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THE
Gardeners' Chronicle

No. 1,097.—SATURDAY, January 4, 1908.

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ILLUSTRATIONS.

WINTER-FLOWERING CARNATIONS.

"WINTER-FLOWERING," or, more correctly perhaps, "perpetual flowering" Carnations, are in no sense novelties in British gardens where, for many years past, the best productions of France, Germany, and England have been cultivated. To-day however, the great majority of the varieties that have emanated from the above-named sources appeal to us rather as incidents in the past history of a flower that now impresses the beholder by its beauty, its boldness, and its increasing utility. Most of the modern varieties have been raised in America, a small minority being productions of well-known growers in the British Isles. A representative set of good American varieties are exemplified in such as Enchantress, Robert Craig, Mrs. T. W. Lawson, and White Perfection. Well-grown specimens of these dominate any exhibit of these Carnations, catching and holding the attention. Such a collection affords an excellent proof of what may be accomplished in a few years from small beginnings. Who, for example, a decade and a half ago when the well-known American variety Wm. Scott made its appearance in this country would have dreamed of what was to follow in a few years? Crude in colour, and, from the English florists' standard, rough and worthless, many people said they had thrown better Carnations to the rubbish heap. In Covent Garden market it was openly despised. It so happened, however, that this variety appeared at an opportune moment, just when that universally popular kind, Miss Joliffe, was failing everywhere in its thousands and tens of thousands, filling with consternation the minds of those growers who for years previously had made a leading feature of this variety. With plants of Miss Joliffe dying in this manner the unpleasant prospect of empty glasshouses presented itself, and Wm. Scott, which had reached England and was reputed to be of good constitution, was installed in its place till, as many observed, "something better should turn up." The florist or decorator was not long before he discovered that if flowers of Wm. Scott were magenta coloured when seen in daylight this became toned to a warm rosy pink shade under artificial light, remaining, however, much brighter and more showy than any other variety of Carnation existing at that time. Free and profuse in flowering, and of good constitution, the variety held its own until "Mrs. T. W. Lawson" was introduced to this country, and to this variety rather than its forerunners is due the great popularity of the American Carnation as we know it to-day. Disappointing as first seen by reason of its indifferent form and colour, the variety has since been regarded more favourably, and at the present time and for some years past has been grown in vast quantities for the production of blooms for cutting. Curiously enough, this variety gained an "Award of Merit" from the Royal Horticultural Society when first shown by an almost unanimous vote, but the equally beautiful variety Enchantress did not succeed on its first appearing before that body.

It was "Mrs. T. W. Lawson" that caused the change in the cultivation of Carnations which resulted in the adoption of the method of allowing one flower only to develop on each stem. The change was radical and its importance great, and the Carnation rapidly became one of the most important and highly favoured of all winter flowers. It was during one of his visits to this country that Mr. A. Herrington, of Madison, New Jersey, said to the writer, looking at some poor examples of the flowers of these Carnations at one of the meetings of the R.H.S.: "The more I see of the American Carnation in England, the more I see it requires America's sun." To-day, however, the flowers usually seen greatly surpass those referred to, both in size and colour. At the same time, they suffer materially from the effects of fog and equally so from the dark and sunless days. How much damage a few hours' fog may cause can hardly be estimated, and to a large extent it will depend upon the quality of the fog, its duration, and not least upon the state of the flower buds at the moment. It is during the nascent period of the petals that the Carnation suffers most severely. How penetrating the influences of fog really are may be gathered from the fact that it is the young petals, but carefully enclosed within the calyx, that suffer most of all, and for weeks afterwards the effects of a bad fog may be seen in the opening flowers. In America, bright sunlight and sunheat stimulates the plant day by day, and healthy examples develop their flowers readily. In England, Carnations suffer from absence of sunlight, quite apart from the losses entailed by fogs. From the grower's point of view, the chief remedy—when we remember that it is the backward buds that suffer most—is to so time his crops by stopping and other means that the flower buds will be fully formed before the arrival of the shorter days and the worst period of fogs. In this way his losses may be lessened to some extent.

In the vicinity of large towns, in low-lying districts adjacent to large rivers, and in those areas usually affected by fogs some such method of reducing the losses should be adopted. A problem as yet unsolved is how to keep the fog or the influence of its poisoned vapour from entering the glasshouses, and I am not aware that any practical method has been devised. Practical men might try the effect of heavy, wetted, roller blinds upon the glass, or the still more simple expedient of perforated water pipes attached to either side of the ridge of the house for the purpose of spraying water on to the glass, with a view to hermetically sealing the glass laps against the fog. Should this be found to modify an attack of the fog so far as the roof glass is concerned, there yet remains the ends of the houses, with the doors, &c., to treat successfully. Here, perhaps, some method of glazing could be adopted to render those portions of the building more distinctly airtight.

Generally speaking, the varieties whose flowers have much blue in their composition suffer the most quickly, and of these C. R. Dana, Nelson Fisher, and Wm. Scott are examples. Aristocrat (see fig. 175 in the issue for December 21), a novelty of the moment, is of the same type of colour, and, so far as present experience goes, promises to be a notorious flower in this respect, for it becomes discoloured when exceptionally young. It is an unfortunate failing in an otherwise good and shapely flower. Most of the scarlet-coloured varieties and the crimson-scarlet shades more particularly than the bright scarlet shades, become bleached as the result of fog and the long-continued absence of sunlight. What happens in their case is that the more intense colouring either remains developed, or that this brighter tone is afterwards destroyed, and much slate colour appears instead, giving a dulness and inferiority to the bloom.

All scarlet flowers appear to suffer most when strong chemical manures have been employed in their cultivation. Some of the maroon-crimson shades as The President refuse to develop in winter time, and the crumpled bundle of petals will not unfold. White-flowered kinds and the pink shades suffer the least discoloration, but such full-petalled varieties as Enchantress require a very long time to expand; the well-known variety Fair Maid, with its fewer petals and smaller flowers, being preferred in some instances because it opens so much more freely and quickly.

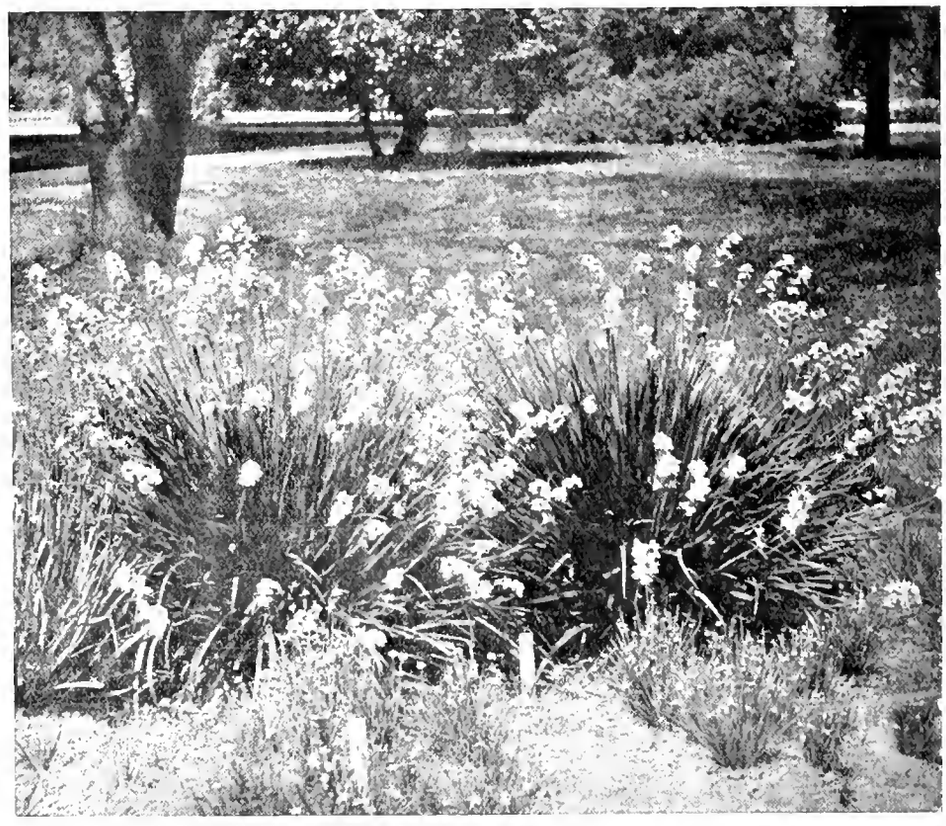
These facts naturally lead to the question of the improvement to be looked for in the future. So far as England is concerned, the ideal variety for winter-flowering will be that

having comparatively few petals, and in which the petals are of a large uniform size right to the centre. Such a flower in artificial heat will move easily and readily, and the variety whose flowers do this prove most profitable to the grower. Market salesmen and others who do not grow Carnations consider the highest-priced flowers as those best worth growing, openly condemning other kinds. The fact that many of the largest growers still cling to the old types, Wm. Scott for example, may to some extent prove the contrary. It is not always the variety whose flowers realise the highest prices in the market that yields the best returns to the cultivator, but rather the variety that opens quickly and flowers profusely over a long period of time. The grower for market has to consider not what price he gets per bloom, or for a few dozens on the market, but the value of all he can produce from every square yard of glass at home. Whether a variety may prove profitable or otherwise depends not a little upon its perpetual habit of growth and profuse flowering. This idea of perpetual flowering is more interesting to the British than the American grower. Already there are those who begin to doubt if White Perfection will prove profitable. Why? Because at flowering time its stems are practically bare of shoots or growths to continue the flowering, hence a wait of three or four months is necessary before there will be another crop of flowers. Thus it is obvious that a larger number of smaller-sized blooms would be better. Generally speaking, varieties of the "Lawson" type are much in favour for their profuse flowering. Speaking of this as a type, it is interesting to note that while American raisers have given us many of their "pink" varieties, as yet they have not given us a good long-stemmed kind of the exquisite pink tone of the old Miss Joliffe. That most recent pink variety "Winsor" is not only obviously of the Lawson type, but it is a pink with the cerise of Lawson taken out of it. It must, however, at once be said that all of this shade of colour show up splendidly under artificial light, and this, from the decorative point of view, is of the highest importance.

Other qualities to be borne in mind by the raiser of new kinds include that of rigidity of stem, and while some varieties are altogether too weak, others appear to be too rigid and erect. Nonsense! I hear someone say, but I refer entirely to the long-stem flowers, and the longest of these in particular when used full length on a table for example but reveals the back view of a very handsome flower. Moreover, the too rigid stem does not lend itself to the most graceful work, and in the near future the ideal stem will be that which presents the flower to good view by a graceful arch of the upper 8 inches or 10 inches of its stem. The shorter-stemmed "Lawsons," rigid as they are beyond comparison, are valuable by reason of their shortness. On the contrary, where stems are 2½ feet or 3 feet long the rigidity has its drawbacks. In these directions there is abundant room for improvement in the Carnation, and if to these qualities could be added the capacity to withstand the so-called "rust" (Helminthosporium echinulatum), a great work will have been accomplished. *E. H. Jenkins, Hampton Hill.*

LIBERTIA GRANDIFLORA.

THE genus Libertia consists of eight species confined to Australia, New Zealand, and S. America. Most of the species have been in cultivation from time to time, but are still rare in gardens. They are all of very easy culture, thriving best where they can obtain an abundance of moisture at the roots at all times. The subject of the accompanying illustration is the best of the genus for garden purposes, although the nearly-allied L. ixioides is almost as valuable. L. grandiflora is a native of New Zealand, being fairly common throughout both the north and south islands from North Cape to Otago. The elegant and free-flowering habit of the plant, combined with its beautiful pure white flowers, should appeal to all plant lovers. The plant is of good constitution, and does not appear to be at all fastidious as to soil, and it seldom fails to produce an abundant supply of flowers each summer when once it has become established. In very cold districts it is best treated as a greenhouse plant, as it thrives well under pot culture. In common with so many species of New Zealand plants, it is injured by severe frosts, and for this reason, if planted out in the open border, it should be afforded some protection during severe weather. When once established, it is best left alone for a number of years, as it resents any interference with the roots. The inflorescence is an elongated panicle, carried well above the foliage to a height of 2 to 3 feet, and consisting of numerous pedunculed umbels, bearing clusters of five to ten pure white, shortly pedicelate flowers, 1 inch or more in diameter. The fruit, when ripe, is yellow, dividing loculicidally into three valves, and encloses numerous bright, orange-coloured seeds which remain on the plant for several weeks before falling, thus producing a most beautiful effect. The foliage is grass-like in habit, rigid, linear, 1 to 2½ feet long, ½ to ¾ of an inch in diameter, and dark green in colour. *C. P. Raffill.*



[Photograph by C. P. Raffill.

FIG. 1.—LIBERTIA GRANDIFLORA AS IT FLOWERED IN THE ROYAL GARDENS, KEW.

NOVELTIES OF 1907.

THE past year has been prolific in the production of good new plants, all branches of floriculture being well reinforced, and especially

THE ORCHIDS.

In this class the home-raised seedlings have taken the greater part of the awards of the Orchid Committee of the Royal Horticultural Society, although there is distinct evidence that pretty species and interesting Orchids of the class denominated "botanical" are steadily increasing in favour; and that albinos, and especially white Cattleyas, still meet with the same appreciation as formerly.

Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), has in 1907 created a record, having secured the Veitchian Cup at the Temple, and on other occasions two Gold Medals, two Silver Medals, and for culture two Silver-Gilt Lindley Medals, and four Cultural Commendations; while his new plants, chiefly raised at Westonbirt, obtained 14 First-Class Certificates and 16 Awards of Merit. The best of these fine novelties were Cattleya Fabia gigantea, C. fulvescens, Westonbirt variety, C. Germania superba, C. Hardyana, Westonbirt variety, all noble flowers of fine colour; C. labiata Purity, the best pure white variety yet flowered; Brasso-Lælio-Cattleya Rowena, Lælio-Cattleya Golden Glory, Miltonia vexillaria, Westonbirt variety, and Cattleya Mossiæ Princess of Wales, three fine plants being exhibited at the Temple Show; Sophro-Lælia-Phroso superba, Sophro-Lælio-Cattleya Phyllis, and S.-L.-C. Medea, all richly-coloured flowers; Lælio-Cattleya Baroness Schroder, Westonbirt variety; L.-C. Ganymede, L.-C. Ortrude, L.-C. Berthe Fournier var. tigrina, Odontoglossum Lady Howick, a very distinct and pretty hybrid; O. crispum Rosemary, a grand form of the white type; Brasso-Cattleya H. G. Alexander (C. citrina × B. Digbyana), a very remarkable cross of distinct features; several good new Cypripediums, Cattleyas, &c.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), whose collection has developed so remarkably during the last few years, secured First-Class Certificates for the stately and extremely rare Arachnanthe Rohaniana, Cymbidium insigne, Glebelands variety, the handsome Brasso-Cattleya Digbyano-Schroderæ, Fowler's variety; the charming Brasso-Lælio-Cattleya Fowleri, which is unique in colour; and Sophro-Cattleya eximia, Fowler's variety; Awards of Merit for Odontoglossum Aliciæ and the large and finely-shaped Cypripedium Ernest Read; and a Botanical Certificate for the rare Catasetum laminatum. The superbly-blotched Odontoglossum crispum Fowlerianum also flowered in the Glebelands collection, and was illustrated in the *Gardeners' Chronicle*, May 4, p. 278.

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), still remains true to the species, both showy and curious, and he adds to his famous collection, which has always been the most interesting and varied in existence, anything that is new and rare. At the same time, good hybrids are not despised at Burford. The species for which Awards were secured during 1907 were the fine Dendrobium regium, which secured a First-Class Certificate; Habenaria Ugandæ, a very remarkable African species; Cirrhopetalum gracillimum, and C. Makoyanum, both graceful species; Hartwegia purpurea, Epidendrum campylostalix, and the large and singular Bulbophyllum longisepalum, for which Mr. White was voted a Cultural Commendation, the specimen having 14 large purple and white flowers, each nearly 6 inches in length.

From the Right Honble. Lord ROTHSCHILD'S gardens, Tring Park, Tring (gr. Mr. A. Dye), the Honble. WALTER ROTHSCHILD also showed some remarkable and rare species, including Lissochilus giganteus, the handsome Stanhopea platyceras, Plocoglottis Lowii, Eulophia ecristata, Bulbophyllum galbinum, Ancistrochilus Rothschildianus, and other new species have flowered at Tring Park, and some of them have been illustrated in the *Gardeners' Chronicle*.

Baron Sir H. SCHRODER, The Dell, Egham (gr. Mr. H. Ballantine), in Odontoglossum John Clarke, which obtained a First-Class Certificate on November 26, showed one of the finest hybrid Odontoglossums of the season.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), from his splendidly-grown collection, has produced as home-raised novelties the handsome Lælio-Cattleya Epicasta "The Premier," the large-flowered Cœlogyne Colmanii, Spathoglottis Colmanii aurea, Phaio-Calanthe Colmanii and its variety rosea; and the pretty purple-spotted Brasso-Cattleya Mary; and of species the neat little Cirrhopetalum retusiusculum and Acineto Humboldtii Colmanii.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), great in good Cypripediums, and especially in hybrids of C. Lawrenceanum, secured Awards of Merit for C. Mrs. Francis Wellesley (Sanderianum × Gowerianum magnificum), a very beautiful hybrid, and, unlike most other hybrids of C. Sanderianum, a very free grower. Also the ruby-purple C. Tautzianum nigricans, the finely-coloured C. Dicksonianum, and Cattleya Mendelii Francis Wellesley.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), received a First-Class Certificate for Cattleya Trianæi The Premier, one of the largest and best of coloured varieties, and Awards of Merit for C. T. Mooreana, with a deep claret-crimson lip; the fine white C. labiata Daphne, and Augusta; and the handsome Odontoglossum venustulum Apollo.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), who recently showed some good results of attempting to improve on the favourite Cypripedium insigne Sanderæ, secured Awards for the fine yellow C. Sanderæ superbum; C. Nandii, Low's variety; and C. Winifred Hollington, Cookson's variety.

Other gentlemen who have received honours for novelties during the year are F. M. OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), for Odontoglossum crispum xanthotes "White Lady" and Sophro-Lælia Gratrixiæ magnifica; F. J. HANBURY, Esq., for the very fine Oncidium leucochilum "Mrs. F. J. Hanbury"; H. S. GOODSON, Esq. (gr. Mr. Day), for Odontoglossum crispum Lily Bourdas, O. ardentissimum "Herbert Goodson," and Cattleya Aliciæ; J. S. MOSS, Esq., Bishop's Waltham, for the handsomely-blotched Odontoglossum crispum Mossii; F. DUCANE GODMAN, Esq., Horsham (gr. Mr. Moody), for Maxillaria grandiflora and Lycaste Ballii, South Lodge variety; C. J. LUCAS, Esq., Warnham Court, Horsham (gr. Mr. Duncan), Lælio-Cattleya Lawrie and Odontoglossum Othello; W. THOMPSON, Esq., Walton Grange (gr. Mr. Stevens), for Odontoglossum Thompsonianum superbum.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), has, during the year, flowered several new and interesting hybrid Odontoglossums, the finest of which, O. Queen Alexandra, var. Carmen, ranks with the best yet produced.

NURSERYMEN.

Messrs. SANDER & SONS, St. Albans and Bruges, have, during the past year, exhibited many new Orchids, obtaining First-Class Certificates for Odontoglossum Prince Edward of Wales, O. crispum xanthotes, White's variety; and O. c. Solum, all good, and the last-named unique in its distinctive characters, and likely to remain so. Awards of Merit were secured for Dendrobium chryseum giganteum, Lælio-Cattleya The Duchess, and the very handsome Cypripedium Fairrieanum "Black Prince." Some of the best of Messrs. SANDERS' other novelties, which have been illustrated in the *Gardeners' Chronicle*, are the finely-blotched Odontoglossum crispum Lord Cromer, O. c. Prince of Asturias, O. Wattianum princeps, O. crispo-Harryanum F. Sander, and Brasso-Cattleya Rajah, a grand hybrid, with flowers of a golden hue delicately tinged and veined with rose-purple.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, showed one of the best new plants of the year in the scarlet Odontioda Bradshawiæ, with which they secured the first First-Class Certificate of the year on January 8. Other awards were obtained for Dendrobium regium, Miltonia Schroderiana, Heaton variety; the extremely rare Angræcum Bryssaii, the richly-coloured Sophro-Cattleya Antiochus, and the very singular Polycycnis Charlesworthii, while of their many other novelties remarked during the year may be mentioned the heavily-blotched Odontoglossum crispum heatonense, one of a small batch of home-raised seedlings; and of the many new hybrids, the pretty O. Phœbe magnificum. Messrs. CHARLESWORTH were also awarded a First-Class Certificate on December 31 for Odontioda Cravenana.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, have for their best the fine Brasso-Catt.-Lælia Veitchii and Cattleya Iris His Majesty, both of which received First-Class Certificates; the remarkable Cypripedium tibeticum, and the floriferous Dendrobium Wilsonii.

Other novelties which have secured awards during 1907 are the fine Odontoglossum ardentissimum Robsoniæ, from Mr. ROBSON, Altrincham; Cymbidium Colmanniæ, Edenside variety, from Mr. JAS. DOUGLAS; Lælia anceps Schroderæ "Grace Ruby" and Odontoglossum Pescatorei ornatum, from Messrs. MCBEAN; and the large and beautiful Cœlogyne asperata, shown by Messrs. MOORE, LTD., Rawdon, Leeds, and which, although known for many years, is still rare. Messrs. MOORE, LTD., also flowered for the first time the pretty Javan Cirrhopetalum biflorum, and some other interesting plants.

CONTINENTAL NOVELTIES.

M. CHARLES VUYLSTEKE, Loochristi, Ghent, has added to his credit some marvellous hybrid Odontoglossums, several of those shown at the Temple Show being unique in colour, the blotchings having a dark violet shade. Three First-Class Certificates were secured on that occasion, viz., for Odontoglossum gandavense, O. eximium "King of England," and O. cœruleum; awards being also obtained for O. caloglossum and O. Ruby.

M. A. A. PEETERS, Brussels, showed the rare Cymbidium Humboldtii at Holland House, and on other occasions the white-petalled Cattleya Warscewiczii Madame Valcke, and the fine Odontoglossum Lambeauianum, var. Idol.

M. GRAIRE secured a First-Class Certificate for his pretty dark-red Odontioda Decrossiana; M. LAMBEAU for Miltonia vexillaria, Lambeau's variety; and Lælio-Cattleya Clive Lambeau's variety.

M. CHAS. MARON showed Brasso-Cattleya Lido; M. JULES HYE DE CROM, the white Miltonia vexillaria Lambeauiana; M. THEODORE PAUWELS, Odontoglossum crispum, Orchid Villa variety; and Messrs. LINDEN, Odontoglossum crispum Roi d'Angleterre, and several other fine, home-raised, blotched varieties of Odontoglossum crispum.

The following new or rare Orchids have been illustrated in the *Gardeners' Chronicle* in 1907:—

Ancistrochilus Rothschildianus, Jan. 26, p. 50.
Ancistrochilus Thompsonianus (for comparison), Jan. 26, p. 51.
Ansellia gigantea, June 8, p. 362.
Brasso-Cattleya Rajah, June 1, p. 351.
Brasso-Lælio-Cattleya Fowleri, May 11, p. 303.
Bulbophyllum galbinum, July 20, p. 42.
Bulbophyllum longisepalum, Sep. 21, p. 211.
Cattleya Warscewiczii (Holford's specimen), supp., Nov. 2.
Cœlogyne Colmanii, Feb. 16, p. 108.
Cypripedium Actæus Langleyense, Jan. 5, p. 12.
Cypripedium californicum, June 29, p. 418.
Cypripedium Morganiæ (specimen), Feb. 2, p. 66.
Cypripediums (Mr. Drewett's), Feb. 16, p. 99.
Dendrobium acuminatum, Sep. 21, p. 210.
Dendrobium fusiforme, May 25, p. 357.
Dendrobium regium, Aug. 17, p. 122.
Grammatophyllum speciosum at Peradeniya, Aug. 31, pp. 169, 170.
Lælio-Cattleya elegans (specimen), supp., Oct. 5.
Lælio-Cattleya Golden Glory, June 1, p. 357.
Neobenthamia gracilis, Aug. 31, p. 174.
Odontioda Bradshawiæ, Jan. 19, p. 36.
Odontoglossum Alexis, Jan. 12, p. 26.
Odontoglossum Beauté Céleste, Jan. 26, p. 56.
Odontoglossum caloglossum, Feb. 2, p. 76.
Odontoglossum crispo-Harryanum F. Sander, March 2, p. 142.
Odontoglossum crispum Fowlerianum, May 4, p. 278.
Odontoglossum crispum heatonense, June 22, p. 409.
Odontoglossum crispum Lord Cromer, June 1, p. 352.
Odontoglossum crispum Prince of Asturias, June 1, p. 353.
Odontoglossum crispum Rosemary, April 6, p. 217.
Odontoglossum John Clarke, Nov. 30, p. 380.
Odontoglossum Prince Edward of Wales, May 11, p. 302.
Odontoglossum Phœbe magnificum, June 1, p. 355.
Odontoglossum Queen Alexandra, var. Carmen, July 7, p. 13.
Odontoglossum Ruby, Feb. 2, p. 76.
Odontoglossum Wattianum princeps, March 2, p. 135.
Pleione yunnanensis, March 9, p. 152.
Sophro-Lælia Phœbe superba, May 4, p. 277.

(To be continued.)

THE ROSARY.

CULTURAL HINTS FOR THE MONTH OF JANUARY.

THE severe weather has rendered it necessary to make provision for covering and soiling up all standard and dwarf plants of tender varieties. I trust the advice given last month as to the advantage of autumn planting has been acted upon, because spring-planting Roses are apt to make top growth first and roots afterwards. Examine the early-planted Roses and Rose cuttings that are likely to become loosened by the shrinking of the soil or by frost, and carefully tread the soil about the roots row by row. This will also include standard and dwarf Briars, Manetti and De la Grifferie stocks and cuttings. Afterwards apply a fresh mulch on the surface of the ground.

The atmospheric temperature of the forcing house may now be raised to 55° during the day time, and when the weather is favourable more air can be given on the south and west sides of the house. An occasional syringing during bright weather, and damping of the ground surfaces in dull weather will be valuable as helping to maintain a humid atmosphere. Close the house early in the afternoon.

A later batch for succession can be brought into the cooler end of the house during the latter part of the month, and the same treatment accorded them as was adopted for earlier ones; following the pruning operation they should be kept for a short period rather drier at the root. Prune the Hybrid Perpetuals to about one-third of their growth, cutting each shoot back to an outward eye. The Tea-scented and Noisette varieties do not require to be pruned so closely, but merely to have the weak and unripened growths removed, shortening very moderately the strong flowering shoots.

The Tea-scented varieties will bear a much warmer atmosphere than the Hybrid Perpetuals It should be distinctly understood that the treatment just described applies only to established plants that were potted-up during the late spring and have been plunged out-of-doors all the summer. Plants that were planted in October can be brought into a cold house or frame. Slightly prune them, and keep the roots moderately dry; this will cause the lower buds to swell. The final pruning can be carried out during February and March. At present the atmospheric temperature need not exceed 45°, but it should not fall below 40°. The house at present can remain closed, but a little air may be given after a month has elapsed on bright days only.

When it is intended to fumigate or vaporise the house, it should be kept perfectly dry, and no moisture should hang about the plants. This operation is best done on a quiet still evening, and if it is found that one fumigation is insufficient to kill the insects, let it be followed by another of medium strength early on the next morning. This will be found more effective and economical than making more severe operations at longer intervals, and there will be less liability of the foliage getting scorched or otherwise injured.

Herbaceous or soft grafting will now be well to the fore. The earliest-forced Roses will now provide plenty of available and sufficiently ripened wood for the purpose, and when new or scarce varieties have to be propagated quickly, it is customary to cut up each bud and leaf of the shoot for a scion; the terminal growth being softer can be used entire. The tops of the early grafts will also now be sufficiently forward to supply material for the same purpose.

A good look-out must be kept for the maggot and grub that infests the leaves and buds of inside Roses, which should be picked off and destroyed.

The grafts on the roots of seedling Briars need to be brought on cautiously at present; a little air for an hour or two to dry up the damp may be given during the morning, and at present only a moderate bottom heat until root-action has commenced and some top growth has been made, when more heat and air can be given them.

The growths of most out-of-door Roses made during last season will be found to be rather soft and imperfectly matured, and I shall not be surprised to see them badly injured if the weather becomes very severe. *J. D. G*

ODONTOGLOSSUM CRISPUM.

OUR illustration (fig. 2) represents a specimen of Odontoglossum crispum cultivated from a single pseudo-bulb by Mr. H. G. Alexander, Orchid grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Tetbury. It illustrates the advantages to be derived from dividing Orchids in the manner often urged in these pages. The plant illustrated having an extraordinary proportion of leading growths, has produced an unusual number of flower-spikes.

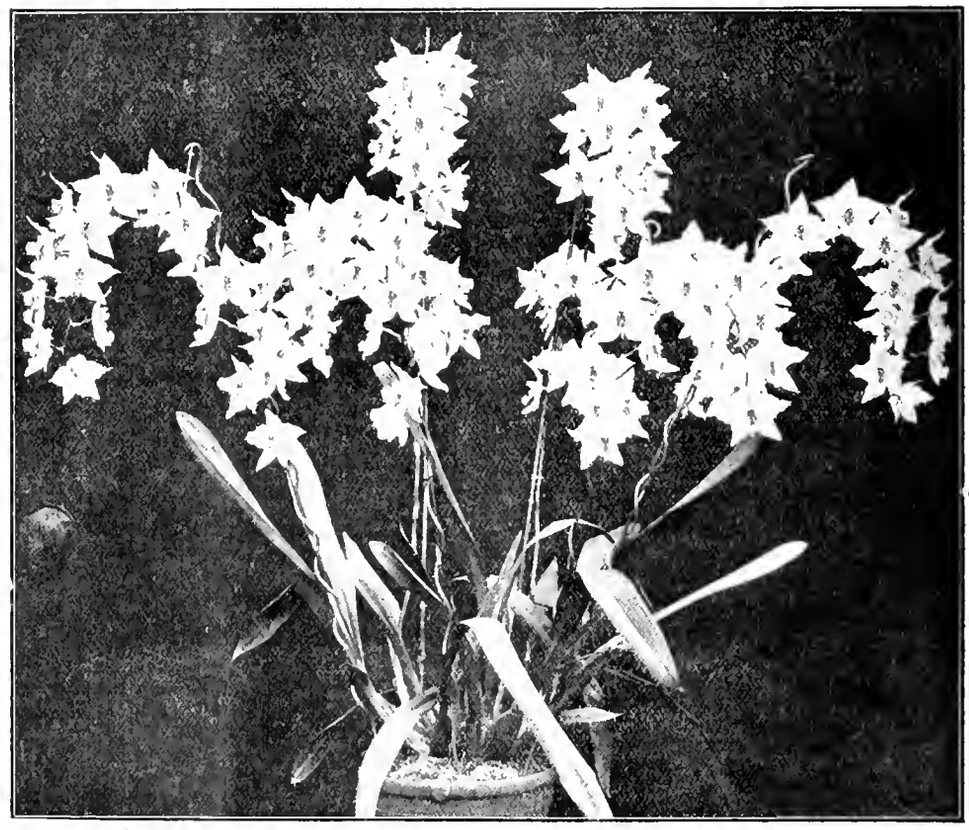


FIG. 2.—A FINELY-FLOWERED PLANT OF ODONTOGLOSSUM CRISPUM FROM MAJOR HOLFORD'S COLLECTION.

LAW NOTE.

THE SMALL HOLDINGS AND ALLOTMENTS ACT 1907.

DURING the passage of the Small Holdings Act through the Houses of Parliament the supporters of the Bill expressed their firm conviction that its provisions would enable many who are now working for others to become proprietors of their own land and employers of labour. It is not difficult to imagine the dismay of those who, in the hope that it might prove of practical benefit to themselves, have endeavoured to follow the scheme of an Act which, in addition to containing 47 clauses and two schedules, either amends or incorporates nearly a dozen other Acts of Parliament, which in their turn refer to other statutes of still earlier date. A short summary of the new Act may therefore help to remove some of the difficulties of those who are thus circumstanced. Putting the matter as shortly as possibly, the Act may be divided into three heads, namely, Part 1, which deals with "Small Holdings," Part 2 which deals with "Allotments," and Part 3 which relates to general matters.

SMALL HOLDINGS.

It may be explained in the first place that a small holding means an agricultural holding which exceeds one acre and either does not exceed 50 acres or, if exceeding 50 acres, is at the date of sale or letting of the value for the purpose of Income-tax of not more than £50 a year.

The Act in the first place provides for the appointment of two or more persons possessed of a knowledge of agriculture who are to be known as the Small Holdings Commissioners. It is the duty of these officials acting under the Board of Agriculture to ascertain the extent to which there is a demand for small holdings, or for which there would be a demand if suitable land were available in various parts of the country, and for this purpose to confer with the County Councils and others. The Board of Agriculture may then communicate with the County Councils, and thereupon it will be the duty of the latter to prepare draft schemes with a view to carrying out the reports of the Commissioners and submit these schemes to the Board for approval or modification by them. If the County Council declines to undertake this duty, or if it fails to prepare such schemes within six months after receiving the report from the Board, then the Small Holdings Commissioners may proceed to prepare draft schemes.

The County Council may, however, submit a draft scheme without waiting to be approached by the Commissioners, and in this event the draft scheme may specify: (a) the localities in which land is to be acquired for small holdings; (b) the approximate quantity of land to be acquired, together with other details; (c) whether and if so to what extent grazing or other similar rights should be attached to the holdings; and (d) the time in which the scheme is to be carried into effect. Subsequently a draft scheme is to be published and advertised so as to enable objections to be sent in to the Board, and, if necessary, the Board can hold a public local enquiry on the subject.

A person who desires to avail himself of the machinery thus provided to enable him to obtain a small holding can either purchase the holding outright or take it on lease. The Council in its

turn can either buy the land compulsorily from the existing holder, or can take it on lease from him and sub-let it to the applicant. The amount of capital at his disposal will probably affect the decision of an applicant in considering whether he shall purchase the holding outright or work it under a tenancy agreement, but machinery is provided under a previous Act whereby the small holder who wishes to purchase the freehold of the property outright can pay off the purchase money by instalments. In this case the course of procedure is that the applicant pays not less than one-fifth of the purchase money at the start. One-quarter of the purchase money can, if the Council think fit, be secured by a perpetual rent charge, which would be in the nature of a small ground rent (it is possible, however, to redeem this rent charge by payment of a lump sum in the future if desired). The rest of the purchase money can be secured by a charge on the holding in favour of the Council, and this balance can either be repaid by half-yearly instalments of principal with interest or can be paid off in a lump sum at such time within the next 50 years, as may be agreed upon with the Council. It often happens that a grower when entering on the land considerably improves it by his initial outlay, and in such cases as this the Council has power, if it chooses, to postpone (for a period not exceeding five years) the time for payment of all or any part of the instalments of principal or interest above mentioned.

The Act also provides machinery whereby holdings may be worked on the co-operative system, and in this event the Council may relax the general rule that not more than one dwelling house shall be erected on any one holding.

The Act of 1892 provides that where a small holding is sold by the Council to an applicant, then, for a term of 20 years after the date of the sale, certain conditions may be imposed. These conditions include the following: (a) that any periodical payments due in respect of purchase money shall be duly made; (b) that the holding shall not be divided, sub-divided, assigned or underlet without the consent of the Council; (c) that the holding shall be cultivated by the occupier, and shall not be used for any purpose other than agriculture. However, in this case the expression "agriculture" includes "horticulture" and also the use of the land for any purpose of husbandry, including the keeping and breeding of live stock, culture of bees, and the growth of fruit, vegetables, and the like.

ALLOTMENTS.

Hitherto allotments have been dealt with by the Local Government Board, but their powers are now transferred to the Board of Agriculture, except as to certain powers relating to the financing of local authorities. Similarly the powers and duties of Rural District Councils are now transferred to Parish Councils, or, in cases where the district does not possess a Parish Council, then to the Parish Meeting. Up to the present time "allotments" have represented very small holdings which in fact did not exceed one acre, but the maximum size allowable under the Allotments Act of 1887 is now raised to five acres. A dwelling house may only be erected on an allotment if such allotment is one acre or more in extent, and in no case can more than one dwelling house be erected for occupation with any one allotment. It is the duty of County Councils to ascertain the extent to which there is a demand for allotments in their district, and to take steps to satisfy such demand. If the Board of Agriculture, after holding a local enquiry, considers that any County Council has failed to fulfil its obligations under the Allotments Act of 1890 the Board of Agriculture may transfer the powers of the County Council to the Small Holdings Commissioners.

GENERAL PROVISIONS.

The third part of the Act deals with the powers of the Council to purchase or hire land, compulsorily where necessary, in order to carry out the provisions of the Act, but in fixing the price no additional sum is to be paid to the owner of the land on account of the purchase or hiring being compulsory. Where a Council has hired land compulsorily for the purpose of small holdings or allotments the Council may, by giving to its landlord written notice not more than two years nor less than one year before the expiration of their tenancy, renew the tenancy for a further period (with the limits fixed by the Act) on the same terms and conditions as the original lease, and so on from time to time. A Council, however, has not power to acquire compulsorily land which forms part of any park, garden, or pleasure ground, or of the home farm attached to or usually occupied with the mansion, or which is otherwise acquired for the amenity or convenience of any dwelling house, or which is woodland not totally surrounded by or adjacent to land acquired by a Council under this Act, or which is required for certain public purposes as therein mentioned, and the Council cannot compulsorily acquire any holding which is 50 acres or less in extent. The Act also contains a somewhat novel provision to the effect that where a County Council acquires land for small holdings, and the labourers working on such land are thereby deprived of their employment and cannot obtain equally beneficial employment in the same locality, then the Council may pay to these labourers such sum as it thinks just by way of compensation for the consequent loss of employment and the expense of moving to another locality.

COMPENSATION FOR IMPROVEMENTS.

Hitherto we have only considered the position of an intending small holder when he enters on the land, but the Act also contains important provisions with regard to his right to compensation for improvements when he gives up his tenancy. The Act provides that where a Council has let a small holding or an allotment to a tenant he is to have, as against the Council, the right to compensation on quitting the holding for the following improvements:—(1) Planting of standard or other fruit trees permanently set out; (2) planting of fruit bushes permanently set out; (3) planting of Strawberry plants; (4) planting of Asparagus, Rhubarb, and other vegetable crops which continue productive for two or more years. It will be seen that the tenant thus gets similar privileges in this respect to those enjoyed by the ordinary market gardener (as distinct from a nurseryman), with, however, two important exceptions. First, no compensation is given for the erection or enlargement of buildings for trade purposes, and, secondly, the tenant is not to be entitled to compensation in respect of any such improvements if executed contrary to an express prohibition in writing by the Council; if, however, the tenant feels aggrieved by any such prohibition he may appeal to the Board of Agriculture, who may confirm, vary, or annul the prohibition, and the decision of the Board is final. Furthermore, a tenant of an allotment to which the Allotment Acts (as amended by this new Act) apply, may, if he prefer it, claim compensation for improvements under the Allotments and Cottage Gardens (Compensation for Crops) Act 1887, instead of under the Agricultural Holdings Act as above mentioned, and this right is given to him even in cases where the allotment exceeds two acres in extent.

Under the Compensation Act of 1887 just referred to the allotment holder is entitled on the determination of his tenancy, notwithstanding any agreement with his landlord to the contrary, to compensation for the following matters: (a) for crops, including fruit, growing upon the holding in the ordinary course of cultivation, and for fruit trees and fruit bushes growing thereon which have been planted by the tenant with the previous consent in writing of his landlord; (b) for labour expended upon and for manure applied to the holding since the taking of the last crop from time to time in anticipation of a future crop; (c) for drains and for any outbuildings, pigsties, fowlhouses, and for any other structural improvements made by the tenant upon his holding with the written consent of his landlord.

CONCLUSION.

Summing up the whole position, therefore, it will be seen that if any intending applicant wishes to acquire either by purchase or on lease a "small holding" exceeding one acre and not exceeding 50 acres, he should apply for further information to the clerk to the County Council for the district desired, or if he wishes to obtain an "allotment" not exceeding five acres in extent he should apply to the clerk to his Parish Council, or Parish Meeting, as the case may be. Should his application fail to meet with due attention or consideration, he should communicate with the Small Holdings Commissioners, care of the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

Finally, a reminder on a few important matters may not be out of place from the practical point of view. First, an applicant should make certain that he can secure a market for his produce; secondly, he should decide definitely what he proposes to grow on his holding, and should make sure that the land proposed is suitable for the purpose. The secretary of the Royal Horticultural Society, Vincent Square, Westminster, would probably be happy to inform intending tenants as to where they could obtain the necessary advice for having the soil properly tested and analysed in order to insure that it is suitable for the purpose intended. Thirdly, one is bound to point out that by another Act passed this year the Board of Agriculture has power to order the destruction of any agricultural or horticultural crops or trees or bushes on which any insect, fungus, or other destructive pest may be found, or to which it may be likely to spread, and to do this without vouchsafing to the grower any compensation whatever. It is certainly unfortunate that the President of the Board of Agriculture should recently have found himself compelled to state that he could give no hope of any Act being passed which would enable compensation to be paid in these cases, and it is earnestly to be desired that on further consideration of the subject the Government may soon see its way to alter its decision on this point. *H. Morgan Veitch.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Artificial heat.—Amongst matters which militate against the well-being of Orchids under cultivation, perhaps the worst is the use of excessive artificial heat, and especially at this season, when the various departments devoted to these plants require more fire-heat than usual to maintain the desired temperatures. Nothing, in my experience, is more fatal to any class of plants, and especially Orchids, than excessive fire-heat at any time. A common mistake in the construction of Orchid houses lies in the neglecting to provide sufficient water pipes and boiler power. Another mistake is sometimes made in the massing of hot water pipes immediately beneath a thick slate moisture-holding stage, with the result that, in bad weather, the fires have to be driven and the pipes kept injuriously hot; whereas if the water pipes were more numerous and were equally distributed within a few inches of the ground, the heat of the pipes might be much less. The extra cost of more piping and the provision of a size larger boiler than is actually required is as nothing compared with the cost of fuel in endeavouring to maintain proper temperatures with insufficient heating surface. Of the many good types of boilers now on the market I prefer the sectional type; two of these are working highly satisfactory here, and have all the advantages claimed for them by the manufacturers.

Protection of houses.—In cases where the heating apparatus is not equal to the demands, much may be done in warm weather to reduce the strain imposed upon the boiler by a judicious use of protecting materials, such as Archangel mats, or waterproof canvas, rolled along the lower portion of the roof, and covering all

exposed glass ends and side of the houses. These coverings should be removed in the morning, when the atmospheric heat commences to rise, taking them to the boiler house, where they can be spread out and dried ready for use again.

Atmospheric conditions.—With regard to the atmospheric moisture at this season, commonsense and practice must regulate the operations of the cultivator, who must always bear in mind that it is necessary to maintain a correct balance of heat and moisture. Anything that tends to unduly excite the plants in any way should be strictly prevented, as all plants are now more or less inactive. Damping the floors, &c., is done once daily in this collection according to the atmosphere outside, this being done in the morning when the temperature has commenced to rise. In dry, windy, frosty weather, when much fire-heat becomes necessary, more damping of the paths and spaces beneath the water pipes is called for to counterbalance the consequent aridity.

Ventilation.—Although all Orchids delight in an abundance of fresh air, the ventilation may easily be overdone just now; but when the outside conditions are favourable, air may be admitted with advantage through the top ventilators, provided the method of arrangement is a good one. Continuous ventilation, worked independently on each side of span roofed houses, is far in advance of the lantern system, or small sashes lifting separately, the latter always leading to draughts. On windy days it is advisable to ventilate on the leeward side only, keeping the opposite ventilators closely shut. When the two sides lift simultaneously, as with the lantern system, this is obviously impossible. The lifting should be so arranged that the lights can be raised as little as half an inch if needed—a great advantage that up-to-date gearing possesses over the lever and pin arrangement, which is so often fixed in such a fashion that it is impossible to put on less than 2 inches of air at the first hole. The bottom ventilators may be carefully used at night during mild weather, and may often be opened in the daytime when it is not advisable to lift the top ones. At no time during winter do I advise that the top and bottom ventilators should be open simultaneously. The sense of feeling is the safest guide in the matter of heat, moisture, and air, and a little practice and observance will enable any cultivator to tell on entering the structure if the conditions obtaining therein are suitable for the plants.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

As the days are now lengthening, plants under glass will soon be starting into growth, especially stove and warm greenhouse Ferns, but as large plants in general are only repotted once in the year, it is necessary to avoid giving them a greater check than is necessary by that operation. In order to retard them, therefore, they should all be kept as dry at the roots at the present time as it is safe to keep them. By gradually withholding a little less water at each time of watering, the plant gets used to it, and when repotting takes place it does not feel the check so much, but afterwards starts into growth much quicker, rooting into the fresh soil quickly, as it were to compensate for the stinted measure of moisture it had been receiving. These little points in the cultivation of specimen plants have far more to do with the success of a plant developing perfectly than have great doses of some artificial manure. Attention to the minor details is the secret of the success of every prize-winner. The present time should be used in looking over all insect-infested plants in the stove, as no plant can thrive well with vermin on it. The cause of a great many of these pests upon the plants is bad or careless ventilation and syringing. At this time of the year, especially in Scotland, where we seldom see any sunshine, syringing should be done only on clear mornings at about 11 o'clock. Tepid water should be employed, and the operation should be carried out with care, not merely damping over the tops of the leaves of the plants, but syringing well underneath every leaf and stem of all plants liable to red spider and thrips, such as Codiæums (Crotons), Cordylines (Dracænas), &c. One good washing administered once or twice each week, according to the brightness of the weather, should be sufficient to keep the plants clean. Great care should be taken in not having the hot-water pipes too hot, as it is this kind of heat that is so liable to breed red spider and thrips. A little fresh air should be admitted to the stove after the plants have been syringed, even if the atmospheric temperature should fall a little, so long as the outside temperature is above 32°. Fresh air is of much importance in plant culture at all times of the year. When one considers the important part a leaf has to perform, it is clear that the greatest care should be taken to keep the foliage in a clean and healthy condition.

THE FLOWER GARDEN.

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

At this season of the year the flower garden may be said to be without flowers, at the same time close attention is required during the winter months if good displays are to be realised in spring. Maintain a close observation upon the least robust of the spring flowering plants, and prevent them from suffering ill effects from frost, damp, insects, &c. For the purpose of affording a slight protection from frost it will be found that branches cut from Yew trees are very convenient in use, but they should only be employed with careful discretion. Well-screened coal ashes are valuable in some instances for sprinkling amongst herbaceous and Alpine plants, and may be supplemented with occasional dustings of air-slacked lime. We have found that additions of sharp sand or gravel to our adhesive soil answer admirably, favouring root-action, acting as a deterrent to insects, which not infrequently congregate amongst Alpine plants and their surroundings.

Helleborus niger (Christmas Rose).—The cultivation of this beautiful plant is simple in the extreme, but in order to secure pure-white flowers with a sufficient length of stem, some slight protection is necessary for a period of something like two months previous to gathering; such protection can best be afforded by placing frames over the plants. The plants thrive best in a deep, rich loam in a damp or rather shaded position. We cultivate the plants intended for supplying flowers for cutting, behind a north wall, and the roots are thickly covered with a mulch of rich manure from the time the plants finish flowering until they again need the protection of the frames, after which time cleaner and lighter stimulants are applied. For the purpose of increasing the stock, division of the roots, after flowering, may be recommended, but the plants thrive best if left for several years undisturbed. We have just counted, on a single plant occupying something like a square yard, 250 flowers in different stages of development.

Lawns.—The best appliance which I have yet employed to give the lawn a clean and tidy appearance at this season, after nearly all the leaves have been cleaned away, and after heavy falls of rain, which are followed by the increased disfigurement of the grass by worm-casts, is the motor lawn-mower, either with or without the cutting machinery. If the cutting appliance be removed the front wooden rollers should be removed also, replacing them with cast metal ones, thus giving the machine a more equal balance. If this mower is used at short intervals, and some well-slaked lime is freely applied once or even twice during the winter months before rain is expected, much benefit will result to the lawn.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to Lord ALDENHAM, Aldenham House, Elstree, Hertfordshire.

Arrangement of plots.—In order to become an efficient cultivator of vegetables, whether one has a large, medium, or small garden, it is necessary that many details be brought into practice and rigidly carried out each year. A plan should always be made of that part of the garden devoted to vegetable culture in which each plot is plainly depicted and the names of the various crops that are to be cultivated. It will then be possible to prepare each piece of ground so as to suit the requirements of the individual crop. If a proper system of rotation of crops is carried out, not only will they be much more satisfactory, but the expense of maintaining a kitchen garden in a condition to produce high-class results will be much diminished.

The seed list.—The selection of varieties from the seed list should be given very careful attention, and here I may be allowed to say that every gardener should be given the privilege of selecting his own stocks, as he is in a better position than any one else to know the requirements of the establishment. Varieties that are successful in one locality may be, and often are, a complete failure in another district. The cheap collections of seeds offered by the majority of seedsmen are, I am sure, of good value so far as quantity goes, but it must be remembered these almost invariably contain a large quantity of some seeds which one will hardly use and very little of those that will be most in demand. It is imperative that the best of everything be grown, as one can easily understand that inferior sorts require just as much if not more attention to cultivate them well as do the superior varieties; the extra cost in the first place is so small that it ought not to be considered. Good, standard kinds should always be grown for the main crops, but a few novelties may be included, as they afford opportunities for comparison with the older kinds, and whether they prove superior or not they are sure to be interesting. The work of selection can easily be carried out during the long winter evenings, and to the enthusiastic kitchen gardener will prove a labour of love.

Preparation of the ground.—This work is of paramount importance, but whether it shall be done during the autumn, mid-winter, or early spring must be determined by the nature of the ground and the state of the weather. The preparation of heavy land should, if possible, be left until February or March, but on light land the work can be done with advantage during autumn and mid-winter.

Trenching.—I am a strong advocate of deep cultivation, and am distinctly in favour of bringing the bottom spit to the surface, though I know full well that in this respect I differ from many good cultivators. I have always advised and practised it, and whenever possible move

the soil to a depth of from 2 feet 6 inches to 4 feet.

Manuring.—This operation requires the exercise of much discretion. Many crops will assimilate almost any quantity, while others are injured by its presence in the soil. Especially is this the case in very old gardens. Applications of lime, soot and wood ashes will often put new life into ground which has been a long time under cultivation, and at the same time destroy many destructive insect pests. My notes from week to week will be based upon my experience in this district, which is situated twelve miles north of London, so that some modifications must be allowed for by those who are in less or more favoured localities.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Vines in pots.—Where pot vines are being started to supply an early crop of fruit, the points of their canes should be brought down to a horizontal position in order to cause the buds to break regularly from top to bottom. The buds of young vines that have not been previously forced are usually stubborn about breaking into growth, and require a steady degree of warmth and humidity to cause them to do so. In cases where the pots are plunged, the heat of the material should be maintained at 75° to 80°. When growth has commenced sufficiently for the bunches of fruit to be seen,

the atmospheric temperature of the house (especially while the days are short and the external weather more than usually variable) should not be too strictly regulated. In early forcing it is a great mistake to insist on having fixed temperatures, irrespective of external conditions. Even in cases where ripe Grapes are required at as early a date as it is possible to get them, the forcing should be chiefly done in bright, mild weather, when the atmospheric temperature may safely be allowed to rise to 75° or 80° before the house is ventilated. On the contrary, there need be no hesitation during cold nights, in allowing the heat to fall to 55° or even lower. It is far better to do this than to force hard and continuously by maintaining a temperature of 60° at night, as is reasonable only in mild weather. Do not promote too much atmospheric moisture.

Late Vines.—Without a good season of rest, vines cannot remain long in vigorous health, and even the latest varieties, such as Lady Downes, Appley Towers, and Black Alicante, should now be cleared of their fruit, so that the energies of the plants may not be further exhausted. Sever the bunches with sufficient wood attached to them for the convenience of bottling, and carefully store them, in the usual manner, in the Grape room. Open all the ventilators in the vinery, and if the roots of the vines are contained in inside borders, let them be thoroughly soaked with water. The vines should be pruned without delay, and if this is done on the simple "close-spur" principle, shorten each lateral back to two prominent basal buds. Wash the woodwork of the house with hot, soapy water, and lime-wash the walls. In cleaning the vines, relieve their rods and spurs of any loose bark, and subsequently thoroughly wash them with a warm and moderately strong solution of the Gishurst Compound, working it well into the crevices by the aid of a soft brush. Should the vines be affected with mealy bug, it may be necessary to be more particular in removing all the loose bark, and the rods and stems, down to the uppermost roots, should be painted (avoiding the buds) with a thoroughly mixed compound composed of half a pint of coal tar, one wineglassful of paraffin, and nearly a gallon of soft water, with enough powdered clay added to make it of the consistency of paint. Complete these operations by removing the surface of the borders down to the top roots of the vines, and replacing it with a compost of loam, liberally mixed with crushed mortar rubble and wood ashes and a good sprinkling of bone meal or some approved fertiliser.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NEWSHAM, Warter Priory, Yorkshire.

Planting and transplanting.—Autumn is undoubtedly the best time for planting or transplanting fruit trees, always provided the soil at that season is in a proper condition for carrying out the work. Planting may, however, have been delayed from various causes, and where the soil is of a cold and clayey nature, it is often better to defer the operation until late in the spring. Those who have contemplated planting will have already ordered the trees, selected the site, and prepared the ground in the manner excellently described by the previous writer of this Calendar. No further delay need now occur when once the weather is favourable for the work. In gardens where there are many wall trees it is a good plan to purchase a few young maidens or two-year-old trees yearly, so that they may be trained to replace any that become worn out or that cease to crop satisfactorily. By this means changes may be effected without causing much difference in the supply of fruit, as such trees will come into full bearing at once. In replacing old wall trees, as much as 18 inches to 2 feet deep and 4 feet wide, of the old soil should be entirely removed. If the subsoil is cold and wet, some effective measures must be taken to provide good drainage by placing broken bricks and covering these with a layer of lime rubble. Cover the drainage material with turves, placing them grass-side downwards, and fill in with good roughly-chopped loam, or, failing this, with good garden soil, adding lime rubble and charred refuse to heavy soils, especially when planting stone fruits. No manure should be used at the time of planting. The work should be done carefully by skilled workmen; any extra labour bestowed at the time of planting will be well repaid later by fruitful trees. Prune all damaged roots and others that are extra long. Place the tree in position, and spread out the roots carefully at varying depths, working in amongst them some of the finer soil and making the whole quite firm as the work proceeds; the topmost roots should not be more than 3 inches below the surface. In planting Standard or Pyramid trees on heavy and wet ground, provision should always be made for drainage, and the soil should be well broken up, but there is little good to be got by trenching ground that is already too light for fruit trees. It is far better to apply from time to time rich manurial dressings on the surface. Extra deep or excessively rich borders cause young trees to produce gross roots, and these result in gross shoots, neither being any advantage to the cultivator. Trees that are received from distant nurseries should never be planted without being well puddled; this is done by standing the roots for some time in a tub containing stiff loam reduced to thick paste by the addition of water. All freshly-planted trees should be provided with stakes, and a permanent label attached to each. Mulch the trees with some litter or other material but do not employ animal manure.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

The politics of park-management.—The important part which public parks and open spaces occupy in regard to the health and welfare of dwellers in crowded cities is so well recognised nowadays by municipal and urban authorities at home and abroad, that most cities and towns of any pretension have either a special department, or a committee, responsible for the establishment and maintenance of such establishments. As public parks and gardens, from their very nature, are part of a gardener's calling, and generally are, and always ought to be, managed by a properly-trained gardener, it naturally follows that the interests of both can be best served by their leading technical journals. It was, therefore, gratifying to those responsible for the care and management of public parks to read the editorial announcement on p. 5 of the first issue of the *Gardeners' Chronicle* for 1907 that a special feature was to be made of park interests. While the truths in the announcement were well and tersely put, the hope was expressed that the articles would prove valuable to those to whom they were to be specially addressed. If any fears existed in the editorial mind as to the success of the venture, such must have been quickly dispelled by the series of interesting articles by my friend, Mr. Pettigrew, whose management of the public parks and gardens of Cardiff is most commendable. To his articles I attribute a considerable increase in my correspondence during the past year on questions relating to the equipment and maintenance of parks. I have stated that the management of public parks ought to be in the hands of properly-trained gardeners. The fact remains, however, that in some places the responsible official hardly knows the difference between an Oak and an Elm, and consequently he has to depend on his subordinates for the technical details of the work. To one who is fairly familiar with the public parks of the principal cities of the United Kingdom, as well as with those of many continental towns, it is pleasant to be able to state that this point is being better realised by municipal authorities; and instead of the parks and open spaces being merely subordinated to the surveyor's department, they are forming separate parks departments, and appointing men as superintendents who are trained gardeners. As hardly any two towns are alike in their arrangement of work, the parks department in one may only be a sub-section of another, usually that of the surveyor's, or that of general health, whilst in another there may be a special parks committee.

PRICKLY PEAR. Few people in these latitudes are probably aware of the troublesome character of the Opuntia or Prickly Pear in the drier and hotter regions of the Southern Hemisphere. In South Africa a select committee has been appointed to consider the best means to secure its extirpation, and has recommended the Government to afford financial assistance in the matter. In Queensland matters have assumed an even more serious aspect, and the Government has offered a reward of £10,000 for the discovery of an efficient method of destroying the pest. The cost of clearing the Prickly Pear in this country is stated, by a writer in the *Queensland Agricultural Journal*, to vary between £5 and £15 per acre.

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Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Bulbs, Herbaceous Plants, Azaleas, &c., at 12; Roses at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Perennials and Border Plants, Bulbs, Tubers, Liliums, Carnations, &c., at 12; Roses in variety, at 1.30; Azaleas, Palms, and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 1 (6 P.M.) Max. 38°, Min 34°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, January* 2 (10 A.M.): Bar. 30·2; Temp. 35°; Weather—Fair.
PROVINCES.—*Wednesday, January* 1 (6 P.M.): Max. 42° Land's End; Min 33°, Scotland N.E.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—37·8°.

1908. In accordance with our usual practice, a sheet almanac is published with the present issue, containing all the horticultural events for 1908 for which the dates have been fixed at the time of going to press. In the cases of some Societies the fixtures are made at the annual meetings which take place in January, and therefore we are compelled reluctantly to omit their names from the calendar. To those secretaries who have kindly furnished us with particulars we desire to offer our thanks, whether or not the information they were in a position to afford was sufficiently definite for our purpose.

The fixtures are so far complete as to indicate that the year just commenced will be marked by great horticultural activity. The Temple and Holland Park Shows and the autumn exhibition of British-grown fruits will take place as usual, and the Royal Horticultural Society having quite got into the habit of holding fortnightly meetings during the winter months, instead of monthly meetings, as was the case formerly, will be concerned with as many events as its most enthusiastic members can reasonably expect.

Whilst writing on this subject, we may point out that meetings of the various committees have again been fixed in two instances for Tuesdays immediately following Bank Holidays. Complaints have been made again and again of the unnecessary inconvenience such meetings impose upon the members of the committees and exhibitors alike. Seeing that the services of the committees are purely honorary, the Council might reasonably be expected to favourably consider any representation the committees make on such a subject, and it was thought that the unanimous appeal made by the Floral Committee last August would have induced the Council to have modified the dates of such shows in the future. It may be argued that any particular member is not obliged to attend on certain days if his attendance would cause an unusual amount of personal inconvenience, but there can be no doubt that, from feelings of loyalty to duty, many of those whose personal desire would be to stay away, are, nevertheless, constrained to attend. We hope the Council may be induced to reconsider the question.

Several exhibitions of Colonial produce have been again provided for, and in respect to these we can only repeat our observations in a recent issue: namely, that if these shows are not to be made more attractive than they have been hitherto, the majority of the Fellows have no wish to witness them.

The National Rose Society will hold its annual Metropolitan exhibition in the Royal Botanical Gardens, Regent's Park, its autumn show in the Royal Horticultural Hall, and its provincial exhibition at Manchester.

The National Chrysanthemum Society will hold its exhibitions at the Crystal Palace as usual, but most of the remaining special societies, including the National Auricula, National Carnation, National Dahlia, and National Sweet Pea Societies, have arranged for their exhibitions to take place in the Royal Horticultural Hall.

The great provincial shows, such as those at Shrewsbury, Wolverhampton, York, Newcastle-on-Tyne, Hanley, and other places, will be held again this year, and the Yorkshire Gala will have special interest as marking the jubilee of the exhibition. The Midland Sweet Pea Society will hold its first annual exhibition at Wolverhampton, and several Midland societies, including the Midland Daffodil and Midland Carnation Societies, will again hold exhibitions in the Birmingham Botanical Gardens.

It will be noticed that spring shows, having Narcissus and Daffodils for their principal features, are becoming more numerous, and April is in consequence a greater exhibition month than it was formerly.

So far as can be estimated at present, the exhibitions of Chrysanthemums in November, 1908, are not likely to indicate any appreciable diminution in number.

The Franco-British Exhibition will be opened at Shepherd's Bush in May, and it is expected that horticulture will form an important feature at this exhibition during the summer months.

Outside the British Isles the most important horticultural event will be the show to be held at Ghent, which will extend from April 25 to May 2. The Ghent Quinquennials have always proved a great attraction for horticulturists not only in Britain but in almost all European countries as well, but that of 1908 will be specially memorable because it will mark the centenary year of the Société Royale d'Agriculture et de Botanique de Gand. There are 760 classes, divided into 29 groups, and in each class liberal prizes are offered. For new plants there are 20 classes; Orchids are invited to fill 82 classes, and as some of them are for large collections, there should be a magnificent display. In the 26th group there are 52 classes of a more or less scientific nature, and in these the exhibits will have some bearing upon the important questions of heredity, fixity of varieties, mutation, artificial selection, adaptation to environment, morphology, and many other important matters. The first list of invitations to assist upon the jury have already been issued.

Culture of Alpine Plants. Among the books recently published is one by Mr. Farrer* on the cultivation of Alpine plants in an English rock garden. It appeals directly and effectively to the specialist, who will spare no pains in acquiring an accurate knowledge of the accepted and named variations of the particular species, and in experimenting in a hundred and one ways to provide the cultural conditions best suited for each plant. We frankly confess that on opening this book and turning over its pages, our first feeling was one of irritation. Mr. Farrer rather seems to have expected to arouse some antagonism by his spelling and his mannerisms, judging from a few lines of his preface, so it will not come to him as a surprise to find he has partly succeeded. We shall not, we think, adopt his suggestions as to spelling reform, nor do we believe that he has scholarship on his side.

But when we have said this much and get into close quarters with the book, we have scarcely anything but praise. Mr. Farrer is an enthusiast, as anyone who gets keen on Alpine plants must be if he is worth his salt, and the little self revelations add an interest to the book to anyone who is fond of these gems of the floral world. Everybody who has explored moraine and peak for the plants themselves knows full well the sensation of suddenly coming upon a specially fine example of the objects of his quest often in the most inaccessible places. Anyone who has seen Eritrichium nestling in the crevices of the yellow south precipice of The Meige, or on the almost equally difficult faces of some of the Graian Mountains, must be dull if he does not get a little excited owing to the superiority of such a specimen over those growing in the scree below.

Mr. Farrer's claims to have enriched the literature of Alpine plants rests, however, on a basis more solid than that on which we have just lightly touched. The critical remarks as to specific distinction in, for example, the Saxifrages, will find an echo in the mind of all who have been entangled in them—and who, amongst those who care for Saxifrages, has escaped despair?—whilst his hints on many of the other difficult forms will be received with attention. He has himself travelled much, and some of the remarks on the plants in their native habitat strike us as very good. We note with pleasure that the author devotes a chapter to our English Alpines. Some of these are far more beautiful than many foreign species, whose chief claim to consideration often lies in mere

* *My Rock Garden*, by Reginald Farrer. London: Edwin Arnold, 1907.

rarity or high price. Some of our own plants require as much skill in their cultivation as the majority of those which hail from China, the Himalayas, or the Rocky Mountains. If anyone doubts this, let him experiment on Saxifraga oppositifolia for a few years; or let him try some of the Gentians, if he happens to live in one of the many districts in which it seems impossible to persuade them to flower as they ought to do. The excellent full-page illustrations form an attractive feature in a book which will be welcomed by all lovers of Alpine plants. There is much in it that is valuable and suggestive, and there is a refreshing absence of that dogmatism as to proper methods of culture, which, in the case of this class of plants, is never wise and is often futile.

former as Assistant Forest Officer in Cyprus, and Mr. DOWN, a member of the Kew gardening staff, as Agricultural Instructor and Assistant Superintendent of the Hope Gardens and Experiment Station, Jamaica. Mr. NOBLE holds the Diploma in Agriculture of the University of Aberdeen, and has studied forestry in France. The Secretary of State for India in Council, has appointed Mr. W. W. SMITH, M.A., Assistant to the Professor of Botany in the University of Edinburgh, as Curator of the Herbarium of the Royal Botani Gardens, Calcutta, in succession to Capt. A. T. GAGE, I.M.S.

"THE JOURNAL OF THE BOARD OF AGRICULTURE" for December contains an article upon the American Gooseberry-mildew, with special reference to its prevention or cure. It is urged that in the case of a badly-affected bush, which about one and a half million sterling. The botanical establishments in the various islands have played an important part in securing this result, both by distributing the plants and by affording information as to their culture, &c. Experimental stations have also been maintained by the Imperial Department of Agriculture, and these have become central points for giving information to cultivators in the various districts, and the authorities are also investigating the plants with the view of improving the yield of Cocoa both as to quality and quantity.

FAIRY RINGS. The unsightly appearance often produced in lawns and, occasionally also, in putting-greens, by the growth of the various species of fungi, which form "fairy rings," is so well known that any remedy which promises a chance

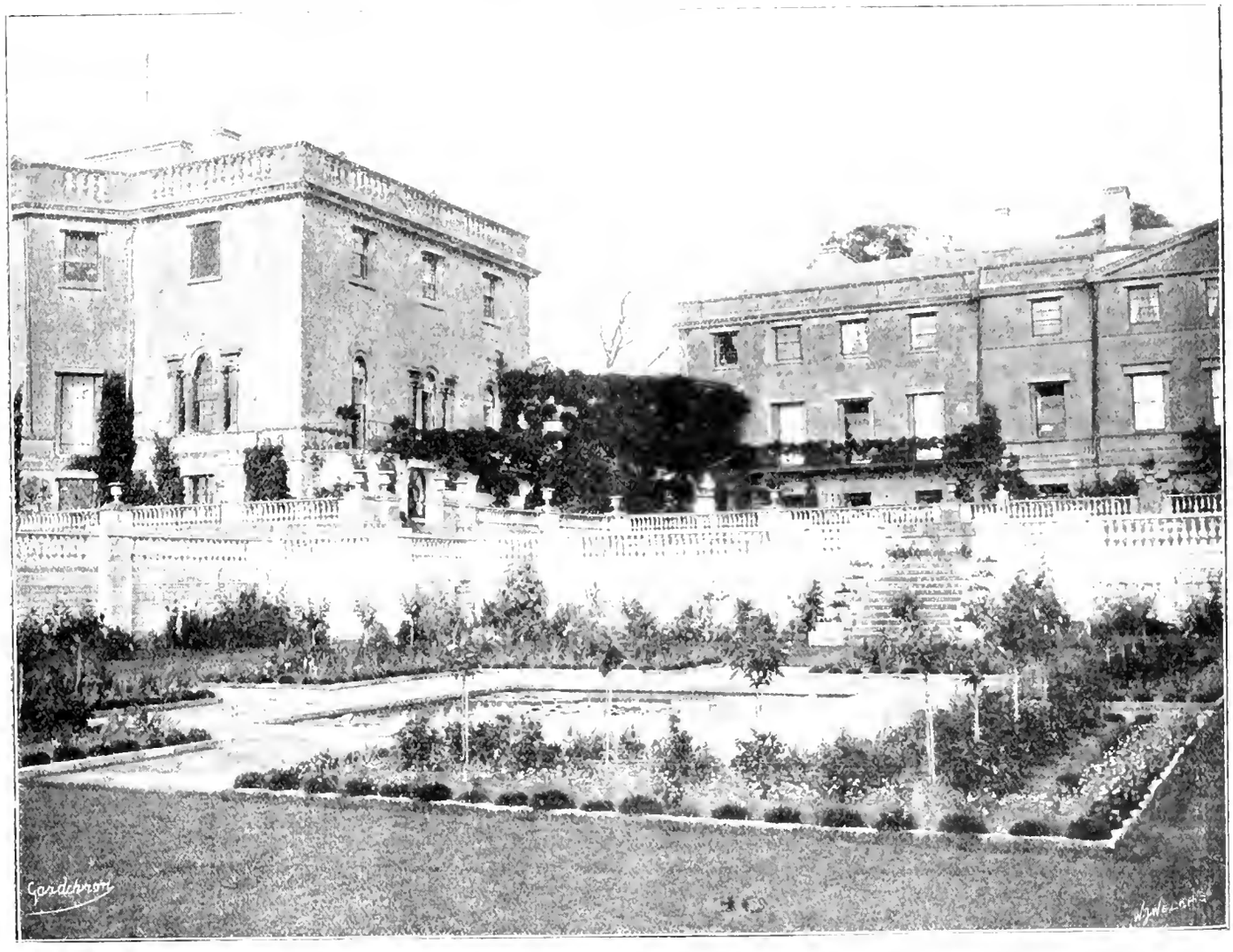


FIG. 10.—THE NYMPHÆA-GARDEN AT NUNEHAM PARK, THE RESIDENCE OF THE RT. HON. L. V. HARCOURT, M.P. (See p. 10).

SCIENTIFIC COMMITTEE.—In respect to the report of the last meeting of the R.H.S. Scientific Committee, Mr. FRED J. CHITTENDEN, secretary, has written us stating that in the seedless Apple, to which Mr. WORSDELL referred, the little structures at the "eye" end of the fruit were actual Apples, but only partially developed, and not only Apple-like structures as reported. The malformed fungus was a species of Tubaria, not Cribraria, as written in the report.

APPOINTMENTS ON THE RECOMMENDATION OF KEW.—We note in the *Kew Bulletin* (No 10, 1907) that Mr. CRAWFORD NOBLE and Mr. WILLIAM JAMES DOWN have been appointed by the Secretary of State for the Colonies, the ought to be removed and burnt, it should be first sprayed so as to avoid as far as possible spreading the infection by shaking off living spores. A coloured figure illustrates the appearance of the affected twigs in winter.

ROYAL GARDENERS' ORPHAN FUND.—The coming-of-age festival in aid of this charity will take place on Tuesday, May 12, at the Hotel Cecil, when the President of the fund, the Duke of BEDFORD, K.G., will preside.

"THE WEST INDIAN BULLETIN" (Vol. viii., No. 2) contains some interesting information on the Cocoa industry in those islands. In importance it ranks only second to sugar, the value of the exports in 1905-6 being estimated at

of success is worth a trial. Mr. G. H. ROBINSON, writing in the *Agricultural Gazette* (New South Wales), concerning "fairy rings" produced by a puff-ball, recommends sulphate of iron (green vitriol) dissolved at the rate of 8 lbs. in 30 gallons of water. This quantity is sufficient for 60 square yards. The ground should be well watered before the application, which should be repeated at weekly intervals three or four times. A week after the last application a dressing of freshly-slaked lime (1 ton per acre) must be given, and it should on no account be omitted, or the heavy dose of iron will produce injurious effects. The work is best done in autumn, as there is then less risk of injury to the Grass.

BIRMINGHAM SCIENTIFIC SOCIETY.—At a recent meeting of the Birmingham Scientific Society, held at the Midland Institute, Birmingham, an interesting paper on liverworts was given by Mr. T. H. RUSSELL. He explained that there were two kinds of liverworts—the foliose, or leafy liverwort, and the frondose, a variety which took the form of flat green fronds. The latter kind was often plentifully produced on the banks of streams, and was also to be found growing on the sides of wells. The foliose variety generally grew in shady moist spots, although some of them were more hardy, and flourished on rocks or trunks of trees. Mr. RUSSELL explained the close structural relationship between mosses and liverworts, pointing out that in a good many particulars the two came very near to one another. The most interesting cases of resemblance were to be found in some of the small mountain mosses, the capsules of which split open in a manner very similar to the method of the liverwort and quite different to the ordinary way of mosses. Mr. RUSSELL mentioned that the derivation of the name of the plant was somewhat curious. It received its name in far-off times, and was called liverwort because it was supposed to be a specific against liver complaint. This supposition was based upon the fact that some of the plants bore a resemblance to that organ of the body. The lecture was illustrated by about fifty lantern slides from original black and white drawings cleverly executed by the lecturer from specimens in his own collection.

ANNUAL DINNER OF NURSERY EMPLOYÉS.—At the invitation of Messrs. DICKSON & ROBINSON, Manchester, the members of the staff met at the Victoria Hotel recently, where an excellent dinner was provided, the remainder of the evening being given up to music and toasts. Mr. ROBINSON, the senior partner, replying to the toast of "The Firm," proposed by Mr. COMPSON, remarked the disastrous effect the bad weather of the closing year had had on the Grass and Clover crops in nearly every seed-producing country of the world, and stated that the Red Clover crop had been almost a failure. Its effect on the flowers of the garden was pointed out. As evidence of the existing good feeling between employer and employee and of its permanency, Mr. HICKS, in his toast "The Staff," alluded to the length of service of many now serving the firm; for instance, two 30 or more years, one 21, one 20, and several 13 to 20 years. Messrs. CLAYTON and WARD replied.

SEEDING OF ENGLISH ELM. The current number (10) of the *Kew Bulletin* contains an interesting note on the seeding of the English Elm. It is well known that although Ulmus campestris flowers freely in this country, it is generally believed to propagate itself solely by root suckers, and indeed its claim to rank as an indigenous tree has been disallowed partly on the ground of the infertility of its seeds in this country as contrasted with the readiness with which good seed is produced in France. But this year seedlings that were believed to be those of U. campestris were found in abundance in Lord RAYLEIGH'S grounds at Terling Place, Essex. Investigations showed, however, that they belonged to U. glabra, which is abundant in that neighbourhood. This species is hardly separable from U. campestris, and by some is regarded only as a varietal form, and the Terling Elm is said to be U. glabra with a certain leaning towards U. campestris. Seedlings of an Elm have also appeared in the grounds of King's College, Cambridge, which are believed to belong to U. campestris. Seedlings of the true plant, brought by Dr. AUG. HENRY from France, and germinated at Cambridge, indicate that there exists considerable diversity of appearance amongst the individuals derived from the same tree, and the leaves are hairy on both surfaces. A figure is given of the Terling seedlings, and also of a twig from one of those from Cambridge. The curious differences in the quality of timber in the Elm from different districts may be recalled here. Thus there is a variety in Buckinghamshire which is regarded as especially valuable for wheelwright purposes, for which it commands a high price. Perhaps it may turn out that these forms of the Elm represent mere varietal forms of one species, and are thus related to each other in the same sort of way as are the three forms of Cedar—Libani, Atlantica, and Deodara. The question of the mutual relationship of these varietal forms, and the causes on which their differences depend, are not only of scientific importance, but also of considerable economic interest.

GRAFTING CHRYSANTHEMUMS.—The remarkable results to be obtained by grafting the varieties of Chrysanthemum upon the vigorous species C. frutescens were well exemplified by a magnificent specimen of the variety Tokio exhibited at the Paris Chrysanthemum Show by Messrs. VILMORIN-ANDRIEUX this year. The plant, which was about 10 feet in diameter, bore between 700 and 800 blooms of fine quality. M. GASTON CLEMENT, writing in the *Revue Horticole*, gives an interesting account of the experiments that have been made in France on grafting Chrysanthemums, with especial reference to this latest production. The plant of C. frutescens, which formed the stock, was grown in a large tub, and was made to form a thick, clean stem of about a yard in height. At this point it was allowed to branch, and the stems were carefully pinched and stopped so as to form a symmetrical bush. The stock (which was four years old) was then grafted with 288 Chrysanthemum scions, the whole being accomplished in a single day last March by two skilful men. Complete union was established within 15 days, and the plant received no special care beyond that ordinarily bestowed on the Chrysanthemum, except, of course, that its large size rendered it necessary to shelter it from wind.

NUNEHAM PARK.

NOTWITHSTANDING the strenuous and responsible duties connected with a Parliamentary and social life, the Right Hon. L. V. Harcourt, M.P., the owner of Nuneham Park, Oxfordshire, has also succeeded in developing within a short space of time a very beautiful garden. The terraced Rose gardens, the Nymphæa-garden, the herbaceous-garden, the sundial-garden, and the swamp-garden are all interesting. Labels innumerable are seen, each of an indestructible type, so that one can walk and admire and make oneself familiar with the objects of attraction without continually appealing to a guide.

On the mansion itself, which occupies a commanding situation overlooking the River Thames, are growing such plants as Solanum Wendlandii, Leonotis Leonurus (at the time of my visit covered with its catkin-like orange flowers), Magnolia Campbellii, Ipomœa Learii, reaching a height of 20 feet, which flowered profusely last summer and perfectly withstood last winter's frosts; Azara integrifolia, Buddleia intermedia, Wistaria multijuga rosea, Tecoma speciosa, Wistaria fruticans, Ampelopsis Henryana which is quite distinct and has beautifully velvet-like, striped foliage; Passiflora racemosa, &c. In a narrow border on the south side I noticed the distinct grey foliage of Senecio Grayii and Citharexylum quadrangulare, reputed to be the fish-wood. On the western side of the house there are many uncommon wall creepers, including Bridgesia spicata, Wistaria chinensis noda, Stauntonia latifolia, Gelsemium sempervirens, Carpenteria californica, Edwardsia grandiflora, Schizophragma hydrangioides, Vitis Coignetiæ, and V. Thunbergii, Rhyncospermum jasminoides, &c. The walls of the mansion on the north side were planted with Lardizabala biternata, Lonicera caprifolium, Actinidia arguta, Solanum crispum, Wistaria fruticans, and Piptanthus nepalensis, which will some day become a most attractive feature.

The upper terraces extend along two sides of the mansion, and a broad path, some 200 yards in length, of mosaic paving of handsome and irregular design enhances the beauty of the surrounding flower borders. These beds, immediately in front of the mansion, are 10 in number, and each contains about 50 Rose plants of a distinct variety of colour; included are such varieties as La France, Frau Karl Druschki, General Schablikine, Grand Duc de Luxembourg, Caroline Testout, &c. The plants appear healthy and strong, and I was informed by Mr. Munday, the gardener, that each bed had been formed of new soil.

On the upper terrace are other beds of considerable size and geometrical design. One long border had been freely planted with Lilium speciosum magnificum, and, judging from the flower stems just removed, the plants must have flowered well. Ericas, Pernettyas, Choisya ternata, Andromeda floribunda, and Aster Amellus are also freely used here.

The lower Rose terrace is reached by about 11 steps: here there are eight Rose beds, each containing about 50 plants of such popular varieties as l'Idéal, François Dubreuil, Papa Gontier, Killarney, President Carnot, &c. The beds are edged with a broad band of Mrs. Sinkins Pink, while the beds and borders on the upper terraces have a broad edging of the old Crimson Clove Carnation.

Still another descent is made by 11 steps to the third terrace, which is known as

THE NYMPHÆA GARDEN.

Attractive and interesting as the Roses, &c., unquestionably are, one is compelled to linger here. This garden, or terrace, possesses exceptional interest in many ways. The central square pond contains some of Marliac's introductions. Four beds around the pond contained standard plants of Hydrangea paniculata grandiflora, these had flowered perfectly; the groundwork of these beds was planted with Andromeda japonica and floribunda, Kalmia latifolia, and Rhododendron præcox, bordered with Iris Victorine, Iris hispanica, mixed with Ixias and Armeria alpina. The walls on two sides were planted with such choice species as Ozothamnus rosmarinifolius, Medicago arborea, Adenocarpus anagyrus, Lomatia ferruginea, Cestrum Newellii and C. aurantiaca, Distylium racemosum, Sollya parviflora, Fabiana americana and F. imbricata, Hibbertia volubilis, Muehlenbeckia varians, Teucrium fruticans, &c.

In a line with the Nymphæa-garden terrace is the croquet or tennis lawn, which measures some 50 to 60 yards across. From this point a commanding view of the surroundings may be obtained, and looking across to the right as one faces the river it is evident more still remains to be seen, so we make our way to this new part by descending another flight of steps leading to a walk bounding the terraces. A wide herbaceous border extends parallel with this walk on the right, and to the left is a sloping bank to the park beyond, which has been beautified with Wichuraiana Roses of many kinds, creeping naturally over the ground surface, and a large bed of Rosa rugosa, Blanc Double de Coubert.

The continuation of this long path to the "wall-walk," which is about 11 chains in length, leads to the dell, water, pond, and swamp gardens. The wall has been built of stones placed flatwise; it extends round an elevated bank, and is an eminently successful piece of work. Here as elsewhere, the crevices of the stonework are planted with such suitable plants as Saxifragas, Sedums in variety, Campanulas, Alyssums, Acæna Buchanani, Acantholimon glumaceum, Veronica rupestris, Erinus alpinus, Opuntias in variety, Dianthus, Cerastiums, and other beautiful subjects. Immediately above the wall, which varies from 2 to 8 feet in height, a skilful piece of work has been executed at a point nearest the mansion, in the form of a novel sundial, some 15 yards in diameter, on the grass. On an inner circle, the Roman figures denoting the time are planted with Box on a groundwork of fine shingle; on an outer circle the following Latin motto is also neatly planted with Box—*Horas non numero nisi serenas;* the whole is novel, artistic and interesting. Hereabouts is a dividing hedge of Cistus ladaniferus, and if the plants succeed in attaining so large a size, and in flowering as freely, as they do in the south of England, they will form a pleasing and attractive feature.

It is necessary to return to the walled walk in order to reach the water garden; on the way a fine mass of Euphorbia Myrsinites is noted, and just beyond is a bed of Lilium longiflorum planted with 150 bulbs. On the left of this walk a broad herbaceous border contains a rich assortment of beautiful subjects, which have been arranged with great skill. I noted Agapanthus Mooreanus, Indigofera Gerardiana, Veronica Kirkii, Berberis Wallichiana, Andromeda Catesbæi, Styrax japonica, Coronilla Emerus, Othonnopsis fruticosum, Rubus lasiostylus, Cornus Kousa, Eleagnus longipes, Rhus Osbeckii, Magnolias, Ailanthus glandulosa pendulifera, Spiræas, Ribes, Weigela in groups, Rhododendrons, Buddleias, Cerasus of sorts, Crabs, Ilex, Liliums in variety, and close by a large bed of Gruss an Teplitz Rose, bordered with French Lavender.

On the right a path leads to the bowling green, and the entrance to the dell is reached by continuing along the "wall-walk." Here five large irregular beds are formed; one of these contain upwards of 150 Eremurus of sorts. Two beds are planted with Rhododendrons and Azaleas and the others with ornamental and deciduous plants and trees, which include Spiræa Aitchisonii, Myrica californica, Juglans cordiformis, Prunus Carohniana, Viburnum macrocephalum and Sieboldii, and Lycium europæum. Another bed contained Andromeda nitida, Menziesia prolifera alba, Abelia rupestris, Carmichaelia australis, Vitex Agnus-castus, Digitalis ambigua, and Senecio compactum. These beds are divided by a grass walk 15 feet wide and bordered with Lavender, and an avenue of pink-flowered Almond trees. On the north side of this lovely dell many choice shrubs are planted, totalling over 100 kinds; they are such as Cassinia fulvida, Romneya Coulteri, Pittospormum Tobira, Eucalyptus urnigera, Azara Gilliesii, Nevinsia alabamensis, Raphiolepis japonica ovata, Eriobotrya japonica, Coronilla Emerus, Caragana aurantiaca pygmea, Eucalyptus Gunnii, Stuartia pentagyna, Daphniphyllum glaucescens, Xanthoceros sorbifolia, Crinodendron Hookeri, Corylus maxima purpurea, and many others, which will give a constant succession of floral and foliage display. Near at hand is a border containing about 50 tree Pæonies backed with Aucuba japonica variegata; clumps of Rhododendron "Pink Pearl" are close by, the whole forming, when in flower, an enchanting picture. *W. H. C.*

(To be continued.)

A LITTLE-KNOWN ACACIA.

WE reproduce a figure of Acacia podalyrifolia, a plant the sprays of which are just now being sold in the Covent Garden market. It is, without doubt, one of the most beautiful of the Acacias, and the contrast between the yellow colour of the blossoms and the powdery, glaucous hue of the conspicuous and rather leathery leaves (phyllodes) is most effective. The flowers are very sweet scented, and for decorative purposes this Acacia deserves to rank high in the public esteem. The species, like so many others of the genus, is of Australian origin, and, although it is now being imported from the South of Europe, it is still looked on as an uncommon plant in our markets.

FIG. 11.—ACACIA PODALYRIFOLIA, A SPECIES IMPORTED TO COVENT GARDEN MARKET.

AMERICAN NOTES.

CHRYSANTHEMUMS.—Much of the dissatisfaction shown in America with English and Continental-raised novelties in Chrysanthemums arises from the long neck or bare stem that is produced when a crown bud is taken. The ideal commercial kind must be clothed with leaves well up to the flower, and have a stiff stem that is capable of carrying the flower erect. Clear telling yellows, whites, and reds are most in demand.

OBITUARY.—The lamented death of P. J. Hauswirth, of Chicago, the popular secretary of the Society of American Florists, and one of the best known men in the trade, under peculiarly painful circumstances, has caused a widespread feeling of regret. He was so universally liked that there is not a city of any size in the Union but has someone who will mourn his loss and miss his genial presence. Just 20 years ago he was elected financial secretary of the Chicago Florists' Club.

CARNATIONS.—"Keep their heads cool and their feet warm," writes a successful Carnation propagator, when referring to cuttings cultivated on benches. Among the best of the newer Carnations is the bright red seedling G. P. Bassett. It is a grand, showy bloom, and, as growing in Messrs. Bassett and Washburn's fine plant house at Hinsdale, Illinois, shows its excellence as a commercial variety. It thrives admirably under the ordinary benching treatment as practised here, and the only drawback, according to English ideas, would be the somewhat severely serrated petals. Defiance, a grand seedling, raised by Mr. W. N. Rudd, is better in this respect, and is in every way worthy of this noted raiser. Although White Enchantress finds many admirers, White Perfection is certainly the finest white variety to date. Lucille, tinted white, is a lovely flower, and the new Lawson Enchantress, a variety with Enchantress habit and Lawson colour, is a coming sort. It has not been as widely advertised as some others, but it has excellent qualities [illegible]

NOTICES OF BOOKS.

*TREES AND THEIR LIFE HISTORIES.

THE awakening interest in trees and forestry is shown in the recent appearance of several books on the subject. Some of them, full of valuable information, are yet disappointing owing to the absence of arrangement upon any definite plan, scientific or practical, thus making it difficult work for those who consult them in the hopes of making sure of identifications. Others again, while better arranged, are intended more as guides to the sylviculturist who is growing trees to be treated as a crop, rather than to the arboriculturist who grows them for their beauty and for the pleasure they give him in watching them grow. Mr. Groom's book is neither of these: the arrangement is scientific and yet easy to follow, while the practical advice is reduced to careful definite statements put as briefly and concisely as possible. Instead of having, let us say, the Mountain Ash sandwiched between the Yew and the Horse Chestnut, we have all the important members of the family Rosaceæ brought together, and their appearance, growth, and requirements easily contrasted. In the preface to his book, Mr. Groom says: "I have endeavoured to consider the tree, not as a mere object to be identified, but as a living being whose struggling life is to be watched, whose wants are to be studied and whose changing lineaments are to be observed." And thus he has, very rightly in our opinion, confined himself to the study of the indigenous British trees and large shrubs, with the addition of merely the most important and most common of introduced species. Each species is studied not only in its state of flower, summer leaf-expanse and fruit, but in its winter aspect, when, for deciduous species at any rate, there is little to help in identification but the twigs, the bark, and the resting buds. All these characteristics are represented in a series of admirable illustrations from photographs which show bark, resting buds, winter twigs, opening buds and young leaves, flowers and fruit, and give as well, in most cases, and certainly for all the most important kinds, full-page pictures of the same tree in its winter and summer aspect, taken from the same point of view and placed in the book opposite each other. We venture to think that such an arrangement may be of great use to the artist who has to paint a landscape and is glad to be able to prepare his skeleton trees beforehand and then clothe them with leaves just as the painter of draped figures goes to work. For an example, we may point to figs. 251 and 252 (the Beech) or to 373 and 374 (the Horse Chestnut), both admirable examples of the disposition of branches and twigs, and the appearance of the same when covered with their summer foliage. The number of really indigenous British trees and shrubs, such as Mr. Groom has admitted to his work, is, we estimate, only 42, of which the Poplar and Willows account for 10 and the Rosaceæ for nine species. To these Mr. Groom has added, of course, those species which, like the Spruce, Silver Fir, and Larch among Conifers, and the Elm, Sweet Chestnut, Horse Chestnut, Black Poplar, Sycamore, Norway Maple, and Plane among broad-leaved trees, have been at some time or other introduced and have more or less established themselves here. And he has also included, especially among Conifers, some of the foreigners which are most commonly met with in parks and gardens, and among them we find the Cedar, Sequoia (Wellingtonia), Araucaria imbricata, several species of Pine, the Douglas Spruce, and the Evergreen Oak. Mr. Groom has done well to go no further: it would only have complicated his work, and he must have found it more difficult to restrain himself than to yield to the wish to mention just one or two other popular favourites. This work is sure to be popular with those who can afford it. A little more information regarding the geographical distribution of each species and the kinds of soil they thrive best upon would have been useful.

* By Percy Groom, M.A., D.Sc.; illustrated by photographs by Henry Irving. (Cassell & Co.)

PLANT NOTES.

LUCULIA GRATISSIMA.

IT was interesting to see this useful greenhouse plant so well shown at a recent meeting of the Royal Horticultural Society. Its propagation is a difficult matter unless properly understood. I have raised a good many seedlings, but have lost most of them before they flowered. My experience has been more favourable with cuttings, but even these require very careful treatment. The best cuttings are those obtained from fairly well ripened shoots, which should be taken early in the year. They must be cut off quite close below a joint (or pair of leaves), and a slight split made upwards between the two basal leaves, which, of course, are removed. The cuttings may be put into any light, sandy loam, and only just deep enough to keep them firm. I have been most successful when I have fixed them to a stick to hold them up, and put the ends of the cuttings in only just below the surface. They root best where there is a good bottom heat and a cool surface.

FIG. 12.—LUCULIA GRATISSIMA. A FRAGRANT GREENHOUSE PLANT: COLOUR OF FLOWERS PINK.

After the plants have made roots they require some care in potting, for the Luculia is a plant that must not have its stem buried, and the fine, thread-like roots may be easily damaged. Make the soil moderately firm, and be sure to employ plenty of drainage material. The compost should be used when neither too dry nor wet enough to clog together.

Many of the best plants of this species have been lost, or neglected, through failures which have been chiefly caused by the use of shading and too much artificial heat.

The Luculia was introduced somewhere about 1822 or 1823, and this was the time when the heating of greenhouses on improved methods was making headway. In looking up the date, I am reminded of one of my oldest friends, the late Mr. E. Spary, of Brighton, who was one of the first to superintend a saddle boiler for the heating of greenhouses, and, though a very old man when I first knew him, he gave me much useful information. *A. H.*

LILY BULBS FROM JAPAN.

As may be seen by the advertising columns of the *Gardeners' Chronicle* immense numbers of Lily bulbs are sent to this country from Japan during the late autumn and winter months. Were it not for these importations some of the species would soon become exceedingly rare, as they are by no means easy of cultivation—at least, in Western Europe. A notable example is Lilium Krameri, while Lilium auratum is in many districts, at least, extremely difficult to establish. One hears of individual successes with L. auratum, but, despite this, the fact remains that it is quite impossible to purchase home-grown bulbs in considerable quantities.

By this expression I do not mean bulbs imported one year, planted in England, and lifted in the following season, as such bulbs can by no means be considered as grown in this country. We must still look to Japan to maintain for us a supply of this magnificent Lily, for it does not appear likely that other countries will send us consignments of L. auratum, as they have done in the case of Lilium longiflorum. Whether it be from Lily fungus, sunstroke, or some other cause, L. auratum is a capricious Lily, and when the boxes sent from Japan are opened here, it is found that the mortality among the bulbs on the voyage is much greater than in the case of L. longiflorum or L. speciosum, which are also imported in very large numbers. Beside the ordinary form, we get limited consignments of that extraordinary variety of L. auratum known as platyphyllum or macranthum, some of the bulbs of which are very large.

Two beautiful and distinct varieties are virginale or Wittei, the spotless purity of whose blossoms is only relieved by a yellow band down the centre of each petal, and rubro-vittatum, in which that band is of a deep crimson hue. Compared with the others, the bulbs of these two varieties are small, but, as a rule, they flower well.

Lilium longiflorum naturally goes to rest, and also starts its growth earlier than the other

species, so that the bulbs of this species are the first to arrive here. They are much sought after, being purchased in very large numbers for retarding purposes, by which process it is possible to have flowers of this species all the year round. Most of those sent from Japan as the typical L. longiflorum consist of a very superior form, almost, if not quite, identical with that known as Wilsonii. Other varieties are grandiflorum and Takesima, characterised by dark-coloured stems, while the exterior of the flower buds is tinged with purple.

Lilium speciosum, which usually arrives in splendid condition, is also as amenable to retarding processes as is L. longiflorum. The bulk of the white-flowered forms we get from Japan consist of the variety Krætzeri, which, though often referred to as album, is quite distinct from the true album. This last is largely grown by the Dutch, and has dark-coloured bulbs, while the stems and unopened buds are heavily tinged with chocolate. The bulbs of L. Krætzeri, on the contrary, are of a yellowish hue, the stems and buds green, while even the expanded blooms have a greenish tinge towards the centre. The pollen of this flower is of a dark brown colour, but occasionally mixed with the bulbs of L. Krætzeri is a form whose flowers have bright yellow pollen. This, known as album novum, is a white-flowered counterpart of the variety punctatum, which, though grown by the Dutch, never, as far as I am aware, crops up among these Japanese importations.

Of the coloured kinds, most of the bulbs are disposed of as rubrum. They consist principally of a decidedly superior form, to which the name of rubrum superbum is often applied. Interspersed with them are frequently bulbs of the variety Melpomene, the richest coloured of all the varieties of L. speciosum, the brightness of whose colouring is further enhanced by the almost white margin to the segments. In this variety the bulbs show a greater tendency to break up into several crowns than in any other kind. So marked is this feature that it is quite possible for anyone well acquainted with these Lilies to select a good percentage of the true Melpomene, even when mixed with the other forms.

Although the bulk of the Lilies we receive from Japan consists of the three species above named, yet there are many others sent here from the "England of the East" in greater or lesser numbers.

Chief among them are L. tigrinum, most of the bulbs of which are characterised by their immense size. As a rule, they consist chiefly of the variety Fortunei, with very woolly stems, and rather pale-coloured flowers, disposed in a large pyramidal-shaped head. Though these flower magnificently the first season after importation, their strength is so much exhausted that they take some time to recover.

Other Lilies that reach this country from Japan, usually in very limited numbers, are Lilium Alexandrae, known sometimes as L. Ukeyuri, L. Batemannæ, L. concolor × L. c. Coridion, L. cordifolium, L. Hansonii, L. Krameri, L. Leichtlinii, L. Maximowiczii, L. odorum, and L. rubellum. Several choice forms of L. elegans also arrive here, but, in addition to these, we get many varieties from the bulb cultivators of Holland.

While the importations of L. longiflorum and L. speciosum from Japan have greatly increased within the last ten years, the more uncommon Lilies are not sent in such numbers as they were formerly. *W.*

HOME CORRESPONDENCE.

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

TRIALS BY THE ROYAL HORTICULTURAL SOCIETY.—During an informal talk recently amongst members of the Fruit and Vegetable Committee it was suggested that the respective varieties of Asparagus might form the subject of a very desirable trial at Wisley, the deep sand there being well suited to the culture of that plant. One single row of 18 or 20 plants of each variety would suffice. This would constitute practically a permanent trial. Bundles of cut heads of each could be shown to the Committee in the spring at Westminster, and that body could see the plants in the autumn in order to examine their growths and general characteristics. A further suggestion was made that, apart from any ordinary trial of new varieties of Potatos, one to determine the effects of seed change in relation to place of growth should also be carried out. Experiments in other places have shown that very different results are obtained from Irish, Scotch, Midland, and Southern grown seed. For the Fellows of the Royal Horticultural Society such information would be invaluable. *D.*

NERINE BOWDENII.—This new species, illustrated in the *Gardeners' Chronicle*, November 26, 1904, p. 365, proves to be the best of the late-flowering Nerines, and it should be grown extensively for decorative purposes. Four plants of it which have been in bloom with me for some time past were still in flower on Christmas Day, and their large heads of pink flowers were very effective. There are two distinct forms, the one with the broader segments being the dwarfer, and, some would say, the better variety, although that with narrower and longer petals is an elegant form. This species is one of the most robust and floriferous of the Nerines, merely requiring to be grown in a cool greenhouse, pit, or conservatory. *J. O'B., Harrow.*

ECCREMOCARPUS SCABER.—A plant of Eccremocarpus scaber used to grow on the walls of the gardener's house at Burghley House, Stamford, and possibly it, or some descendant of it, may still find a place on the walls. This plant used to flower profusely every year, and its seeds were scattered round about, and germinated freely. It was there during the time the late Richard Gilbert was gardener at that place, and it had become quite naturalised. Two hundred miles and more south of Stamford, near the Dorsetshire coast, I had a plant of it on the front (south) wall of a vinery. It had also become naturalised, and flowered freely. It was not much of a seed-bearer however, unless artificially pollinated, and then only to a small extent. This plant was never protected in any way, although it undoubtedly derived some warmth from the heating apparatus of the vinery, which served as a plant stove in the winter months, the vines being withdrawn to the outside at that season. Treated as an annual, Eccremocarpus scaber is a pretty plant and well worthy of a place on a warm wall, or it may be allowed to trail over Pea sticks or small shrubs, the colour of the flowers—deep yellow—being uncommon among hardy climbers. Eccremocarpus belongs to the natural order, Bignoniaceæ, and it could, as the late F. W. Burbidge advised in his *Cultivated Plants*, be grafted on Catalpa syringifolia, a species belonging to the same order. Like all Bignonias and Tecomas, the Catalpa is readily increased by root cuttings, put in the late winter months, in a slight bottom heat. The grafting should be undertaken in a close, warm case in the propagating house, employing one-year-old mature shoots as the scions. *F. M.*

A PROPOSED VEGETABLE EXHIBITION.—The disappearance of the National Potato Society from the list of special horticultural or gardening societies leaves the course clear for the creation, if it be desired, of a national society for the promotion of the culture of vegetables generally, and Potatos especially. All vegetables have great value as food, and their culture and improvement merit the widest encouragement, and in any exhibition they help to create a very attractive variety that Potatos alone cannot give. They have for the seed trade a very special importance, as nearly all the kinds in cultivation have to be raised from seeds. Any national exhibition must largely depend for its prizes and support on the liberality of the members of the seed trade, but no objection can be taken to such dependence, provided each seed firm recognises to the full the fact that the objects of any such exhibition are general, and not local nor personal. At Shrewsbury and other large provincial exhibitions of vegetables may be seen the wonderfully attractive nature of good vegetables, and the liberality of the seed trade in promoting such displays. It is not merely that at such shows vegetables make remarkable displays, but that they are doing very much to popularise their culture, and to show which are the best kinds or varieties. Almost everywhere in the provinces do we see superb displays of vegetables in their seasons. There is nothing of the kind in London, although were a society specially formed to promote a great exhibition of vegetables in the Horticultural Hall in the autumn of each year, we ought to have something much finer and more comprehensive than any provincial show can provide. One weakness of ordinary vegetable competitions is that the numbers of varieties or kinds in a class being limited, each cultivator merely duplicates just a few of the most attractive. If a large class of, say, 18 to 24 dishes be included in a collection, then almost every known garden vegetable finds inclusion. Where only classes for six or nine dishes are provided, certain kinds should be specified for such class or classes, and other classes for equal numbers of kinds provided, from which all previous named kinds be excluded. That would enable the so-called "interior" vegetables to find a place at any exhibition. Salads, as a rule, are best excluded from classes, the kinds forming which are used for cooking. Herbs also need encouragement, and rather than be shown in bunches should be shown as single, well-grown plants in pots. Necessarily the Potato, being a primary vegetable product, exhibitions would have to be held in the autumn, although not necessarily at the same time each year, to enable the Potatos to be exhibited at their best. The month of August in one year would be suitable for early varieties of Potatos or other vegetables, and October in alternate years would suit late ones. This variation in the times of the competitions would no doubt help to introduce diverse competitors from year to year. *A. D.*

SHOULD POINTS BE AWARDED IN JUDGING FRUITS OR VEGETABLES?—When visiting some of our leading horticultural shows, the question has occurred to me whether there is any real value in awarding points to exhibits. At this time of the year, when new schedules are being drawn up, could not something be done to settle the matter? It is questionable whether the present system of pointing is of any real value at any exhibition, whether the exhibits to be judged are groups of plants, fruit, or vegetables. Does not the present system deter the young grower, rather than encourage him to compete? *Hortus.*

ANEMONE ST. BRIGID'S STRAIN.—At the time of writing (December 26), these are in full bloom out-of-doors. They may be had in bloom all the year round by making sowings at different seasons; they are easy of cultivation, and will grow in any good garden soil, being specially well suited for the herbaceous border. The plants now blooming have been raised from seeds sown last May, having been saved in the previous summer. To maintain a succession of bloom, seeds need to be sown in spring, summer, and autumn; being perfectly hardy they require no covering in the severest weather. The seeds should be sown moderately thickly, and the seedlings thinned out as may be required. They are best when sown in a bed or mass to produce an effect. When sown in the autumn, a few wood ashes should be placed over the bed to keep the heavy rains from making the surface soil too hard. Anemone King of the Scarlets does not seed so freely as the St. Brigid's Strain, but for cultivation in pots it is one of the most useful. Rabbits are very fond of the tops of these Anemones, and will soon make havoc among them if not protected in winter. *A. B. Wadds, Paddockhurst Gardens, Sussex.*

CEANOTHUS AZUREUS.—This species is perfectly hardy in gardens in this locality and planted in all aspects. The flowers, which are pale blue, are produced from June to August. I have never known it to be affected by the cold of winter. In these gardens is a specimen, 30 or 35 feet high, planted in the pleasure grounds in a cold, damp corner. This tree is probably 50 years old. *G., Newtown Park House Gardens, Blackrock.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 31, 1907.—The last meeting of the Society for the year now past took place on the above date at the Society's Hall, Vincent Square, and it was remarkable for the paucity of the exhibits and the poor attendance on the part of Fellows of the Society and the general public. The weather was cold and sunless, although the hall itself was warm enough for personal comfort and for the safeguarding of the warm-house plants, including some exhibits of Orchids.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. Henry B. May, Jas. Walker, Jas. Hudson, Ed. Mawley, T. W. Turner, Herbert J. Cutbush, Chas. Blick, W. Howe, J. F. McLeod, Walter T. Ware, W. Bain, Chas. Dixon, Arthur Turner, Jas. Douglas, Charles E. Shea, W. P. Thomson, E. H. Jenkins, George Paul, R. C. Notcutt, and R. Hooper Pearson.

The exhibits from Messrs. J. VEITCH & SONS consisted of groups of winter-flowering Begonias, hybrids of B. socotrana and other species, but in every case the first-named species was employed in the crossings with large, late-flowering, tuberous varieties. The crosses shown on this occasion were extremely floriferous, and possessed pleasing tints. They consisted of Latona, pale red fading almost to white in the centre, and, unlike the others, having single flowers; Winter Cheer, Mrs. Heal, Julius (a fine rose-pink, with double and partially double blooms), Ensign (of a rosy carmine colour, mostly double-flowered, and the plant reaching a height of 2 feet, with ample leafage). Other plants were Pavonia × kermesina, having terminal corymbs of crimson-coloured flowers of a highly decorative character, and bright green, lanceolate leaves; the showy Calceolaria Burbidgei, Leonotis Leonorus, Moschosma riparium, a South African plant having loosely-arranged spikes of small, white blossoms; Jacobinias coccinea and chrysostoma, Coleus thyrsoides, and Exacum macranthum, both blue-flowered and most useful decorative plants in the winter season. As foils to the flowering subjects various species of Ferns were intermixed with these. A plant of Cotoneaster Franchettii, bearing a good crop of coral red berries, was likewise shown. (Silver-Gilt Flora Medal.)

The other side of the table was occupied by a mixed collection of plants and cut flowers from Messrs. HUGH LOW & Co., the Royal Nurseries, Bush Hill Park, Middlesex, among which were remarked the new, scarlet-flowered Carnation Beacon, bright in its tint and very double in form; pink-flowered Enchantress, and the rose-coloured variety of that name; also Robert Craig; Aristocrat (new), White Perfection, and a few other Carnations. Of the rest, we may mention some new strains of Cyclamens and a group of small plants of Euphorbia jacquiniæflora, some bush Oranges, and, arranged on the floor, a group of well-grown Dracæna Doucetti and D. Dallieri, both excellent decorative plants (Silver Flora Medal.)

A fine display was made by Messrs. CANNELL & SONS, Swanley, with bunches of flowers of Zonal Pelargoniums in single and double-flowered varieties. (Silver-Gilt Banksian Medal.)

Several small groups of plants were shown by Messrs. H. B. MAY & SONS, nurserymen, Upper Edmonton. These consisted of Euphorbia jacquiniæflora, Carnation Snowflake, three varieties of Poinsettia pulcherrima, a few plants of Indian Azaleas, and a considerable group of Dracæna "His Majesty," having broad, richly-coloured leaves; a good decorative variety. (Silver Flora Medal.)

Carnations as plants and cut blooms were shown by Messrs. W. CUTBUSH & SON, of Highgate and Barnet. There were noted the varieties Robert Craig, Mrs. S. J. Brooks, The Mikado, Britannia, Jessica, Marmion (a big flower, having crimson splashes on a white ground), the variegated Lawson, Harlowarden, and others. This firm also exhibited a miscellaneous assortment of such subjects as Pernettya mucronata in variety, bush Oranges, Poinsettia pulcherrima, Skimmia japonica, Daphne japonica, Ferns, small Palms, Iris alata, &c. (Silver-Gilt Banksian Medal.)

Messrs. J. PEED & SON, nurserymen, West Norwood, exhibited Alpine plants in much variety; these were growing in pots and large pans. (Silver Banksian Medal.)

For a large vigorous clump of Sarracenia purpurea, taken from the open ground, and furnished with numerous pitchers, Mr. W. A. Cook (gr. to Sir E. LODER, Bart., Leonardslee, Horsham), was awarded a Bronze Flora Medal.

AWARD OF MERIT.

Primula obconica, "*Hayes Place Double*."—E. A. HAMBRO, Esq., of Hayes Place, Hayes, Kent (gr. Mr. J. Grandfield), exhibited several varieties of Primula obconica, and an Award of Merit was granted to the variety "Hayes Place Double."

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. secretary), Harry J. Veitch, De B. Crawshay, W. Boxall, F. J. Hanbury, J. Charlesworth, H. G. Alexander, W. H. Young, J. Wilson Potter, W. H. White, H. A. Tracy, T. W. Bond, A. Dye, H. T. Pitt, W. Thompson, A. A. McBean, and H. Little.

Messrs. JAS. CYPHER & SONS, Exotic Nurseries, Queen's Road, Cheltenham, staged a very nice group, in which all the plants were excellently well grown and flowered, and for which a Silver Flora Medal was awarded. The central plant was a very good specimen of Miltonia Blenana nobilior, with two spikes of its large white and pink flowers. Behind were arranged a selection of varieties of Lælia anceps, including the large and finely-coloured L. a. Chamberlainiana, L. a. Amesiana, L. a. Percivaliana, L. a. Hillii, and others. A pleasing effect was made by arranging with these the white Lælia autumnalis alba and the graceful and now rare L. Gouldiana. The rest of the group was of Calanthe Veitchi superba, C. Wm. Murray, and a good selection of Cypripediums, among which were C. Troilus var. Nogii, with a fine dorsal sepal having an even band of white at the edge; C. Charlesianum, Cypher's variety, a very bold flower; a selection of good yellow varieties of C. insigne, and a pretty new hybrid between C. hirsutissimum and C. Mons de Curte.

Messrs. MOORE, LTD., Rawdon, Leeds, were awarded a Silver Banksian Medal for a group of Cypripediums, the best of which were C. Boadicea majesticum, a very fine hybrid, with a good white and rose dorsal sepal and very dark-coloured petals and lip; C. insigne McNabianum, very freely developed, the large chocolate-purple blotches on the upper sepal being joined together, and changing to purple towards the clear white margin; C. aureum virginale and C. aureum delicatum, two fine light-coloured forms; a pretty light form of C. Niobe; C. Leeanum Imperator, a well-defined and attractive variety; C. Phædra, with a fine rose-purple dorsal sepal; and several unnamed hybrids.

Messrs. HUGH LOW & Co., Enfield, staged a group, for which a Silver Banksian Medal was awarded. The central plant was a very fine specimen of Cypripedium Mrs. Wm. Mostyn, with unusually flat and well-developed dorsal sepal, which is deep rose-purple, with a white margin. Also noted were good C. insigne Harefield Hall, and other forms of C. insigne; C. Adrastus Mariæ, with a very finely-coloured flower; C. Ville de Paris, the largest of the Sallieri section; and C. Mrs. Alfred Fowler.

Monsieur MERTENS, Ghent, showed a selection of hybrid Odontoglossums, including O. Vuylsteker, O. amabile, and home-raised O. Wilckeanum. Also a white Cattleya Trianæi, and a coloured variety resembling Backhouseana.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed the rich lily-coloured Lælia anceps Schroderæ Theodora in splendid condition, and the new and handsome C. Bellerophon (Mrs. Tautz × Calypso), a very dark-coloured variety, the petals and lip being yellow, tinged with dark mahogany red, the dorsal sepal heavily blotched with chocolate purple, the spots changing to rose towards the broad white margin. Also C. Moonbeam (see Awards).

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed Cypripedium insigne Arnoldii, a distinct form, with greenish-yellow flowers, having a clear white upper third to the dorsal sepal, the blotching usually seen in C. insigne being indicated by raised green spots.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, showed two forms of their Cypripedium Countess of Carnarvon (villosum giganteum × Euryades), the one having large purple spots on its dorsal sepal, and the other smaller spots on a purplish ground, the upper part in each case being white.

Messrs. SANDER & SONS, St. Albans, showed a grandly-blotched Odontoglossum crispum, home-raised. The flower was of fine shape, broad in all the segments, white tinged with rose, the greater part of the sepals and petals being covered with rose-purple blotches; crest orange colour.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium Moonbeam (Thompsoni × Sallieri Hyeanum), from Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander).—A grand flower in size and form, realising the florist's idea of perfection. In colour it is nearest to a fine form of C. aureum. The large dorsal sepal is pure white, with a yellowish-green base, a broad purple band extending up the middle, with short, rose-coloured, feathered lines on each side from the base. Petals and lip yellow, with a slight green tint, and suffused with purple.

AWARDS OF MERIT.

Odontioda Craveniana (Cochlioda Noezliana × Odontoglossum cordatum), from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—A very fine cross, and a good companion to the scarlet Odontioda Bradshawiæ, for which Messrs. CHARLESWORTH received a First-Class Certificate in January, 1907. The new cross scarcely shows so much of O. cordatum as might be expected, although evidence of it is given in the distinctly-keeled sepals, in the faintest suggestion of mottling in the red of the basal half of the petals, and in the base of the lip; the sepals and petals are red, with a slight golden line. Lip in form much like that of O. Pescatorei. The crest of the lip is yellow, the blade blotched with salmon-red, through which the cream-white ground colour shows in front.

Cypripedium Dædalus Cravenianum (insigne Harefield Hall × nitens magnificum), from J. H. CRAVEN, Esq., J.P., Beeches, Keighley, Yorks. A fine large flower, with a resemblance to C. insigne Harefield Hall, but with the dorsal sepal more flat, and bearing more and smaller spots than that variety.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (chairman), and Messrs. Jos. Cheal, Edwin Beckett, Alex. Dean, H. Parr, A. R. Allan, James Vert, Jos. Davies, Geo. Reynolds, J. Willard, Charles Foster, and Owen Thomas.

Messrs. J. VEITCH & SONS, Chelsea, exhibited a collection of Apples and Pears, numbering over 160 dishes, and it was one of the best we have observed at any meeting. Of the finer varieties, mention should be made of the following:—Cox's Orange Pippin, Cornish Aromatic, Paroquet (of a very high colour), Small's Admirable, Winter Peach, Royal Late Cooking, Dumelow's Seedling, Baumann's Red Reinette, Golden Spire, Cellini, Beauty of Stoke, Lady Lennox, Duke of Devonshire, Hormead's Pearmain, Reinette du Canada, Winter Quarrenden, Beauty of Kent, Ribston Pippin, Margil, Schoolmaster, Peasgood's Nonsuch, Egremont Russet (one of the best varieties), Belle Pontoise, Cobham, Lord Hindlip, Chelmsford Wonder, Prince Edward, Tyler's Kernel (unusually well developed for this variety), Blenheim Pippin, Sandringham, &c. The finer Pears were Bellissime d'Hiver, Bergamotte d'Esperen, Beurré Baltet Pere, Olivier de Serres, Beurré Easter, Beurre de Jonghe, Marie Benoist, and Nouvelle Fulvie.

SIR EDMUND G. LODER, Bart., Leonardslee, Sussex (gr. Mr. W. A. Cook), exhibited a fine collection of Apples and Pears, the former from orchard trees of considerable age, and the large size and clear skin of the majority of the fruits

indicated the good cultivation bestowed on the trees. The finer Apples were Mère de Ménage, Dr. Harvey, Traveller, Yorkshire Greening, Bismarck, Lane's Prince Albert, Deux Ans, Ribston Pippin, and Court-Pendû-Plat (very large for this variety). The finer Pears observed were Duchesse de Bordeaux, Passe Crassane, Le Lectier, Duchesse de Nemours, Chaumontelle, Olivier de Serres, Marie Benoist, Beurré Baltet Père, Josephine de Malines, Beurré de Naghan, Huyshe's Victoria, and Easter Beurre, mostly, therefore, consisting of varieties long known in our gardens. (Silver Banksian Medal.)

AWARD OF MERIT.

Potato "Dobbie's Favourite." — From the Society's gardens, Wisley, came five varieties of Potatos, samples being supplied uncooked and cooked. The latter operation was carried out in the tubers' coats. These varieties had been selected by the Fruit and Vegetable Committee when they inspected the Potato trial at Wisley in the autumn, some tubers having been cooked previously. A First-Class Certificate was now unanimously awarded to Dobbie's Favourite, a white, flattish tuber, and a very heavy cropper. This had been previously granted an Award of Merit. Now, having been kept longer, the tubers, when cooked, were so superior in flavour and texture that the unusual award of a First-Class Certificate was readily accorded. It is a late mid-season variety. An excellent Potato was Forester, but it did not secure an award; neither did Dreadnought or Leonardslee Favourite, all three white round varieties; or the red-skinned kidney Cardinal, though all four were heavy croppers. Dobbie's Favourite was one of the most delicious Potatos we have tasted.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending December 28, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* was somewhat rainy in most parts of the Kingdom during the early days of the week, but subsequently became drier, although with a generally overcast sky. Showers of sleet and snow, however, occurred in most districts, and some heavy falls of rain on the southern and south-western coasts of Ireland and at Scilly. The snow was generally very slight, but some places both in the north-east of England and in the extreme south-west experienced considerable falls. During the latter half of the week the atmosphere was unusually dry.

The *temperature* remained considerably above the average until Tuesday or Wednesday, but afterwards fell quickly and became low, with a very small diurnal range. The mean for the week was above the average in all parts of the Eastern Section except the Midland Counties, and below it elsewhere. The greatest divergence from the normal was + 1·5° in England S. The highest of the maxima occurred on the 22nd at nearly all stations, and ranged from 54° in England E. and S., and the English Channel, to 47° in Scotland N. During the latter part of the week the maxima over a large part of Great Britain were only a little above 32°. The lowest of the minima were recorded on somewhat variable dates, but generally on the 28th in the south and west of England, and on the 23rd or 24th elsewhere. The readings ranged from 24° in England N.W., and 25° in England N.E., to 30° in England S. and Scotland W., and to 32° in the English Channel. The lowest grass readings reported were 15° at Crathes, 20° at Balmoral, and 21° at Hull and Dublin.

The *mean temperature of the sea.*—Generally the water was only slightly colder than during the preceding week, but at Eastbourne there was a decrease of 4°. The actual values ranged from nearly 50° at Plymouth and Salcombe to 40·8° at Cromarty.

The *rainfall* was less than the average except in Ireland S. and the English Channel, the deficit being large in nearly all districts.

The *bright sunshine* was equal to the average in Scotland E., and exceeded it in Scotland N. and England N.W. In all other localities it was less than the normal. The percentage of the possible duration ranged from 20 in England N.W. and 17 in Ireland S. to 4 in the Midland Counties. At Birmingham the week was quite sunless.

THE WEATHER IN WEST HERTS.

Week ending December 25.

A remarkably warm and gloomy week. On each of the first four days of the past week the highest temperature in the thermometer screen rose to, or exceeded, 51°, and on the warmest of those days reached 54°. These are very high readings for a winter month. The first two nights also proved unusually warm for the time of year, the lowest readings indicated by the exposed thermometer being respectively 45° and 42°. On the two coldest nights of the week the same thermometer showed only 2° of frost. The ground has become warm again, the reading at 2 feet deep being now 2°, and at 1 foot deep 4°, warmer than is seasonable. Rain fell on five days, but to the total depth of less than half an inch. On the 22nd light rain began to fall at 8 p.m., and continued without intermission until 1 p.m. on the following day, or for 17 hours. Previous to this fall the percolation had almost ceased, but it is now coming quite freely again through both gauges. The sun shone on an average for 25 minutes a day, or for only about a third of its usual duration at this period of the year. Light airs and calms prevailed during the week, and on one day the mean velocity for the 24 hours amounted to less than a mile an hour. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 2 per cent. *E. M., Berkhamsted, December 25, 1907.*

Week ending January 1.

The most sunless week for four years.—During the past week the highest readings in the thermometer screen have ranged between 37° and 32°, or from 5° to 10° below the average for the end of December. The nights also proved rather cold, but on no night did the exposed thermometer indicate more than 8° of frost. At 2 feet deep the ground is at the present time 1° colder, and at 1 foot deep 2° colder than is seasonable. Snow fell on two days of the week, but at no time was the ground completely covered by it. No measurable quantity of rainwater has now come through either of the percolation gauges for three days. The sun shone on an average for only two minutes a day, or for about 1¼ hour a day short of a seasonable duration, making this the most sunless week recorded here since December, 1903, or for four years. On five days no sunshine at all was recorded. The wind proved, as a rule, rather high, but in no hour did the mean velocity exceed 13 miles. Throughout the last eight days the direction of the wind has been exclusively from some easterly point of the compass. The average amount of moisture in the air at 3 o'clock in the afternoon was 3 per cent. less than a seasonable quantity for that hour. *E. M., Berkhamsted, January 1, 1908.*

Obituary.

E. WARD.—I have to announce the death of Mr. E. Ward, gardener at Longford Hall, Stretford, near Manchester. Deceased was a very clever gardener, and was well known as an excellent cultivator of all choice fruits, especially Pines, Peaches, Grapes, and Melons. He was the only gardener that I am personally acquainted with who could completely cure "Silver Leaf." This he did whilst I was fruit foreman under him, the tree being Royal George Peach, in a late house. The plant, hardy fruit, vegetable, and other departments of the extensive garden at Longford all received great care and attention at the hands of deceased. He endeared himself to the hearts of all young gardeners, for he was one of the best of men. The onerous nature of his duties, together with a naturally modest and retiring disposition, prevented him from looming large in the eyes of the gardening world. *Harry Johns, Birchley Park Gardens, Biddenden, Kent, December 21, 1907.*

GEORGE BATTERS.—The death of Mr. George Batters occurred on Christmas Day at Birkfield Lodge Gardens, near Ipswich, Suffolk. Deceased, who was 43 years of age, was the second son of Mr. Batters, gardener at Gillingham Hall, Norfolk, and had held the situation of gardener to Dr. and Mrs. Bartlett for nearly 15 years.

ENQUIRIES AND REPLIES.

CINERARIAS AND CALCEOLARIAS.—Can any reader furnish me, through the medium of the *Gardeners' Chronicle*, the sizes of the best specimens of Cinerarias and Calceolarias staged in the old country. Here at Corry during the past season we have grown some very fine specimens, and we are anxious to see how they compare with those grown at home. *Cinerarias*—30 specimens in 10-inch pots, flowers 3 inches to 4 inches across; heads of bloom 2 feet 9 inches to 3 feet across; good colours; splendid foliage. *Calceolarias*—30 specimens in 9-inch pots; heads of bloom 2 feet 9 inches to 3 feet across, 8 feet to 9 feet in circumference; splendid markings and colours; Dalkeith Park strain, one plant has nearly 1,000 blooms. My employer, L. C. Mackinnon, Esq., is a subscriber to the *Gardeners' Chronicle*, and he wished me to write you about this matter. Your journal has always a welcome here, and we are looking forward in anticipation to future numbers. *H. B. Downer, Gardener to L. C. Mackinnon, Esq., Corry, Toorak, Melbourne, Victoria, Australia.*

———The cuttings from the Australian papers, and the letter from Mr. Downer, are most interesting to an old florist. I have cultivated both these showy greenhouse plants, and have seen examples of them exhibited in Scotland and London since 1854; but I do not remember to have seen anywhere larger specimens than those grown at the Antipodes. The old system was to grow the Cineraria into very large specimens from propagated plants, three in a 10- or 11-inch flower-pot. This system could not be defended as a method of culture of specimen plants. Large specimens, or a number of specimens in large pots are seldom seen now, either exhibited in public or in private gardens. Some 20 or 25 years ago prizes were awarded for Cinerarias at the April exhibitions of the Royal Botanic Society in Regent's Park. I was frequently an exhibitor in those days and won prizes, but never had any plants so large as those grown by Mr. Downer. Calceolarias are generally at their best in May, but in the case of these, as well as in that of Cinerarias, quality of bloom has been the point aimed at rather than size of plant. On this point there is probably a difference of opinion. The colour of the Australian Cineraria blooms is said to be a deep blue. In any ordinary collection in England there would be some with deep blue flowers, some white with blue margins, others pure white, crimson, purple, white with crimson margins, &c. Some have flowers large enough to cover a crown piece and perfectly circular in form. The strains of seed are of such excellent quality that few people care to propagate their Cinerarias from offsets or division. Gardeners have also come to the conclusion that very large specimens are not so useful for decorative purposes as smaller plants which can be conveniently arranged with other specimens in the greenhouse or conservatory. Evidently the Calceolaria, like the Cineraria, is not as yet well known in Australia. We are informed that "Several of the specimens puzzled expert judges, inasmuch as the blooms resembled something akin to a Snapdragon." The Snapdragon (Antirrhinum) does not resemble a Calceolaria, and the further the form of the blooms is removed from an Antirrhinum the better for the Calceolaria. The one has long shaped flowers placed on a tall stem, whereas the corolla of the Calceolaria has a rounded sac or pouch, and the flowers are produced in clusters. If we refer to the coloured illustrations of the Calceolaria published 70 or 80 years ago, the pouch was considerably elongated, but the art of the florist has brought the corolla into quite a rounded form, and, if possible, a greater advance has been made in improving the colour of the flowers. They are mostly deep yellow, more or less densely spotted with the richest colours, crimsons of various tints being predominant. Calceolarias can be propagated from cuttings or by dividing the old plants, but both processes are unsatisfactory, as seedlings of both are easily raised, and these make better plants at a tithe of the trouble. *Culture.*—A few remarks on culture may be useful. The same compost is suitable for each, and it ought to be rather rich, but not too rich; an over-rich compost causes the plants to die off suddenly; sometimes the branches, but at other times the entire plant will die off. The Calceolaria is more liable to suffer injury in this way than the Cineraria: over-growth is altogether bad, it produces large, flabby leaves, but not a high-class quality of bloom. The seed of the Calceolaria is of the smallest size, and a person not having any knowledge of it should open the seedsmen's packet with great care; before doing so the seed pot or pan should be made ready to receive the seed. Sow them on a quite level surface, and just cover them with very fine soil; place a square of glass over the top of the seed pan to retain moisture. The seed may be sown in June or July, and it will germinate freely in a frame or greenhouse; the soil should be moderately moist, and shaded from the sun. The Cineraria requires similar treatment. The seedlings should be pricked out as soon as they can be easily handled, and be re-potted again in good time, as the plants have to make the best part of their growth by the end of the year. The best compost is one made up of four parts good fibrous loam, one part decayed leafmould, and one part well-rotted stable manure. Under good management the plants of both species will be vigorous enough to need 8-inch pots as their final shift. The worst enemy of both plants is greenfly, but it can be destroyed with the vaporising compounds. This troublesome pest will certainly put in an appearance, therefore keep a watchful eye on the plants, and fumigate immediately any fly is discovered. Calceolarias will succeed in a cooler atmosphere than Cinerarias in winter, as they are not so easily injured by frost. *J. Douglas.*

Answers to Correspondents

A SIEVE OF FRUITS AND VEGETABLES: *A. M.* A sieve is not a recognised measure of capacity; it may be described as a slightly less quantity than a bushel. A sieve of Brussels Sprouts weighs from 36 lbs. to 40 lbs. There are 45 lbs. of Apples in a market sieve and 56 lbs. of Plums.

CARNATION CULTURE: *F. C. B.* The treatment of winter-flowering Souvenir de la Malmaison and other Carnations has been fully described during the past season in our weekly Calendar of work, under the heading of "Plants under Glass." We will reply briefly to your questions. The atmospheric temperature at present should range between 45° and 52° at night allowing a rise of from 5° to 10° during the day, this range being allowed to meet the varying climatic conditions out of doors. During severe weather the lower figure will be the correct one, and in mild weather the higher reading will be safe, but a certain amount of ventilation should be employed whenever the conditions are favourable. This will suit all Carnations. We cannot recommend any particular chemical manure as being better than all other proprietary manures Do not apply any manure of this kind to plants which have not filled the pots with roots. Diseases are often the result of errors in cultivation.

CORRECTION: On p. 451 of the last issue in the article on Quinces, the variety Rea's Monarch should have read Rea's Mammoth.

CYCLAMEN NOT FLOWERING: *F. C. B* The fact that your Cyclamens are healthy one-year-old plants, full of flower buds and yet failing to develop their blooms, points to them having suffered a severe check at a late period of their growth. If the roots are in a healthy condition a little artificial manure, applied strictly in accordance with the directions given by the manufacturers, would be better for the plants than liquid farmyard manure, which is often of an unknown strength, and in the hands of an inexperienced person might be very harmful.

GRAPE VINE THAT HAS GOT INTO A GRAVELLED PATH: *J. Wallace.* It would be advisable to replant the vine, after making a new border, which should extend across the path and a short space beyond it. The area occupied under the present path might be covered with an iron grating resting on brick walls on either side so as to admit the rain and render applications of water possible In the course of time, when the roots have extended beyond the path, the grating might be dispensed with and gravel substituted.

HINTS FOR SCHOOL GARDENS: *S. F., P. H. L. and Others.* Copies of this pamphlet can be obtained from Messrs Dulau & Co., Soho Square, London, or from The West India Committee, Seething Lane, E.C.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *E. C. C. D* Pernettya mucronata — *J. H. B.* Selenipedium caudatum, often called Cypripedium caudatum; and Selaginella Wildenovii.—*R. A.* 1, Oncidium triquetrum, 2, Brassia maculata; 3, Ionopsis utricularioides.

INSECTS: *H. R., Welbeck* The specimens you enclosed were so rubbed that it is difficult to say to what species they belong. They are probably specimens of the Winter Moth (Cheimatobia brumata) whose caterpillars feed on most trees, and at times cause great injury to the foliage. The female moths are practically wingless and unable to fly, they have to crawl up the stems of the trees in order to lay their eggs near the buds The presence of the winged moths on the bark of the trunks was due to their being in search of the females who would be leaving their chrysalides, which are formed in the ground about this time of year, say, from the beginning of October to the end of December, or sometimes even in January. "Grease-banding" as used for fruit trees is the best remedy.

ROSE GARDEN: *C. W. B.* If you find that the water collects in your clayey soil, then by all means drain it, but, on the contrary, if the shingle subsoil acts as a natural drainage, then it will not be necessary to make any artificial drainage. We are disposed to think this is the case, but you must carefully consider the matter, and act according to your discretion. If you have to make a drain, be careful to provide it with a good fall, and the pipes should be placed at least 3 feet 6 inches deep. It is not necessary that pipes should be placed under each bed. Allow a space of 18 feet from drain to drain; connect them to one main drain along the lowest portion of the ground, and provide a good outlet for the water. Large pieces of chalk may be used round about the pipes, as these will allow the water to percolate freely, and thus drain the ground effectively. Chalk in this form may also be used with advantage at the bottom of the beds below the layer of clay which you have placed there. When you have provided means for the escape of the superabundant moisture, expose the clay to atmospheric influences in order to make it porous and friable; for this purpose also a portion of the clay may be burnt. The additions which may be made to improve the staple soil are already at hand; they include mortar-rubble, wood-ashes, leaf-mould, and well-decayed stable manure. The staple soil for Tea Roses should be of a lighter nature than that required for Hybrid Perpetuals, but it must be borne in mind that it is possible to have the soil too light, and that most varieties of Roses thrive best in a strong soil. The beds should be made some little time previous to planting, in order to allow the soil to settle.

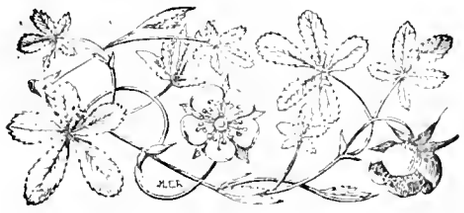
SECKLE PEAR: *Saxon.* This variety of the Pear is not at all rare in gardens in this country, and in the warmer parts it fruits well on low standard and bush trees worked on the Quince stock, or when placed on a west or east wall on the Pear stock. In Scotland and the north of England it is always advisable to plant the Seckle, a tender Pear, on south, east, and west walls The season during which it is at its best would thereby be lengthened by several weeks. If worked on the Quince stock it is advisable to first graft Beurré d'Amanlis, Sucré Vert or Beurré Clargeau on to the stock, so as to obtain a good union and vigorous growth, the next year budding the intermediate stock with the Seckle.

SEED AND SOIL INOCULATION: *Fred W Jeffery, J. H. B., and Others.* You may procure a pamphlet on "Seed and Soil Inoculation," by W. B Bottomley, M.A., Ph.D. Price 1s. Published by *Country Life*, Tavistock Street, London.

VALUATION OF TREES: *J. L.* In making a valuation of the damage resulting from the compulsory lifting and replanting of fruit trees, several matters must be taken into consideration. First, there is the age of the trees, which has a marked effect on the results; young trees two or three years old might be lifted with comparatively little loss, whereas an old or established tree would suffer to a much greater extent. Secondly, the condition as regards health and productiveness prior to the removal must receive due attention For example, a healthy, vigorous tree might be making an excess of growth and be consequently unfruitful; the process of lifting might greatly improve such a tree from a fruit-bearing point of view. On the contrary, examples in full crop-producing condition would be more or less checked, with a resulting decrease of fruits until the trees had recovered; some, indeed, if weakened by heavy crops or defective in any respect, might be seriously damaged or even lost altogether. Much would also depend upon the time selected for the work and the manner in which it was performed. In the autumn and early winter the risk would be reduced to the minimum, especially if the lifting and replanting were carried out in an efficient manner, to the satisfaction of the tenant. Assuming, however, that the 50 trees were in a productive state, and that the work was performed in a thorough manner at a suitable time, it would be fair to realise the damage at the loss of one average crop based on the crops of several years at the average prices prevailing in the district. If the trees are young and have not borne fruit, but are approaching a crop-bearing condition, the estimate must be founded upon the degree of productiveness or the special nature of the variety; thus, with free and early-bearing Apples like Stirling Castle, Potts' Seedling, and Lord Grosvenor, a first general crop might vary in value from 1s. to 2s. per tree, while that of a Cox's Orange Pippin may even exceed the latter amount. As regards the Rhubarb and Raspberries, if the plants are young the loss would be small, but if established and productive, all the conditions being favourable, the valuation for damage could be based on the loss of half the ordinary value of the crop in the season after removal.

WET CLAYEY GARDEN SOIL: *R. S.* There are seven kinds of clays in the British Isles, each of which is differently constituted, there being, however, present in them silica and alumina to a large amount, more especially in pottery clay, fuller's earth, fire clay, Broseley red tile clay, and a few others; and there are much less of such substances as lime, magnesia, potash, iron protoxide, &c., and a variable quantity of water. You have not informed us which kind of clay constitutes the subsoil of your garden, and we can only give an answer that is applicable to clays in general. The soil evidently is in need of draining with water pipes or rubble, preferably the latter, the drains being thrown out to a depth of 4 feet, and 24 feet apart. That work being carried out and a free outlet supplied for the main drain, the land will gradually become freed of the abundant water. It will be advisable to find the water level in the winter months, and the drains should be placed just below this point. It may be advisable also to drain some of the land surrounding the garden, otherwise the inflow of water from this land may tend to keep the soil wetter than would be desirable. Not much of the fresh subsoil, if any, should be brought to the surface in trenching, but it may be dug or loosened with a pick or digging fork and left at the bottom of the trenches, and be afforded a thick layer of strawy litter, and applications of half-decayed contents of hotbeds, rough vegetable refuse, &c. The surface soil may be simply dug the depth of a spade and afforded lime, crushed bones, and ordinary decayed manure. Sand and fine coal ashes would also tend to make the soil lighter and porous, and as a consequence warmer. As land drained naturally or by the hand of man parts with several of its more readily diffusible elements, such as lime, sulphuric acid, and hydrochloric acid, it is an essential point for the gardener and farmer to supply these elements to the soil in small annual dressings. The other constituents of good soil, such as ammonia, potash, and phosphoric acids, are usually retained, only very small quantities of them being found in drainage water.

COMMUNICATIONS RECEIVED.—E. W. & Son—J. L. (thanks for E. for R.G.O.P.)—C. R., Herts—J. C.—A. H.—E. G. R. H. J. C.—Carnation—Onlooker—Inquirer—W. E.—G.—J. M.—J. R. B.—S. C.—W. E. W.—Prof. L. S.—W. P.—S. T.—A. J.—W. E. B.—Ch. Van P.—W.—C. Green.—P. W.—J. D. A. H.—J. S.—W. W. P.—Clean Bill—E. Young—Trusted and Interested—W. T. S.—G. Forrest—F. R. Browne.—G. W. L.—Amersham—Subscriber—W. H. C.—Dawson, S. G. F. T.—H. W. W. E. H. J.—Reading and District Gardeners Soc.—G. W. Y.—F. J.—T. C.—G. P.—G. B. M.



THE
Gardeners' Chronicle

No. 1,098.—SATURDAY, January 11, 1908.

CONTENTS.

ILLUSTRATIONS.

ADDINGTON MANOR.

ADDINGTON Manor, the seat of Lord Addington, is pleasantly situated in the midst of well-wooded and rich pasture land, about five miles from the ancient town of Buckingham. The planting of the park and pleasure grounds was carried out some 50 years ago by the present gardener, who has seen his work slowly developing as the decades have rolled by, and he still lives to enjoy the partial fruition of his labours, knowing full well that a century or two hence the trees that he planted will by that time have attained to a greater perfection of beauty than they even now possess. The selection of the numerous species, both exotic and indigenous, and their arrangement with respect to position, proportions, and colour, for every season of the year, afford a testimony to his prescience, skill, and taste.

It must not be gathered from the foregoing remarks that the park is entirely devoid of large timber. The reverse is really the case. For though the greater number of the trees are but of 50 years' growth, when the estate was laid out advantage was taken of existing trees in the hedges that divided the meadows and those growing in the hedge-rows on either side of the original highway, which was diverted for the convenience of the estate. It is exceedingly interesting to see how skilfully this older timber has been woven in with the rest to enhance the general effect. A feature which adds to the picturesqueness of one portion of the park, is the pretty and ancient Early English church. The churchyard is separated from the park by a slight fence which is invisible at a short distance away. Just inside the park, near this spot, is an interesting relic in the form of the old stocks, which, though superannuated and out of repair, are a silent monition to the idle, disorderly, and drunken.

At the principal entrance to the park is a one-storeyed Gothic lodge. The avenue is formed by well-grown trees of Spanish Chestnut. There is also a fine avenue of sturdy Elms, planted some 45 years ago, the trees are remarkably even in height and symmetry.

The park is of large extent, and the natural conformation of the ground lends itself to effective landscape gardening, of which advantage has been taken, so that, as one wanders among the trees, unexpected glades, open spaces and vistas are frequently lighted upon. In addition to the trees usually seen in English parks, *e.g.*, the common Oak, Elm, Beech, Ash, Chestnut, Lime, &c., there are many of the rarer and more beautiful of these species, as well as of exotic trees that have become naturalised in this country, as Quercus sempervirens, Q. rubra, Acer vars., Liquidamber, handsome Hollies, both green and variegated species, and many others too numerous to mention. The collection is especially rich in examples of the Coniferæ, and it was interesting to note the growth each specimen has made since it was planted. The gardener has kept a record of the year in which each tree or group of trees was planted, thus enabling a comparison to be made with ease and accuracy. Of Cedars, Cedrus Libani showed excellent growth, and its glaucous foliage betokened perfect health. The same may be said of C. Deodara (these trees were obtained from Stowe House, and planted just 50 years ago). My attention was drawn to a specimen of Pinus Laricio planted in 1872, therefore 35 years old, which was 65 feet high, 5 feet 6 inches in circumference 3 feet from the ground—"a good stick," as the gardener pithily observed. Sequoia gigantea has also developed well: one specimen (planted in 1862) measured—height 80 feet, circumference 4 feet from ground 18 feet, covering 40 feet of ground. Among many others may be mentioned Cupressus Lawsoniana, C. Macnabiana, Abies orientalis (well clothed), A. Douglasii, Picea Nordmanniana, P. nobilis, Pinus austriaca, Thuya Lobbii, Thuyopsis dolabrata, T. borealis aurifera, Cupressus viridis, Cryptomeria japonica, and Taxodium distichum sempervirens. Daffodils, Pheasant's-eye Narcissus, and Colchicums abound in the grass in their season, while the comparatively rare Lady's Slipper Orchid may also be found here.

The conservatory is a handsome structure, admirably adapted for the purpose for which it was built. It is some 22 yards long by 13 yards wide. The end wall is clothed with a luxuriant growth of Heliotrope, the presence of which was quickly detected by its characteristic perfume. Of the larger subjects may be mentioned two fine specimens of Camellia, viz., C. Sasanqua alba plena and C. japonica rosea, the foliage of which showed that the trees were in perfect health, and the already swelling flower-buds indicated a prospective wealth of floral beauty. There is also a well-proportioned Eucalyptus, the bluish tinge of its luxuriant foliage, as it faintly exhaled its unmistakable odour, showing that it appreciated the conditions in which it was placed. Of numerous climbing subjects may be mentioned the common but always beautiful Cobæa scandens, which rioted at will; the delicate Maurandia scandens, twining round supporting wires, with its Gloxinia-like flowers, made a pleasing decorative feature; while a pink-flowered Tecoma, rambling where it could find support, arrested the attention. Among the plants meriting notice may be mentioned some beautifully-marked and well-developed specimens of Coleus and a good example of Fuchsia procumbens. There were also good plants of Begonias, Caladiums, Hoya carnosa, Hibiscus vars., Funkias, Salvia splendens, Panicums, Fuchsias, Sedums.

The mansion is an imposing structure of red brick, with stone embellishments, and, standing as it does on high ground, forms an important feature of the landscape. It is built on the model of an old French château, and its chimneys, dormers, and decorations are fine examples of the builder's art. Around the central tower runs the legend, "Except the Lord build the house, they labour in vain that build it." On the wall facing south were Wistarias and Magnolias, one of the latter carrying, even in the last week of September, a number of handsome pungent-scented flowers.

In front of the house and on one side is an extensive lawn. Formal bedding has been almost entirely superseded, and masses of colour has been relied upon for decorative effect. Dahlias, Gladioli, Asters, Pelargoniums, Montbretias, Nicotiana Sanderæ, &c., are used with excellent results. Easy access to the various levels of the lawn is afforded by means of small flights of steps, on either side of the head of which stand in some cases a well-trimmed Cupressus; in others, a vase containing suitable flowers. On the lawn also are classic vases, as well as some exquisite statuary of children. From this point, a scene of peaceful beauty opens upon the view. On the late September afternoon, when I saw it, not a cloud stained the azure of the sky, not a breath of wind stirred the foliage of a tree. To the right lay the ancient church of Addington, while across the lawn the lovely shades of green on the trees of the park were illumined by the afternoon sun. Not yet had frost or wet or gales of wind done havoc, though here and there were visible the flame of the Liquidamber and the golden hue of the Maple. The eyes wandered over a broad landscape of sylvan beauty, in which nestle pretty Buckinghamshire homesteads and hamlets, till the horizon is bounded by the hills of Quainton and Brill, forming spurs of the far-famed Chiltern range.

One of the most interesting features of this estate is the herbaceous garden. It is of large extent, and may be roughly described as in the shape of an egg-timer, though the garden is not proportionately so narrow at the waist. In the centre is a well-kept lawn, with a border varying in width all around it. The whole is enclosed with a magnificent hedge, 9 feet high and 4 feet thick, formed of Thuya Lobbii. The hedge is clipped twice a year, and the severity of its line is relieved by "flying buttresses" of the same Conifer. Nearly the whole year through the garden affords pleasure to the lover of flowers. Being sheltered, the earliest of spring-harbingers soon appear. Then the lawn is a sheet of Daffodils and Pheasant-eye Narcissus. Later the borders are brilliant with summer-flowering perennials; while in autumn they are still gay with Chrysanthemums, Aquilegias, Roses, Dahlias, Sedums, Phloxes, Helianthus, Malope,

Marigolds, Œnotheras, Bocconias, Epimediums, Acanthus, Achilleas, &c.

The kitchen garden is entered through a handsome wrought iron gate of Italian workmanship. On the walls that encircle this garden are well-grown Pear trees, which, at the time of my visit, were bearing remarkably heavy crops. They consisted of the following varieties:—Williams' Bon Chrétien, Marie Louise d'Uccle, Bergamot Esperen, Louise Bonne of Jersey, Pitmaston Duchess, Souvenir du Comice, and Beurre Diel (Beurré Magnifique). A good crop of Plums had been gathered, chiefly of the varieties Victoria, Orleans, Transparent Gage, Green Gage, Monarch, and Grand Duke. Apples are grown chiefly in bush form. Unfortunately, the yield last autumn was not a prolific one. The varieties Ribston Pippin, Wellington, Cox's Orange Pippin, Manx Codlin, and Ecklinville Seedling have given the best results. The small bush-fruit trees looked healthy, and had yielded well in their season. There was a profusion of winter-greens of the usual types showing good culture. A magnificent crop of Onions was drying in the autumn sun. Bordering the vegetable beds were planted a variety of perennials for cutting for decorations, such as Sweet Peas, Valerian vars., Mignonette, Senecio clivorum, Pentstemons, Nicotiana affinis, Salvia, Buphthalmum, Mrs. Simkins Pink, and others.

There is a lake on the estate some two acres in extent which, though teeming with fish and often crowded with wild water-fowl and pleasantly situated, is disappointing from a floricultural point of view. One would have liked to see there some of the beautiful water-plants of which such a wide selection can now be made. I must not forget to mention a pergola covered by Nasturtiums, Clematis Jackmanii, Honeysuckles, and rambling Roses such as the popular varieties Gloire de Dijon and Reine Henriette, which, in spite of the lateness of the season, were carrying good flowers.

The stove house is a commodious structure. The end wall is clothed with luxuriant growth of Ficus radicans, and rambling riotously were plants of the beautiful Allamanda cathartica in full flower. There were also a great number of plants of Begonia Gloire de Lorraine developing well for winter decoration, and a small but choice collection of Orchids.

In the fruit houses were some well-developed Peach trees, which I was told had borne excellent crops. Of Grapes, the varieties principally grown were Black Hamburgh, Muscat of Alexandria, and Black Alicante. The Grapes did not look so well as they might have done, owing to some neglect through the illness of the gardener earlier in the season. Fair crops of Tomatos were ripening.

There were also a large number of splendid plants of Chrysanthemums of the best varieties, carrying buds of large size. When the flowers developed they would take no mean position among competitors upon an exhibition board.

The gardens are in the charge of Mr. John Matheson. Though he has reached the age of 83 years, his eyes are not yet dim nor is his natural force abated. He has held the position of gardener for 53 years. That he is proud of the results of his work is but natural, and he is to be congratulated on the appearance of the plant-houses and park, flowers and lawns; but perhaps what causes the aged gardener the greatest pleasure and his heart to beat with honest pride is when he shows the chair presented to him by Lord Addington on the completion of 50 years' service, on the silver mounting of which is inscribed an appreciation of his worth and integrity. In these days of economic changes and industrial warfare it is refreshing to meet with such an instance of the reciprocal esteem of master and servant. *Richard P. Hesketh.*

THE WINTER STORING OF APPLES.

THE collection of Apples staged on December 21 at the Horticultural Hall, by Messrs. Jas. Veitch and Sons [awarded the Society's Gold Medal], was one of the finest ever seen on such a date, and shown, too, as the product of a year far from being a favourable one for Apple production. The fruits were in every case so firm and apparently fresh, they naturally led to enquiry as to the nature of the store in which the fruits had been housed. The store is a large, span-roofed house, and stands quite in the open. In that respect it resembles Messrs. G. Bunyard and Co.'s fruit house in their Allington Nurseries, as also it does in being thatched and coated round the sides with reeds. Originally, Messrs. Veitch's house was coated with heather, as is the fruit house at Wisley, but it was found that this covering harboured birds, and the heather was therefore taken away and Norfolk reeds substituted. The inside of the house is match-boarded. The shelves round the sides are 2½ feet wide, and 1½ feet apart, and are composed of stout wood laths, forming open trellis shelves, the sharp edges of the laths being planed off.

In the centre of the house, which is 13 feet in width, is an exhibition stage 3 feet wide, on which special samples of each variety of Apple are placed for comparison and recognition. At one end is a double door, and ventilation is given by louvre openings above the door and in the farther end. These openings can be effectually closed by movable shutters during hard weather. The floor of the house is, like that of the Allington house, of earth, and is occasionally damped with water to promote a slight humidity—an atmospheric condition of supreme importance in helping to keep the fruits firm. A great error with so many Apple stores lies in having wooden floors, thus promoting excessive dryness, as there can then be no soil exhalations. It is right to have proper ventilation to maintain a pure atmosphere, but a very dry one, such as is absorbent of the juices of the fruit, is by no means desirable.

That such firm examples of Apples as these from Langley or from Maidstone, and other nurseries, can be shown during the winter is, however, due to some other causes besides good storing. Without doubt, the bulk of the samples having been grown on young trees and near the ground, the fruits have been well fed with fruit requirements. They have been allowed to hang on the trees to the latest possible period, and have been fairly near the soil, hence have derived from it some assistance because of the greater humidity of the air than is the atmosphere higher up. These facts serve to show how important in Apple culture it is to maintain a constant supply of young trees.

An interesting experiment in relation to Apple storing at Langley was once told me by Mr. Algrove, the fruit manager. Whilst the centre stage was open lathed, one side stage was close boarded, the other side stage being covered with glass. Six fruits of numerous varieties of Apples were placed on each of these three stages and their keeping qualities severely tested and carefully noted daily. Ultimately the result showed that the fruits on glass, because any moisture engendered on them by sweating passed down to the base of each fruit and settled there, not passing away, promoted early decay. Those on the close boards suffered less, though they did suffer to some extent. Those on the open laths did not suffer at all, and therefore kept much the longest. Whilst it was held that any moisture engendered on these fruits could freely pass away and leave them dry, it is also most probable that on account of the free circulation of air through the open laths, very little if any, moisture settled on the fruits, and there was therefore none to remain on the laths to engender decay.

We may grow Apples well, but if we want to keep them late, we must seek to do so by the best methods. *A. D.*

FIG. 13.—ODONTOGLOSSUM CRISPUM "MEMORIA BATTLE OF WATERLOO," RECENTLY EXHIBITED IN BRUSSELS BY M. JULES HYE DE CROM.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM VARIETY.

THE variety of which we give an illustration (fig. 13) is taken from a flower kindly sent us by Monsieur Jules Hye de Crom, Ghent (gr. Mr. Mertens), who exhibited his specimen with 16 flowers at the meeting of the Sociétés Royales Linnéenne et de Flore de Bruxelles on December 15, 1907, when the plant was accorded a Diplome d'Honneur. Reference to the illustration, which represents the flower in its natural size, will show that it is a very handsome variety. The ground colour is white, slightly tinged in places with rose colour, showing through from the purple shade on the reverse side. The blotching is deep blood-red.

STANHOPEA OCULATA.

OUR illustration at fig. 14 represents a plant of Stanhopea oculata grown by Mr. W. R. Wright, The Gardens, Aldborough Hall, Ilford, the plant when photographed bearing the last two of the six inflorescences which it has borne this season. The species, which was first imported from Mexico, in 1829, flowered in Messrs. Loddiges' nursery in 1831, and has since that time been well known in gardens. The flowers are cream-white, spotted with rose-purple and bear a blackish spot on each side of the basal part of the lip.

CYPRIPEDIUM STANIS

(WILLIAMSIANUM × INSIGNE SANDERÆ).

THIS is a finely-shaped Cypripedium, which has flowered with Eustace F. Clark, Esq., Chamonix, Teignmouth, who names it after his son, Stanislaus. All the parts are broad and well arranged. The dorsal sepal is emerald green, darkest in the veining, the margin white, and bearing a few purple spots at the base. The petals are 1 inch in width, and have a greenish ground colour tinged and veined with purple, and marked with a few small purple spots on the inner parts. The staminode is as broad as the basal part of the lip; its colour is pale yellow veined with green; the broad lip is cream-white tinged with red.

FIG. 14.—A FINE INFLORESCENCE OF STANHOPEA OCULATA.

CYPRIPEDIUM × EUSTACIANUM

(C. SUPERBIENS × ARGUS).

THIS very pretty variety plainly indicates a blending of the features of both the parents, and in point of beauty it excels each of them. The size and graceful outline is of C. superbiens (Veitchii), the effective blotching is derived from C. Argus. The broadly ovate acuminate dorsal sepal is white tinged on the lower half with rose colour, and bearing about two dozen green lines, every alternate one being finer and shorter than the rest. The deflexed petals are two and a half inches long, and over half an inch in width. They are white, with pale green lines at the base, flushed with rose on the outer halves and bearing numerous warted, chocolate-purple blotches, those on the margins being hairy. The large, well-formed labellum is whitish, veined with green, and tinged on the face with rose. It flowered with Eustace F. Clark, Esq., Chamonix, Teignmouth, from seeds sown in January, 1903.

TREES AND SHRUBS.

SPECIES FOR CHALK SOILS.

THE soil here is a thin loose chalk, varying in depth from 6 to 15 inches; underlying this is a few inches of chalky pebbles, and on passing through the pebbles the solid white chalk rock is encountered. The labour necessary to convert such land into profitable garden ground is very great, and the initial work is generally costly. Circumstances sometimes make it imperative to excavate the ground, but in the majority of instances a sufficient depth of soil has been secured by forcing the ground to a higher level.

From the nature of the subsoil, porosity is a marked feature, and as water passes rapidly away the ground renders to half-hardy subjects perfect immunity from the bane of many soils, namely, excessive moisture at the roots in winter.

Under the influence of summer heat and prolonged drought, chalk soils support vegetation better than most other mediums, which is no doubt explained by the presence of rock fragments in considerable quantities. As is proved when moving established specimens, the roots cling to the rocky floor in a most tenacious manner, showing how much the roots appreciate the cool sub-stratum; it is on such soils that considerable difficulty is experienced in re-establishing large specimens.

The general effect upon flowering subjects is an annual growth of short wood, which invariably ripens well, and rarely fails to produce fine crops of well-developed and richly-coloured flowers, and it is further noticeable that the autumn tints of many trees and shrubs are singularly rich and constant at that season.

I have frequently heard comments upon the rich, glossy appearance of the leaves of evergreens; such well-known examples as Holly (Ilex), Choisya ternata, Azara macrophylla, Viburnum Tinus, Ligustrums and Escallonias, and many others, present a very pleasing feature in the winter by the unusual richness of the leaves. This may partly be explained by our proximity to the sea, which lies 12 miles east, but I have never seen Choisya or Azara grow with such vigour elsewhere. From our position, we generally experience late and trying springs, and as these "wolds" are wind-swept for seven or eight months of the year, the provision of adequate shelter is of more than ordinary importance. Fortunately we have Beech, Sycamore, Austrian Pine, and Evergreen Oak available subjects for planting, which not only reach perfect development on the shallowest soil, and furnish the best of shelter, but the timber is often of considerable value. Of undershrubs that succeed in Beech woods, we have had the best results with Euonymus japonica, Aucuba, Ruscus aculeatus, Buxus sempervirens, and Ilex aquifolium.

Evergreens employed in garden decoration, other than those already noted, are Escallonia exoniensis, E. Langleyensis, E. macrantha, and a broad-leaved form of E. macrantha. Garrya elliptica grows and flowers freely in the open, and it is interesting to note a group of Ericaceous shrubs like Arbutus violating a knowledged traditions, and making themselves at home in the chalk. Arbutus Unedo coccinea, rubra, and Menziesii are the forms grown here. Arbutus Unedo coccinea, if only for the bright red bark in winter, should be extensively planted.

Olearias are represented by O. Haastii, O. Gunniana, O. macrodonta, and O. nitida, the latter scarcely as often planted as its merits deserve. The best species and forms of Ulex and Cytisus succeed well, including the Sweet-scented Spartium junceum; these, when employed with the hardiest varieties of Cistus, form a valuable group of plants for converting dry banks or like positions into objects of beauty with the minimum of expenditure and upkeep. Some of the rarer Evergreens have but recently been planted, among the most promising are Daphniphyllum macropodum, Cornus capitata, Desfontainea spinosa, Cotoneaster angustifolia, Osmanthus ilicifolia purpureus, Phillyræa decora; those having the protection of a wall are Senecio elæagnifolius, Carpentaria californica, Fremontia californica, Cistus ladaniferus, and Jasminum primulinum.

Mention may be made of a colony of Bamboos represented by a dozen sorts, which have been planted about six years; the canes rarely exceed 12 feet in height, the yearly growth being most satisfactory.

Deciduous trees and shrubs which succeed on the chalk include Abutilon vitifolium, Cercis Siliquastrum, Cercidiphyllum japonicum, Dimorphanthus mandshuricus, and the two variegated forms; all the species of Cornus except C. Kousa; Cratægus and Cerasus in many forms, Aronias (Pyrus), Amelanchiers, Berberis (evergreen and deciduous), Ginkgo biloba, Gleditschia triacanthos, Liquidamber, Liriodendron tulipifera, Parrotia persica, Pyrus, Rhus, Robinia, Spiræa, and Syringa.

Among the most promising of new deciduous shrubs are Amelanchier oligocarpa, Cæsalpinia japonica, Davidia involucrata, Prunus spinosa purpurea, Eleutherococcus Simonii, Euonymus nanus, Hamamelis mollis, Syringa Josikæa eximia, this last a delicately-coloured Lilac.

Having remarked upon the leaf tints of many trees in autumn, it remains but to note a few of the most brilliant—Aronia (Pyrus) florifera, coccinea, erythrocarpa, Berberis Thunbergii, Amelanchiers, Cercidiphyllum, Ginkgo, Gleditschia, Parrotia persica, Rhus in variety, Stephenandra flexuosa, and S. Tanakæ, Spiræa prunifolia fl. pl. and S. Thunbergii. In most positions, with special soil free from lime, which gardeners on chalk soil may readily procure at a slight expense, there is nothing to beat the colouring of Oxydendron arboreum, while the ruddy shoots of Leucothoe racemosa are borne by the leaves through the greater part of the winter. *Thomas Smith, Walmsgate Gardens, Louth, Lincs.*

ROMNEYA COULTERI.

THIS exquisite Mexican Poppy is generally recommended for light, sandy or peaty soils, but in the heavy, sticky clay here it does admirably. I planted, in 1906, a small piece of which I had about 1 foot deep, in which I mixed with the

clay soil at planting some sand and leaf-soil. In the first year it gave three flowers, but in 1907 it has grown vigorously and has given a quantity of its silvery-white blossoms (6 inches over), which have been greatly admired. It is fully exposed, and has not been given any protection. The plant is now 4 feet through, and full of shoots. As many of them were October growths, I have now put some ashes round the crown. Do not let those who have a heavy (Rose) soil, therefore, despair of growing Romneya Coulteri. *George Bunyard, Oakwood Lodge, Ide Hill, Sevenoaks.*

NOTICES OF BOOKS.

*"The Minimisings of Maurice."

This is a book specially written for children, and one in which many truths concerning natural history are related in such a manner as is considered to be most interesting to the juvenile mind. It relates the adventures of a boy who, aided by his Fairy Fancy, has the power of "minimising himself" to any size he requires. After reading the opening chapter it seems no longer wonderful that he should be able to wander among the inhabitants of the garden, the field, and the pond, or even speed away on the wings of a butterfly and describe his experiences on such journeys. In this way the narrating of his interviews with the owl, kingfisher, rook, dormouse, squirrel, bee, water-beetle, toad, frog, dead nettle, the aerial roots of the Ivy, "lady" teasel, &c., discloses much accurate information about their habits and uses, and child-readers may be reasonably expected to retain some of these particulars even if they are not led to make further observations themselves or to study more advanced books. There are 36 excellent illustrations which are reproductions of photographs direct from Nature. This work is an attempt to sugar-coat the pill, and may be recommended as one of the very best of its class.

†"The Flower Garden."

Mr. Sanders is already well known as the author of several useful books on gardening, and the present volume forms an excellent addition to its predecessors. It may be thoroughly commended as a reliable guide. The plan of the work is good and business-like. Opening with an account of the various aspects of gardening, the author goes on to deal in detail with the different parts of the subject in separate chapters. This method of treatment will appeal to those who use the book by reason of its convenience.

First come the hardy plants; then the bulbs, Orchids, aquatics, Ferns, &c., are all separately considered and dealt with. The treatment of the various tender outdoor plants, climbers, and the hardy trees and shrubs ends an excellent book, in which the space available is utilised with considerable judgment. The 64 full-page illustrations form an attractive feature of the work, and some of them possess no small artistic merit.

‡"Flowers and Fruit for the Home."

This little book will appeal to those who are interested in the rather gossipy type of garden book. The author manages, however, to convey a fair amount of information in the style of the newspaper article, and the illustrations that accompany the text are well executed.

* By Rev. S. N. Sedgwick, M.A.; published by Elliot Stock.

† By T. W. Sanders, F.L.S., F.R.H.S. London: W. H. & L. Collingridge.

‡ By T. L. Richmond. T. N. Foulis, Edinburgh and London, 1907.

NOVELTIES OF 1907.

(Concluded from page 3.)

Some of the favourite garden flowers have recently been remarked upon in these columns; the appended list of the most important plants and fruits illustrated in the *Gardeners' Chronicle* during the past year will be a sufficient reminder of the progress made in all branches of horticulture.

Hardy trees and shrubs, both flowering and ornamental, are of special interest, as their culture can be undertaken by all having gardens. In this matter the new introductions from China by Messrs. Jas. Veitch & Sons, through their representative, Mr. Wilson, and which are now beginning to show their real worth and obtain the recognition they deserve, take the place of honour among new plants. Messrs. Jas. Veitch & Sons secured First-Class Certificates for the compact and free-flowering Rhododendron intricatum (first shown as nigro-punctatum), Viburnum rhytidophyllum, and Berberis Wilsonæ. Awards of Merit were obtained for the pretty hybrid raised by them between Primula pulverulenta and P. Cockburniana, and named Unique; Azalea Hexe, a bright red variety; Actinidia chinensis, a good pillar plant; Lonicera Maackii, a hardy cream-white species, which also bloomed with Messrs. Paul & Son, Cheshunt; Cotoneaster applanata, Vitis leeoides, and other pretty species, and among more tender plants Nepenthes Ruby, one of the largest and brightest in colour; Amphicome Emodi, Kalanchoe Dyeri, and Caladium Thomas Tomlinson.

Other hardy flowers which have secured Awards are Iris Aspasia and Melusine, from Mr. F. Herbert Chapman, Rye (who also showed the pretty yellow Freesia Chapmanii); Iris Luna and Freesia Tubergenii Amethyst, of Mr. C. G. Van Tubergen; Iris Caterina and I. Paracina, of Messrs. Barr & Sons, who also have some good new Daffodils; Rhododendron Duke of Cornwall, a fine red variety from Tremough; the fine purple Syringa Josikæa var. eximia, Campanula longistyla, and Arctotis regalis from Sir Trevor Lawrence's gardens; and many other acceptable novelties shown by Messrs. Wallace, Colchester; Kelway & Son, Langport; Carnations by Mr. Jas. Douglas; the very small-leafed Ampelopsis Veitchii Lowii of Messrs. Hugh Low & Co.; and some excellent new Daffodils which have secured recognition by the Narcissus Committee. Among these were the varieties Homespun, Ailsa, and Miss Willmott, all fine flowers.

Stove and Greenhouse Plants.

Novelties in this class have not been shown very numerously in 1907. Among the best of those certificated are Hippeastrum Vulcan and H. Lady Howick, from Major G. L. Holford; H. Mrs. Carl Jay, a fine hybrid of H. reticulatum, from Mrs. C. Jay, Bexley; the dwarf and pretty Crinum amœnum var. Mearsii, from Col. Beddome, and the more showy variety H. J. Elwes, from Mr. Elwes; the fine Agapetes speciosa, from Mr. J. T. Bennett-Poë; and the excellent strain of Streptocarpus, for which Mr. Burkett, of Sunningdale, received an Award of Merit last August.

Ferns which have secured Awards during the past year include Cyrtomium falcatum Rochfordii, with fringed fronds, and Polystichum aculeatum Drueryi, one of the most elegant of hardy Ferns, both of which secured First-Class Certificates; also Nephrolepis exaltata Whitmanii and Davallia brasiliensis (H. B. May), both of which were accorded Awards of Merit.

The Roses, Sweet Peas, Carnations, and Chrysanthemums have all been well represented by the novelties of 1907, which have been duly recorded. The Dahlias, Begonias, and other large classes of florists' flowers have also been strengthened by the specialists in the different classes, and the seedsmen have not failed in furnishing novelties of sterling merit.

The following new and noteworthy plants and fruits have been illustrated in the *Gardeners' Chronicle* in 1907:—

Abies magnifica xanthocarpa, Feb. 23, pp. 114-115.
Acacia caffra, Jan. 12, p. 20.
Acantholimon echinus, May 18, p. 311.
Agapetes speciosa, April 13, p. 237.
Amphicome Emodi, Oct. 19, p. 276.
Anchusa italica, Dropmore variety, Oct. 19, p. 282.
Apple Ard Cairn Russet, March 16, p. 174.
Apple Encore, Jan. 5, p. 2.
Apple High Canons, March 2, p. 133.
Apple Ross Nonpareil, March 23, p. 182.
Arctotis regalis, Sep. 14, p. 204.
Argemone grandiflora, Aug. 10, p. 113.
Asparagus falcatus (flowering), Feb. 2, p. 82.
Aster Norah Peters, Oct. 12, p. 269.
Auricula Miss Berkeley, May 4, p. 286.
Begonia Miss Clibran, Nov. 16, p. 347.
Berberis Wilsonæ, Nov. 30, p. 372.
Bryophyllum calycinum, Supp., June 29.
Bryophyllum crenatum, June 29, p. 419.
Calceolaria Veitch's hybrid, June 29, p. 426.
Campanula longistyla, Sep. 14, p. 191.
Campanula mirabilis, Aug. 24, pp. 144-145.
Campanula punctata, Aug. 3, p. 96.
Campanula trœa, Sep. 14, p. 197.
Carnation Aristocrat, Dec. 21, p. 420.
Caryopteris Mastacanthus, Dec. 14, p. 409.
Chrysanthemum Horace Martin, Oct. 12, p. 267.
Chrysanthemum Miss Hampson, Jan. 5, p. 9.
Chrysanthemum Thyrza Cherry, Jan. 5, p. 9.
Citrus (Orange) Excelsior, Feb. 23, p. 124.
Cladrastis tinctoria, Sep. 7, pp. 186-187.
Cosmos sulphureus, Supp., Aug. 24.
Cordyline Banksii, Supp., Feb. 23.
Cordyline indivisa, Feb. 23, p. 123.
Crinum amœnum var. Mearsii, July 27, p. 62.
Crinum H. J. Elwes, July 20, p. 53.
Cyclamen latifolium, March 30, p. 207.
Diervilla sessilifolia, Dec. 21, pp. 426-427.
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A set of fastigiate trees have been illustrated in these pages during 1907, and form a very useful reference.

NUNEHAM PARK.

(Concluded from page 11.)

THE WATER GARDEN

has been laid out in an artistic manner, and presents many attractive features. It follows a serpentine course, and a clear, trickling rivulet passes gracefully over several miniature falls, each one enhanced in beauty by beautiful blue Gentians and Iris Kæmpferi. Clumps of rock placed beside the water diversify and break up the surroundings; the artist, in order to naturalise his picture, has grouped clumps of Iris anglica and I. stylosa, and Incarvillea variabilis, together with the bright Primula japonica. Near at hand is planted Saxifraga ligulata, Lobelia cardinalis fulgens, Lilium giganteum, Rheum palmatum, Phormium tenax, Echinops humilis, Lysimachia clethroides, &c. Mr. Munday is now busy in forming or converting the dell pond into a charming spot by the formation of a rustic path of stones entwining its way in and about the bank. Already Phormium tenax, Ferula gigantea, and Senecio clivorum are planted, and the beautiful Royal Fern, Osmunda regalis, Cotoneaster frigida, Gunnera manicata, Fuchsia Sieboldii elatior, Bamboos, Trilliums, Ranunculus bilobus, Glyceria spectabilis, &c. A rustic bridge affords approach to these plants across a small stream.

THE ROSE GARDEN

proper contains, as far as my memory serves me, about 600 to 800 plants of all the finest Tea and Hybrid Tea varieties. The outside border is 8 feet wide and planted with Princess de Sagan, and about 100 varieties planted in "3's," a good method of obtaining "blocks" of colour. The rockery, supposed I believe to be the work of "Capability" Brown, is planted with Sedums and Saxifragas in variety. Tiarella cordifolia, Helianthemum diversifolium, Crucianella stylosa, Epimedium sulphureum, Heaths, Dianthus alpinus, and many beautiful Alpines.

THE PERGOLA

is built with brick pillars 14 inches square and 8 feet high, crossed at the top with oak beams; the brick walk below is laid herring-bone fashion on edge. A space of 8 feet is allowed from pillar to pillar, which extends round a water tank 28 feet in diameter. Thirty kinds of Vitis are planted; the species include: Vitis vinifera, V. riparia, V. rupestris, V. rubra, V. Henryana, V. Coignetiæ, V. Labrusca, V. striata, V. Brandti, V. flexuosa, V. amurensis, and V. capriolata. Several varieties of rambling Roses and Clematis help to furnish this most interesting collection.

In one section of the kitchen garden a very substantial fruit enclosure has been erected, covered with small-meshed wire-netting 190 feet by 50. Raspberries, Gooseberries, Plums, and Cherries are its principal occupants. Each and all give promise of excellent crops. Most of the leading kinds of Pears, Apples, Cherries, Apricots, and other fruits have been planted against the walls, and as pyramids round the patches.

THE KITCHEN GARDEN.

The gardener is well aware of the requirements of a well-appointed establishment; crops in various stages are in excellent culture. The vines have mostly been replanted in newly-made borders; one old vine of Black Alicante, occupying two houses, was over 30 yards long. Peaches and Nectarines in some cases are being renewed.

Considerations of space forbid the description of the plants which are grown under glass, and I have therefore confined these remarks to the many attractive features of the open-air parts of the grounds. *W. H. C.*

FIG. 15.—VIEW OF A PORTION OF THE WATER GARDEN AT NUNEHAM PARK.

FORESTRY.

THE LARCH APHIS AND BLISTER.

I THINK some facts have been overlooked in this matter (see pp. 353 and 438). The Larch disease "blister"—begins in two ways. As a rule, judging from many examples, the disease begins in young plantations by attacking the stem mainly and creeping up with the tree's growth until, in the case of badly-affected trees, blisters cloth the stem from top to bottom, killing the tree outright or arresting its growth to such an extent that the tree never gets thicker than a rail. Extensive examples were shown at the Royal Agricultural show, at Islington, in June last. In Wilts, Dorset, and Wales especially, extensive plantations are to be seen like this, but in all of

them are to be seen good trees as well that are quite clean, and others only partially affected. Cases of this kind may, and do, arise, in which the aphis apparently plays no part.

As to the other way in which the disease begins, there seems to be no doubt that it is caused by the Larch aphis. The time, the sudden attack, and distribution of the disease all point to this conclusion. The disease appears, comparatively speaking, suddenly all over the plantation, and such examples may be seen often. One example will suffice. On a favourable position for Larch, on a hillside near Maxwelltown Braes, in Dumfriesshire, a healthy, well-established Larch plantation, free from disease and supposed to be out of danger, was, within the space of two or three years, affected badly all over with blister, as if it had fallen on the trees in a shower. The owner and his agent told me that a few years before, during a dry summer, the plantation suffered from a very bad attack of aphis, and both attributed the disease to that, without having read or heard much on the subject of disease before. This was about six years ago, and I have seen similar examples since. I think, if the theory that the Larch fungus enters at a wound is correct, there is no doubt about the aphis making wounds in millions for the disease to enter, and that seems to be about the logic of the case. *J. Simpson, Studfield.*

The Week's Work.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Peaches and Nectarines.—In many gardens, especially if the earliest maturing varieties are cultivated, there is no necessity to start the trees earlier than the commencement of the year, and if fruits of the best quality are required, it is not advisable to force them sooner. There need be no difficulty about starting at this date trees that have been forced early in the previous season; afford them a steady atmospheric temperature of from 45° to 50° at night, with a rise of about 5° by day, admitting air cautiously in mild, sunny weather, but close the house sufficiently early to cause the temperature to remain for a short space of time at about 60°. Atmospheric moisture should be provided, depending in amount on the condition of the weather, syringing the trees with tepid water on fine days. It should be remembered, however, that mischief may be easily done at this season by using the syringe too freely. It will be well to vaporise the house with the XL-All Vaporiser just before the buds are about to open. In the case of earlier trees that are now coming into blossom, the atmospheric temperature may be from 50° to 55° at night, allowing a corresponding rise by day, and a moderate circulation of air. The pollination of the blossoms should be assisted at midday by the use of a soft brush, or rabbit's tail.

Strawberries.—As soon as the earliest plants are in blossom, efforts should be made on favourable occasions to secure perfect fertilisation by adopting artificial pollination, using a very soft brush when the pollen is dry. Maintain the atmosphere comparatively dry, and keep it in circulation. The atmospheric temperature should be 55° at night, allowing the usual rise by day. As soon as sufficient perfect fruits can be selected for the crop, fully expose them to the sun by carefully supporting them with twigs, and pinch off all the remaining fruits and blossoms. Give care to the watering of the plants and afford them applications of suitable manures; liquid obtained from the farmyard answers well or top-dressings of an approved artificial compound. The demands of early crops in these respects are not so great as are those of later ones. Successional batches of plants should be top-dressed with compost, enriched with soot and artificial manure, and be brought forward as may be necessary to meet the demands. We still follow here the old practice of resting the pots upon thin turves, which are placed upon stages near the glass, over beds of tree leaves that subsequently serve the purpose of affording bottom heat for summer crops of Melons and Tomatos. These beds promote beneficial humidity for the Strawberries during their early stages of growth. Spray the plants over head early in the afternoon of fine days, and keep the atmospheric temperature at 50° at night.

Early Melons.—Little is to be gained by raising Melons before the commencement of January, but plants raised in the present month, if cultivated under favourable conditions, should yield ripe fruits by the end of April. Seeds should be sown singly in 2½-inch pots filled with moderately moist, fine compost. Plunge the pots in a hot-bed, and cover each pot with a shaded piece of glass, placing them in an atmospheric temperature of 70° at night. No water should be applied to the soil until the plants appear. At this stage they should be given a light position near the glass; syringe them daily, and do not allow the roots to suffer from want of water.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Planting of bush fruits.—It is necessary to make new plantations from time to time to replace old bushes that have ceased to be profitable. The fresh bushes should be planted by themselves on a piece of ground where they can be easily protected from the birds. The ground should be trenched and enriched with a liberal application of manure, as the soil cannot easily be made too rich for bush fruits which generally occupy the same ground for several years together. Spread out the roots carefully when planting, and do not plant them too deeply, but tread the soil firmly about the roots as the work proceeds. Spread a mulch of half-decayed manure over the ground after the work has been completed, and do not prune the bushes until later in the spring. Gooseberries and Currants should be allowed a distance of 5 feet between the plants and 6 feet between the rows. Black Currants require 1 foot more space between each plant, and the same additional space between the rows. Black Currants will bear freely in a more shaded and moist situation than Red or White Currants, which thrive best in a lighter soil.

Pruning bush fruits.—The bushes on old plantations should now be pruned, unless buds are very troublesome. Thin and shorten more severely the spurs in those varieties of Gooseberries that are required for dessert, shorten the spurs on the Red and White Currant bushes to two or three buds and the leading shoots to a length of 8 inches. Remove the old wood from the Black Currant bushes and leave the young and vigorous shoots unpruned. When the pruning has been completed, collect all the shoots together and remove them to the fire heap. Apply a good dressing of manure to all the bushes, digging it in very lightly, so as not to cause damage to the roots. Dust all the bushes over occasionally with lime and soot, when the shoots are damp, as this will greatly assist in keeping away the birds. If cuttings of any of the above-mentioned fruits are required for increasing the stock, select well-ripened shoots and tie them in bundles and, after labelling them, heel them in under the shade of a north wall until they are required, or such time as they can be properly prepared for planting.

Raspberries.—If Raspberries have still to be planted, the work should be taken in hand at the first opportunity. The ground for Raspberries requires to be prepared as thoroughly as I have recommended for small fruits, but in subsequent seasons the spade should not be used on the ground, or the surface roots will be destroyed. Plant the canes at distances of 2 feet apart in rows, and allow spaces of 5 feet between the rows. Train the canes to strained wires made secure to iron uprights or strong posts about 5 feet in height. Cut the canes down to 6 inches or 1 foot from the ground when they are about to break into growth in spring. Old plantations that were thinned in the autumn will only require to have the canes trained to the wires, leaving them about 6 inches apart. Apply a mulch to the ground. Autumn-fruiting varieties should be cultivated in all gardens, and a more shaded position should be selected for these. They will require to be cut down to the ground early in the spring.

Top-dressing and manuring.—Any trees growing against walls, or any Apple and Pear trees that usually carry heavy crops of fruit, and trees that show signs of becoming exhausted should now be given attention. All such trees should have the surface soil removed down to the roots and replaced by good loam, wood ashes, and a liberal sprinkling of bonemeal; later a good dressing of manure may be applied.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to Lord ALDENHAM, Aldenham House, Elstree, Hertfordshire.

Seed-sowing.—This work must now be given serious consideration. Although one may easily sow seeds too early, at the same time every endeavour must be made to prolong the season of the most important vegetables during as long a period as possible. Consequently, it is now necessary to make small sowings of many kinds under glass.

Onions.—It is the rule more than the exception to raise a portion, if not the whole, of the crop under glass and transfer the plants to their permanent positions in due course. This practise has many advantages over that of sowing in the open, the principal ones being the early maturation of the bulbs, and the comparative immunity such plants have to attacks of the Onion fly. The present year promises to be one of exceptional interest to Onion-growers, owing to the large inducements offered in prizes for a new variety. But whether the Onions are intended for exhibition or not, I strongly advise that the plants be raised under glass. The seed should be sown in well-drained boxes at some date from the 10th to the 15th of the present month. Only a gentle heat is required, such as that afforded by a Vinery or early Peach house, which has just been started; hard forcing at any time must be avoided.

Leeks.—These should be treated like Onions, but if extra fine specimens are required early, a small quantity of seed may be sown in 3-inch pots, and the seedlings potted on into 32's (6-inch pots) when ready.

Cucumbers.—These should be sown in a light compost singly in small 60-size pots and raised on a brisk bottom heat. Very little water will be required until active growth commences, and this should be warmed to the same temperature as that of the atmosphere of the house.

French Beans.—To maintain a regular supply of Beans, fresh sowings should be made in pots at this season every fortnight or three weeks. Pots measuring 7 or 8 inches in diameter are best. These crops should be raised in the forcing house. Plants of Ne Plus Ultra and Canadian Wonder which are in bearing should be given liquid manure at every other watering; maintain a moist atmosphere where these are growing, or red spider will be certain to cause trouble.

Cauliflowers.—Sow a small quantity of seeds of Magnum Bonum and Early Giant in boxes, and raise them in a temperature of about 50°. Any forcing varieties which should have been sown last month ought now to be ready for potting off singly into pots having a diameter of 3 inches. Varieties such as Snowball and Early Forcing answer well for forcing early, and may be kept in a gentle heat till the heads are ready for cutting.

Lettuce.—Sow both Cabbage and Cos varieties for early supplies, and if from any cause the winter supply is getting short, sow Harbinger, and prick the seedlings out when ready into boxes, putting them 3 inches apart and affording them an atmospheric temperature of about 55°. These, when quite young, may be cut in the same way as Mustard and Cress, and they then make a tender ingredient for the salad bowl.

Seakale, Rhubarb and Chicory.—Introduce these to the Mushroom house as necessity requires. Sow seeds of the small salads once each week. Make preparation for protecting Celery and other tender vegetables with suitable material.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

The resting season.—The present being the quiet season for most Orchids, particular attention should be paid to all plants that are more or less inactive. Their treatment during this period involves even more care and thought than are required during the season of growth. The term rest, so often misunderstood, does not imply a periodical shrivelling of plants owing to the withholding of water and reducing of temperature. What the plants require is gradual and natural cessation of growth, as far as outward appearance goes, for a longer or shorter period according to the habit of the different species. If all Orchids were alike in their needs, it would make the resting season a much less anxious time for the cultivator, but they are not; therefore the grower has always to be on the alert, and give to each plant the attention it needs during this state of comparative inactivity. When a number of different species and hybrids varying so much in their time and manner of resting are grown together in one house, it is impossible to arrive at a common method of treatment that will suit all alike. It becomes, however, necessary to adopt what one may term a compromise as regards temperature and atmospheric conditions, to which the plants are perforce obliged to be made to submit in the compartment at command for their cultivation. Orchids that rest naturally during our winters not only require a lower temperature, but also less moisture in the atmosphere and at the roots. Nevertheless, the materials should not be allowed to dry excessively. Independently of the necessity in the case of many species for a proper resting period to ensure their satisfactory flowering, such rest is equally requisite to ensure their future growth. Hence the obligation to provide a cooler, drier atmosphere, and to afford water to the roots only in sufficient quantities to keep leaves, pseudo-bulbs, and roots in a plump and healthy condition. All the species of Orchids that require to be kept dry at the roots during their season of rest will be able to benefit by this to an extent depending upon the condition under which they have been grown during the last and preceding seasons. If the leaves and pseudo-bulbs are well developed and properly matured or solidified, especially the evergreen species, they will be the better able to bear a lengthened period of drought without shrivelling to an extent that will injure the foliage.

Temperatures.—The atmospheric temperatures of the various departments for the present should be as follow:—**Stove** or **East Indian house:** By day, 68° to 75°; by night, 60° to 65°. **Cattleya house:** By day, 60° to 65°; by night, 55° to 60°. **Intermediate house:** By day, 58° to 62°; by night, 53° to 56°. **Cool** or **Odontoglossum house:** By day, 54° to 58°; by night, 50° to 54°. The outside weather must be considered at all times, and the higher or lower figures maintained accordingly. A few degrees lower than the lowest will not cause any injury in severe weather, such as we are experiencing here at the time of writing (January 4), whilst 10° more than the highest day reading when it can be obtained by solar heat will be beneficial.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

The warm fernery.—Adiantum cuneatum is one of the first species of Ferns to start into growth in the New Year, and it is cultivated more commonly than any other species, for the plants lend themselves to numerous decorative purposes, and are acceptable at all seasons of the year. If any of the plants are intended for exhibition, they should be prepared for repotting. All the old fronds and any younger ones that are infested with insects should be carefully removed, and the old frond-stems cut out, but upon no account cut the plants down to the surface soil, as is sometimes done simply to save labour, the necessary time must be allowed if fine specimens are desired, and to cut off all the young fronds causes a great check to the plant. If the fronds are thin or scarce after so much cleaning, place three or four small thin stakes round the sides of the pot and a piece of twisted matting round the stakes to keep the remaining fronds in an upright position; another reason for not cutting the plants back too severely is that the young fronds which appear almost directly afterwards, come up so plentifully that as a result they become very weak, tender, and crowded at a season of the year when there is very little sunshine or light; the amount of moisture essential for the well-being of the plant, therefore, causes the mass of young fronds to suffer injury from damping. The present is a good time to collect any seedling Ferns that have appeared in the pots containing other plants, as these make by far the best specimens. Adiantums do not succeed well when cut up and quartered, as they are sometimes treated for purposes of division; it is much better to throw away old plants that have grown to too large a size and pot on others that are younger. It is a good plan to have a shelf near the roof in a fernery with an inch of board on each side, just sufficient to hold that depth of ashes. This shelf can be used for accommodating Gymnogrammes of the finer varieties, as no place in a fernery suits these plants so well as a position that is close to the glass. Such a shelf proves to be a splendid seed-bed, and young plants of almost all the varieties in the house will appear from time to time. It is useful also to cut a few of the spore-bearing fronds and place them in the water used for watering the plants and for damping down the surfaces in the house; by this means the spores are distributed.

THE FLOWER GARDEN.

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

The pleasure grounds.—It is worthy of notice the number of common yet popular spring, summer, and autumn-flowering plants that remain effective even during the winter months if left in groups undisturbed over that period. Take, for example, the well-known Lunaria annua (Honesty). This plant, which flowers in such profusion from early in May through July, and has flowers of various shades of colour, produces silvery seed-pods in autumn, and now, when the seeds have fallen and the silver lining to the pods has become more fully exposed, the effect is beautiful. In the grounds here at the present time, as seen from a distance, a bed of the perennial Phlox stands out quite a conspicuous feature in a garb of nut-brown. The different types of Aster, such as Amellus, several shades lighter than the Phlox, make a good contrast. Epilobium, or the Willow herb, when confined to a limited space, is very useful for producing a good effect in winter. Good-sized clumps of Solidago present a very imposing appearance with their light plume heads. There are many ornamental grasses, a conspicuous sort being Eulalia zebrina, with its elegant arching leaves, so effective during summer and winter. Numerous plants of other species, which are usually cut down early in autumn, may with advantage to the plants, apart from the good effect they have in the grounds, be left standing until late in winter or early in spring.

Roses.—Any contemplated planting which has not been already carried out would be better postponed for the present. In preparing the ground for Roses deep cultivation should be practised and proper drainage afforded; these conditions are necessary whatever the nature of the soil may be. A fibrous root system near to the surface is most desirable in the plants; therefore do not bury rich farmyard manure too deeply, but rather make up your mind to give frequent surface dressings in subsequent seasons. We have now been covering the ground with such dressings, the work having been deferred with the object of allowing slight frosts to pulverise the surface soil. At the same time we are freely intermixing with the dressing some branches cut from Yew trees for protection. In preparing the ground for planting Roses in our somewhat cold, wet, chalky soil, a liberal addition of gravel has the effect of inducing the plants to make freer growth and better-coloured foliage.

Protection for tender plants.—Give attention to providing protection for tender subjects, such as Gunneras, which may be covered with bracken fronds, over which a wire basket pegged down affords good protection. The Pampas grasses may be matted up. Hollyhocks, Montbretias, and similar plants, when allowed to winter in the open, need top dressings of cocoa-fibre, rough peat, or coal ashes. Up to the morning of January 3, when we registered 17° of frost, Veronica Andersonii, covering a border measuring 60 feet by 3 feet, retained its summer beauty. On January 4 we had 20° of frost. The rainfall here for 1907 amounted to 27 inches.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

The gardener's opportunity.—Seeing that in the matter of park-management a wider opening is being made for gardeners, those whose thoughts and inclinations are in this direction should study to train and equip themselves for the best positions this branch of gardening can afford. A thorough all-round training in his profession is absolutely necessary to enable a man to successfully discharge the duties which are inseparable from the office of park superintendent in a large city. The more important the charge the greater is the necessity for this. Where the parks department is a separate and distinct division, the superintendent is usually responsible for all the general work, excluding, of course, the legal and financial, and other special work such as surveying and architecture, though he is required to be in attendance at the committee meetings when all matters are being discussed. He may have to design and lay out new parks and playgrounds, and carry out the work with the help of his regular staff, with such extra assistance as the case demands. He must be able to supervise and direct the various tradesmen employed, see that all work is properly executed, keep the time and cash books, make out the necessary returns and reports for the committee, and conduct the general correspondence of the department. This will bring him into contact with the town clerk and heads of the various municipal departments, with whom he should always keep on friendly terms, as there is nothing more conducive to failure than having his department at friction with another department, for all are integral parts of a huge machine which must work in harmony, otherwise there will be a waste of energy, and, upon discovery, the result is bound to be in the removal of the cause.

Method of training.—Assuming that the young gardener is perfecting himself first in the practical work of his business, he should endeavour to prove himself a skilled tradesman. He should be neat and smart in person, prompt and polite in his speech, courteous and obliging in manner; in his daily life practising the grand old maxim, "Whatever is worth doing is worth doing well." In his spare time he should learn the science of his business, and he will find plenty of books to assist him in doing this, but remembering always that these are but means whereby, by strict application, he may attain perfection. When he has served five or six years in a good private garden he might profitably spend a year or more in a good plant nursery, where he could learn more about the propagation and handling of trees and shrubs than is possible in a private garden. If he desires to further increase his knowledge of plant life, a couple of years spent in a first-class botanical garden will be of great advantage to him. Thereafter he may act as a foreman in good gardens or public parks until he is able to secure a situation as a head gardener, where he can show his ability and skill as a cultivator and manager of men, also his ability to carry out work on his own initiative. He will then have an opportunity to learn how to buy materials, keep books, and his horizon will thus be widened generally as he gains increased knowledge of men and affairs. There may be exceptional cases of gardeners being given the care of public parks without having first held responsible positions, but these cases are in the minority. The appointment of responsible officials is a matter of importance in any community, and corporations and local authorities usually make thorough investigations into the credentials of candidates for their appointments.

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APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JANUARY 14—
Royal Hort. Soc. Coms. meet. Hort. Club meet. Ann. Meet. of Scottish Hort. Assoc., Edinburgh.

WEDNESDAY, JANUARY 15—
Brixton, Streatham, and Clapham Hort. Soc. Ann. meet.

THURSDAY, JANUARY 16—
Linnean Soc. meet. Kent County Chrys. Soc. Ann. meet.

SATURDAY, JANUARY 18—
Soc. Franc. d'Hort. de Londres Annual Dinner. German Gardeners' Soc. meet.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 8 (6 P.M.): Max. 49°; Min 34°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, January* 9 (10 A.M.): Bar., 29·6, Temp. 37°; *Weather*—Fair.
PROVINCES.—*Wednesday, January* 8 (6 P.M.): Max. 43° Land's End; Min. 35°, Scotland N.E.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—36·6°.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Dutch Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Herbaceous Plants, Bulbs, and Tubers, Azaleas, &c., at 12; 1,000 Roses of sorts, at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Hardy Border Plants, Perennials, Bulbs, and Tubers, at 12; 3,600 Roses of sorts, at 1.30; Azaleas, Palms, &c., at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Imported Dendrobiums and other Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Small Holdings.

In our issue of last week we printed an exposition of the somewhat complicated provisions of the Small Holdings Act, concerning which a good deal is being spoken and written at the present time.

Some enthusiastic people see in it a sort of universal cure for all the evils resulting from rural depopulation, whilst others, less sanguine as to the reality of the benefits it is expected to secure, assume a detached attitude of philosophic doubt regarding it. Probably both classes of persons will be able to point to facts in the future which will go to support their present position. For our own part, we do not range ourselves with those who would pour cold water on the movement, but we cannot blind ourselves to the difficulties which will have to be satisfactorily met if the new order of things is to become a permanent success.

There is no doubt as to the existence of land hunger, and it is the less real because of the obvious fact that many who give expression to it most loudly are clearly destitute of all knowledge as to what is involved in its satisfaction. But it still remains to be seen just how far the class which can best afford to appease it, with advantage to themselves and to the community, are prepared to accept also the attendant risks. A small allotment, such as a labouring man can cultivate in his spare time, is one thing, but the management of what, to all intents and purposes, is a small farm or market garden is quite another. In fact, for the purposes of ownership or occupation of land under the new Act, we may divide the intending applicants into two sharply-defined groups, those who do and those who do not possess a practical knowledge of the essential matters pertaining to the cultivation of the soil. It is tolerably certain that the latter class will be a fairly large one, and it ought to be distinctly understood that persons in this position will run serious financial risk in gratifying their desire for land. The management of a farm or a market garden is by no means the simple thing it may appear to be as long as one's living is not dependent on its success; and any one who has had actual experience of these matters is only too well aware that it is a business which demands considerable knowledge of a practical sort, and that it does not by any means consist solely of the kind that can be picked up in a few weeks from books. The countryman born and bred has this great advantage over a townsman who aspires to a rural life—namely, that he has learnt from boyhood, and almost unconsciously, those practices which long experience has proved to yield good results. It is very likely that he may often be unable to give an intelligent reason for the various things he does, but rule of thumb is not the monopoly of any one trade or profession; and the results of an operation are not necessarily the worse because the causes for its performance are not fully understood.

But assuming that the new occupant or owner is already acquainted with the business of cultivation, there will presently loom up the question of markets. For if the movement is going to develop on a scale at all commensurate with the expectations of those who have interested themselves in it, the existing conditions of things in regard to this very important question of markets will inevitably have to undergo material alteration.

It is by no means the same thing for a number of people to engage severally in the cultivation of vegetables, or other produce, in quantities which are hardly more than sufficient for their own needs, as to embark on a business the success of which depends on the prices in a fluctuating market. This aspect of the matter is sufficiently serious even in the case of the larger grower, with reserve capital at his back. But the individual financial resources of a member of the class we are now considering will naturally not be large, and, when the local market is satisfied, must often prove quite inadequate to meet profitably the expenses unavoidably incurred in connection with the disposal of produce.

Some sort of co-operative organisation is obviously indicated, otherwise the profits which ought to go to the producer will tend, even more than at present, to collect in the pockets of the middleman, or, worse still, in those of the moneylender. Many suggestions as to methods of co-operation have been advocated, and some plans have been found to work well abroad. It will be necessary, however, to elaborate for ourselves the particular practice which will suit our own requirements; the problem is far too complicated to be solved by the mere importation and adoption of any existing foreign practice in its entirety, although much may be learnt by the study of methods which have proved satisfactory to our neighbours. It would be foolish, perhaps, and certainly premature, for us to advocate any particular plan of co-operation just now, but it is important that the necessity for some practical scheme should be borne in mind. The difficulty has inevitably to be faced, and upon its satisfactory solution will depend, in no small degree, the ultimate success of the movement as a whole.

It ought not to be necessary to remind any one who is contemplating embarking on the experiment of a small holding, the cultivation of which will occupy the whole, or, at any rate, the greater part of his time, and will thus render him proportionately dependent on its results, that it pays over and over again to see to it that he secures good land. It is far cheaper in the long run to take a good, if smaller, piece at a higher price or rental, than a larger one of poor quality because less money is asked for it. But although such advice is plainly in accordance with the dictates of common sense, experience unfortunately proves that it is too often ignored by those who ought to have known better. We have ourselves seen men, brought up on the land, who, after saving money, have put their small capital and their energies into a little farm of poor land, there to eat out their hearts for the rest of their lives in the struggle sometimes in vain—to make both ends meet. It is impossible to make a silk purse out of a sow's ear, and it is almost as hard to make a fair living out of a hungry soil. Such land takes all and gives little, and that grudgingly, in return for the labour spent upon it.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees of this society will take place in the Royal Horticultural Hall, Vincent Square, Westminster, on Tuesday, January 14. A lecture on "Royal Horticultural Society's Exhibitions" will be delivered at 3 o'clock by Mr. J. GREGORY. The lecture will be illustrated by lantern slides.

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, January 14, when Mr. E. A. BUNYARD will lecture on "Recent Advances in Plant Breeding," with special reference to Mendel's work.

NATIONAL SWEET PEA SOCIETY.—We have received a circular from the honorary secretary, Mr. C. H. CURTIS, relating that there will be a further trial of Sweet Peas at the University College Gardens, Reading, during 1908. The trial will be an independent one, and under the management of Mr. CHAS. FOSTER. Not fewer than 15 seeds of each variety should be sent, and they should reach Mr. CHAS. FOSTER, Assistant Director in Horticulture, University College, Reading, on or before January 14. The sender should indicate the colour section to which each variety belongs, whether it has waved or plain flowers, and whether he wishes to have it tested by the side of any standard variety. This information should be on a separate sheet of paper, and if a duplicate copy is sent to the secretary, it will be esteemed.

THE SWEET PEA ANNUAL. We are asked to state that the *Sweet Pea Annual* and schedule of prizes for 1908 will be ready for distribution on or about January 16.

BOTANICAL MAGAZINE.—The issue for January contains illustrations and descriptions of the following plants:—

PHILODENDRON × CORSINIANUM, tab. 8,172.—This is a garden hybrid raised by the firm of Messrs. MAKOY, of Liège, for which they were awarded a Certificate of Merit by the Royal Agricultural and Horticultural Society of Ghent in 1887. Its parentage is not known, but Mr. N. E. BROWN states that judging from the purple tint on the under surface of its leaves, a coloration which is unusual in the genus, it is possible that P. verrucosum, Mathieu, may have been one of its parents. The hybrid is a climbing plant of somewhat slow growth; the Kew plant which afforded material for the present figure was acquired in 1898, and is now only about 8 feet high, with a spread of about 6 feet. The rich purple-crimson colour developed on the large spathes is sufficient to make the hybrid a good garden plant. Mr. WATSON, who appends a note on the cultivation of Philodendrons, remarks that P. × Corsinianum is the only hybrid Philodendron that has been raised. Plants of this genus are very desirable subjects for clothing pillars, Palm-stems, and back-walls in tropical houses; their leaves are no less handsome than their inflorescences.

PÆONIA MLOKOSEWITSCHII, tab. 8,173.—There are three yellow-flowered Pæonies from the Caucasus, P. Wittmanniana, Stev., P. macrophylla, Lomakin, and the present species P. Mlokosewitschii. All three species have affinities with P. corallina, Retz, and Dr. STAPF appears to think it probable that they may eventually be reduced to forms of that species. P. Mlokosewitschii was collected by MLOKOSEWITSCH near Lagodekhi, in the eastern part of the central Caucasus, and the present figure has been prepared from specimens sent to Kew by Mr. W. E. GUMBLETON, Belgrove, Queenstown, who obtained the species from Mr. MAX LEICHTLIN, of Baden-Baden. Mr. WATSON describes the species as the most handsome of the yellow-flowered Pæonies, and it is as hardy under cultivation as they have proved.

VIBURNUM UTILE, tab. 8,174.—The present drawing of this species has been made from materials supplied by Messrs. JAS. VEITCH & SONS, who raised it from seeds sent home by their collector, Mr. E. H. WILSON. It was first discovered near Ichang by Mr. T. WATTERS (British Consular Service) in 1880. Mr. W. BOTTING HEMSLEY, who is responsible for the description, remarks that there are upwards of 50 species of Viburnum now recorded from China. Mr. W. J. BEAN states that this new species, as seen growing in the Coombe Wood Nursery last spring, gave the impression that it would eventually prove one of the most desirable of recent introductions from China. It promises to succeed on ordinary, well-cultivated ground, and may be increased by cuttings like the other species.

HERBERTIA AMATORUM, tab. 8,175.—Mr. T. F. CHIPP describes this South American species, seeds of which were forwarded to Kew in 1903 by Dr. C. B. CANTERA, of the Natural History Museum, Monte Video. Corms raised from these seeds flowered for the first time in a greenhouse in May, 1907. Mr. WATSON states that this is the most handsome species of the genus so far brought into cultivation. The porcelain-blue flowers are very fugitive, but the plants bloom continuously for several months. The plants require protection from frost, and succeed best in a sunny position in a frame or greenhouse.

PSEUDOLARIX FORTUNEI, Mayr, tab. 8,176.—This species was referred to by Mr. E. H. WILSON in a letter published in our issue for November 16, 1907. It is the species erroneously identified by LINDLEY in the *Gardeners' Chronicle*, 1854, with his Abies Kæmpferi of 1833. The confusion arose owing to the discovery of the species taking place many years after the name Abies Kæmpferi had already been applied to another plant, this being followed by a wrong identification of species with the latter. Mr. W. BOTTING HEMSLEY enumerates these and other particulars, and states that the late Dr. M. T. MASTERS accepted Mayr's name (*Journ. Linn. Soc.*, 1902, vol. xxvi., p. 557, and 1906, vol. xxxvii., p. 424). The tree succeeds but poorly at Kew, and it requires a large proportion of stiff loam mixed with the staple. It is a very beautiful deciduous tree, and in spring the foliage is of a delicate shade of yellowish-green; in autumn the leaves develop a rich gold colour before falling.

"JOURNAL OF THE BRITISH GARDENERS' ASSOCIATION."—The third number of this quarterly journal contains articles on "Testimonials," by A. C. BARTLETT; "A Gardener's Reflections," by G. F. TINLEY; "Is Gardening a Luxury?" by "J. W."; "Trade Unions—Masters and Men," by Mr. W. H. DIVERS; also unsigned articles on "The Status of Gardeners," "Gardeners' Agreements," "Wages, Work, and Worth," "The Ordinary Male Gardener," and other subjects. A report is given of the conference on "Examinations for Gardeners," held in the Royal Botanic Society's Gardens on September 12, also of the meetings of the B.G.A. Council, &c. The copies are 3d. each, and may be obtained from the Secretary, Talbot Villa, Talbot Road, Isleworth.

DR. PLOWRIGHT.—On January 6 the Mycologist to the Government of Ceylon, Mr. T. PETCH, B.A., B.Sc., was married at King's Lynn to Miss EDITH MARY PLOWRIGHT, the only daughter of Dr. C. B. PLOWRIGHT, whose communications on mycological matters have for many years appeared in these pages.

ANNUALS AND DIRECTORIES.—Numbers of these indispensable books find a place on an editor's table at the present season. First in importance to the gardener, and more especially the trade gardener of almost every grade, are the garden directories.

The Horticultural Directory and Year Book for 1908 in certain points is more compendious than others sent to us for review, and includes a list of county staff instructors in horticulture, with names and addresses; many garden recipes, recipients of the Victorian Medal of Honour, a descriptive list of certificated plants, &c., and Awards of Merit granted by the R.H.S. and London Horticultural societies from October 9, 1906, to September 17, 1907. An equally useful list is that of Chrysanthemums certificated by the National Chrysanthemum Society from October, 1906, to October, 1907; those of the National Sweet Pea Society on August 20, 1907; and of the National Dahlia Society and London Dahlia Union, 1907. The list of the principal fruit and flower salesmen and commission agents in London will be appreciated by growers and sellers residing in the country districts who may be desirous of bringing their productions to the notice of people in town.

The Garden Annual and Almanack, issued by Mr. W. ROBINSON, proprietor of *Gardening Illustrated*, is a compilation on similar lines to the *Horticultural Directory and Year Book*. Its contents consist in great part of an alphabetical list of nurserymen, seedsmen, and florists in the British Isles, and a select list of the leading men in these branches of trade in European countries, Germany, France, Holland, and Belgium. This list of foreign nurserymen and seedsmen might be made much more comprehensive. The list of the chief public parks and gardens increases in number with the years. In this list we find Chiswick included, notwithstanding the garden of the Royal Horticultural Society has been removed to Wisley, in Surrey. In a list of the principal horticultural societies, Mr. ED. MAWLEY is still mentioned as the secretary, but several years ago Mr. MAWLEY was succeeded by Mr. BROUSSON, and Mr. BROUSSON having recently retired, Mr. H. H. THOMAS now fills the position. A list of the new plants, fruits and vegetables certificated in the period November, 1906, to November of 1907 by the chief horticultural societies is appended towards the end of the volume, together with a variety of useful tables and postal information.

Vinton's Agricultural Almanack and Diary for 1908. This publication will appeal more to the stock breeder and farmer than to any others. The work is in entirely new and improved form, and it is increased in size. The chief feature is the inclusion of a full diary for the year, four days to the page, along with cash receipt and expenditure accounts, two pages per month, with a like space devoted to monthly breeders' tables and calendar. A review of the agricultural year and a monthly calendar of the operations of the farm are given, along with a large and complete collection of statistics, tables, &c., hitherto only available by consulting numerous publications. A useful publication, compiled to meet the requirements of landowners, farmers, estate agents, and others interested in country life and pursuits.

The Writers' and Artists' Year Book, 1908.—A directory for professional writers, artists, and photographers, and containing a list of papers and magazines, with details of articles and illustrations required; a list of American journals and magazines; lists of publishers in this country and America; press-cutting agencies; photographers who supply prints for reproduction; literary agents, &c.

The Gloucester Diary, published by the Gloucester Railway Carriage and Wagon Co., Ltd., Gloucester, contains, besides the usual calendar and almanac for 1908, brief notices of the city of Gloucester, its many royal charters, now in the custody of the town clerk; and of Berkeley Castle, the docks, and of the importance of the carrying trade of the port; the cathedral, &c. The advertisements, which take up the major portion of the publication, concern the manufactures, many and important, of the Gloucester Railway and Wagon Co.

Diary and Note Book.—Messrs. HAYWARD-TYLER & CO., LTD., 99, Queen Victoria Street, London, send us a convenient little pocket diary and note book for 1908, containing useful information on the matter of the water supply to estates, gardens, mansions, &c.

Webster's Foresters' Diary and Pocket Book.—This convenient diary and pocket book, prepared by Mr. A. D. WEBSTER, contains a vast amount of information useful to foresters and gardeners, and is already well known by a large number of readers who annually look forward to the publication of each new edition. An enumeration of the prices for contract work, a list of foresters in Britain, trees for various kinds of soil, tables for measurement of timber, and hints on most details of forestry work, with [illegible] articles on such subjects as "Afforesting Waste Lands," "Forest Law," &c., are but some of its contents. It is published by WHITAKER RIDER & SON, LTD., at the price of 2s. 6d.

ROYAL METEOROLOGICAL SOCIETY.—At the annual general meeting to be held at 7.45 p.m. on January 15, the presentation of the Symons Gold Medal will be made to M. LEON TEISSERENC DE BORT, and an address will be delivered on "Map Studies of Rainfall" by Dr. H. R. MILL, president.

THE NICE AND MARITIME ALPS SOCIETY OF PRACTICAL HORTICULTURE will hold a horticultural show on April 2-5, under the patronage of the Prince of Monaco, the Minister of Agriculture, and others. Intending exhibitors should address Mr. A. BERRY, the president of the society, at 1, Avenue de la Gare, Nice, before February 15.

MESSRS. VEITCH'S EXHIBIT OF FRUIT.—Owing to a printer's error, we omitted to state in the last issue that the excellent exhibit of Apples and Pears shown by Messrs. JAMES VEITCH & SONS at the last meeting of the Royal Horticultural Society was awarded a Gold Medal

AGAVES AND SOIL DENUDATION.—Much trouble is caused in the South African veldt by the various agencies that tend to erode the surface of the ground, such as burning, excessive trampling, torrents, &c. The evil is being successfully combated, according to Dr. NOBBS, writing in *The Agricultural Journal of the Cape of Good Hope*, by planting the American "Aloe" (Agave) on the affected lands. Lines of these plants form effective barriers to the denuding effects of torrential rains, and, by catching the sediment as it washes down, the line of Agaves in the course of a few years becomes a terrace. In addition to the use just mentioned, a shelter is provided for other plants which spring up and form an additional mass of vegetation, whilst the young succulent leaves of the Agave afford a supply of palatable food during the dry season. The use of vegetation in arresting denudation is well known all over the world. Much of the barrenness that now forms so strongly marked a character of the higher valleys in certain Alpine regions of Europe is directly traceable to the carelessness or stupidity of the inhabitants, who destroyed the trees and scrub. By the removal of the barrier of vegetation, the mountain torrents have stripped the rock of its covering of earth, and desolation reigns in many a stony glen to-day where formerly the ground was covered by a vegetation of Pine and other trees.

MANOR HOUSE GARDENS, BASINGSTOKE.

(See Supplementary Illustration.)

THE residence of John Mares, Esq., is pleasantly situated on the south side of the busy town of Basingstoke, which is noted for the manufacture of agricultural implements. The gardens attached to Manor House are not extensive, but are kept remarkably well, and possess much interest. If Mr. Mares has a leaning to any particular phase of gardening it is the cultivation of Roses. The garden contains a remarkable collection planted in various methods and situations.

The Rose garden, which forms the subject of the supplementary illustration, is mainly composed of dwarf plants of Tea, H.T., and H.P. varieties. The soil is loam over chalk, and it suits Rose admirably; careful attention to occasional re-planting, together with the employment of a sufficient quantity of manure, have enabled remarkable results to be obtained.

Mr. Mares wishes to grow only the best varieties, therefore he is continually revising and adding to his collection.

Within the last three years the newer type of Rambling Roses, of which there are now so many charming varieties, has been planted in considerable numbers. A handsome pergola constructed of Larch timber in an artistic manner has been built, and this leads from the lawns to the kitchen garden in a southerly direction, and the situation—north and south—is an ideal one for the Roses. This has been planted with the best varieties, and the careful attention bestowed on the plants by the gardener, Mr. Neale, has brought about very satisfactory results. Such varieties as Lady Gay, Hiawatha, Mrs. F. W. Flight, the newer forms of Rosa Wichuraiana, as well as such varieties as Dorothy Perkins, Felicite-Perpetue, Mme. Abel Carrière, and Leuchstern have given much pleasure.

Considerable additions have been made during the present season. Standard Wichuraianas on the lawns, and many "pole" Roses have been added, as well as groups of such varieties as Richmond, General Schablikine, General Nabonnand, Cheshunt Scarlet, Mme. Abel Chatenay, Mme. Ravary, Gustave Regis, Lady Battersea, and Prince de Bulgarie.

Alpine plants are cultivated in considerable quantities, and a recently-constructed rockery by Mr. E. Ladhams, Shirley, Southampton, affords much scope for this style of gardening. Considering the short time that has elapsed, considerable growth has been made by the plants.

Herbaceous plants are given considerable space in two long borders flanking a gravel path leading to the Rose garden. Flowering shrubs are an interesting feature.

The glass department is but small. A lean-to Peach house, with the trees planted crosswise in the house, was a great success under that method of training. *A. Wanderer.*

FOREIGN CORRESPONDENCE.

JAPAN.

THE following paragraphs are extracts from the *Japan Times*, copies of which have just reached us, and are interesting as showing that the editor of that paper believed that the bulbs exported from Japan were consumed in Europe as food

EXPORT OF LILY BULBS

The export of Lily bulb as edible food is fast increasing. According to the returns of the Department of Agriculture and Commerce the total exported during last year reached 500,000 yen in value. The crop this season is expected to show some increase compared with the previous year. An increase of about 10 per cent. is expected in Kagoshima where the Lilies are cultivated in great abundance. *October 30.*

TO THE EDITOR OF THE *Japan Times*

SIR,—I note in your to-day's issue a small paragraph in reference to the export of Lily bulbs and beg to correct that article in so far as Lily bulbs exported from Japan to Europe and America are not used as a food product, but are simply purchased and cultivated on account of their beautiful blossoms.

A great many of them, especially Lilium longiflorum (Jap. Teppo yuri), are forced in greenhouses and are sold principally during the Christmas and Easter holidays. The other varieties like Lilium auratum (Jap. Yama yuri), the different varieties of Lilium speciosum (Jap. Kanoko), are planted in large masses in our gardens and parks, and are in such demand that hardly any well-arranged garden is without them.

The demand for these Lilies has increased from year to year and has been an excellent source of revenue to the Japanese farmers.

It is, however, necessary that the farmers should pay more careful attention to the culture of these bulbs and endeavour to eliminate some undesirable and diseased types, which they deliver mixed with the good types and which cause great dissatisfaction amongst growers abroad, and which will surely injure this trade in the future, which is now so promising to Japanese agriculture

Yours faithfully,

ALFRED UNGER (L. Boehmer & Co.).

Yokohama, October 30, 1907.

USEFUL SPECIES OF ACANTHACEÆ.

THERE are many members of the natural order Acanthaceæ that, blooming in the winter season, are especially valuable for the purpose of decorating the stove and warm greenhouse. Nearly all of them are natives of tropical regions; therefore, a structure in which a minimum atmospheric temperature of 50° or thereabouts is maintained is necessary for their cultivation. Most of them are of easy propagation and culture, their one drawback, viewed from the present-day standard, being that the individual blooms are somewhat fugacious in character; hence they are not of much value in a cut state.

As decorative plants, however, most of them are capable of maintaining a succession of flowers from one head or cluster for a considerable time.

Perhaps the most useful of all are the Jacobinias, in which genus are now included several plants that were at one time known by other names, and as such are often seen in gardens. Chief among the Jacobinias is J. chrysostephana, introduced from Mexico nearly 40 years ago, but it is only within the last decade or so that its merits have been fully recognised. This has been principally brought about by the splendid flowering examples that have been exhibited in recent years during the late autumn and early winter. With its crowded heads of golden orange-coloured flowers, this species is totally unlike any other occupant of our greenhouses.

Jacobinia Ghiesbrechtiana, under the generic name of Sericographis, has long been a favourite subject for flowering in winter. The tubular-shaped flowers of this species are scarlet, and, instead of being borne in closely-packed heads, are disposed in loose panicles. J. magnifica may be often seen under the name of Justicia carnea; it has flowers of some shade of pink. Of this species there are several forms, some of which were at one time regarded as distinct species. J. pauciflora is the proper name for that old favourite, Libonia floribunda. The pretty yellow and red tubular-shaped flowers of this species are borne throughout the winter months.

APHELANDRAS.

The brightly-coloured blossoms of some of the Aphelandras will be borne during the winter, but they are by no means limited to this particular season of the year. Perhaps the most regular in this respect is the oldest species of all, viz., A. tetragona, far better known as A. cristata. In this plant the flowers are arranged in a terminal decussate spike. They are rich scarlet, and make a goodly show when at their best, which, as a rule, is in late autumn and early winter. Other showy species are A. aurantiaca, A. Chamissoniana, A. ritens, and A. pumila, but, as above stated, they are not strictly winter-blooming plants.

JUSTICIAS.

Justicia calycotricha, syn. J. flavicoma, is almost the sole survivor of the numerous plants that were at one time included in the genus Justicia. It is, however, so pretty that it deserves extended cultivation. Like many of its allies, it branches but sparingly, and the flowers are borne in terminal heads. They are canary-yellow in colour, while the segments of the calyx are long and hair-like, thus giving to a head of bloom a distinct and fluffy appearance. It has also been known as Schauerta calycotricha.

PERISTROPHE SPECIOSA.

This species is a native of the Himalayas, and one of the hardiest of the winter-flowering species. The flowers are purple, and they are scattered over the entire plant which is of a branching habit. It is also known as Justicia speciosa.

DÆDALACANTHUS.

The members of this genus were formerly known as Eranthemums, and as such are still grown in most gardens. The most beautiful is Dædalacanthus nervosus, syn. Eranthemum pulchellum, whose blossoms are of a delightful shade of rich blue. Its Gentian-like colour gains it the admiration of all.

D. macrophyllus has curved flowers about 1½ inches long and of a purplish mauve tint, the lower lobes being of a deeper hue. The flowers are disposed in a loose, terminal, pyramidal-shaped, branching raceme. As a rule, this species does not bloom till after Christmas.

D. parvus, which was given an Award of Merit by the Royal Horticultural Society a few years ago under the name of D. Wattii, nearly resembles D. nervosus, but it is distinct therefrom. It grows little more than 1 foot in height, and the flowers are borne in short spikes, and individually are about 1 inch across, and of a deep bluish-purple with a slight metallic shade.

THE RUELLIAS

deserve especial mention, more particularly R. macrantha (see Fig. 16), whose flowers are larger than those of any other member of the order with which I am acquainted. It forms a somewhat upright-growing plant, while the solitary flowers are produced from the axils of nearly every leaf towards the upper part. They are trumpet-shaped, slightly curved, from 4 to 5 inches long, and about 3 inches across the expanded mouth. The colour is a kind of rosy purple veined with a deeper tint. This Ruellia will flower throughout the winter. There are other species, but this is much the best. W.

VEGETABLES.

EARLY SEED POTATOS.

THE early Potato crop in gardens is such an important one that no stone should be left unturned to ensure its success, and upon this success there is no question that the proper preparation of the tubers has a decided bearing. The man who selects his seed tubers at the time that the season's crop is lifted undoubtedly scores a valuable point, as he is able to give the sets special attention during the winter months, but there is much which may be done now to make up for neglect at that period.

In the first place, the available stock should be looked over, and as many sets of seed size as are likely to be wanted put on one side. These sets, in the case of early Potatos, should average about 2 ozs. in weight; they may be a little less, but should on no account be too small. I have seen early Potato sets not larger than marbles, while a tuber as large as a pigeon's egg is by many experienced gardeners considered a good size. Many scores of carefully conducted experiments have, however, proved the 2-oz. set to be the ideal size, and where the stock will permit of a choice being made, I would always advise the selection of this size.

If the stock of Potatos has been kept cool, there is little fear of shoots showing at present, but before they do show, say, the last week in January or the first week in February, the tubers should be set on end in boxes in a light and cool place. If the "eye" system of a Potato is closely examined, it will be seen that each eye consists of several buds, generally three, arranged with the most prominent bud in the centre and two smaller buds, one on either side. Now this central bud, because of its strength, invariably starts into growth first, and, also because of its strength, pushes a shoot which is much stronger than those pushed by its companions, should they ever have the chance of pushing any. This, however, they rarely have unless something goes wrong with the main shoot; they are merely nature's provisions against failure or sterility.

As priority and extra strength are the attributes bestowed by nature upon the central bud in each eye, so in like manner she bestows them upon the shoots which emanate from the large or rose end of a tuber; in other words, the shoots which issue from the large end of the tuber are invariably the earliest and [illegible]. From these facts we learn two valuable lessons: firstly, that the first shoots from [illegible] are the best, and, secondly, that the first shoots pushed from the rose or large end of a Potato are the very best that the Potato can give.

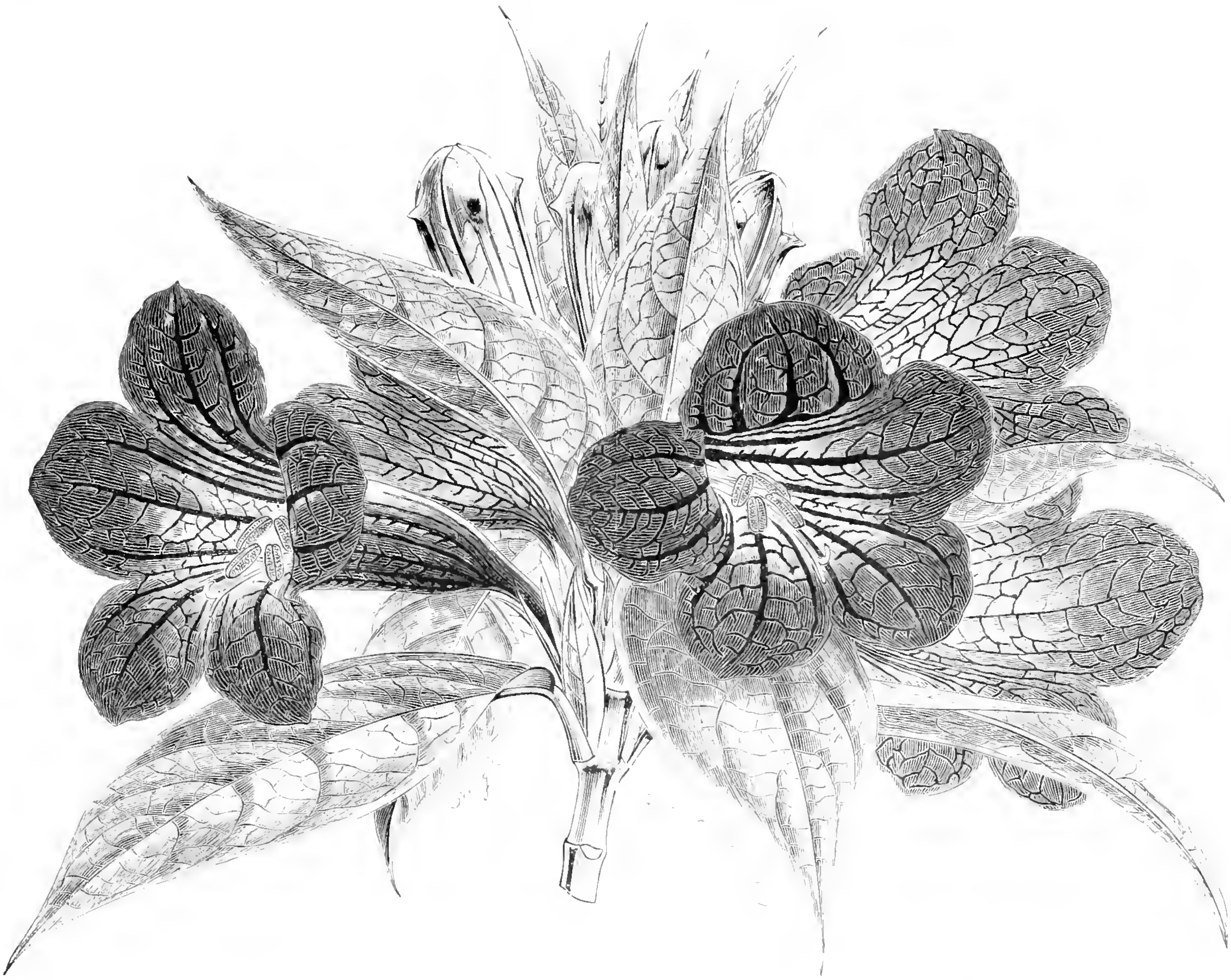


FIG. 16.—RUELLIA MACRANTHA: COLOUR OF FLOWERS ROSY-PURPLE, VEINED WITH A DEEPER TINT.

Armed with this knowledge, we at once see the explanation of the practice followed in all good gardens of placing Potatos on end to sprout. It may be, probably is, a rule of thumb method with some practitioners, but all the same they have seen the good results attending the system and are perfectly justified in following it.

As already indicated, the end of January or the beginning of February is the best time for up-ending tubers wanted for planting early in March, but, in view of what has been written, I hope that readers will realise that rather than wait for any given date, the sets should be placed on end directly the least sign of growth appears. Some lucky people are able to purchase special Potato sprouting boxes, or have them made, and there is no question that these are a capital investment, for not only do they admirably answer the purpose of sprouting Potatos, but they are extremely useful in a garden in many other ways. Ordinary cutting boxes make good substitutes, while I have seen many a fine lot of tubers started in chocolate boxes obtained from the grocers.

The tubers should, as before stated, be placed with the large end up, and they should be so packed that they just touch each other. They should then have a place in a light shed, where they will be safe from frost. Some growers make a practice of covering the sets over with sacks or other cloths, giving as a reason that the shoots push more quickly in the dark; this may probably be the case, but it is a practice with which I, personally, do not agree, for shoots pushed in the dark must be comparatively tender, and, moreover, are blanched and drawn.

As the shoots develop, their number should be strictly limited, as many shoots mean many and small tubers in the resulting crop; this fact may be taken advantage of by those whose taste runs in the direction of small Potatos. The majority, however, like to have Potatos of good size, and they will, therefore, be well advised to rub off all shoots but two, or at the most three, at the rose end of the tubers. Every care should be taken of these, and at planting time they should be somewhere about ½ inch long, or a little longer, sturdy, semi-tuberlike in shape, and of a deep green or purple colour. *E. J. C.*

OUT-OF-DOORS VINE BORDERS.

VINES which are growing exclusively in outside borders, and are to be subjected to forcing in January or later, should receive attention at their roots. A quantity of stable manure and tree-leaves in about equal parts should be well mixed together and be turned several times to allow the rank heat and steam to pass off. This heap is best if prepared some weeks in advance. The surface of the vine border should be lightly disturbed with a digging fork to the depth of 3 or 4 inches, or down to the surface roots. The soil thus loosened should be removed and be replaced with a like thickness of prepared compost, consisting of four parts good loam, one part of old lime rubble or wood ashes, and one of horse droppings, the whole being mixed well together before being laid on the border. Cover this new soil with a layer 3 or 4 inches in thickness of well-decomposed stable manure, and then put on the mixture of manure and leaves to a depth of 6 inches at the point where the vines enter the house, sloping down to a depth of 24 inches in front. Thus treated there need be no apprehension of the heat imparted by the mass of fermenting materials injuriously affecting the vine roots, as the fermenting materials will simply heat the surface of the border to a depth of 3 or 4 inches. This extra heat will attract the vine roots in an upward direction and into the prepared soil and top-dressing of manure. A sufficient quantity of the fermenting dung and leaves should be kept in reserve so as to be able to add a further layer after a month or six weeks has elapsed, and this should be repeated up to the end of February or the middle of March. Early in May rather more than half of this covering should be removed from the vine border; the effect of the then increased power of the sun's rays on the border will prove beneficial to the vines. When the Grapes are quite ripe the remaining portion of the fermenting materials should be removed down to within a couple of inches of the top-dressing of short manure that was first laid.

The weight and quality of crop of Grapes resulting from vines growing in outside borders treated as described above will compensate more than fourfold for the trouble and expense incurred in doing the work. *H. W. Ward.*

LAW NOTE.

THE RAILWAY FIRES ACT, 1905.

ON January 1 of the present year there came into force an Act which to some extent redresses a grievance under which occupiers of land adjoining railways have laboured ever since the introduction of railway travelling. Until the beginning of this year such persons were unable to obtain compensation from a Railway Company for any kind of damage caused to their property by sparks escaping from engines unless they could prove that this occurred through some "negligence" on the part of the Company, a task which was practically impossible. This hardship is to some extent redressed by the Railway Fires Act, 1905, which came into force on January 1, 1908, and which in effect provides that where damage is caused to agricultural land or to agricultural crops by fire arising from sparks or cinders emitted from any locomotive engine used on a Railway the Company shall be liable to pay compensation whether the Company has been guilty of negligence or not. The Act, however, only applies to claims amounting to £100 or under, so that if damage for more than that amount is claimed the difficulty in the way of enforcing compensation from the Railway Company still remains.

It will be noticed that this Act is expressly stated to apply to agricultural land or crops "Agricultural land" for this purpose includes arable and meadow land and ground used for pastoral purposes or for *market or nursery gardens*, and for plantations, woods and orchards, and also includes any fences on such land, but it does not include any moorland or buildings.

The words "agricultural crops" include any crops on agricultural land, whether they are actually growing at the time of the fire, or whether they have already been taken up from the land, *provided* they are not already led or stacked. The term "railway" includes any light railway, and also any tramway worked by steam power.

As Railway Companies are liable to pay compensation in the above cases it has been considered only fair to give them the right to take all steps necessary for salvage as speedily as possible. Accordingly the Railway Company can enter on the land where the conflagration occurs, or on any adjoining land, and do everything reasonably necessary for the purpose of extinguishing or arresting the spread of the fire.

The Railway Company may also cut down and clear away any undergrowth and take any other reasonable precautions necessary for the purpose of preventing or diminishing the risk of fire there, but they may not cut down or injure any trees, bushes or shrubs (apart from undergrowth), without the consent of the owner.

Persons who wish to claim compensation under this Act must be careful to see that written notice of their claim is sent to the Railway Company within seven days after the damage is sustained, and also that particulars in writing of the actual damage sustained are sent to the Company within 14 days after the occurrence.

It will be seen that the relief granted by the new Act is still only partial, for not only does it limit the damage that can be claimed to £100, but its provisions do not apply at all to the case of damage to *buildings*, so that if a house is burnt down by sparks from a railway engine the owner will still be without any redress unless he is in a position to prove that the Railway Company was guilty of negligence. *H. Morgan Veitch.*

FRUIT REGISTER.

THE YELLOW-FRUITED MIRABELLE PLUM.

M.'s note, printed in the issue of the *Gardeners' Chronicle* for December 28 last, p. 452, in reference to Mirabelle Jaune Plum, has reminded me of the fact that I only know of one garden in the United Kingdom (Longford Castle) in which this Plum was, and perhaps is still, grown. It was introduced to Longford Castle gardens very many years ago from France by a French lady. There were two fan-trained trees growing respectively against walls having east and west aspects. They bore heavy crops of rather small, roundish oval, yellow-skinned fruits, which were covered with a light bloom and were suffused with small, reddish spots next the sun. The flesh was Apricot colour when fully ripe, sweet, and rich. The tree is not a robust grower. The shoots are downy, numerous, short-jointed, and weak, rather than strong, in growth. The leaves are small, ovate, slightly cordate at the base, and downy above on young shoots. At Longford the fruit was appreciated for the making of compôtes and preserves in August and September. I do not think that the Mirabelle Jaune Plum is included in any of the British nurserymen's catalogues. *H. W. Ward.*

SWAN'S EGG AND KNIGHT'S MONARCH PEARS.

YOUR correspondent *F. M.*, seeking some explanation as to the cause of Swan's Egg and Knight's Monarch Pears being so seldom cultivated is, I venture to say, answered in the last paragraph of his letter. "In cool summers in the north, even on a south wall, the fruits of this variety do not ripen in the fruit-room." My own observation confirms this; the first week in December there were about 20 pots (56 lb. each, nett) offered by auction in the Hereford fruit market. These realised 2s. 8d per pot, or 5s. 6d. per cwt. Several buyers standing round made some remarks, to the effect that their experience of the variety in question (Swan's Egg) was that it frequently rotted on their hands before ripening. At the finish of the day's sale, these pots of Pears were again put up at the request of the purchaser, the highest bid then being 1s. 11d. per pot; they were withdrawn. The week following these pots of Swan's Egg Pears were again in the market, and realised 1s. 8d. per pot, or a loss of 1s. per pot to the original buyer. Evidently buyers will not have Swan's Egg Pear unless the price is low enough to cover the risk of failure to ripen. The moral therefore is: do not plant Swan's Egg unless you have a particularly favourable situation suited to the variety. *Dawson Smith, Grosmont Place, Hereford.*

HOME CORRESPONDENCE.

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

PREVENTION OF CORRUPTION ACT, 1906.—In commenting upon Sir Edward Fry's very lucid pronouncement upon this subject in your issue of the 21st ult., *Enlightened* (page 452) states—what is apparently perfectly correct—that nurserymen and gardeners seem to think that this Act was specially aimed at the gardening trade, and as a natural consequence feel aggrieved over it. That they should look upon the Act in this light is certainly an indication of their child-like innocence of what has been going on for years past in other branches of trade. Did they possess the slightest knowledge of the corruption which has been so rampant, they would, instead of miscalling the Act, bless it, and hope that it would meet with the success it deserves in assisting to purify business dealings in all branches of commerce in this country. To use a colloquial phrase, nurserymen

are "not in it" with many other tradesmen who stoop to all kinds of acts merely for the purposes of extending their businesses. While it must be admitted that some nursery firms have undoubtedly been guilty of adopting very reprehensible methods of getting orders, the majority have followed a more or less uniform system which—without examining its ethics too closely—from long custom had been regarded as a perfectly legitimate way of doing business until the passing of the Corrupt Practices Act. However much this custom of paying discount may be regarded as a seeking for favours to come, it had at least the saving grace of appearing to be an acknowledgment for favours that were past and finished with. Notwithstanding the new law, certain tradesmen entirely outside the gardening business are still not merely showing their appreciation of past favours, but deliberately making presents to interested parties before any business transactions have taken place. In this matter I am not speaking from mere hearsay, but from actual experience. At the present moment I am testing a certain material, which shall be nameless, from several different manufacturers, but up till now have not quite decided which will suit my purpose best. A few days before Christmas I received the following letter from one of the firms in London:—"Dear Sir,—At the request of our Mr. ——, we have much pleasure in advising you that we have forwarded to you some birds, which we trust you will accept, together with our best wishes for Christmas and the New Year." The same morning upon which I received this letter a brace of pheasants came to hand. A month ago this firm had not so much as heard of me, or I of them, and yet so benevolently inclined are they that they cannot let this festive season pass without trying in a small way to help me enjoy it! The birds were returned as soon as received, and a letter sent to the firm, expressing my thanks for the generous feelings which had prompted them in sending the gift, but pointing out the fact that their representative had made a very grave error in asking them to act in the manner they had. In all my dealings with nurserymen, which now goes over a period of 17 years, I have never once had occasion to suspect a single firm of trying to gain my goodwill in any other way than by supplying me with the very best stuff at the most reasonable charges. *Interested.*

———Sir Edward Fry's article under the above heading is interesting, as far as it deals with the meaning of the Act, but there are phrases which tend to make the gardener appear a bit of a scoundrel. For instance, he says the great tendency of such a gift is to tempt the gardener to neglect his duty in several ways—his duty to point out any defects in the goods supplied to his master: to give, if required, independent advice as to the seedsman to be employed; to order or advise the ordering of no more seeds or plants than the garden requires; these gifts have a tendency to make the gardener blind to the defects in the goods, to prefer the bribing seedsman over the honest one, to order or advise the ordering of more goods than are required. If Sir Edward has experienced this sort of treatment at the hands of gardeners, I am sorry for him; at the same time, I very much doubt whether a gardener interested in his profession—for such it is—would be gulled as easily as he makes out. Consider the gardener who exhibits vegetables, for instance; it would be no advantage to him to have defective seeds or anything else that is inferior, and he would certainly advise his employer to deal with the best firm. Should he need advice, as far as ordering seeds or other goods, there is nothing to prevent the employer seeing the order before it is sent and altering it should he think fit. I have presented a seed order after making it out, and been asked often to include something I had not put down. I maintain that a gardener interested in his work will and does bestow a care on seeds he has to deal with, with the intention of getting the best possible results for his labour. *E. Young.*

———At this season of the year those who can afford it give presents of money and goods to railway officials, but according to Sir Edward Fry's letter in the issue of the *Gardeners' Chronicle* for December 21, these gratuities are illegal, for they are given in order that special attention shall be given to their goods and chattels, as well as my lord or my lady's persons when they appear at the station, whilst those who cannot afford to give these bribes may struggle with their baggage and open the railway carriage door for themselves, &c. I have not been much burdened with discount or gratuities—an average of 10s. a year would cover it, and that and much more has been given as gratuities to others for small services rendered which were of as much benefit to my employer as to myself; at any rate I thought so. I am informed that counsel's opinion has been taken, and that to give and accept a Christmas or New Year's gift is not a crime, and whilst my employer gives these annual gratuities to railway company's servants, I am prepared to receive all that is offered me, and I trust donors will be more liberal in the future. I know of some gardeners whose employers have told them to get all they can, for they (the employers) would not get it. May I ask you, Mr. Editor, or Sir Edward Fry, if the prizes offered by seedsmen for vegetables at shows grown from seeds supplied by them are bribes? *Clean Bill.*

——— I have read the article in your issue of December 21 by Sir Edward Fry. The thing that particularly sticks in my throat is the implication—several times repeated—that gardeners are in the habit of ordering more seeds or plants than are necessary for the gardens under their charge, in order to get a larger discount. If I give my own experiences with regard to this matter, it will no doubt be typical of that of the main body of present-day gardeners. In my first place, where two members of the family were keen lovers of their garden, I obtained my seeds from which firm I chose, but neither then nor since have I been able to spend money in the free-and-easy way suggested by Sir Edward Fry, nor have I met anyone who has. In the second place, my employer also took a great interest in his garden, and was besides a shareholder in two stores where garden seeds were sold. He handed me the catalogues of both, with the remark that he would like me to try a few seeds from one of them. I was quite ready to do so, and finally divided my order between the two of them and the cheaper of the seedsmen with whom I had previously dealt, although, be it noted, I was aware of the fact that there would be no bribe from either of the said stores. I have invariably spent my evenings, for over a week each year, studying several different lists and trying my best to keep the accounts down, for my own credit, instead of, as Sir Edward suggests, ordering unnecessary seeds to obtain larger discounts. The said discount from firms of repute has, I believe, been 1s. per pound, and to hint that any gardener worthy of the name is, or has been, in the habit of ordering enough extra seeds, &c., to make the extra discount worth having, is both absurd and ridiculous. I was rather amused at Sir Edward Fry's concern as to whether his gardener neglected some part of his duties to give extra care to the bribers' seeds. Surely the remedy for this is too simple and obvious to require pointing out. Let me assure Sir Edward Fry that in these modern times, when nearly every employer or some member of his family takes an intelligent interest in their gardens, the gardener has to take special care of anything he is requested to, no matter from where it has come, or make way for someone who will do so. We gardeners are generally much more interested in having something good for our employers, their visitors, and our own gardening friends to look at, to worry ourselves much about any paltry discount, and I cannot see that the withholding of the same has made any difference in the prices charged to our employers. *Outsider.*

——— I don't think any gardener would bestow more care on one nurseryman's seeds than those of another; he has to grow them to his own satisfaction and to supply his employer with vegetables and flowers. Some employers are never satisfied and don't know how to treat their servants properly, while some help and encourage them. There are people who seem to think there is only one side to a hedge. It is a pleasure for servants to live with good and kind employers. Some of these like their servants to have bonuses, knowing they are not robbing them. The employer pays the same price now for things as he did before the Act was passed, so where is the difference, and how does it come about that anyone should imagine that they have got to pay more for things if their gardeners, keepers, and stewards receive discounts? No gardener or farmer is going to sow inferior seeds if he knows it, and it would be absurd for him to order seeds or plants that are not wanted, but it would be just as absurd if his employer were to refuse what is requisite. In any profession in the world is there anybody who knows better what is really wanted than the man who has been brought up in it? How can engineer tell shop walker, or clerk tell carpenter, butler tell gardener, or coachman tell electrician what to do? But some know everything or nothing properly. *Trusted and Interested.*

VEGETABLE TRIALS AT WISLEY.—Now that the Royal Horticultural Society has brought the gardens at Wisley to a proper condition for successfully cultivating green crops, much valuable information might be obtained in the selection of the best varieties of vegetables suitable for every purpose. Formerly these trials, although conducted with great care, have not been so completely satisfactory as could be wished. Take, for instance, the trials of culinary Peas. Various seedsmen send many varieties; they are duly numbered and entered in the trial book. In April a fine day is selected for sowing them, this date is recorded, a note is taken of the opening of the first flowers, and of the date of their being fit to gather. A sub-committee of experts is appointed to examine and report on 100 or more varieties. In discharging their arduous duties these gentlemen usually describe the cropping qualities of each variety as light, medium, heavy, abundant, or prodigious—terms more or less vague. To some extent the same remark may be applied to their opinions about flavour. From the very nature of things it is impossible for this sub-committee to see all the varieties at their best in one day. Surely it would be better if the earliest varieties were got together and sown, say, early in February, or as soon as the ground is in a favourable condition. The hardiness or fitness to stand cold spring winds would then be thoroughly tested. The dwarf kinds should be grown together and the round seeded by themselves. The Maincrop Marrowfats might very well be sown in April and the so-called late varieties in May, giving all a fair chance of being seen and reported upon at their best. Instead of describing the cropping qualities as light, medium, or heavy it would be more accurate if on, say, 6 feet of each row all the pods were gathered when at their best, and carefully weighed at the same time, noting the length of haulm and distance allowed from row to row. It would add to the interest of these trials if the senders would fully describe on the packets of their samples the height of growth, season of fitness for use, &c. The same remarks are applicable to the trials of other kinds of vegetables such as Cabbages, Cauliflowers, Carrots, Turnips, Potatos, &c. The early varieties ought to be all grown by themselves, and examined in their season of perfection. *J. McI.*

THE TERM "HERBACEOUS" (see p. 438, vol. xliii.).—What is the correct or botanical meaning of this term? It is well, in the face of recent discussion, to have it authoritatively settled. When last year the term was applied by me in a report solely to those plants which have perennial roots but purely annual stems, I was taken to task by an esteemed botanist for not being correct. The term, he said, applied to all plants having soft or herb-like stems, yet with perennial roots. Thus he would include in the term "Herbaceous" Pansies, Pinks, Carnations, Penstemons, and many other similar plants that are evergreen yet not woody or shrubby. The term admittedly has always in ordinary acceptance been applied to the section of hardy plants first named. In Johnson's *Gardeners' Dictionary* the description is: "Those perennials which lose their stems annually whilst the roots continue alive in the earth." That seems to be a practical description. Still, if it be incorrect, by botanical means let us have it determined by the highest authority once and for all. *A. D.*

THE FLORIST'S ART.—While agreeing with most of what *F. M.* says on p. 439, I cannot help but think that he would defeat the end he has in view by inaugurating shows for exhibiting the different classes of florists' work of "art" without first making a most drastic change in the way that schedules are at present drawn up and the way prizes are awarded by the judges. First and foremost, I would place dinner-tables. The methods of arrangement that one sees at shows answers no doubt to what is required by the schedule, but what gardener would dare to put the same arrangement upon the table of his employer? I think schedules should ask for a table arranged and decorated for dinner, instead of (as at present) a decorated dinner-table with a space limit. The decorations that one sees are generally arranged either too high above the table, with nothing beneath, or vice versâ. Another fault is that most competitors cover the whole space allotted to them without leaving the spaces required for such necessaries to a dinner-table as candlesticks, dessert dishes, &c. I would suggest that there should be a prize offered for the best-decorated dinner-table, laid as for dinner, to be judged (first) for general effect as would be seen upon entering the room, (second) the arrangement of flowers, lightness, etc., (third) the effect obtained when seated at the table. The effect obtained from this view should have great bearing upon the awarding of the prizes, as the guests that are to dine have to be in a sitting position for a period varying from one to two hours. The effect from this view should be a soft, light maze of flowers and foliage, but arranged in such a manner as not to obstruct the view or to hinder conversation across the table. Further, these tables should be judged for colour by the daylight effect only (at shows, of course), or else ask especially for a colour suitable for view in artificial light. Groups should be asked for in distinct colours, or arranged for a certain purpose, viz., for drawing-room, conservatory, or winter-garden. Tables of pot plants should be shown as they would be arranged for stages in the conservatory. Gardeners as a class have taste; if not, I say they have no right to be gardeners. I do think they need opportunities to study effect at shows, as for the most part they are rather given to copying too much. They need to be more original in their designs. Let the committees of societies change the wording of their schedules, give competitors a free hand to exercise their taste and discretion, and we shall hear less of lack of taste and of the monotony of horticultural exhibitions. *Geo. W. Young, Rampton Manor, Lincoln.*

——In *F. M.'s* interesting note on the arrangement of cut flowers printed in the *Gardeners' Chronicle* for December 21, p. 439, mention is made of the lack of good taste that is often displayed by gardeners, &c., in the arranging of cut flowers for effect, and, with a view to effecting an improvement in this direction, suggests that important and influential horticultural societies should offer cash prizes, &c., for various kinds of floral arrangements. This is a good suggestion on the part of *F. M.* However, I may be permitted to state that the Shropshire Horticultural Society has for several years past offered such prizes, and the exhibits annually staged in competition for the Society's liberal prizes are most artistically arranged, and afford educational hints and examples of the florist's art to the numerous professional and amateur horticulturists and other visitors who attend the Shrewsbury shows in their thousands, and make mental notes of what they see, subsequently turning them to good account. Referring to the Shropshire Horticultural Society's schedule of prizes for the August show of 1907, I find that in 15 classes for its many kinds of floral arrangements the Society offered £75. Two of the 15 classes are for the arrangement of cut flowers only for dinner-table. And, again, in addition to the above-mentioned number of classes, prizes to the value of £9 15s. are offered in the three classes provided for collections of fruit, which collections, it is stipulated, must be decorated with flowering or foliage plants (in pots not exceeding 5 inches in diameter), also cut flowers or foliage in glass or ware are allowed, at the exhibitor's discretion; the floral decorations of the said collections being judged separately, are awarded prizes independently of the merits of the individual collections of fruit, for which prizes totalling £89 are offered. Thus, it will be seen that £84 10s. is offered in 18 classes for floral arrangements, personal and household adornment. *H. W. W.*

——*F. M.*, on p. 439, wrote rather lightly of the efforts of gardeners as decorators. Were not the groups of plants exhibited at the last great Shrewsbury show arranged with skill—the result produced by the individual exhibitors excellent? These exhibits were surely something to be proud of, and were not merely arranged to "occupy the floor." That many unsuccessful attempts are made by exhibitors at the various exhibitions throughout the country is true. These failures are, however, not confined to the decorator, but may be witnessed in other classes throughout the exhibitions. Respecting the decorations of the dinner-table and the apartments in a private house, the wishes and taste of the employer must be studied in the first instance. Tastes differ as to what may, or may not, constitute a good table decoration. *C. R., Herts.*

——I quite agree with *F. M.* (p. 439, December 21) that good material is often wasted through want of taste in using it. The great mistake that is usually made is that too much variety is crowded together. We often see this at the Royal Horticultural Society's meetings. Yet we also see some neat and well-arranged exhibits. The late Mr. John Wills set a good example when he started the fashion of grouping special subjects together, and relieving with a good groundwork of green and a background of tall, feathery Palms and other foliage; yet very few who attempt to imitate him produce as good an effect. I have been privileged to see some of the work done by the leading florists, and there is usually some decided feature which strikes the eye as artistic, being very different from the ordinary flower-show groups or arrangements. Gardeners as a rule have little practice in the decorative art, and when they do have a special arrangement to carry out, they usually have but little time to do it in. I believe that there are many gardeners who have good taste and would be able to display it if they only had more practice and the requisite time to carry out the work properly. At flower shows one never knows what the judges' opinions may be, and when the first prize usually goes to similar arrangements as those seen for at least the past 30 years, and any new or novel design is passed, it does not encourage exhibitors to introduce novelty. With cut flowers it is different: we see great alterations; but when a gardener, who has rather stiff fingers, attempts to make up a bouquet for some special occasion, he is at a disadvantage compared with a florist or his assistants, who are always in practice. The worst exhibits that I have noted in competitions during last season have been the so-called shower-bouquets. It is surprising that the Royal Horticultural Society do not give a little more encouragement to exhibitors of floral arrangements. If one of the annexes in the hall could occasionally be devoted to the purpose, it would be of interest to most of those who attend the meetings. *A. H.*

APPROACHING MARRIAGE OF MR. W. M. TREVOR LAWRENCE.—The public announcement of the marriage next month of the eldest son of the President of the Royal Horticultural Society, Sir Trevor Lawrence, Bart., V.M.H., with the youngest daughter of the late Brigadier-General Eyre Crabbe, C.B., a distinguished officer of the Guards, and formerly a near neighbour to Burford Lodge, recalls the interesting coincidence that the grandmothers of both of the young people were in their days amongst the best known exhibitors of plants. The name of Mrs. Lawrence, of Ealing Park, can never be omitted in any history of the progress of horticulture in England, and her exhibits at the once famous and popular, as well as fashionable, flower shows in the old Chiswick Gardens, remain deeply impressed on the minds of all old enough to remember them. Though doubtless then little dreamt of, how very fitting has it been that her son, so ardent an horticulturist also, should become not merely a President of the Royal Horticultural Society, but especially the President, under whose control the society has risen to its present great height of prosperity and popularity. The other lady was, a Mrs. Spooner, an equally enthusiastic plant grower and exhibitor in the forties of the past century at the shows of the old Southampton and Winchester Horticultural Societies. At that day, Mrs. Spooner's chief competitors—for flower shows in those days mostly comprised pot plants, and very limited then as compared with to-day was the range of selection for such purposes—were the Rev. Canon Beadon, of North Stoneham Rectory, the Rev. Mr. Rashleigh, of Bursledon, and the Rev. the Warden of Winchester College. In my youthful days I knew Mrs. Spooner, as she very often paid visits to the Hill Nursery of Bridgewater, Page & Son, near Southampton, where my father was foreman, and later in life when she married Colonel Eyre Crabbe, a gentleman of high position in the town, they jointly built that beautiful suburban residence, Glen Eyre, Bassett, situate in a once wild dell. This, under Mrs. Crabbe's instructions, aided as she was by her faithful gardener, Mr. Stewart, who still lives on the place, a nonogenarian, became a really beautiful garden, in which, perhaps, more freely than in any other such garden in the kingdom, Camellias grew and flourished in the open as single shrubs in beds and on walls, with great luxuriance and beauty. A devoted gardener was Mrs. Crabbe, and one never tired of talking about the art or of describing the charms of her gardens. The late Brigadier-General Crabbe was her only son of that name. He chose a military career, and before his early death had risen to a distinguished position in the British Army. *D.*

VARIETY OF PEA.—I had a Pea growing on the side of a Celery trench, and it looked like a Sweet Pea when it was in bloom. The flowers were blue, with light-blue wings, but when the seed pods formed they were larger than those of American Wonder. Could any reader tell me if he has had any Peas like it? The Peas have a nice flavour, and the seeds are quite distinct, having a small streak on them. I showed the plants to several gardeners and they told me they had not seen one like it before. *J. Sheehan.* [You should have sent some for our inspection.—ED.]

JUDGING VEGETABLES AT EXHIBITIONS.—There is nothing in the present system of vegetable judging at shows to deter young growers from competing, except it be the young grower who thinks he knows better than experienced judges and therefore grumbles when his exhibits do not win prizes. It does not matter also whether vegetables in collections are judged by points or without pointing. If the judges be capable men, it is the best that will win. When show committees require that collections be judged by points, and fix the scale of points for each dish or kind, the judges have to do as instructed. When such is the case, the points are published on the respective collections. Nothing exhibited in the show arouses such interest as does the reading of these lists, and they become subjects of discussion and criticism. How points as maximums should be granted to various kinds of vegetables may be subject to criticism, but once settled by show committees, they remain for the time being, laws to both judges and competitors. *D.*

THE HEATING OF GLASSHOUSES.—As a practical grower I thoroughly endorse Mr. Alexander's statements (see p. 5) as regards the heating of Orchid houses. What a lot of worry and arguments it would save growers if only they were all in the happy position of Mr. Alexander and had sufficient boiler power! The old theory of calculating the pipe heating surface is laughed at by present-day engineers. To have what Orchid growers require—that is, heat without hot, dry, pipe heat—one must have more boiler power than is generally provided. A test in the up-to-date method is: take the pipe surface heat at a point of about 3 or 4 yards away from the boiler. If the return pipe surface heat is about 30 or 40 degrees Fahr. below the flow pipe surface heat, then you can rest assured your boiler is sufficient, but if there is any greater difference between the flow and return heat, then there is too much piping for the boiler to properly heat. The expert figures are as follow:—Flow surface heat at the said distance, 160° Fahr.; return, 120° to 130° Fahr. Growers have had a good time during this spell of cold weather to test the power of their boilers

thoroughly. Most of our leading trade firms and private growers find it more beneficial and far more economical to have slightly more boiler power than is required. Happy is the grower who can rely on his power to maintain steady temperatures! *J. Pitman, manager to S. Edgar & Co., Orchid Growers, South Woodford.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 31.—*Present:* Mr. A. E. Bowles, M.A., F.L.S., F.E.S. (in the chair); Messrs. A. Worsley, C. H. Hooper, J. W. Odell, and F. J. Chittenden, hon. secretary.

Cankered (?) Rose roots.—A report was received from Mr. GUSSOW concerning the Rose roots shown at the last meeting by Mr. JENKINS, as follows: "I find the trouble with the Rose roots is not canker, and cannot be transferred from one plant to another. It is generally accepted that canker is caused (a) by frost; (b) by fungus; (c) by any other mechanical injury which fungi have infested. In the present case there is no fungus present, and if the root in the attacked plant (when repotting) is cut away, no injury will be done to the plant. The growth is nothing but a continuous formation of adventitious roots, especially where the root is bent or injured. New callus is formed, and from that callus rootlets are everywhere sent out, but as the plant depends on the root system of the Manetti no use is made of these roots, and they develop but little.

Grease bands and winter moth.—Messrs. W. Voss & Co., of Millwall, showed specimens of grease bands taken from trees on Mr. Michell's fruit farm, Enfield Highway, covered with both male and female specimens of winter moth (cheimatobia brumata). The bands had been placed on the trees in the middle of November, and no other insects but these had been caught with the exception of two or three weevils. The chairman remarked that the time of appearance of this moth varied greatly with the seasons, frequently being found as early as the beginning of October. Grease banding to be thoroughly efficient should be commenced then, and the bands should be kept sticky until near the end of March in order to capture other species of a similar nature.

Seed and soil inoculation.—Mr. CHITTENDEN gave some account of his experiments with seed and soil inoculation of leguminous crops.

Double Anemone blanda.—Rev. Canon ELLACOMBE sent buds of this beautiful form, which has occurred in his garden, remarking that it is the first Anemone to show buds this season.

LINNEAN SOCIETY.

DECEMBER 19.—A general meeting was held on the above date, Prof. W. A. Herdman, F.R.S. (President), in the chair. Dr. G. Archdall Reid read his paper, communicated by Sir Ray Lankester, K.C.B., F.R.S., F.L.S. "On Mendelism and Sex," of which the following is an abstract:—

Species are adaptional forms which have arisen under the operation of Natural Selection. The evidence is plain that, speaking generally, variability is controlled and regulated by Natural Selection; therefore variability itself is, in a real sense, an adaptation. Nearly all variations are spontaneous, as is proved by a mass of evidence afforded by human beings: Natural Selection builds solely on spontaneous variations. When selection ceases as regards any character, that character tends to retrogress; therefore retrogressive variations tend to predominate over progressive variations. This tendency to retrogression is very useful, and has played an immense part in adapting species to their environments. The author then touched upon blended and alternative inheritance; fluctuations and mutations; differences between Artificial and Natural Selection; and differences in the mode of reproduction of sexual and unsexual characters. The mode of reproduction of mutation tends to resemble that of sexual characters; when conjugation occurs there is an appearance of alternative inheritance as regards both sexual characters and mutations, but it is an appearance only. The evidence is plain that there is only alternative reproduction combined with latency of one alternative and patency of the other, and actual blending between the patent character of one individual and the latent character of the other, therefore blending is universal. This tendency owing to the predominance and prepotency of retrogressive characters tends to cause retrogression on cessation of selections, and this is the function of sex.

The next General Meeting will be held on Thursday, January 16, at 8 p.m.

PAPERS.

1. Mr. Arthur W. Sutton, F.L.S.—Brassica crosses, illustrated by lantern-slides.

2. The same.—Notes on Wild Types of Tuber-bearing Solanums, illustrated by lantern-slides.

3. Mr. S. T. Dunn, F.L.S.—Revision of the genus Illigera, Blume.

4. Mr. Bunzo Hayata.—New Coniferæ of Formosa.

EXHIBITION.

Mr. A. P. Young, F.L.S.—Lantern-slides showing stages of soil-denudation consequent upon removal of forests.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 19.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, C. Parker, A. Warburton, H. H. Smith, P. Smith, Z. A. Ward, F. Sander, A. J. Keeling, J. Walmsley, E. Shill, J. Cypher, F. Ashton, P. Weathers (hon. sec.).

Fifteen good groups of plants were shown at this meeting, which was undoubtedly the best ever held by the society.

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), staged a charming group of Cypripediums, all the plants were beautifully fresh and well grown. Cypripedium × Thalia var. "Mrs. Francis Wellesley" was awarded a First Class Certificate—it is a beautiful hybrid; C. × Thalia var. gigantea received a similar award; C. × Hitchensiæ var. Eva, C. × Mons. de Curte (Rann Lea variety), C. × Archimedes (Rann Lea variety), C. × Rita, C. × Evelyn, and C. × Actæus var. Cecil, received Awards of Merit. A Silver-gilt Medal was awarded to the group.

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherby), made a nice display of some well-grown Odontoglossums, Lælio-Cattleyas, &c., which relieved somewhat the sameness of the numerous Cypripedium groups. Odontoglossum crispum "Rose Queen," O. × amabile var. Queen of Spain, and O. × Jasper (O. × amabile × O. crispum) were voted Awards of Merit. A Silver Medal was awarded to the group.

Messrs. CYPHER & SONS, Cheltenham, received a Bronze Medal for a small, but interesting group of plants, chiefly varieties and hybrids of Cypripedium.

J. LEEMANN, Esq., Heaton Mersey (gr. Mr. Smith), gained a Silver Medal for a miscellaneous group of plants, some good Odontoglossums, hybrid Lælias and Cypripediums being noticed. Cypripedium insigne var. Apollo was given an Award of Merit.

Messrs. KEELING & SONS, Westgate Hill, Bradford, was awarded a Bronze Medal for a good group.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), obtained a Silver Medal for a group of Cypripediums. Awards of Merit were given to Cypripedium insigne giganteum, Heaton variety, C. × Evelyn Ames, Craven's variety, and C. × Cravenianum: a First-Class Certificate was awarded to C. × Archimedes, "Craven's variety."

Mr. W. BOLTON, Orchid grower, Warrington, made a magnificent display with 25 beautiful specimens of Cypripedium insigne var. Sanderæ, each plant carrying 8 or 10 flowers. (Silver Medal.)

Messrs. H. LOW & Co., Enfield, staged a good group, in which were Cattleyas, various hybrids, and some good Cypripediums. (Silver Medal.)

Messrs. SANDER & SONS, St. Albans, sent an interesting group of Cypripediums.

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. to Mr. Herdman), staged an extensive group of Cypripediums. C. × beechense var. superbum, a good form, was awarded a First Class Certificate. Awards of Merit were voted to C. Prospero var. majus, C. × Leeanum var. Balla, C. × Herdmani, C. × Thomas Mills, and C. × Hera var. Madelinei. A Silver Medal was awarded for the group.

Mr. J. ROBSON, Altrincham, received an Award of Merit for Cypripedium × Hitchensiæ var. magnificum. He also exhibited Odontoglossum crispum var. Mrs. A. Warburton.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), staged a very fine group of Cypripediums in the "Sander Cup" competition. In addition to confirming a large number of previous awards the following new ones were given:—Awards of Merit to C. × Actæus, Warburton's var., C. × Hitchensiæ var. Baroness, C. × Adam, C. × Marjorie var., C. insigne alba var. Warburtonianum, C. × Bertie, C. × Harold, C. insigne var. "Etendard." (Silver-Gilt Medal for group.)

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), received a First-Class Certificate for Cypripedium × Fulshawense, West Point variety, and an Award of Merit for C. × Annie Carter.

Mr. W. SHACKLETON, Bradford, received an Award of Merit for Odontoglossum crispum var. Mont Blanc, a fine white variety.

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes), received a Silver Medal for a miscellaneous group, and a Bronze Medal for Cypripediums. Lælia anceps Amesiana, Temple's variety, and Cypripedium × Mons. de Curte, Hey House variety, received Awards of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), received Awards of Merit for Lælio-Cattleya × The Hon. Mrs. Astor and Cypripedium × William Hughes.

Mr. C. PARKER, Preston, received an Award of Merit for Cypripedium × Fernbankense, a pretty hybrid.

Messrs. HEATH & SON, Cheltenham, were awarded a Silver Medal for a good group of Cypripediums. *P. H.*

BRITISH GARDENERS' ASSOCIATION.

DECEMBER 31.—At the meeting of the executive council on the above date, nine new members were elected, making 1,128 since the establishment of the association. The Secretary reported that the last issue of the *B.G.A. Journal* had been posted to every member both at home and abroad. The design for members' certificate was adopted, and it is hoped it will be ready for issue in a few weeks. The report of the Richmond and District branch for the past year was received, and will be printed in the next issue of the *Journal*. Gardeners are reminded that the B.G.A. is confined to qualified gardeners only, and that new members may join at any time, provided their credentials are up to the required standard. Forms can be obtained from the Secretary, B.G.A., Talbot Villa, Isleworth, W. *J. H.*

Obituary.

ARNOLD MOSS.—We regret to hear of the death on January 1 of Mr. Arnold Moss, head of the firm of Messrs. Jacob Wrench & Sons until the business was sold in 1905. Since that time the late Mr. Moss and his son, Mr. E. M. Moss, have traded as A. & E. Moss at 46, King William Street, London. Deceased, who was 63 years of age, will be remembered by many of our readers as having helped the gardening charities on every possible opportunity. He was a frequent speaker at the festival dinners of both the Gardeners' Royal Benevolent Institution and Royal Gardeners' Orphan Fund.

GARDENING APPOINTMENTS.

Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in an envelope bearing the words "Gardeners' Orphan Fund," it will be thankfully received, and an acknowledgment made in these columns.]

Mr. GEO. D. LILLEY, previously Gardener to the late Lady GEORGIANA SHAKERLEY, at Moreton Hall, Congleton, Cheshire, and recently with Messrs. DOBBIE & Co., Ltd., as Gardener to Mrs. PARR-YATES, Ince Blundell Hall.

Mr. C. GILES, late Gardener to E. A. HOSKYNS, Esq., Norton House, Lacock, Wilts, as Gardener to G. LEIGHTHURST, Esq., Latimer Road, Headington, Oxford.

Mr. A. W. TAYLOR, for the past 5½ years Foreman at St. Audries, Bridgwater, as Gardener to Sir WALTER J. TREVELYAN, at Nettlecombe Court, Taunton.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending January 8.

A very sudden change in the temperature.—The recent cold period lasted from December 26 until January 6, or for 12 days. During the greater part of that time the day temperatures were about as low as would be seasonable in the coldest part of the night. Only the last four nights were in any way exceptionally cold, but on the coldest of these the exposed thermometer registered 25° of frost. A remarkably sudden change in temperature then took place. For instance, the lowest reading in the thermometer screen on the night of the 5th was 15°, and in the warmest part of the following day the temperature was 49°—a difference of 34°—the greatest range in temperature in any one day that I have yet recorded here in January. Owing to the absence of snow at the time, the temperature of the ground fell to 37° at 2 feet deep, and to 34° at 1 foot deep. After a dry period lasting a fortnight there occurred during the night of the 7th inst. an exceptionally heavy fall of rain and snow. The aggregate depth of this fall (including rain and melted snow) was 1¼ inch, which is the heaviest fall in any night or day since June, 1906. On the morning of the 8th the ground was covered with snow to the average depth of 2½ inches. This is the first time the ground has been completely covered with snow this winter. The sun shone on an average for 2 hours 47 minutes a day, which is nearly twice the average duration at this period of the year. The winds were, as a rule, moderately high, and for the first five days came from some point between north and east. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by as much as eight per cent. The last Rose bloom of the year was destroyed by frost on the 5th, which is 23 days later than the average date of its destruction in the previous 22 years, and 10 days later than last year.

MONTH OF DECEMBER.

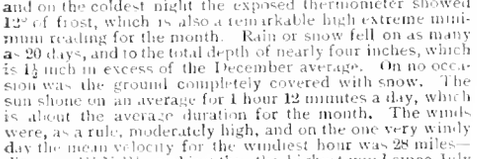
Remarkably warm and very wet.—This was the warmest December for seven years. In fact, during the first 25 days there did not occur a single cold day and only a few cold nights. The highest temperature registered in the thermometer screen was 56°, the highest in December for 19 years, and on the coldest night the exposed thermometer showed 12° of frost, which is also a remarkable high extreme minimum reading for the month. Rain or snow fell on as many as 20 days, and to the total depth of nearly four inches, which is 1½ inch in excess of the December average. On no occasion was the ground completely covered with snow. The sun shone on an average for 1 hour 12 minutes a day, which is about the average duration for the month. The winds were, as a rule, moderately high, and on the one very windy day the mean velocity for the windiest hour was 28 miles—direction W.N.W., making this the highest wind since July 1901, or for seven years. The average amount of moisture in the air at 3 o'clock in the afternoon was 2 per cent. below a seasonable quantity for that hour.

THE YEAR, 1907.

Rather cold and dry with an average amount of sunshine. The mean temperature of the past year was slightly below the average for the previous 22 years. The last four months of the year were all moderately warm, but in the previous eight months there occurred only one unusually warm month, and that was March. On no occasion did the temperature in the thermometer screen rise above 78°—making this the lowest extreme maximum since 1890, or for 17 years. The lowest reading registered by the thermometer exposed on the lawn was 14°, which is the highest extreme minimum temperature since 1898, or for nine years. The total rainfall fell short of the average for the previous 51 years by ¾ inch. The only months in which the fall of rain exceeded the average were April, May, October, and December. Taking the year as a whole there was an average record of sunshine. The sunniest months of the year were March and September, these being brighter than any of the summer months.

OUR UNDERGROUND WATER SUPPLY.

The total rainfall for the last three months has exceeded the average for the same period in the previous 51 years by 2¾ inches, which is equivalent to an excess of 61,300 gallons on each acre in this district. Last year at the same time there was an excess of 90,430 gallons per acre. *E. M., Berkhamsted, January 8, 1908.*



ADDRESS: *J. N.* The correct address is Royal Horticultural Hall, Vincent Square, Westminster, London, S.W.

APHIDES: *F. W. J.* We cannot recommend any better insecticides for use against the "Snowy fly" or "White fly of Tomatos" than vaporising with a nicotine preparation, or fumigating with hydrocyanic acid gas.

BOTANIC GARDENS: *S., Thirlhall.* If you refer in your letter to the Royal Botanic Gardens at Kew it will not be possible for you to obtain employment there until you have acquired more experience. You had better get a place in a good private garden, and when approaching 20 years of age apply to the Curator, Royal Gardens, Kew, for a form of application for employment.

COUNTRY GENTLEMEN'S ASSOCIATION: *Enquirer.* Apply to the secretary of this association at 21 & 25, St James Street, London, S.W.

GARDENER'S NOTICE: *W. E. B.* It is customary for head gardeners to receive one month's notice before terminating employment.—*A. J.* It is doubtful if you could successfully claim more than a week's notice, assuming you have no agreement on this matter.

GAS LIME: *W. T. G.* (1) The best time to apply gas lime is in the autumn or early winter, so that it may get well incorporated with the soil before the time for sowing crops in the spring. Two tons per acre may with safety be applied. Gas lime should always be exposed to the air for about a month before digging in, in order that the sulphuretted hydrogen gas may escape, as this gas is injurious to plant life. The action of the air on the gas lime is to convert the original substance into sulphate of lime (gypsum). (2) Light soils are generally deficient in organic matter or humus, consequently there is but little material for the gas lime to work upon. Gas lime, like ordinary quick lime, combines with substances already in the soil and renders them soluble and useable by plants. Lime is not a plant-food in itself, yet it is a most important element of plant-food, because it converts the insoluble and otherwise unusable food into an assimilable form that crops can take up. (3) Ordinary quick lime or ground burnt lime acts in the same way as gas lime; they all tend to check the acidity of the soil; they assist in forming soluble phosphates and nitrates; they encourage a low, compact growth and increased fruitfulness in plants.

MANURE FOR SWEET PEAS: *Amersham.* (1) A manure to be recommended for Sweet Peas is one consisting of three parts of super-phosphate and two parts of bone meal mixed together, sown at the rate of 6 ozs. per square yard, and dug in a month previous to sowing the seed. If the soil is poor in humus matter, a small dressing of good stable manure may be dug in previous to the application of the artificials. The dung should be dug in deeply. (2) Horse-hoof clippings are a valuable source of nitrogen, as they contain from 14 to 15 per cent. of that element. When added to the soil, they very gradually decompose, and thus form a slowly acting and lasting manure. They are extremely useful for digging into a vine border; they can with advantage be used in potting up Pelargoniums, Carnations, Chrysanthemums, Tomatos, &c. Use about half-a-pound of the clippings to 1 cwt. of soil.

LINNEAN SOCIETY *J. L.* If you wish to become a Fellow of this Society, you should address an application for particulars to the Secretary, Burlington House, Piccadilly, London, W.

MEALY BUG ON VINES: *E. G. R. & A. H.* After scraping off the loose bark that would afford hiding places for this or any other pest, the canes may be dressed with the following mixture. Take one part coal tar and six parts clay; dry the clay and powder it so that it may be passed through a ¼ in sieve. Work the tar and clay thoroughly together, adding sufficient boiling water to make the mixture of the consistency of paint. The "paint" should be smeared over the canes, filling all the crevices, but avoiding coating the buds themselves. Keep the mixture well stirred during the entire process of application. Another and stronger dressing, which is not recommended for use on the same plants year after year, is that known as the caustic wash, which is composed as follows: Caustic soda (70 per cent.), 1 lb.; potassium carbonate (80 per cent.), 1 lb; soft soap, 10 ozs.; water, 10 gallons. The soda and potash should be dissolved in water, and the soap, having previously been dissolved in hot water, added to the solution, afterwards making up the quantity to 10 gallons. The dressing recommended by Mr. Coomber in his Calendar on "Fruits under Glass," on p. 7 in the last issue, may also be safely applied for the extermination of mealy bug. You should read the weekly Calendars regularly.

NARCISSUS NEAR PINE TREES: *J. Moore.* Whether or not Narcissus will prove permanently successful "in grass or borders on which the needles of Pine trees are constantly falling" will largely depend upon the number of the trees and the amount or density of the shade imparted by them. The bulbs will also be affected by the dryness or wetness of the soil in which they are growing. Generally, however, where the soil is favourable to the development of the bulbs, and sufficient air and light reaches the plants during their season of growth, the bulbs succeed well. Instances occur to us where the bulbs planted years ago in "rides" and "drives" through a wood, many acres of which are of the Corsican Pine, are eminently successful, and they grow well and flower freely. In such circumstances the soil should be moist clay. It is another matter altogether where the bulbs have been planted near to large trees growing in light and over-drained soil. If your soil is cool in summer, and of good depth, you have not much to fear. The growth and flowering of the plants in the coming spring will be your best guide. You give us no idea of the length of time the bulbs have been planted or what measure of success has in the past been attained.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *Warner.* Apple Malster.—*W. E. W.* Apple White Westling.

PLANTS: *J. E.* 1, Pteris cretica cristata; 2, P. serrulata; 3, Davallia Mooreana.—*L. G. P.* Ornithogalum lacteum. It is quite possible that it came from South Africa in the manner you describe.—*E. C.* Ornithogalum lacteum.—*A. T.* 1, Oncidium barbatum; 2, Oncidium pubes; 3, Stelis micrantha; 4, Ada aurantiaca; 5, Odontoglossum Lindleyanum; 6, Odontoglossum Adrianæ.—*R. S. H.* 1, Pteris tremula; 2, Pteris hastata; 3, Selaginella Wildenovii; 4, Helxine Solierolii.

SULPHATE: *W. F.* Chemicals used in photography are as a rule not to be recommended as plant-foods as some of them are decidedly injurious, the exception being in the case of ammonium chloride which contains the same amount of nitrogen as ammonium sulphate, namely, 21½ per cent., but the cost of ammonium chloride prevents it being used as manure. The price is from 20s. to 24s. per cwt wholesale. We cannot recommend particular firms who are wholesale sellers of manures. The present wholesale price of nitrate of soda is 11s. 6d per cwt; basic slag 3s. per cwt.; ground lime 1s. 6d. per cwt. Sulphate of soda is not to be recommended as a manure for general use, most soils contain sufficient of this element. Sulphate of potash is much to be preferred, the cost is 10s. per cwt. Manurial applications suitable to heavy soils will depend upon the crops to be grown. For flowering plants, superphosphate, basic slag, lime and bone-meal from 3 to 5 cwts. per acre of either may be used, to be dug in during winter or early spring. For vegetables, superphosphate 4 cwt., and ground lime 1 cwt. per acre, mixed together and dug in before planting, or 6 cwt. basic slag may be used. Nitrate of soda 2 cwts. per acre may be sown when the crops are able to take it up, about March. For lawns on heavy soil use superphosphate 3 cwt. and ground lime 1 cwt per acre, to be sown in early spring, and 1 cwt sulphate of ammonia per acre in March. Basic slag encourages too much white clover to make it valuable for lawns. 4 cwts. of manure per acre is equivalent to 2¾ lb. per square rod or perch and 1½ oz. per square yard.

COMMUNICATIONS RECEIVED.—H. & Son—W. S. (Photograph)—F. D.—T. W.—E. J. C.—J. O'B. R. H. M.—E. F. I.—K., Yokohama—J. V., Haarlem—C. L.—A. C.—W.—Subscriber—R. D., Cape Town—Taplow—J. W. B., Australia—T. F.—G. D. R.—J. B. A.—F. L.—A. H. A.—G. P.—F. S.—H., Parr—A. H. H. Y., Chepstow—Yorkshire Gardener—J. Morison—W. T.—S. A.—S. B. M.—J. J. W.—W. A. C.—T. Lewis—G. W.—H. J. W.—G. M. C.—G. W.—H. J. W.—G. Forrest (Photograph)—W. B.

View in the Rose-garden at Manor House, near Basingstoke.

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CONTENTS.

ILLUSTRATIONS.

SPARTINA TOWNSENDII.

GIVING evidence some time ago before the Royal Commission on Land Erosion, Lord Montagu of Beaulieu called attention to the rapid spreading of a grass on the mudbanks of the Hampshire coast. According to him, it was accidentally introduced from the Argentine not many years ago and locally known as Rice Grass or Sea Rice. It was a rapid grower, overrunning mudbanks which had been hitherto bare and exposed, solidifying and raising them. The area covered by the grass was estimated at 6,000 to 8,000 acres. The matter was submitted to the Director of the Royal Botanical Gardens at Kew,* and subsequently I was invited to investigate the subject from the scientific point of view. Having during the last few months paid a number of visits to various points on the Hampshire coast and in the Isle of Wight to study the question in the field, I propose to give here a preliminary sketch of the history of the grass and the present extension of its area, adding at the same time a short technical paragraph for those who wish to make themselves familiar with the grass and the allied species which occur along with it.

The grass which Lord Montagu had in view is Spartina Townsendii, a member of

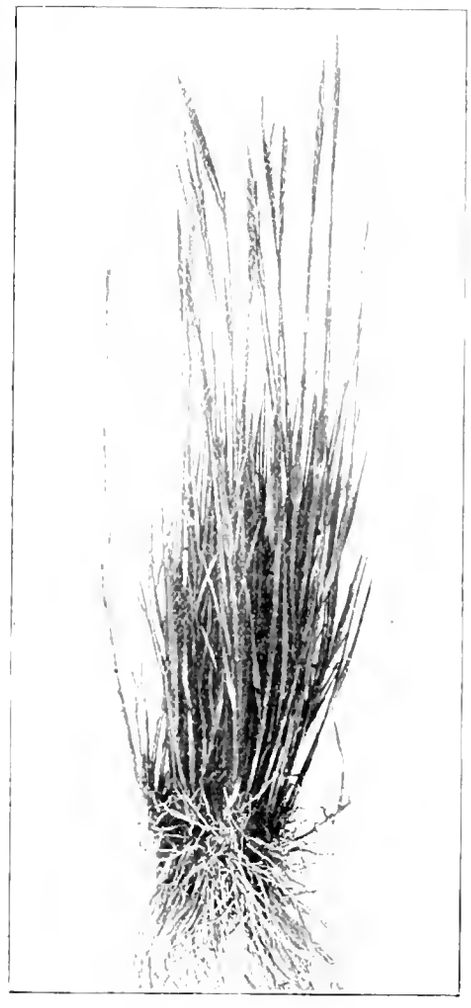


FIG. 17.—SPARTINA STRICTA
⅓ natural size.

a genus numbering about 18 species, mostly natives of America. With few exceptions, they inhabit sea marshes and muddy foreshores, under favourable conditions covering hundreds and even thousands of acres. Four species are known to occur in Europe (see map, fig. 20). Two, S. juncea and S. alterniflora, were introduced from the Atlantic coast of America, probably during the first half of the last century. S. juncea is confined to the western basin of the Mediterranean.

The other, S. alterniflora, was discovered by Loiseleur in the estuary of the River Adour near Bayonne in 1803, and then in 1829 by Borrer in the Itchen River near Southampton. A very complete account of it as it appeared there in 1830 was given by Brom. eld.† It has since then spread to some distance north of Northam Bridge in the Itchen River and to the Southampton Water as far as the Titchfield River on the eastern, and from Hythe to Redbridge on the western bank and from there to Millbrook. In France the grass has extended its area over a coast line of about 25 miles from Capbreton (Landes) to the estuary of the Bidassoa River.

Of the three remaining species, one, S. stricta (fig. 18) has been known for a long time (since 1629), and is beyond doubt truly indigenous in Europe. It is found in England along the east coast from southern Lincolnshire to the Thames and on the south coast from Chichester to the Solent. On the Continent it occurs along the Atlantic coast from the estuary of the Scheldt to near Gibraltar, and in a detached area at the head of the Adriatic. A continuation of the Atlantic area is found on the coast of Morocco from Tangier to Mogador. The other two species are S. Neyrautii and S. Townsendii. S. Neyrautii was discovered by Neyraut near Hendaye in the estuary of the Bidassoa River about 15 years ago, and was described by Foucaud (1894), who suggested that it was a hybrid between S. alterniflora and S. stricta, among which it is found growing.

S. Townsendii (fig. 18, see also map, fig. 19) was first recorded by the brothers H. and J. Groves in 1870 from Hythe in the Southampton Water; but we have evidence that it existed there as early as 1870. According to the brothers Groves, it was already in the 'seventies rather common on both sides of Hythe Pier. This for years remained the only station. In 1883 it

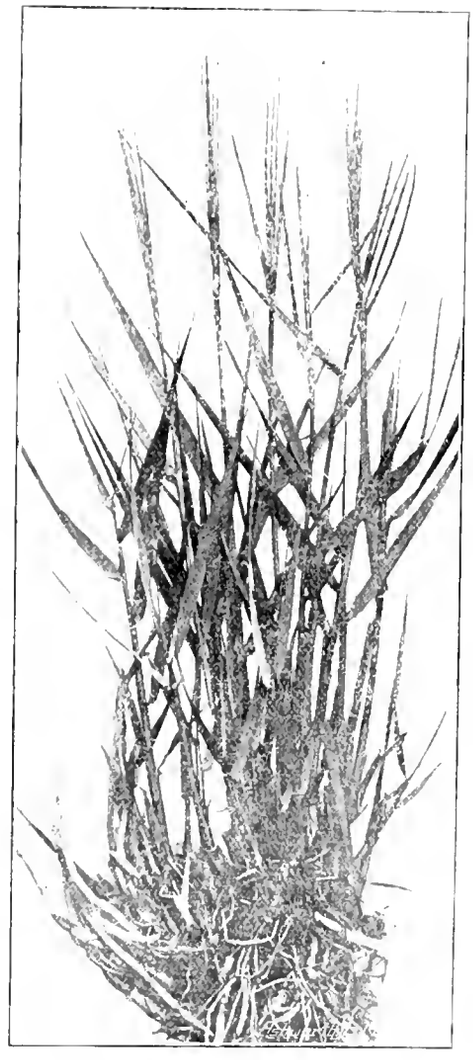


FIG. 18.—SPARTINA TOWNSENDII.
⅓ natural size.

had not yet travelled beyond Crockmore Head (two miles north of Hythe). In the Isle of Wight it was observed in 1893 (Yarmouth) and 1895 (Medina River); but nearly all

* See the article on "Mudbinding Grasses" in *Kew Bulletin*, 1907, No. 5, pp. 190-197.

† Bromfield in Hooker's *Companion to the Botanical Magazine*, Vol. 1, pp. 254-263, partly reprinted in *Kew Bulletin*, l.c.

other first records date from 1900 or after. To what extent it has spread during the last seven or eight years can be seen from the accompanying map. The area thus conquered by the aggressive newcomer extends at present over a coast line the extreme points of which are over 50 miles distant. It would be tedious to trace the advance in detail; a few instances may suffice. In 1893 Linton found "several strong patches" of it near Yarmouth on the road leading from that place to Freshwater. To-day it completely covers the mudbanks in the River Yar; it invades the adjoining marshland, and scattered marshes and mudflats between Hurst Castle, Milford, and Keyhaven; but in 1905 it was "plentiful and evidently rapidly increasing." On the roadstead of Poole Harbour a single small clump was discovered by Mansel-Pleydell in 1899. Six years later Riddlesdale found it "in some quantity" by the fever hospital at Poole, whereas Mr. W. J. Goddard describes it in a letter to Col. Prain, dated October 8 of last year, as occurring in hundreds of big clumps all around the harbour on nearly every mudflat.

To explain the sudden appearance of the grass three theories suggest themselves. It may, like *S. alterniflora*, have been introduced, as Lord Montagu thinks; but so far no Spartina corresponding to *S. Townsendii* has been found in America; or it may have originated by way of mutation. It could only have sprung from *S. stricta* which formerly occurred in Southampton Water; but *S. stricta* is little given to variation, and the differences are not of a character to support this theory. There is finally the hypothesis of the hybrid origin of *S. Townsendii*. This idea is not new; it was suggested by Foucaud in his note on *S. Neyrautii*. According to him, the latter was a hybrid of the formula *S. alterniflora* × *stricta*, whilst *S. Townsendii* was *S. stricta* × *alterniflora*. Two circumstances lend considerable strength to that view; first, the fact that *S. Neyrautii* as well as *S. Townsendii* actually combine not a few of the distinctive morphological and anatomical characters of the supposed parent species, and, secondly, their occurrence just in the two—and the only two—parts of the world where *S. alterniflora* and *S. stricta* have met, namely, at the head of the Bay of Biscay and in the Southampton Water. This coincidence is very remarkable and has almost the demonstrative force of an experiment, the more so as *S. Neyrautii* and *S. Townsendii* approach each other so closely that they could not stand as distinct species if one wished to leave the theory of their hybrid origin out of consideration.

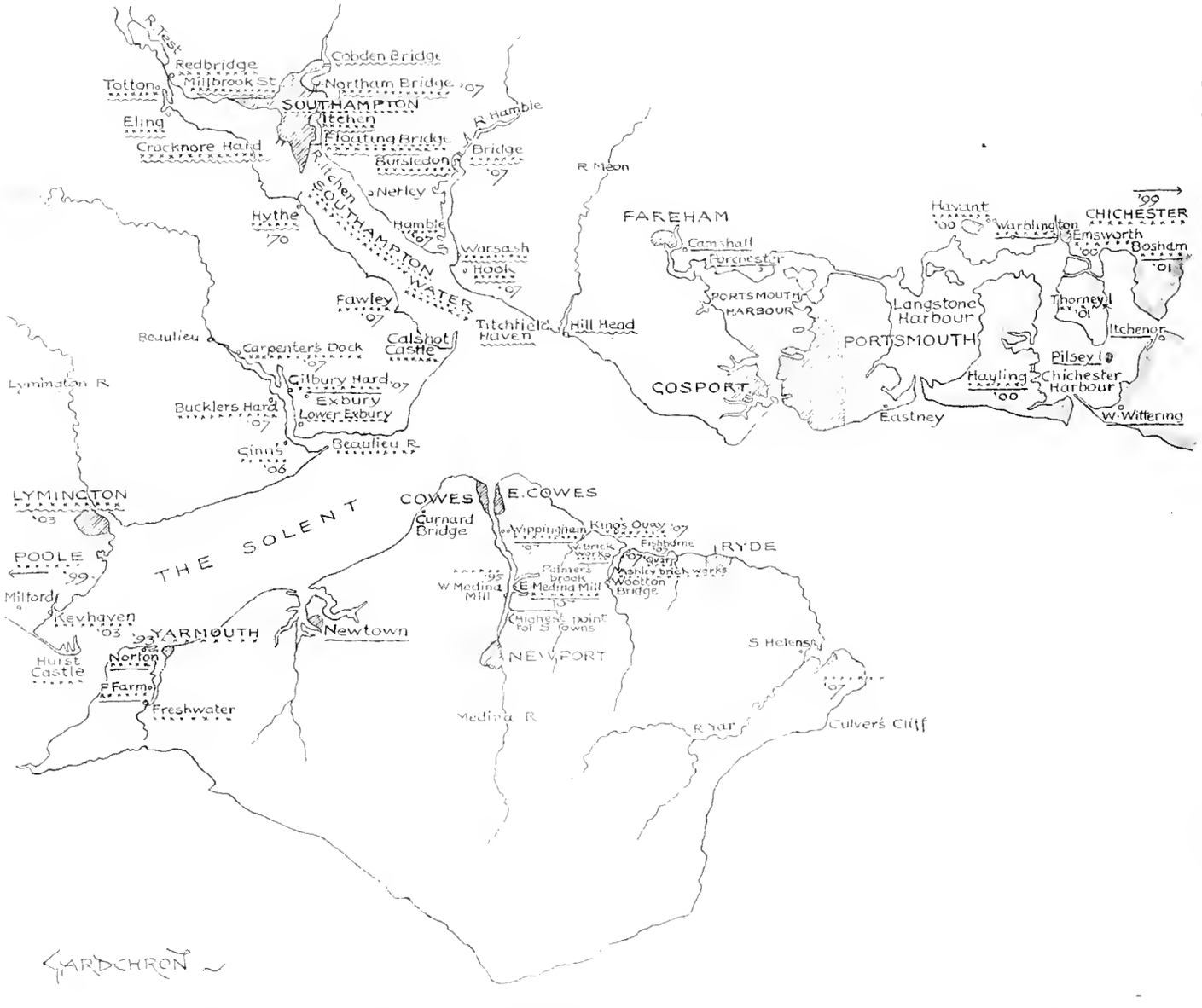


FIG. 19.—MAP SHOWING THE DISTRIBUTION OF SPARTINA. *S. STRICTA* (——— = STILL PRESENT, - - - - = NOW EXTINCT), *S. TOWNSENDII* (·····), *S. ALTERNIFLORA* (~~~~), ON THE COAST OF SUSSEX, HAMPSHIRE, AND THE ISLE OF WIGHT.

clumps may be seen as far up as Freshwater Church. A few years ago, Lord Montagu assures me, there was no trace of it in the Beaulieu River; now it predominates everywhere to beyond Buckler's Hard, to quote from a manuscript report by Mr. J. F. Rayner, of Southampton, "not only fringing the water, but running along every dyke, filling every pool and invading the broad borders of marshland," and its advanced posts stand within half a mile of Beaulieu village. In 1895 and 1896, so Cosmo Melvill tells us, there was none of the grass visible on the

But another question, perhaps of more practical interest, presents itself. What are the conditions that enable the grass to spread with such amazing rapidity and get so firm a hold? The dispersal is no doubt mainly by seed. The grains fall with the spikelets, which float and would be carried about by

the tides and currents until they are left on the beach or get caught somehow on the mudbanks. The grass does not seem to seed very freely, although it flowers profusely; but a few fertile clumps, as I have seen them, would after all give a good supply. When the seeds germinate, under natural conditions, we do not yet know. Possibly they behave like those of Zizania aquatica (a gregarious aquatic grass of North America), which lie in the water over the winter and germinate in the following spring. The seeds of these two grasses are remarkably similar, although the grasses are not allied at all. They have a highly-developed embryo, which, in S. Townsendii, is considerably larger than the endosperm and bright green throughout, including even the leaf-like scutellum, which suggests that the process of germination passes off very quickly and effectively. Once established, the seedlings would soon grow into tufts with plenty of stolons radiating in all directions and anchoring themselves in the mud by long, thread-like roots, which descend vertically. So firm is their grip on the soft substratum that even small tufts cannot easily be pulled up; and when I visited Quarr Abbey (Isle of Wight) after the heavy October gales of last year I could find no traces of uprooted Spartina on the beach, although there was an extensive bed of it on the foreshore. The grass is evidently wonderfully adapted to life on mudflats; to this must, however, be added as a factor favourable for its establishment the practical absence of all competition except where it meets with its congeners S. alterniflora and S. stricta. The former has so far made a good stand against the inroads of S. Townsendii, whilst S. stricta is evidently doomed to succumb.

The immediate effect of the appearance of this pushful grass on the mudflats of the south coast has been to relieve their barrenness and even to beautify them to some extent, and it has no doubt already affected animal life. Physical changes must follow, which, if the grass continues to flourish and spread, will react on the general conditions of the foreshore, resulting probably in the solidification and raising of the mudbanks; but this process will take time. It is at present barely beyond the first stage. Whether the result will in the end be beneficial or to the contrary will depend greatly on local conditions.

FIG. 20.—MAP SHOWING THE DISTRIBUTION OF SPARTINA STRICTA (——), S. TOWNSENDI AND S. NEYRAUTII (⊖), S. JUNCEA (✱), IN WESTERN EUROPE AND N. AFRICA.

In any case it will be a change worth watching and studying.

KEY TO THE BRITISH SPECIES OF SPARTINA.

1. S. stricta (fig. 17).—Forming small tufts ½ to 1½ feet high; rhizomes and stolons wiry; culms with a succession of up to 15 tight, firm, short sheaths, which, with the exception of the upper, soon throw off the blades; spikes usually 2, sub-contiguous, rigid, overtopping the leaves; spikelets 5½-7 lin. long, pubescent; second glume 3-nerved, lateral nerves delicate, tips hyaline.

2. S. Townsendii (fig. 18).—Forming large clumps or beds 2-4 feet high; rhizomes and stolons soft; culms with a succession of up to 10 or 12 somewhat soft sheaths, much increasing in length upwards, the lowest throwing off the blades; spikes usually 3-5, suberect, rigid, overtopping the leaves; spikelets about 8½ lin. long, delicately pubescent; second glume 3-6-nerved, with 1 or 2 stouter side nerves, keeled, keel ending abruptly below the short hyaline tip.

3. S. alterniflora.—Forming large clumps or beds 2-3 feet high; rhizomes and stolons soft; culms with a succession of up to 8 or 9 soft and very smooth sheaths, not throwing off the blades, which gradually decay; spikes usually 5-7, suberect, slender, and often slightly flexuous, overtopped by the long drawn-out blades; spikelets glabrous to the naked eye, 6-7½ lin. long; second glume delicately 5-6-nerved, keeled to the very tip. *Otto Stapf.*

FLORISTS' FLOWERS.

GROWING SWEET PEAS FOR EXHIBITION.

THE skill displayed in the cultivation of Sweet Peas may be said to increase year by year. This is not very reassuring to the man who may be thinking of trying his hand at exhibiting for the first time, but on the other side may be set the fact that many novices—that is, novices at exhibiting Sweet Peas—have scored signal successes at their first attempt. Another consoling fact, which has almost passed into a gardening truism, is that the soil which grows good culinary Peas will also grow good Sweet Peas, and the man who is a successful exhibit or of garden Peas is likely to succeed equally well with Sweet Peas.

The Sweet Pea resembles the edible Pea in liking a deep, well-tilled soil of a rich and holding nature, and plenty of moisture. It may be sown under glass in January or February, and planted out in April, or it may be sown outdoors in the place where it is to flower at any time from the beginning of March to the middle of May, and will give splendid results from either system of cultivation. In one important point it differs from the culinary Pea, and that is that in the ordinary course it does not form pods; once allow pods to form and ripen, and the flowering days of the plant are numbered.

The fact that it is not allowed to form pods has a decided bearing on the preparation of the soil, as most up-to-date growers who know the part that potash plays in the production of seeds will at once infer. As no seeds are produced, the liberal supplies of potash which are found of so much benefit to the garden Pea are not required, therefore there need be no special effort made to apply potassic manures to soils which are already in fairly good heart. What are wanted instead are phosphates, and those who is liberal in the use of these can scarcely fail to reap due reward, if only for the purpose he will presently have of feeling with nitrogenous manures in view of the reserved phosphates that he has stored in his soil.

But someone may say, Who could be foolish enough to waste nitrogen on Sweet Peas? Can they not get all they want from the atmosphere? In theory they can; in practice they cannot, and anyone who doubts this statement has only to grow two lots of plants side by side, one lot with nitrogen supplied and one lot without, to be convinced of its truth. Personally, I give my Sweet Peas nitrate of soda every week after they commence to flower, but they get a dose of superphosphate of lime as well. The latter is, I think, by far the best phosphatic artificial manure to use on the majority of soils. Even where bone flour gives equal results, I prefer the superphosphate, for bone flour is not at all nice stuff to handle out-of-doors, especially on a windy day. In soils that are already in a good state of cultivation, a dressing of 2 ozs. of superphosphate to the square yard will be found enough, either in preparing the ground or in feeding the plants after they are in flower. In very poor soils, a dressing of 4 ozs. to the square yard when preparing the ground will not be too much, followed by half the quantity when feeding subsequently. The superphosphate should be applied about a month before sowing the seed, or a week before putting out plants raised in pots.

While superphosphate of lime is the best artificial manure for general use, I would by no means recommend it in preference to farmyard manure, or even that from good stables, i.e., where plenty of corn is used. I always like to put plenty of animal manure in the bottom and about half-way up the trench in the autumn or early winter, and then give a dressing of superphosphate early in the spring, the date being determined by whether the seeds are sown outdoors or under glass. For this purpose the soil is moved to a depth of 3 feet, which allows ample room to get in two layers of dung without any coming into direct contact with the top 6 inches of soil. Had I to choose between superphosphate and animal manure, I should certainly select the latter.

The date upon which sowing is done must depend very largely on the date when blooms are wanted at their best. In previous years the National Sweet Pea Society has fixed the date of its London show early in July, and even southern growers have found it necessary to sow in January where the plants were raised in a cold frame. This year the show does not take place until July 24, and as the plants progress very rapidly after the commencement of July, sowing this year must be late if the grower would catch the plants, or rather the flowers, at their best. Just when to sow is a very nice problem, and one which has already greatly exercised the minds of many cultivators.

If one could correctly estimate the vagaries of the coming season, the task would be greatly simplified, for previous records would tell to a day when we might expect the finest flowers from a sowing on a given date; but this is beyond our powers, and past experience enables us to generalise but little. Thus, I have had flowers up to exhibition standard in the middle of July from a sowing made out-of-doors early in April, but I should not think of depending upon a similar sowing to give flowers for an important show this or any other year; one must have a little luck to it, and such a sowing would not give it. But I do not see why a sowing made at the beginning of March this year should not give flowers in profusion at the end of July, especially if made on pots in a cold frame. The seedlings would be up by the end of March or the beginning of April, and would be splendid little plants for potting out at the end of the latter month, an ideal time for planting out Sweet Peas for flowering profusely at the middle and end of July.

In light soils and warm situations, an outdoor sowing at the beginning of March would probably be in plenty of time. It is astonishing how quickly March-sown Peas come along compared with those sown earlier, and many a man has cut good exhibition flowers from such a sowing who had never thought to be in time. Outdoor sowing is, however, risky—so many accidents can happen to the seeds and young plants, and sowing in pots in a cold frame is always advisable. Novelties cost money, and are too valuable to waste on wireworms, slugs, birds, and other enemies. Raising in a greenhouse is even better than in a cold frame, providing that the pots are transferred to a cold structure immediately the young plants are above the soil. There is no fear of the seeds rotting in a warm greenhouse, and if any variety fails to appear in proper quantity, a second sowing can be made without much loss of time.

Five seeds round the side of a 5-inch pot has long been the favourite way of sowing Sweet Peas in pots, but exhibitors are now leaning towards the one-pot-one-Pea system. There is a good deal of labour involved in this practice, but it cannot be denied its advantages. Who has sown five seeds in a pot and has not had the annoyance of seeing, perhaps, two seedlings quickly appear, and then of having to wait a fortnight for the next? What this means, only the exhibitor who is pressed for time can really tell! With one seed per pot the case is totally different, as, should any of the seeds prove refractory, the pots containing them can be placed in gentle heat. Again, planting out is much more pleasantly and expeditiously done, and the plants experience no check.

It is very difficult to give a selection of the best varieties to grow, chiefly because so many of the novelties are sold out; indeed, many of the stocks were exhausted before November had run its course. Those who cannot get novelties must of necessity grow the older sorts, but they will be placed at a disadvantage in doing this where the competition is strong, for judges have to judge what is placed before them, and it is not likely that Mrs. Collier will score over Clara Curtis, or Dorothy Eckford over Etta Dyke, provided that both are in tip-top form.

Of varieties which should be readily obtainable I would select the following as the best twelve: George Herbert, Helen Lewis, Helen Pierce, Nora Unwin, James Grieve or Clara Curtis, Bobby K., Lord Nelson, Miss E. F. Drayson, Countess Spencer, Frank Dolby, King Edward VII., and Henry Eckford. For eighteen varieties I would add A. J. Cook, Etta Dyke, Mrs. Hardcastle Sykes, St. George, Dudley Lees, and Nell Gwinn. Twenty-four varieties should include: Queen Alexandra, Romolo Piazzani, Marjorie Willis, Dorothy Eckford, Sybil Eckford, and Mrs. Collier. In case of failure with Countess Spencer or George Herbert, Enchantress, Paradise, and John Ingman may be grown as reserves. *E.*

TREES AND SHRUBS.

CYTISUS NIGRICANS.

There is a wealth of splendid garden plants among the shrubby Leguminosæ that is wholly neglected in modern gardening, and particularly is this the case in the genus Cytisus and kindred plants. The power of individuals to thrive in the poorest soils, and to flower amazingly every season with no stint, together with the circumstance they are happiest with the wind blowing through them, should tempt many to give them a good trial. One pretty species of Cytisus named nigricans I have admired for many years as one adaptation to the worst possible conditions of a garden—a barren heap of stones, for instance. I have proved it many times, and I never neglect an opportunity of planting it where it can grow. In habit it is literally a dwarf twiggy specimen of the common Broom, and is generally less than 3 feet in height. The inflorescence differs greatly. In the case of C. nigricans position determines flower production. Where one can keep the plant literally struggling to live, there its flowers will prove a great delight. The long racemes that recall Laburnum, but are shorter and held suberect, are produced in late summer in quantity. Cytisus racemosus of the greenhouse is a good illustration of C. nigricans, but the floral yield in the latter species is much the greater. The plant is exceedingly hardy, and beyond an occasional trimming back, which all Brooms need, there is nothing to learn in its cultivation, except the following important detail, viz., plant young specimens only. Old and pot-bound plants never recover vigour, and youngsters outstrip these in the race. One of my pleasantest recollections of a northern rock garden is a grouping of C. nigricans in a rock wall. The rock face was literally draped with what I must describe as "nananised" Laburnums—a tumbled and elegant curtain of yellow.

SPIRÆA AITCHISONII.

New trees and shrubs of every description establish their position in gardens on a slow but sure principle, that of merit, and Spiræa Aitchisonii, withal a very beautiful plant that everyone admires, is no exception to this rule. It is the strongest and handsomest of all the shrubby Spiræas with which I happen to be acquainted, and those who would see it at its best must give it ample room for development and a soil moderately rich in plant food. In many respects it resembles the older S. Lindleyana, but is of taller habit and greatly excels in the richness of its leafage and its inflorescence. The stems exceed 10 feet in length, and are of a ruddy chestnut in colour all through the summer, whilst the foliage is the best example of elegant lobing I have seen in shrubby plants. Giant Spiræas such as this are ideal plants with which to form specimen clumps, either as units or as isolated groups; their bold, stately outline forbid a muddle at their bases, hence the poor display given by starvelings in a crowded shrubbery. A flowering specimen with 20 to 30 stems, most of which bear a spreading, flattened, plumy inflorescence almost white as Spiræas go, is surpassingly beautiful; the older stems dip to the ground in sheer luxuriance of growth, whilst the younger ones, upright as pollarded Ash, sway to and fro with every strong breeze. Two or three years are required for plants to develop into typical clumps, but the delay is well compensated by the annually increasing beauty of the specimens. This Spiræa is essentially a plant for the large garden, and it is one of the few "things" one can group effectively where garden and park meet. *G. B. Mallett.*

THE FERNERY.

ADIANTUM SCUTUM ROSEUM.

The cultivation of Adiantum cuneatum is in many nurseries giving place to A. scutum roseum. It is undeniable that in most establishments the former species, during the late autumn, winter, and early spring months, pass a miserable existence beneath the stages of the glasshouses, to be again brought out and afforded favourable positions when the sun mounts in the sky—therefore, at a season when A. cuneatum fronds have the least value. In glasshouses unprovided with overhead heating, which are not free from damp, or in which the necessary warmth cannot be maintained, the fronds suffer rapid decay. In the autumn, A. scutum comes in usefully, if the fronds have not been produced under too much shade, and so are not soft and liable to decay. The plants will then for a time, at any rate, take no harm if placed under the stages, and they will grow healthy and strong in a warmth of 60° to 65° Fahr. Plants will thus be provided for the Christmas season, such as no other Adiantum can equal. Another good quality of the plant is its rapid growth, which is unapproached by any other species. One-year-old plants, by good culture, may reach a height of 1¼ feet to 1½ feet, and in two years they may attain a diameter of 3 feet. A. scutum does not require so high a degree of warmth as A. cuneatum. *M.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT WESTFIELD, WOKING.

THE compact and well-grown collection of Francis Wellesley, Esq. (gr. Mr. Hopkins), is famed for its rare Cypripediums, and for the excellent selection of white Cattleyas which it contains. The last white Cattleyas to flower were white forms of C. labiata. C. Mossiæ Rosalind, shown by Messrs. J. Veitch & Sons at the last Temple show, proves to be a very fine and free-flowering white form, with a slight bluish tint on the lip.

The Cypripedium houses have a very fine show of bloom, some of the finest of the C. Fairrieanum crosses which Mr. Wellesley has so carefully collected being still in bloom. The best of these is C. Thalia Mrs. Francis Wellesley (insigne Chantinii × Baron Schroder), a grand flower, which leaves nothing to be desired either in colour, size, or form. Many other hybrids of C. Fairrieanum are in bloom, including the distinct C. Primrose virginale, C. Niobe (Westfield variety), a very distinct and finely-coloured form; C. bella, C. Baron Schroder, the best and richest-coloured form raised by Messrs. J. Veitch & Sons; varieties of C. Norma and C. Arthurianum, the best of which is pulchellum (Westfield variety). A pretty new cross of this class is C. Mrs. Robert Lonsdale (Arthurianum × Lathamianum), which has a fine dorsal sepal closely spotted with dark purple. A number of varieties of C. insigne are in bloom, by far the finest being C. insigne Francis Wellesley, which may be said to be an improvement on C. i. Hatefield Hall, which is also in bloom. By comparison, the variety Francis Wellesley has a rounder and more flat dorsal sepal, which also bears a number of purple spots on the basal part of the pure white margin. C. insigne Aurora is a bright variety with a very polished surface to the flower; C. i. Wellesleyanum is very dark and with bright purple spots on the upper sepal; among other distinct forms is one which dates back to the collection of the late Mr. Day. A very fine set of Cypripedium Euryades are in bloom, varying much in colouring, but all pretty. An allied variety is C. Dicksonianum, which has a fine rose-purple dorsal sepal with a white margin. Cypripedium Ville de Paris is in flower in two varieties. Both are very remarkable and showy flowers. C. Mrs. Wm. Mostyn (Westfield variety) is also in bloom, its dark and richly-coloured flowers being conspicuous. C. Lucienianum superbum is a finely-coloured flower, and among the C. aureum section several good varieties are represented of allied crosses C. Tracyanum is a very attractive flower, with a fine white dorsal sepal, having an emerald green base and a broad olive-coloured band in the middle. C. Prospero Sedenii and C. Actæus Bruleyensis, two Veitchian hybrids, are very distinct, both having the greater part of the dorsal sepal pure white. The yellow forms of C. insigne are in flower. C. insigne Sanderæ is a favourite with all, but the darker yellow C. i. Sanderianum rivals it in beauty and is still not plentiful. C. King Edward (Rothschildianum × Lawrenceanum magnificum) is a stately flower and a robust grower. It is not yet generally known, being still rare. A good number of varieties of C. Leeanum were in bloom, also C. Minnie, a very neat and pretty flower; C. Actæus Sir Redvers Buller, a distinct form; C. Mandæ virginale, a large flower with fine white dorsal sepal, on which the emerald green lines are distinctly marked, and not shaded into each other, as in some forms, the petals also showing white ground colour; C. Pollettianum (Westfield variety), a very rich-coloured but bright-looking form; C. White Lady, something like C. Actæus Langleyense; several forms of C. Walhertæ; and many others.

In the Cattleya and Lælia house there are but few plants in bloom, but all are in fine condition.

WINTER FLOWERS AT ASCOTT.

IN the gardens of Leopold de Rothschild, Esq., Ascott, Leighton Buzzard, which have been in the care of Mr. John Jennings for more than 30 years past, the principal object has been to have flowers all the year round, and a specially good show in winter. That object has been successfully attained, and the declining days of the year 1907 witnessed a wonderful profusion of flowers, which continues at the present time.

Carnations are first favourites, and of these there are supplies every day in the year. At the present time a grand show exists in each of the several houses devoted to them, there being something like 10,000 specimens cultivated in pots. In the main span-roofed range the beautiful varieties in bloom include Britannia and Flamingo (scarlet), Perfection (white), Jessica (white flake), Mrs. Burnett (pink), Golden Eagle, Nelson Fisher (crimson scarlet), Pink Enchantress, Prosperity (white, tinged with rose), Lady Bountiful (white), Cardinal, Mrs. Lawson, America, and others. One division is nearly filled with Lady Bountiful, whose fine white, fringed, and fragrant blooms are pleasant to behold at this season; the pink Mrs. Burnett, the fine crimson Robert Craig, and the equally pretty Cherry Ripe.

The Carnations at Ascott are grown in 7-inch glazed pots, which Mr. Jennings is convinced have many advantages over the common flower-pot, the exterior glaze being more beneficial than otherwise. Some of the advantages are that glazed pots always keep clean and fresh in appearance and do not become green; it is not necessary to have the pots washed while the plants are in them, an operation which is sometimes attended with injury to the plants. The plants in glazed pots require less water, a matter which has to be borne very carefully in mind in winter, but is a distinct advantage in summer. It is not for Carnations alone that the glazed pots are used at Ascott, for they are in general use for all large batches of decorative plants.

Another method of growing Carnations adopted here with great success is to plant them in trays, or beds arranged on the ordinary staging on which a good layer of drainage material is placed and a bed of soil about 5 inches in depth to plant the Carnations in. Wires are run from front and back of the beds, so that the plants when tall enough may have their heads of bloom supported by cross ties of raffia or thread. The house so arranged presents a beautiful sight, with its profusion of evenly arranged flowers and buds; those at present in bloom being White Lawson, Enchantress, Robert Craig, and Fair Maid.

Cyclamen latifolium of a very fine strain fills one house with its fragrant blooms ranging from pure white to deep Carter crimson, some of the darkest having a very deep tint. In the next division the rose-pink Calanthe Veitchii is flowering, and a very fine lot of Cinerarias, outside being the Nerine pit, from which nearly a thousand heads of bloom were obtained last season.

A large temperate range has still a very fine show of Chrysanthemums, together with batches of scarlet Poinsettias, the feathery, white Moschosma riparium; Heliotropes, both dwarf and standard; variously-coloured Zonal Pelargoniums; and a great variety of other showy flowers. The warm ranges have several of the divisions filled with well-grown specimens of foliage plants, including Cordylines (Dracænas), Codiæums (Crotons), Acalyphas, Anthuriums, &c., and with these are arranged Lily of the Valley, Freesias, and other flowers, including a good show of Hippeastrums. The Hippeastrums are brought in from the cooler house at the rate of about two dozen a week and plunged in the slightly-heated bed in one of the warm houses, thus a succession of bloom is maintained, and the flowering season extended over a much longer period.

One division is filled with compact specimens of Coleus thyrsoides, all furnished with tall spikes of bright-blue flowers. These and similar soft-wooded plants for winter blooming are grown in glazed pots of comparatively small size. They are propagated by cuttings taken in June, and, by being brought on gradually, come into flower naturally in the middle of winter. Some plants of the orange-coloured Jacobinia chrysostephana are effectively arranged on the edges of the staging. One house in a span-roofed range is filled with Begonia Socotrana, its dense heads of bright pink flowers borne above the large and fleshly green leaves being very beautiful. This is an old species, not generally grown in gardens, and probably never seen in such beauty as it appears at Ascott. The pendant, moss-like edging in this house is of the Corsican Helxine Soleirolii. The next house contains the handsome Begonia Mrs. Leopold de Rothschild, fine bushy plants with larger rose-pink flowers than the original Gloire de Lorraine; and the white variety, called Turnford Hall. A larger warm-house has a fine batch of Begonia Gloire de Sceaux with a profusion of blush-pink flowers, borne well above the bronzy leaves. The roof is nearly covered with Ipomæa cærulea bearing hundreds of its charming blue flowers, to which nothing else in flower at this season can be compared.

A house of Zonal Pelargoniums, more Carnations, Lily of the Valley and Violets follow; and a glimpse through the end of one of the large houses reveals a fine show of large violet-purple blooms of Lasæandra macrantha and a batch of Cypripedium insigne in flower, the whole giving a fine example of what skill can do in producing flowers in the depth of winter.

The immense Rosary under glass in three broad, span-roofed houses, and filled with the choicest Tea, Climbing Tea, and Pillar Roses, has one section already started and beginning to produce blooms, and the other sections will keep up the supply until out-door Roses come into flower.

FORESTRY.

LARCH DISEASE AND LARCH APHIS.

I MUCH regret my inability to convince Mr. Forbes (see p. 38) that there is anything of value in the theory that Chermes insects are chiefly responsible for the spread and prevalence of larch canker, as the main object of my article in the *Gardeners' Chronicle* of November 23 last was to induce foresters to put the theory to the practical test. In Mr. Forbes' criticism, which appeared in this periodical on December 21 last, there are one or two points to which attention should be drawn.

1. The following sentence is not very clear, and may give rise to misconception: "The wool-secreting form of the aphis found on the stems of the larch is rarely seen in many districts in which the disease is rampant, and the most common form of the aphis is the naked mother which hibernates either in the axil of the buds or in the crowns of the dwarf shoots." The impression conveyed is that practically no wool-secreting forms of Chermes occur in those infected areas, but I would point out that the offspring of the naked mother found on the larch in summer are invariably covered with thick wool, so that if she is present, wool-secreting forms are bound to be present also. The sentence does not definitely state, but it certainly implies, that the naked mother is present in the canker districts referred to, and Mr. Forbes would certainly have stated her absence if it were a fact. We may take it, then, that wool-secreting forms are present in the canker districts, and that Mr. Forbes did not intend to convey the opposite impression. Probably these summer wool-secreting insects were not in his mind, because the majority of the insects are seated on the needles, and

possibly only exert a slight influence on the spread of the fungus living in the stem, but it must not be forgotten that a good many of these insects are also found on the young stems. I conclude, then, that Mr. Forbes is in reality referring to the hibernating generations only, in which case the meaning of the sentence is that Ch. viridis, the winter form of which has a covering of wool, is rarely found in the canker districts, and the most common form is the naked winter mother of Ch. strobilobius. It will be seen that this merely denies the presence in any quantity of one particular species, Ch. viridis, and as mentioned above implies the presence of Ch. strobilobius. In the article of November 23 it was part of my argument that the wool aids in catching the spores of the fungus, but the absence of wool in the winter Ch. strobilobius does not weaken it in any way. The deficiency is made up for by the amount of honeydew excreted, which is often so great that the insects' cast skins remain sticking to the end of the abdomen. These, with the empty egg cases, form a sticky little heap in which some of the countless spores floating in the air are bound to be caught.

2. Mr. Forbes goes on to admit that the sites usually selected by the hibernating Ch. strobilobius do frequently correspond with the sites on which blisters are ultimately found, but the only explanation offered for this coincidence is that the blisters occur on such sites "for the simple reason that they have to occur somewhere if they are to occur at all." Surely in face of the strong evidence pointing to the fungus being a wound parasite, a more probable explanation is that the blisters occur on these sites because they have to occur *at some place which has been previously wounded* if they are to occur at all.

3. The statement that no definite proportion exists between the distribution of Chermes and canker is one which must be received with caution. By the time that the blister shows itself, all evidence of any previous occupation of that particular site by a Chermes has vanished, and, unless the Chermes sites have been marked beforehand, it is impossible to speak with certainty about the proportionate distribution of the two diseases. No attempt to compile scientific records of the distribution of the two diseases has, so far as I am aware, ever been made, and the statement must be regarded as an opinion resulting from general observations and not as an established fact.

In conclusion, the only help Mr. Forbes can give is an opinion that certain causes unknown which favour the aphis attack may also favour the fungoid attack, even if aphides are absent, and a recommendation to let the aphis "take a back place." Against this the Chermes theory presents us with a definite problem for solution. I do not for a moment suppose that it will account for every attack of canker, since other agents besides Chermes wound the trees and so provide an entry for the spores. But there is no other agent which causes such countless wounds as Chermes, and the strong chain of evidence already forged by laboratory methods in support of the theory is surely sufficient warrant for foresters to put it to the practical test, especially when the matter concerns one of the most profitable timber trees in the country.

I am trying to arrange some further experiments on a larger scale which should settle the question beyond a doubt, and I shall be glad to hear from any owner or forester who is willing to assist me by placing at my disposal a small plot of ground in close proximity to a plantation where canker is already present, for the purpose of raising an experimental plantation of about 100 Larch. *E. R. Burdon, Ikeninlde, Royston, Herts.*

The Week's Work.

FRUITS UNDER GLASS.

By T. Coomber, Gardener to Lord Llangattock, The Hendre, Monmouthshire.

Queen Pine-apples.—Properly-prepared plants that have rested during the last two months are now in a fit state to be started into growth with a view to affording a supply of ripe fruit in summer. Provided the plants were carefully plunged in a suitable bed when placed in their fruiting pots, they should not be disturbed at the present time, as re-arrangement after the plants are fully developed cannot be done without causing them more or less injury. The atmospheric temperature of the house at night should be increased to 65° to 70°, and by day by artificial means to 5° higher, with a bottom heat of about 85°. Do not admit air to the structure until the atmospheric temperature reaches 80°, and then only sparingly, closing the ventilators early in the day, and at the same time syringe the spaces lightly between the plants. Promote humidity also on fine days by damping the floors in the morning and evening. By covering the roof of the house with mats on cold nights much less fire heat will be necessary to maintain the proper temperatures. The plants having been kept moderately dry at the roots during their season of rest should be moistened through with tepid water enriched slightly with Peruvian guano.

Figs.—To furnish a crop of fruit in succession to that expected from early forced trees in pots, a house of permanently-planted trees may now be closed. The old variety—Brown Turkey—has not yet been improved upon for the purpose of moderate forcing. If the trees, while making growth last season, had their shoots properly thinned, little, if any, pruning will be now required. Another point in successful Fig culture is that of confining the roots of the trees to fairly small firmly-made borders, provided necessary assistance in the way of nutritious top-dressings and applications of liquid manures are afforded during the growing and fruiting season. Good loam, with some crushed mortar rubble added, without strong manures, will satisfactorily answer for a compost. An old and good method of starting trees into growth is to make a hotbed of tree leaves and stable manure upon the floor of the house, accompanied with sufficient fire heat to slightly warm the pipes. This promotes a humid atmosphere, which, when assisted with daily sprayings of the trees, promotes growth and fruit development. Until growth has commenced, the borders should be only sparingly watered, but subsequently liberal supplies must be given.

Early vines.—At about this season many permanently-planted vines of such varieties as Black Hamburgh, Madresfield Court, and Foster's Seedling are started to supply ripe Grapes early in summer. We prefer to have the roots of these vines confined to inside borders, but in cases where outside borders are in use they should be covered with a firm bed of warm tree-leaves, and be protected from the elements by shutters or glass lights. An atmospheric temperature of 50° at night should be maintained until the buds burst, when a rise of 5°, with the usual increases by day, should be allowed. Disbud weak growths early, leaving the final selection of laterals until the fruit bunches can be discerned. Promote a moderate degree of atmospheric moisture, and keep the soil of indoor borders moist. Increase the supplies of water as the season of growth advances, and apply carefully diluted liquid manures, or top-dressings of artificial compounds.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Schizanthus hybrids.—No plants are more suitable for maintaining a fine display of bloom in the conservatory and greenhouse than a collection of the best Schizanthus. Plants that are intended for flowering early in spring should now be filling their pots well with roots, and may be given a little weak liquid manure twice each week at present, increasing the frequency of the application as time goes on. The plants flower very much better if potted firmly at the final shift, but the compost should be a freely porous one, to allow of it having to be made firm. A sprinkling of bone-meal should be included in the compost. At this time of the year and all through the growing stage, the plants must be kept in a position close to the glass and where they can be exposed fully to the sunshine, so as to keep the plants as dwarf and compact in growth as possible. If a cool plant-house is available for them, a suitable position may be found on a shelf near the roof glass in a cool vinery. They succeed very much better when treated almost as hardy plants. Schizanthus may be had in bloom from early in spring until the end of May, and even in June, but for this purpose successional sowings of seed should have been made from the middle of August last to the end of September. A strict watch must be kept for green fly, and on its first appearance the house should be fumigated.

Bulbs.—Such bulbs as are now being forced and have already filled their pots with roots require an abundance of tepid water at the roots. I have frequently found that hard-forced bulbs suffer for the want of moisture at the bottom of the pots, although at the surface the soil appears sufficiently damp.

PUBLIC PARKS AND GARDENS.

By James Whitton, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Special studies.—Apart from the purely horticultural aspect of the question, there are other subjects which the young gardener, desirous of training himself for public service as a park superintendent, should set himself to study, the two which he will find most serviceable being land-surveying and plan-drawing. In all public schools drawing is one of the subjects upon which much stress is put by the authorities, but, unfortunately, unless in the secondary and technical schools, much of the drawing is aimless in character, and has no direct value in the future career of the scholar. Few young men, therefore, nowadays can say what those of past generations regretted, that they never had an opportunity of learning how to draw a map or simple plan. Having acquired some of the elementary principles of the art, the aspiring apprentice ought to improve himself by learning to draw plans properly to scale. This was the weak point displayed in the intricate designs of flower gardens with which many young men of our generation frequently beguiled themselves during the winter evenings. A few lessons from an efficient teacher, or the estate clerk of works, would materially assist the student, but, as frequently happens in country districts, these may not be obtainable, consequently the young gardener must fall back on his own resources and learn without the advantages a teacher would give him. It is not so difficult as learning botany alone. Let him begin by carefully measuring the garden in which he is employed, thereafter setting down his measurements on paper to a scale which should not be very small at the commencement. If he manages to do that correctly on his own initiative, he will, in time, succeed with others more intricate. The art of colouring his plans he can learn later, as the tinting is but a secondary matter to that of correct measurement and drawing.

Lessons in land surveying.—In regard to surveying, it is almost necessary, and certainly most advisable, that the student should obtain some practical lessons in the use of the "dumpy level" and the method of setting out the work. There being a good and a bad way of doing most things, the difference between a good and bad system of surveying only requires to be seen to be fully realised. Under a capable teacher the art can be readily acquired, and merely needs application and practice in order to attain efficiency in levelling and chain surveying. The plotting on paper of the ground to scale is likewise part of the art.

Value of knowledge.—In advising young gardeners to follow the course of study I have indicated, it must not be assumed that they, when parks superintendents, will always be called upon to practise either surveying or plan-drawing. Very probably they may never be required to do either work. But as no one knows what is before him, he who is best equipped has the best chance of succeeding, and, apart from the value of the general knowledge thus acquired, he is better able to scrutinise and read plans and maps which in the course of his business must come under his observation. Further, this training will enable the student to make out by measurement the various quantities on which he will base the estimate of costs of any proposed works. The question of costs is one of the most important points in every business, but too frequently one which private gardeners do not sufficiently study in detail. It is, however, essential in public service, therefore young gardeners should learn to note the cost of every class of work in which they take part, in order to fully qualify themselves in this respect for obtaining success in their future career.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Zygopetalum Mackayi.—The great merit of this Orchid lies in the fact of its flowering in winter and lasting over so many weeks in full beauty. Its flowers are most fragrant in the daytime, with warmth and sunshine, but very much less perceptible on cooler or dull days. The cultivation of this species is not difficult, provided the plants are afforded a light position in an atmosphere of intermediate temperature and supplied with abundance of water at the roots when they are actively making growth. This is one of those Orchids which do not require much resting in the sense of keeping them at all dry at the roots. The bloom spikes appearing in the centre of the young growths point to the fact of careful attention being necessary to avoid any check to the latter at a season of the year not altogether the best for growth. They should, therefore, be encouraged to continue the growth as long as possible, for upon the perfect completion of this will, in a large measure, depend the production of flower spikes another season. The plants require a good compost to grow in, which should be made porous by including plenty of coarse sand, finely broken crocks, and charcoal. A mixture of two-fifths clean, fibrous loam, and one-fifth each of leaf-soil, turfy peat, and sphagnum-moss, is very suitable to the large fleshy roots. The plants dislike being disturbed at the roots. It is important that they should be kept in good health, for if once they get in bad condition it is not an easy matter to bring them back to a satisfactory state. The above remarks also apply to Z. crinitum.

Platyclinis.—This small genus of epiphytal Orchids is frequently known in gardens as Dendrochilum. The species P. glumacea is one of the most desirable kinds, and a great favourite with Orchid lovers. It is now in active growth, and should be given plenty of water, as it will produce its racemes during the spring months. P. Cobbiana will shortly commence to grow, while P. filiformis is still resting. These plants are grown here in the Cattleya house, and whilst making their growth they enjoy a liberal supply of water at the roots. During the resting season they are kept dry, only enough water being given them to keep the soil moist and prevent the pseudo-bulbs from shrivelling. The most suitable time to repot Platyclinis is shortly after the flowers are passed, and the compost used should consist of two-thirds good fibrous peat, or Osmunda fibre, and one-third clean sphagnum-moss, the pots being quite half-filled with good drainage.

Cœlogyne cristata.—If plants of this species, and its varieties, are allowed to become quite dry at the roots during the winter months, and the pseudo-bulbs allowed to shrivel, weak flower spikes are produced, and the blooms seldom open satisfactorily. It is necessary, therefore, to afford sufficient moisture to the roots as will preserve the pseudo-bulbs in a perfectly plump state from the time these are completed until the flowering stage is passed. These plants may be kept safely during winter in a minimum atmospheric temperature of 50°. Thus treated, a longer succession of bloom can be secured by bringing a few plants at intervals into extra warmth, as plants with plump pseudo-bulbs readily respond to extra heat and develop their flower spikes rapidly.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire.

Border of herbaceous plants.—Some difficulty will frequently be experienced in the attempt to keep a good effect from early summer to late autumn in a border in which none but hardy species are cultivated. Some of the most popular of early-summer flowering plants are continually passing out of flower, thus causing blanks. From the point of view of effect the employment of two borders has much to recommend it. One would be the early-summer border and the other the late-summer and autumn, or, as I should prefer to call it, the "mixed" border. This latter would include hardy, half-hardy, and tender plants. The matter of arrangement must depend upon the selection of plants, the extent of the borders, and whether large or small groups or single specimens of particular species are to be cultivated. When large groups of one variety are preferred, this method can be the more readily carried out by the use of two borders, because of the increased number of plants from which selection can be made that flower at or about the same time. Prominent specimens or groups, say of three plants placed at irregular distances, and of varied shapes and heights, are attractive when the colours have been tastefully selected. The number of herbaceous plants that exhibit no marked dislike to varied soils is very great, but experience will best determine the most satisfactory species to grow to satisfy different requirements and tastes. The present is a very suitable time for preparing such borders. The aspect and extent should be made to correspond with the general surroundings, large, medium, or small. But a site should be chosen which is at least a reasonable distance from any high walls or large trees; the roots of the latter would soon overrun the border. The principal matter for consideration is that of the soil, for this should be deeply cultivated, and afforded manure, leaf-soil, peat, and the general accumulations of the rubbish-yard, according to its present condition whether poor or rich in plant-food and organic matter.

Shrubberies.—At this season time should be found to regulate the numerous occupants of the shrubberies, which, if neglected for any length of time, soon become a tangle. If flowering trees and shrubs are not examined annually, in order that the necessary pruning or thinning may be done, they usually become so intermixed that, after a time, a general overhauling is attempted, but such a severe operation is seldom satisfactory, and transplanting can then be scarcely attempted. If the knife and the spade are annually and skilfully used in thinning and regulating the plants in accordance with their habits of growth, the results are good. The thinning of most species of flowering shrubs can best be done after the flowering, but from pressure of work at that season the work is often overlooked; such as Lilacs, Laburnums, Thorns, Cherries, Pyrus, &c. Yet others such as Ceanothus azureus, C. "Gloire de Versailles," Buddleia Lindleyana, B. japonica, &c., Spiræas "Anthony Waterer," callosa, Douglasii, &c., Clematis Jackmanii, &c., flower better on the young wood, and may with advantage be cut back in early spring.

Frost.—We registered here on the 5th inst. 24° of frost; on the 8th inst 1.23in. of rain, and on the 11th and 12th inst. 20° of frost.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Root-pruning is indispensable in the case of fruit trees that have become too gross in growth through failure to produce crops owing to frosts, and also in the case of trees growing in soil that is too rich. The work should be commenced early in autumn, but if it is not already completed every effort should be made to carry it out. A little fresh loam, with plenty of lime rubble and charred refuse to induce the trees to make plenty of fibrous roots, should be in readiness before commencing the work. Small bush and pyramidal trees are best lifted; the strong roots can then be shortened, and the others spread out carefully nearer the surface, using a portion of the prepared soil for filling in. Large trees cannot be so conveniently lifted, therefore take out a trench 4 or 5 feet from the stems of the trees, according to size, tying up into bundles all the roots found during the process and working well under the ball of the tree, cutting away any strong, descending roots and pruning any strong roots that may be found. Lay in the others nearer to the surface, using a fair proportion of new compost. A good watering should be given to all wall trees after such an operation as root-pruning. If the trees are of very large size, one half only of the roots should be pruned in one season.

Pruning.—The season having been all against getting this work completed, the remainder of the pruning should now be hastened forward at every opportunity. Apples, Pears, and Plums in the open quarters should first receive attention. If the trees received the proper attention during last growing season, very little pruning will now remain to be done beyond shortening any leading shoots, according to the size of the tree and the amount of space available, and spurring in others that were overlooked to two or even four buds for the stronger growing varieties. In large trees that have filled their allotted space, very often the branches and spurs become crowded; in such cases some of the worst placed branches and spurs should be removed in order to let in more sunlight and air. After pruning give attention to any young trees and train the growths equally in any desired position by securing them with strong tar twine to stakes, so that plenty of sunlight and air may circulate amongst the branches, and these latter may become properly ripened.

Standard trees.—These are often more or less neglected, or are only examined at intervals of a few years, and then are generally thinned too severely at one time. They should be examined annually, and any unfruitful branches or useless spray removed so that light and air may have free access to the centre of the trees. Young standard trees should be carefully pruned for the first three or four years, leaving six or seven of the best placed branches to form the tree, shortening the leading shoots to about one-third their length. After the first three or four years very little pruning will be required, with the exception of the removal of any branches which cross each other.

THE KITCHEN GARDEN.

By E. Beckett, Gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, Hertfordshire.

Tomatos.—Plants which have been grown for fruiting in winter will have now passed through the most critical time, and much less difficulty will be experienced both in the setting and ripening of the fruit. Carefully prevent the atmosphere becoming stagnant; keep the roots in a moderately dry condition; maintain an even atmospheric temperature of from 55° to 60°, and apply liquid manure at every alternate watering to plants bearing fruits. Pollinate the flowers every morning as they open, and relieve the plants of any fruits as fast as these latter begin to assume colour, removing them to a slightly warmer atmosphere to complete the ripening. Two splendid varieties for fruiting in winter and early in spring are Sunrise and Winter Beauty; both are free-setting, and the fruits are of excellent quality. Repot successional plants raised from seeds sown last autumn into their fruiting pots, and cultivate them as sturdily as possible. Make another good sowing of reliable varieties. Fumigate houses containing Tomatos frequently to prevent attacks of the white "Snowy fly," to which the plants are so liable, and keep a sharp look-out for the "spot" or fungus disease that often causes much trouble and is spread the more easily by the presence of too much moisture.

Carrots.—Frequent sowings should be made during the next three months to ensure a regular supply of young tender roots, generally so much in request in all establishments. These may either be grown in portable frames on mild hotbeds or in heated pits. Use a finely sifted light compost, and make the soil moderately firm before sowing. Of varieties I may mention Inimitable Long Forcing, Favourite, and Early Nantes, all of these being suitable for this purpose.

Asparagus.—This vegetable, when lifted, forces with the greatest of ease when placed in a heated structure, but under no condition does it thrive better than when brought forward in frames on sweet, mild hotbeds, the quality of the Asparagus being far superior than when subjected to a greater degree of heat and grown in houses a long way from the glass. The same frame may be used for two or three batches, for as the season advances less heat will be required.

Potatos.—Continue to plant these in pits or frames at intervals according to the demand. Those which are in a forward condition will need careful attention both as regards earthing the pits and adding fresh soil for earthing purposes. The soil should be warmed to the same temperature as the atmosphere of the pit, and the warmest part of the day selected for carrying out the work. [illegible] the opposite direction [illegible] is blowing, especially so when the [illegible] the north or north-east.

S[illegible] of Early [illegible] Potatos, and box up Mint, [illegible] Onions thickly [illegible] "green Onions" in salads.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JANUARY 18—
Soc. Franç. d'Hort. de Londres Annual Dinner. German Gardeners' Soc. meet.

TUESDAY, JANUARY 21—
Nat. Amateur Gard. Assoc. meet.

THURSDAY, JANUARY 23—
Gard. Roy. Benev. Inst. Ann. meet. and Elect. of Pensioners at Simpson's Restaurant, Strand, at 2.15 p.m.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38·4

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 15 (6 P.M.): Max. 48°, Min. 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, January* 16 (10 A.M.): Bar. 29·9, Temp. 33°, Weather—Cloudy.
PROVINCES.—*Wednesday, January* 15 (6 P.M.): Max. 47° Guildford; Min. 43°, Scotland N.E.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Herbaceous Plants, Liliums, Bulbs, &c., at 12; Roses at 1.30; by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

WEDNESDAY—
Hardy Border Plants and Bulbs, Perennials, &c., at 12; Roses at 1.30; Palms and Plants at 5; 3,000 Lots Japanese Liliums at 1; by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Odontoglossum crispum (imported), also established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

"Herbaceous Perennials."

In different departments of work we often seem to pursue different methods, but in the last analysis these are always found to result in the endeavour to ascertain, and to state correctly, the relation of facts and things to one another. Since, however, the number of matters of which we have to take cognisance increases in proportion to the extent of our knowledge, we are driven in every branch of science, as in other lines of work, to classify them. As long as the things to be classified are under our own control the procedure is not difficult, so soon as we have agreed on a common basis. Thus the divisions of money are easy enough for most people to understand, though even here the particular £. s. d. basis on which we work in this country is not identical with that adopted elsewhere.

But no sooner do we endeavour to deal with matters that exist independently of ourselves, and so are not of our own devising, than difficulties of various sorts arise and confront us. For our classification can only be thorough, general, and logical, as long as it is dealing with things that are essentially different. Immediately we attempt to grapple with such complex matters as living beings we are speedily rendered aware that a really valid classification is hard to discover, if, indeed, it is not altogether unattainable. This partly results from the various cross relationships of different organisms to one another, and it is partly due to the different ways in which the same individual or structure may respond to altered environment.

A special application of the general position which we have just briefly underlined arises in determining what shall be the basis of our classification of plants for particular purposes. Thus, in connection with horticultural exhibitions and shows, it may be of importance to know whether a plant is to be regarded as a tree or a shrub, an annual or a perennial. The real difficulty of deciding lies in the fact that Nature does not work on the system of pigeon-holes. Everyone knows that numbers of annual plants are practically perennial, so long as they are not allowed to exhaust themselves by excessive fruiting, whilst a curtailment of normal longevity may frequently be brought about, as in the case of trees, by abundant bearing during early youth.

One of the questions connected with these matters, and one also that is continually cropping up, is concerned with the definition of the Herbaceous Perennial. It may as well be said at once that there is probably no single definition which will appeal to everybody as perfectly satisfactory. Certainly the one that is often given, viz., that it is a perennial the stems of which die down each year, cannot be regarded as such. As was pointed out last week by a correspondent, Pansies are among the plants that would be thereby excluded, not to mention many other examples that will occur to everyone.

Perhaps the best solution of the difficulty of arriving at a suitable definition would be to include in the first place all those perennial plants which possess "herbaceous," that is, soft and easily-crushed aerial stems, whether these have an annual or a longer duration, and, in the second, those perennials which lose their aerial stems every year. The latter feature serves as a fairly ready, though by no means universally valid, distinction between the shrubby and the so-called herbaceous perennials. Exceptions of course occur, and it may happen that a plant, the aerial parts of which are both shrubby and persistent in favourable localities, may be deciduous in others. The common Fuchsia forms a shrub or even a small tree in some districts, whilst in others it is annually killed back to the ground level.

A similar difficulty, though less apparent in practice, attaches to the question as to what distinguishes an Evergreen from a deciduous plant. Whilst no doubt exists in the great majority of cases, there are others—some Roses for example—in which the decision is not so obvious. The Rose may also be used to illustrate another point. Although many kinds must certainly be classified as shrubs, an exhibitor who made use of them in this sense at a particular show found himself in a difficult position, but at another show an exhibitor who also staged them as shrubs was upheld. Convention must, in the last resort, determine on which side of the line the "difficult cases" are to be ranged, for, to return to the question of herbaceous perennials, who is to draw the precise limit beyond which a soft stem is to be regarded as a woody one? Or, again, in the case of plants which are soft or woody according to circumstances, as Wallflowers, some Snap Dragons, &c. Which of the two forms is, for classifying purposes, to be regarded as the type?

There can be little doubt but that these matters might be made simpler for exhibitors if those responsible for compiling the Schedules would give greater consideration to the need for employing precise language, and for affording an indication by means of a foot-note, or in some other fashion, of any limitations exhibitors should respect in certain classes. For instance, a class for twelve herbaceous perennials stated as such, without qualification, would include most of the perennial bulbs, but in frequent instances in which Lilies have been included in such an exhibit, it has turned out afterwards that the Society's committee had intended to exclude bulbous plants; in some cases a special class was provided for such species. It cannot be too clearly pointed out that exhibitors have no other means of ascertaining the wishes of a committee in regard to a certain class than those afforded by the published directions.

Only those limitations and rulings which are definitely expressed can be binding upon exhibitors, and it is the duty of judges to interpret schedules according to the exact words, and not attempt to go beyond what is definitely expressed.

A correspondent in the present issue suggests that it might be found convenient to dispense with the use of the word "herbaceous" altogether. This would certainly prevent any trouble arising in regard to the alleged persistent or woody character of the stem, when it is required to be incapable of more than annual duration, or possess only soft, easily-crushed tissues. But its disuse would open up a field just as prolific in quicksands, for the flowers of shrubs, and even trees, might then be exhibited in a class where such species are undesirable.

In the same letter that we refer to, our correspondent, writing as a judge, states that in making an award he would consider a certain species a shrub or an herbaceous plant, according to his observations of the habit of the plants in the particular neighbourhood in which the exhibition was being held. But gardens vary much, even in the same locality, owing to differences of soil and subsoil, degree of altitude, and of shelter; therefore, such species as Phygelius capensis, Romneya Coulteri, certain Fuchsias and Pentstemons might have persistent aerial growths in the one garden, although in nine others they might be habitually killed to the ground each winter. In the concluding paragraph reference is made to exhibitors who frequently err by staging Sweet Peas and Canterbury Bells as herbaceous subjects. But surely the Canterbury Bell is to be regarded as an herbaceous subject? Such a plant would only be excluded, inasmuch as it is a biennial, by the use of the term herbaceous "perennial."

It seems to follow, therefore, that in compiling a class of the recognised type for herbaceous perennial plants, care should be taken in the first place to state whether or not bulbous plants may be exhibited, and, in the second place, to enumerate certain species the eligibility of which might otherwise give rise to misunderstanding.

The number of species concerning the status of which doubt can reasonably be entertained is not a very large one after all, and we believe that it would be worth while to arrive at some conventional understanding with respect to them. In this way it would be possible, both to remove existing sources of friction, and also to secure that uniformity of practice which, in the interests of fairness, is so much to be desired.

OUR SUPPLEMENTARY ILLUSTRATION.—The interesting species, Montanoa bipinnatifida, exhibited by Messrs. PAUL & SON, of Cheshunt, at the meeting of the Royal Horticultural Society on December 10, was illustrated in our issue for December 14, 1907, p. 419. The subject of our Supplementary Illustration to the present issue, M. mollissima, differs from M. bipinnatifida, chiefly in having smaller, entire leaves, a more branching yet stiffer habit, and the individual flowers are not quite so large, but more freely produced. Both species have white ray florets, and yellow disc florets. M. mollissima, Brongn, was first introduced into Europe by M. GHIESBREGHT, who forwarded seeds from Mexico to the Natural History Museum of Paris in 1843, where it flowered in the Botanic Garden the following year. Illustrations are given in the *Revue Horticole* for 1857, p. 543, and *Bot. Mag.*, tab. 8,143. The plant has been given several names. In the south of Europe, where both species thrive in the open air, it is more often named Montagnea grandiflora. The plant now illustrated flowered in the greenhouse at Kew in November. It grew to a height of 9 to 10 feet, and was growing in a 12-inch pot, being three years old from seed. M. bipinnatifida has also received several names. In the *Revue Horticole* for 1863, p. 370, the plant is figured as M. heracleifolia. This illustration, and also that of M. mollissima, from the same work, are reproduced in NICHOLSON'S *Dictionary of Gardening*. Polymnia grandis is another name for this plant. Judging by photographs of M. bipinnatifida received from India, it is a charming plant in that country, having been introduced from Mexico, where both species occur as natives. Montanoas are easy plants to grow, thriving in a loamy soil under the conditions of a cool greenhouse. During the summer the plants may be grown outside just like Chrysanthemums. Propagation is effected by seeds, cuttings, or suckers. Planted out in a large conservatory or greenhouse both species grow rapidly; the roots, however, seem to require confinement in order to induce the plants to flower freely. Neither species will make a good commercial plant, but those who have a large greenhouse to furnish in winter will find both of them of great service.

THE FLORAL COMMITTEE AMONG THE UNEMPLOYED.—At the meeting of the Royal Horticultural Society, on Tuesday last, the members of the Floral Committee, on meeting in their usual room on the first floor, were surprised to find that not a single entry had been made of plant or flower for the Society's First Class Certificate or Award of Merit. The surprise was natural enough, seeing that the chairman, Mr. WILLIAM MARSHALL, informed us afterwards that a similar circumstance had not occurred within his memory, and this extends over a period of 25 years!

FRUIT CONFECTION FROM UNRIPE GRAPES.—Experiments have been made at Thomery, in France, in converting unripe Grapes into a useful conserve. For example, the bunches of table Grapes are thinned in June and July of two thirds of their berries, and again at a later part of the season another third of the remainder is taken.

ADDITIONS FOR CALENDAR PUBLISHED LAST WEEK: THE WINDSOR, ETON AND DISTRICT ROSE AND HORTICULTURAL SOCIETY, at a committee meeting held on January 11, fixed the Annual Exhibition for Saturday, June 27. The report for the past year was considered satisfactory, the number of subscribers having increased whilst the exhibition entries were greatly in excess of all previous years. The hon. secretary announced that two additional Silver Cups would be offered in the coming schedule, one given by Mrs. FORTESCUE, Dropmore, the other to be known as the Islet Challenge Cup. At the general meeting it was decided to amend Rule 7 so that in future the local radius of the Society should be extended to include the whole of the county of Berkshire.—THE DEVON DAFFODIL AND SPRING FLOWER SHOW will be held at Plymouth Guildhall and Square on April 21 and 22. Captain PARLBY MANADON, Crown Hill, Plymouth, is secretary.—THE WEST OF ENGLAND CHRYSANTHEMUM SOCIETY'S SHOW will take place in the Plymouth Guildhall and Square on November 10 and 11. Mr. CHAS. WILSON is secretary.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. The annual meeting and election of pensioners will take place at Simpson's, 101, Strand, on Thursday next, January 23, at 2.15 p.m. Afterwards at 6 p.m. the annual friendly supper will be held also at Simpson's, under the presidency of MARTIN H. DOCKER SUTTON, Esq., of Reading.

THE CROYDON & DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY have arranged for the annual dinner to take place at the Greyhound Hotel, Croydon, on Wednesday evening, the 22nd inst., at 7.30 p.m.

APPOINTMENT TO CARDIFF CEMETERY. At a meeting of the Cardiff City Council, held on Monday, the 13th inst., Mr. C. WILLIS, superintendent of Cheltenham Cemetery, was appointed manager of the Cardiff City Cemetery. This appointment which was advertised in these columns a few weeks ago, is worth about £140 per annum, inclusive of house rent. There were originally over 170 applicants for the post, but the Parks Committee reduced these to a short list of five, who appeared before the Council on the date named. The successful candidate is 35 years of age, and has filled the position at Cheltenham for four years. Those selected to appear before the City Council were Mr. F. J. P. LOND, superintendent of Acton Cemetery; Mr. T. P. POWLEY, deputy-superintendent and manager of the General Cemetery, Wisbech; Mr. C. WILLIS, superintendent of Cheltenham Cemetery; Mr. HARRY ROUSE, foreman for the past 5½ years of the propagating department of the City Parks, Cardiff; and Mr. W. J. MELLINS, reservoir keeper, in the employ of the Cardiff Corporation.

IMPATIENS HOLSTII. Those cultivators who may have failed to grow and flower Impatiens Holstii to their satisfaction, whether in pots or the open ground, should not discard the plants but accord them another year a partially shady situation indoors or out of doors. In such the plants will surprise them by their wealth of bloom and good growth, the type form and its varieties being improved thereby to an equal degree.

"MY GARDEN DIARY FOR 1903."—This little work, published by Messrs. SUTTON & SONS, Reading, is a most useful as well as a dainty volume. Under each month are given, on the left-hand page, reminder notes as to the work that ought to be done, whilst on the right-hand page a blank space is left for notes and memoranda. It will prove a good shillingsworth to many a gardener, and especially to the amateur.

FATALITY TO A SCOTCH GARDENER IN AMERICA.—Early on the morning of December 27 last, it is reported in *Horticulture*, JOHN CLARK, aged 42 years, his wife and three children perished in a fire which destroyed their home at Watertown, Mass. JOHN CLARK was a salesman for the H. E. FISKE Seed Company, of Boston. His father, Mr. JOHN F. CLARK, is employed at the Botanic Garden in Washington, and it will be remembered by some of our readers that before leaving Britain for America he was gardener for many years at Wemyss Castle, Fifeshire. Deceased was a member of the Massachusetts Horticultural Society and the Gardeners' and Florists' Club.

THE AGRICULTURAL DEPARTMENT OF NEW ZEALAND. The annual report of the New Zealand Department of Agriculture forms a bulky volume of 450 pages, dealing, of course, with all kinds of matters agricultural. The planting of vineyards is extending, the last year having proved a very good one, both as to quality and quantity of crop. The growers are more and more discarding the European stocks in favour of the American ones that have proved to be more resistant to the attacks of Phylloxera. A warning is, however, given against the use of Isabella, Surprise, and Albany, since these, although of American origin, are only feebly resistant to the disease. Vine-growing ought to be a profitable undertaking, for it is stated that the yield of wine varies from 400 to 700 gallons per acre, and the price obtainable ranges from 6s. to 10s. per gallon. The department of pathology, which deals with the diseases of cultivated crops, is doing useful work, both of a preventive and remedial nature. As in all countries where fruit and other vegetable produce is grown in bulk, there is a tendency for pests of various kinds to multiply. This is merely a means of restoring the normal balance of nature which man is constantly disturbing, and it is only by unremitting attention, guided by an intelligent appreciation of the circumstances and causes of disease, that the cultivator can retain the upper hand.

TREE ROOTS AND GRASSES.—According to a writer in the *Journal of Botany*, the well-known difficulty of keeping up a good sward beneath trees has usually been ascribed to the shading of the grass, to the absorption of the moisture by the trees, and to the withdrawal of the plant-food by the tree-roots. Some experiments recently made seem to point to a more fundamental cause. In this competition of grass with trees, it is not always the grass that suffers. In several cases trees were found to be very materially affected by the grass growing beneath their branches. On the other hand, not all kinds of trees have a harmful effect upon other plants, though some certainly have such an effect. Potentilla fruticosa, a shrubby Cinquefoil, appears to be unable to live in the shade of the Butternut (Juglans cinerea), though it thrives in the same locality under other species of trees. In the case of the grasses, it was found that certain species of trees, notably the Tulip tree, Dogwood, Maple, Cherry, and Pine seriously checked the growth of grasses grown in their vicinity, and this injurious effect seems to be due to the excretion of substances by the trees that are harmful to the grasses. With regard to these statements by our American contemporary, we have remarked, both in this country and on the continent of Europe, not all of the so-called injurious species of trees act in the manner of those of America, for grasses of average strength grow under the Tulip tree, Maple, and Cherry when the shade is not dense. The dying out of the grasses is more often due to drip from the leaves, and this would be more frequently found in districts and countries having a heavy rainfall than in drier climates.

ECONOMIC BIOLOGY IN AMERICA. The *Proceedings* of the 19th annual meeting of the Association of Economic Entomologists contains, as usual, much interesting matter to all whose business lies with plants. Mr. F. M. WEBSTER contributes a suggestive article on the value of parasites in cereal and forage crop production. He shows how outbreaks of pestilent insects, such as the Hessian fly, were rendered harmless by the concomitant multiplication of other insects (Polygnotus) parasitic upon the eggs and larvae of the fly. Mr. WEBSTER rightly calls attention to the great ignorance which prevails on these parasitic relationships, which are, nevertheless, of the highest economic importance. Even in England, the value of the carnivorous lady-bird, and, still more, of its voracious larva, is often not appreciated. They are, unfortunately, not common enough; but we have known the larva to be destroyed under the impression that it was injurious to the plant!

FORESTRY IN SCOTLAND. The number of the *Transactions of the Royal Scottish Arboricultural Society* for January fully sustains the reputation of this important journal. Besides articles dealing with what might be called the high politics of forestry, it also contains many valuable papers devoted to the consideration of the cultivation and commercial exploitation of timbers of various sorts, e.g., the Douglas Fir, hardwoods, &c. Professor JAMES GEIKIE contributes an interesting article on "Soil: Its Origin and Nature," and a useful summary is given of the Afforestation Conference held in London in June last, at which the chair was taken by the President of the Board of Agriculture, supported by the President of the Local Government Board.

"'LIVE STOCK JOURNAL' ALMANAC, 1908."—This useful publication, issued by Messrs. VINTON & CO., London, gives an excellent summary of the events of the preceding year connected with matters associated with stock breeding. Many of the articles are of interest, and the whole forms a handy book of reference for those interested in the subject of live stock.

MESEMBRYANTHEMUM PYROPEUM.

AMONGST the annual species of Mesembryanthemum cultivated in this country, the one most commonly met with is the "Ice Plant" (M. crystallinum), with pretty white flowers and trailing habit. A species of much greater value for decorative purposes is the South African species illustrated at fig. 21. It is of easy culture and floriferous habit, succeeds in any light soil, and never fails to give a fine display of its lovely flowers throughout the whole of the summer months, or to ripen quantities of seeds. It is one of the prettiest annuals for a sunny position on the rockery or on a border at the base of a wall. The plant is of tufted habit, and forms a densely-flowered clump 6 to 8 inches across. The flowers are borne on peduncles 2 to 4 inches long, and are one inch and a half in diameter. They vary considerably in colour, most of them being light pink, with a dark red eye; others are self-coloured, varieties with white, pink, or red flowers being of frequent occurrence. The leaves are fleshy, linear, canaliculate, and about 3 inches long. The whole of the plant is covered with numerous small tubercular dots. The plant is catalogued by several nurserymen under the name of M. tricolor, under which name it is figured in the *Botanical Magazine*, t. 2141. In Nicholson's *Dictionary of Gardening*, fig. 565, it is illustrated under the name of M. tricolor, syn. M. *Pyropeum*, Haw. (*P. Karoo*).

FOREIGN CORRESPONDENCE.

CHRYSANTHEMUMS IN JAPAN.

THE Chrysanthemum on its native heath in the autumn is ubiquitous; every house has its cut flowers and potted plants; every garden is a mass of bloom; and even the meanest shop with its medley of saleable and unsaleable goods has a pot of the national flower growing in its fresh beauty amidst the general ugliness of its surroundings.

To see Chrysanthemums cultivated to the highest point of perfection it is necessary to visit the grounds of the Imperial Palace in Tokyo; there the cultivation of this plant has been carried on most carefully for many hundred years, and ... passing through these Chrysanthemum ... one has seen the most noteworthy specimens to be found in the Land of the Rising Sun. November is *par excellence* the month in which to make this visit, for then the flowers have attained their highest point of development.

At the present moment fashion ordains that the flowers should be small, so ordinarily one finds them smaller than at home; in fact, sometimes they are the size of a Michaelmas Daisy, and grow in almost equal profusion; these may be satisfactory from a fashion point of view, but they are decidedly disappointing so far as beauty is concerned.

The Japanese have always been experts in grafting several varieties on to one stock; this is still a leading feature in Chrysanthemum culture, and is very highly appreciated out here. Innumerable plants have from 10 to 20 varieties grafted on one stem, but the Palace grounds have plants on which 45 distinct varieties are shown on one healthy growing stock. The blooms of the smaller kinds reach their normal size under this treatment, but the larger kinds never attain their proper dimensions. The colouring being soft, with the exception of a bright canary yellow, these flowers tone together in a most wonderful way and the result is that the whole plant looks like a gigantic bouquet rather stiffly arranged.

FIG. 21.—MESEMBRYANTHEMUM PYROPEUM.

The plants, which are said to have no equal in the world, are trained upon Bamboo frames in the shape of a flat pyramid; some of the largest of these plants had a diameter varying from 9 to 11 feet, with a height of from 4 feet to 5 feet 6 inches. They presented a wonderful sight of blossom, for the heads of bloom varied from 400 to 700 on each plant. To see these plants, Japanese come from every corner of the country, and, indeed, they are well repaid for their trouble, the Chrysanthemum plants with their masses of bloom forming truly wonderful objects.

The Palace grounds are very extensive, and are of themselves well worth a visit, being

well stocked with Maple trees, the leaves of which in November are one blaze of every shade of pink, red, and brown colour; seen above the masses of Chrysanthemums, they form a scheme of colouring perhaps without a rival in any part of the world. *L. K., Yokohama.*

TO TEST FRUIT-TREE BORDERS.

In his weekly Calendars published in these pages during the past year Mr. Alexander Kirk recommended again and again that it is necessary for a gardener to thoroughly test the condition of the soil in a border before he can be in a position to decide whether or not a further supply of water is necessary for the roots. The surface soil, owing to the action of sunshine, or the drip from syringings, &c., may be drier or wetter than the bulk of soil below.

The implement illustrated at fig. 22 was devised by Mr. Kirk for the purpose of bringing to the surface a small quantity of the lowermost soil for careful examination. Mr. Kirk states that the implement "is made entirely of steel, weighs about 14 pounds, is 4 feet in length, and the condition of a vine or Peach border can at any time or place be ascertained by merely driving this instrument to the bottom of the border, and on its withdrawal the soil brought up can be examined, and it can be seen what the soil is composed of, and whether or not requiring water; this can be done without in the least disturbing the roots. When Carrots, Parsnips, or other root crops fail to succeed in old garden soil, this difficulty can be overcome by driving the instrument into the soil at every 6 or 8 inches, and after withdrawing it and filling the hole with a compost of sand, peat or wood ashes and a little artificial manure, firming the soil in each hole, placing a few seeds on the top and covering lightly. All practical gardeners know that one of the points in plant and Grape growing is to know when to give water and when to withhold it. As a rule, vine and Peach borders are too often dry at the bottom when least expected, thus causing Grape shanking and Peach dropping. The temperature of the border can be ascertained by placing a ground thermometer in the sheath of the instrument. This is specially important in early forcing. The soil tester is also an important implement to wood foresters, as by its use the soil and state of the ground can be discovered before planting."

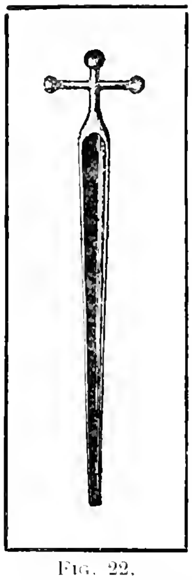


FIG. 22.
KIRK'S SOIL TESTER FOR FRUIT - TREE BORDERS

HOME CORRESPONDENCE.

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

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. At no time does this Institution appeal with greater force to its friends and sympathisers than on the occasion of the annual election of pensioners, which will take place this year on the 23rd instant, when 18 or 20 only out of the 52 candidates accepted as eligible by the committee can be elected owing to the want of further funds. The candidates who may fail to secure election are equally as deserving as are those who will be successful; but, unfortunately for themselves, they have neglected to join the Society in their younger days, and, as a consequence, are now unable to secure the requisite number of votes. It may not be generally known that a change in the principle of election was forced by circumstances on the committee a few years ago. Under the old system, pensioners were placed on the fund by resolution of the committee. Now it is a question of votes only (excepting that the committee still has the power to add one or two non-elected candidates at their discretion), so that those candidates who can command the most votes are sure of election. In the light of this change, it is well worth while for all who are interested in this great charity for the aged and poor of our craft to peruse carefully the list of approved candidates issued with the present election voting papers. It reveals, to my mind, in a most forcible way the great advantage possessed by those who have for long subscribed to this institution, as against those who have subscribed for a short time only, or not at all, truly illustrating the old adage that "God helps those who help themselves." This comes very clearly out on reference to No. 10 on the list. It will be found that this gardener has been a subscriber for 28 years, and, as a consequence, he is entitled to 2,800 votes, making his election practically certain by his own providence and foresight. Another subscriber of 25 years is entitled to 2,500 votes, making his election also practically sure, and so on, every year's subscription adding so many votes to the subscriber's credit, and, as years go by, helping to make his chance of election more sure should he unfortunately require the help of the Institution. It takes about £4,000 a year to pay the pensions of upwards of 200 old gardeners, or the widows of such, and to meet this heavy disbursement the only income the committee have to depend on is £904 from investments, and £1,619 from annual subscriptions, leaving the balance for the committee to find the best way they can, and which is chiefly subscribed by a generous public, who have no interest in the Institution further than the love of gardening and of philanthropy. My object in writing this letter is to appeal to every gardener (and if the gardener is indifferent, to his wife, as the welfare of the charity concerns her as much as it does her husband) who may read these lines to join the committee in lending a helping hand to spread abroad the knowledge of this old and beneficent gardening charity, and to compel a more kindly and practical interest in its welfare, by inducing gardening friends not only to become subscribers themselves, but also to do their level best each to secure at least one more subscriber before another election comes round. The subscription of one guinea a year amounts only to a little more than 1d. a day. This small sum, besides affording an insurance against a rainy day in old age if needed, will afford the subscriber the happiness of knowing that he has done something to cheer and brighten the later days of some poor, deserving, old gardener or his widow. *Owen Thomas.*

A PROPOSED VEGETABLE EXHIBITION.—Few people, I think, beyond those especially interested in a business point of view will regret the disappearance of the National Potato Society. It is a fair question to ask of any of its late supporters, of what value was it in the furthering of Potato culture among the masses? It is all very well for seedsmen to offer 40 or 50 varieties, or more, of Potatos, with a special recommendation for each for some particular season, soil, or locality, but who, beyond the exhibitor, ever thinks of growing more than half-a-dozen for their value as a succession? Go into any market or greengrocer's shop in London or the provinces, and ask the purveyors how many sorts they handle or wish to handle. The answer in 99 cases out of every hundred will be, "Oh! as few as possible. Give me one sort in summer and another for winter; that suits my trade, whether they are 'Snowdrops,' 'Dates,' or 'Dunbars,' and you and your horticultural friends can take the rest." Those who have anything at all to do with vegetable shows, whether in summer or autumn, know what a position Up-to-Date takes with the exhibitor, whether it be as a round or a kidney variety. They know quite well the amount of confusion there is in sorts of Potatos, how easy it is to show one variety under half-a-dozen names. Such circumstances as these are sufficient to deter many persons from taking interest in a Potato society. I know many large gardens where the weekly demand of tubers is not less than ½ cwt. per day; yet, at the most, six sorts are grown. Why trouble to harbour more? *J. D.* (p. 13) brings forward suggestions for a vegetable society, but if such a society were started, like the Potato Society, it would have, I fear, a short existence. The main reason for this is the lack of outside support such a project would obtain. At almost every flower show vegetables are given a prominent place, and at such shows it is not difficult to discern how little is the real interest of visitors in that part of the display. The present fashion is not in favour of sightseeing in the case of such things as big Onions of one variety staged under several names, and which require the keenest expert to tell which is the correct type. The same remark is applicable to many other vegetables. Let us have a kind of vegetable about which there can be no quibbling in regard to names; the more often the names for one sort are multiplied the greater is the interest diminished. *Onlooker.*

NUMBER OF SPECIMENS IN EXHIBITS OF VEGETABLES.—Now that schedule-framing is in progress, attention might be called to the desirability of limiting the number of specimens shown in collections of vegetables. This is generally done, but at some small shows it is not the custom. At an exhibition in this locality last November, in one collection of six kinds there were 47 Tomatos, about 40 Potatos, and other kinds were in proportion. Another exhibitor staged 10 Cucumbers as one of his kinds in the same class. There is a danger of the smaller grower being beaten by another who stages a greater display. It is superiority of specimens that should be encouraged. *H. K., Faringdon.*

ECCREMOCARPUS SCABER.—Referring to the note by *F. M.* on the above plant, on p. 13, I may say there are three plants of E. scaber which have been established in this garden for several years. They are growing in loose calcareous soil, to which a quantity of leaf-soil was added at the time of planting. They are planted in an open position among a small collection of hardy Ferns, and allowed to ramble over some old tree stumps; thus the interesting and attractive blossoms are displayed to the best advantage, and are carried by the plants well into the autumn or early winter. The plants produce seed here very freely; each spring, seedlings appear in handfuls where the pods have fallen, and it is evident from the growth of those retained, that limitations of space alone prevent their naturalising themselves freely. *T. S., Walmsgate Gardens, Louth, Lincoln.*

SEEDSMEN'S SPECIAL PRIZES AND CORRUPTION. The thought that it is just possible special prizes offered by seedsmen at exhibitions of garden produce, when the conditions are that the seeds must be purchased from themselves, to enable gardeners to win prizes, constituted an infraction of the Prevention of Corruption Act of 1906, was in my mind, as in that of your correspondent "Clean Bill." It is evident that the provisions of the Act may be used even to this extent, as the special object of the prizes is to promote custom or trade. On the other hand, there is not a shadow of proof that this practice, so long in existence, injures the gardener's employer one atom. If seedsmen fear that their action in offering these prizes with the stipulation attached did contravene the Act, and they were to refrain from offering them, our exhibitions all over the kingdom would greatly suffer. Of course, if the objectionable stipulation was not added, the seedsman would have no interest whatever in offering the prizes. Still, even were the Act contravened by the stipulation, it is obvious it would not be so if show committees agree to accept these special prizes from seedsmen under the conditions "Open only to our customers," as then no specific act of corruption, or assisting corruption, could possibly be alleged. I do think, whilst the Act is a good one and is distinctly aimed to prevent trading corruption, it is being used somewhat unfairly so far as the gardener is concerned, in seeking to frighten him from accepting an absolutely innocent gift from any source, and, poor fellow, he is too often glad to get such gift, as his wages rarely reach that level his merits deserve, or such as would make him truly independent. Where an employer suspects his gardener of corruption ... the sooner they part the better for both ...

The Yellow Mirabelle Plum. Mr Ward says on p 28 that he only knows of one garden in which the Mirabelle Jaune Plum is grown. At Sawbridgeworth he can at any time see trees of this variety - bushes about 40 or more years old, 12 to 15 feet high and as much through the head Last year they bore very heavy crops, there seemed to be almost as many of the tiny crimson-spotted fruits as there were of the little dark-green leaves It is a miniature tree in all respects Sometimes these trees take a rest, but they generally yield a fair amount of fruit: the crop is, however, not by any means always preserved, since the rooks have a fancy for the little yellow fruits and are very early astir in the morning to get them As jam it is in every way worthy of the name "Mirabelle," firm and very rich Messrs. T Rivers & Son catalogue two varieties, the Mirabelle and the Early Mirabelle. The former, more properly known as the "Petite Mirabelle," has about a dozen synonyms, usually a good criterion of merit. The "Mirabelle Précoce" is, as its name indicates, an early variety Multiplication of synonyms ought not to occur nowadays, but some people go out of their way to make confusion It is always annoying to me to hear the Japanese Plums called Mirabelles, but why folk, who should know better, persist in calling the Cherry Plum Mirabelle, is beyond my comprehension One can understand Myrobalan being frequently mis-spelt - it is too bad that it should be mis-called as well. The origin of this Plum (Prunus cerasifera), like that of Jeames, is "wrapt in mystery." Loudon says "Europe, or according to some, North America" The county of Essex claims it almost as a child of its own, but it is probably a child by adoption only Who christened it I do not know, but it is evidently named after μυροβάλαν (myrobalanum), the fruit of a species of Palm (Terminalia Chebula), the behen nut, from which a balsam was made, now used in dyeing and tanning and also in medicine *H S R*

Libertia grandiflora. I was interested by the remarks and photograph of this plant published in the issue of *Gardeners' Chronicle* for January 4 There is here, in one of the herbaceous borders, a clump over 20 feet in circumference At various times many seedlings have arisen around it spontaneously. These, when transplanted in the spring, even when of considerable size, to other positions, have grown away quite freely Several of these have been transplanted in the ground, in some cases under the shade of coniferous trees, and they seem quite at home and flower well every summer Rabbits never molest them. *F. Street, The Gardens, Ardwell, Wigtownshire, N.B.*

Ononis arvensis (syn. spinosa). This charming little leguminous plant is one of the many British subjects which are so neglected by British gardeners The species flourishes wild in the open fields in the Midlands, and flowers practically all through the summer, its pretty little pea-shaped, rosy-pink blooms giving it a very pleasing appearance It is well worth a place in every garden, its procumbent growth and graceful rambling habit rendering it admirable for ornamental banks and rockeries It succeeds best in the full sun, in a well drained, turfy loam, and seldom thrives in over moist, low ground and damp, shady places *C H Middleton*

What is an Herbaceous Plant? On p. 438, Vol. xlii of the *Gardeners' Chronicle*, Mr Molyneux asks: "How would I treat Phygelius capensis and Pentstemon Newbury Gem if exhibited in a competitive group of herbaceous plants, and, curiously enough, the former species was in my mind when writing the note published on page 417 of the same volume The plant is obviously one that requires much discretion For example, in southern gardens, or others more or less favoured by situation, the Phygelius is distinctly of a "shrubby" character, and with that knowledge and the fact that naturally the plant is of a shrubby nature, I should in these circumstances so regard it But I could not adhere to that course were the plant exhibited in a locality where by the nature of the surroundings it is forced into being a strictly herbaceous subject, as is the case in most northern gardens. In these latter circumstances the plant is most usually cut to the ground each year by the severity of the weather, or at least so disfigured that the above-ground shoots are worthless. The plant is, of course, an exceptional one, and while fully retaining the "shrubby" character in some localities, does "annually produce flowering stems from the perennial root stock," and in this way, in part at least, brings itself within the required condition. By the same line of argument, however, the Romneya must be considered an "herbaceous" plant, and in this respect differs from that section of shrubby plants that produce the growth one year and flower from axillary "eyes" or buds a year later. Disqualification under such circumstances is perhaps not the best way out of the difficulty, as there is nothing to be gained by discouraging the exhibiting of two excellent subjects. I would rather suggest leaving out the word "herbaceous" from exhibition schedules, and substituting the words "hardy perennials" or "hardy border perennials" in its stead. Even these terms may require some explanatory footnote to avoid misunderstandings. Either of the above-named terms, while giving increased latitude to exhibitors, would still serve to keep in check those who constantly err by exhibiting "Sweet Peas," "Canterbury Bells," and other such species as "herbaceous" subjects. *E. H. Jenkins*

Prevention of Corruption Act, 1906.

I am gratefully indebted to your correspondents on the above subject, pages 28 and 29, *Gardeners' Chronicle*, January 11. I most heartily endorse their protest on behalf of gardeners who are alleged to be guilty of such dishonest practices as are suggested in Sir Edward Fry's letter. My experience of gardens and gardeners for upwards of 20 years past is that I can most emphatically deny such practices to exist amongst members of our profession collectively I admit there have been cases of individual gardeners who have proved themselves unworthy of their honourable calling Charity to our neighbours, sir, is due to all men, and I trust that our employers, and many there are who regularly read the *Gardeners' Chronicle*, will not be too prejudiced against their gardeners' honour. During the past ten years I have had the honour to be on intimate terms with some of the best gardeners of the north, and my firm opinion is that gardeners actually make sacrifices in order to serve their employers' interests. As for Sir Edward's opinions in reference to the seedsmen's bribe, that a gardener would pass over inferior seeds at the rate of 1s. in the £, and, in other cases, order more than was requisite, my experience, in the first instance, is such that I can faithfully defend the gardener's honour. In the second, if Sir Edward had a little practical experience he would think himself fortunate if he secured all things necessary for the upkeep of any garden he should happen to preside over In many establishments men are trusted with the keeping of all garden accounts What, indeed, would be the result if we were so dishonest to our employer as the letter in question appears to imply? In cases where employers are imposed upon, if we could trace the origin, it would be the master who is as much to blame as the man for offering such starvation wages. I have been interested in most of the correspondence on the above subject, and what impresses me most is the unlimited amount of legal advice we have been given gratis, or, at least for the modest sum of threepence Apologising for trespassing upon your valuable space *John Donoghue, Bandon Hill Gardens, Ireland.*

—— I am sorry to see that Sir Edward Fry's letter is not being taken up in the best spirit by some gardeners He was writing to a gardeners' paper, and he took up the points applicable to gardeners, not that he regarded them more than anyone else as rogues Had he been writing to an engineering paper he would have referred to undeclared commissions in the same manner he adopted about gardeners' discount. *H*

—— It is highly gratifying to me that, since this Act came into force, I have not been offered any present or discount in any shape or form from any nurseryman or seedsman It is a plain proof that nurserymen are honestly obeying the law, and I hope the mistrust and suspicion that is still in some minds may be quickly dispersed, and that a better feeling and understanding will prevail amongst employers and employed *H. Gardener*

SOCIETIES.

ROYAL HORTICULTURAL.

January 14 —The meeting of this society on Tuesday last was sparsely attended. Several exhibitors made a meritorious display of perpetual-flowering Carnations. There were very few Orchids. The best exhibit included a cork-made rock-garden, and this was shown by Messrs. W. Cutbush & Son. Messrs. Cannell & Sons showed Apples in excellent style and of good quality, all the produce being from orchard trees. Messrs. J. Veitch & Sons had a table of miscellaneous stove and greenhouse plants, forced plants of Rhododendron indicum constituting a bright feature.

Floral Committee.

Present: W. Marshall, Esq., and Messrs. H. B. May, Jno. Green, G. Reuthe, T. W. Turner, R. W. Wallace, Chas. T. Druery, Geo. Nicholson, Jno. Jennings, W. Howe, W. Cuthbertson, Arthur Turner, W. J. Grant, Herbert J. Cutbush, Chas. Blick, Geo. Paul, Chas. Dixon, J. F. McLeod, Jas. Douglas, Walter T. Ware, R. C. Reginald Nevill, and R. Hooper Pearson.

Half of the long table to the left of the entrance to the hall was occupied by exhibits from Messrs J. Veitch & Sons, Royal Exotic Nursery, Chelsea, which were mostly disposed in small groups of three or five plants—a better method than the heterogeneous mixture, the effectiveness of the plant when arranged as a group being easier to gauge and study. The useful winter-bloomer Leonotis Leonorus was repeated several times, as were Azalea indica in varieties, whilst Jacobinia coccinea and J. chrysostephana added to the brightness of the whole. Members of the Citrus family showed plenty of fruits on little bushes; and some had no fruits, but many blossoms, and probably the latter were the more admired. The orange, with variegated leaves and striped fruits, was nicely shown. Some capital Lily of the Valley, grown at Langley, and which had been retarded, and Moschosma riparium, a few Cyclamens, &c., were staged, together with small Ferns and Palms for contrast. (Silver-Gilt Banksian Medal.)

A group of hardy, variegated shrubs, Ivies, &c., was shown by Mr. L. R. Russell, of the Richmond Nurseries, Richmond, Surrey. The most conspicuous plants, however, were those of Buddleia asiatica in flower. Other plants consisted of Aucuba japonica vera, having dark-green leaves, and oval berries of rich scarlet colour; A. j. limbata, Eleagnus glabra marginata alba, E. Simonii, and E. macrophyllus, and Garrya elliptica, this latter species having numerous catkins on branches cut from out-of-door bushes. (Silver Banksian Medal.)

Perpetual flowering Carnations were shown in considerable numbers by Messrs. Hugh Low & Co., The Nurseries, Highgate Hill and Barnet. The flowers were shown as loose bouquets, in tall glasses The varieties included Rose Enchantress, Winsor, White Enchantress, Aristocrat, Helen Gould, and Mrs. Burnett. Some small plants of the same race were shown; among these were Cardinal, Red Enchantress, White Perfection, Oriflamme (a bright-coloured fancy), likewise cut blooms of R. Craig, Beacon, and others On the floor stood a half-circular group of Euonymus latifolius variegatus, with an edging of Aralia Sieboldii; and on the table a group of neat-looking, compactly-habited plants of their Salmon King Cyclamen, the flowers of which make a fine show by artificial light. (Silver-Gilt Flora Medal.)

Messrs W. Cutbush & Son, of The Nurseries, Highgate, London, N., and Barnet, Hertfordshire, showed cut flowers of various perpetual flowering Carnations, viz., Rose Dore (a fine flower showing great symmetry of form), Helen Goddard, Duchess of Portland (a flower of a light rose tint, occasionally flaked on some of the petals), and Nelson Fisher. Several groups of retarded Lilies were placed amongst the other exhibits with good effect, these being L. lancifolium, L. l. rubrum, L. auratum, L. longiflorum, &c., besides Spiræa japonica and Lily

of the Valley, also retarded plants. One part of the table was furnished with cork receptacles of rustic character planted with Alpines of species, small Conifers, Helleborus niger, Iris Histrio, I. Tauri, Meconopsis Wallichi, &c. There were also in bloom Daphne Mezereum alba, Hamamelis arborea, &c. (Silver-Gilt Flora Medal.)

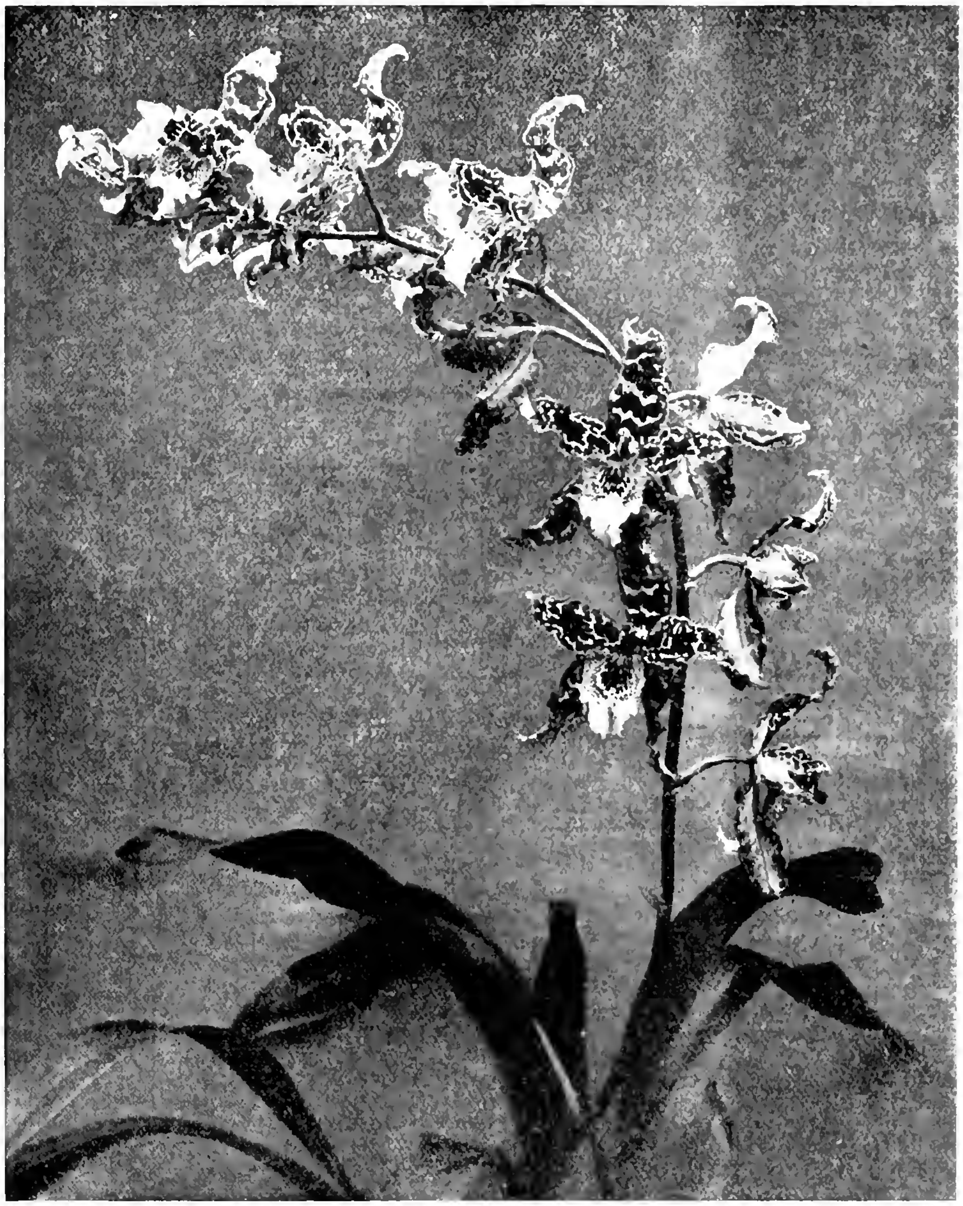
Alpine plants of many species were shown in pans and pots by Messrs. J. PEED & SON, Nurserymen, West Norwood, S.E. (Silver Banksian Medal.)

The Misses HOPKINS, Mere, Shepperton, exhibited a few hardy Primulas, Polyanthuses, Polygala Chamæbuxus, Lithospermum rosmarinifolium, &c.

Messrs. HUGH LOW & SONS, Enfield, staged a small, select group of Cypripediums, which included Thompsoni, Leeanum Clinkaberryanum, aureum virginale, aureum Hyeanum, Chrysotoxum, Mrs. Wm. Mostyn, Euryades, Maudiæ, several plants of the clear yellow C. insigne Luciane, a fine C. Chapmanii, &c., and for which a Silver Banksian Medal was awarded.

Messrs. HEATH & SONS, Cheltenham, also staged a group of Cypripediums, among which were C. Swinburnei magnificum, varieties of C. Euryades, C. insigne, and hybrids. (Silver Banksian Medal.)

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed a fine specimen of Cypripedium G. F. Moore, Gatton



Photograph by J. Gregory.

FIG. 23.—ODONTOGLOSSUM × MACNABIANUM AS SHOWN BY MESSRS. SANDER AND SONS AT THE R.H.S. MEETING ON TUESDAY LAST. (AWARDED A FIRST-CLASS CERTIFICATE.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, W. Boxall, F. J. Hanbury, H. Little, Jeremiah Colman, F. Sander, A. A. McBean, F. M. Ogilvie, G. F. Moore, H. T. Pitt, Walter Cobb, J. Charlesworth, W. H. Young, H. G. Alexander, H. A. Tracy, H. Ballantine, J. Wilson Potter, R. Brooman-White, A. Dye, and C. J. Lucas.

The severe weather which preceded the date of the meeting, although a change had taken place during the night, was doubtless the cause of this being numerically one of the smallest shows of Orchids for some time past. The proportion of good new Orchids, however, was great.

Park variety Mrs. Wm. Mostyn, Chardwar variety × Sallieri aureum), a very strong-growing and handsome hybrid.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), sent Odontoglossum venustulum "Apollo," which was given an Award of Merit, February 12, 1907. The fine white flowers had three parts of their surface covered with claret-red in irregular blotches; also the pale apricot-tinted Lycaste Skinneri armeniaca.

Mr. H. A. TRACY, Twickenham, showed Cypripedium insigne Berryanum.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent a fine-flowered inflorescence of Lælio-Cattleya Callistoglossa ignescens.

Messrs. STANLEY & CO., Southgate, showed a white Cattleya Trianæ with a purple blotch on the lip.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, showed Cypripedium Helen II., a cream-coloured flower spotted and tinged with rose; also the new C. Helen II., variety Armstrongiæ (bellatulum album × insigne Sanderæ), a very handsome hybrid with wax-like white flowers, the petals spotted with purple, and the labellum tinged with yellow, &c.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed the first flower of a very remarkable form of Odontoglossum Wiltonense, obtained by crossing O. Kegeljani and O. crispum Raymond Crawshay. The hybrid has a lemon-yellow ground colour, with large blotches of purple-brown; the very broad, [illegible]ate, white labellum having a large chestnut-brown blotch in front of the crest, and some smaller purple blotches at the sides.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent the pretty Cypripedium Mrs. Robert Lonsdale, and the fine C. Actæus Langleyense.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, showed Odontoglossum crispum Lyoth, a very showy claret-purple blotched variety; a fine form of Cypripedium Fowlerianum; a distinct new variety of C. insigne with a very broad and distinctly-marked dorsal sepal; and a pretty hybrid of C. Sallieri.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum MacNabianum (Harryanum × Wilckeanum albens) from Messrs. SANDER & SONS, St. Albans. A magnificent hybrid (see fig. 23), in size, shape, and colour a distinct advance in its section. The large flowers, although plainly indicating O. Harryanum, were flatly displayed, the segments being undulate, and slightly recurved at the tips. The sepals were nearly covered with claret-red blotches, the cream-coloured ground only showing through in a few curved lines. The petals were equally heavily decorated with bright claret-coloured blotches, the tips and margin being also tinted with violet. Lip broad and flat, white in front and with a fine marking of rose colour around and in front of the crest. The remarkably fine colour of the flower is attributed to the good quality of the parents used, the O. Wilckeanum albens being the purple-spotted form once known in gardens as O. crispum leopardinum. The plant bore a fine spike of a dozen blooms.

Cypripedium Sultan (Mons. de Curte × Milo, Westonbirt variety) from Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Tetbury (gr. Mr. H. G. Alexander).—A noble flower, and one of the best which the famous collection at Westonbirt has produced. The large and finely-displayed dorsal sepal is yellowish emerald green, heavily blotched with dark purple, and having a pure white margin half an inch in width. The broad petals are tinged and veined with mahogany-red, the margins being yellow, and a few dark spots displayed on the base. Lip, mahogany-red, with a golden margin. Staminode, yellow; lower sepals large and divided, pale green veined with dark green and having a white margin. A very fine production.

Odontoglossum Rossianum (parentage unrecorded), from Baron Sir H. SCHRODER, The Dell, Egham (gr. Mr. H. Ballantine). This is the very handsome hybrid first shown in its undeveloped state by Baron SCHRODER in November, 1905. It has now attained fine proportions, and the plant shown had a very strong inflorescence. The flowers are large, very broad in all the parts; the ground colour light canary-yellow, the inner halves of the segments bearing broad transverse [illegible] and blotches of light [illegible] brown. Lip white, with a large brown blotch in front of the crest.

[illegible] Mrs. [illegible] Young [illegible] *Adhæsum* [illegible], from Messrs. [illegible] A. A. McBEAN, Cooksbridge. A [illegible] tardily [illegible] has been [illegible] Baron [illegible] a good many years ago by the [illegible] NATH YOUNG, who always thought [illegible] production, it failed to get [illegible] 1903, Mr BRIGGS-BURY [illegible] Award of Merit for it. The hybrid [illegible], however,

probably never been seen in so fine condition as those excellent cultivators, Messrs. McBEAN now presented it. The fine white upper sepal is tinted and veined with rose from a small green base. Petals and lip yellowish, tinged with red-brown. It is a characteristically fine flower of great beauty.

AWARD OF MERIT.

Laelio-Cattleya Ceruona, from Major G. L. HOLFORD, C.V.O., C.I.E. (gr. Mr. H. G. Alexander).—The parentage of this very brightly-coloured hybrid is not known, but it indicates L.-C. Ingramii on one side. The sepals and petals are bright magenta rose; the lip deep claret-crimson, with gold lines at the base.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), and Messrs. J. Cheal, W. Bates, A. Dean, G. Kelf, H. Parr, J. Davis, E. Beckett, G. Reynolds, C. Foster, J. Willard, O. Thomas, C. G. A. Nix, H. S. Rivers, P. D. Tuckett, and A. R. Allan.

A large exhibit of culinary and dessert Apples was made by Messrs. H. CANNELL & SONS, Eynsford and Swanley, a hundred varieties, distinct, being shown in conically-heaped baskets, all of them being orchard-grown and of marked good quality, the skins being free from blemishes and the fruits of large size. Of extra large size may be named the following varieties, viz., Charles Ross, Lord Derby, Mrs. Barron, Bismarck, Baumann's Red Reinette, Edward VII., Lady Henniker, Schoolmaster, and Lane's Prince Albert. (Silver-Gilt Knightian Medal.)

E. BIBBY, Esq., Hardwicke Grange, Shrewsbury, was awarded a Silver Banksian Medal for a collection of Pears, the fruits being in excellent condition; and a similar award was made to Miss C. E. MARTIN, of Willowbrook, Auburn, New York state, for fruits bottled in brandy and preserved in other ways, such as Peaches, Pears, Cherries, Melon and Mango, Strawberries, and fruits mixed with Okra, to be consumed as a sauce with meat. Probably Ochro, a Malvaceous plant growing in the West Indies and Central America, is meant, the seed covering of which is eaten.

LECTURE ON THE SOCIETY'S EXHIBITIONS.

MR. J. Gregory, the horticultural photographer, occupied the platform in the Lecture Hall in the afternoon. He said that he was not about to deliver a formal lecture, but to have a brief talk on exhibitions held by the society. At the old Drill Hall pictures could not well be taken, but in the present hall, because of the abundant light and space, it was possible, and he had 40 pictures to show his hearers, many of which had been taken in the hall. He wished to say that in securing such pictures he had always received from officials and visitors the greatest courtesy. The first pictures thrown on the screen, as illustrative exhibition groups, were from the "Temple" show held in 1907. These had to be taken very early in the morning. The charming rockery erected outside the tents by Messrs. CUTBUSH & SONS was the first picture, followed by the display of Cherries within the tents from Gunnersbury House. Then came a splendid group of Orchids staged by Messrs. SANDER & SONS, and next a portion of the same group enlarged. Afterwards came Major HOLFORD'S superb collection. The next pictures were from the Holland House show. Mr. AMOS PERRY'S beautiful water-garden and group came first, taken at 6 a.m. A fine group of annuals followed, then came Mr. MEASURES' collection of insectivorous plants, the individual specimens being none too clearly defined. The other group was the fine one of bulbous plants, shown by Messrs. WALLACE & SONS, of Colchester.

Then a move was figuratively made to the Vincent Square Hall, the first picture being one of Messrs. DOBBIE & Co.'s collection of Turnips. Next was that firm's very striking display of stabious flowers. Another of Mr. PERRY'S water-garden groups was shown, then came others representing Perennial Phloxes, a collection of Roses shown by Messrs. PRINCE & SONS, Oxford, a group of Cypripediums, Major HOLFORD'S grand group of Orchids, also as striking pictures two superb specimens of Cattleyas. There were two pictures of Mr. MOORE'S extensive collection of Cypripediums.

Turning to the fruit show, Messrs. BUNYARD & Co.'s fine collection of house-grown fruit and outdoor fruit made effective pictures. Some of the collections of hothouse fruits were shown, then came Messrs. VEITCH & SONS earlier exhibit of Gooseberries, and later their remarkable group of Japanese and Chinese vines. Mr. NORMAN DAVIS'S Gold Medal group of Chrysanthemums, Mr. PAGE'S beautiful collection of winter-blooming Carnations, collection of fruit from British Columbia and the West Indies, taken at the Colonial Exhibition, and several other pictures.

After the audience had left, a gentleman present threw on to the screen a few very beautiful coloured photographs, and we learn that at the next meeting he will present a number of coloured floral pictures of that description.

NATIONAL CHRYSANTHEMUM.

JANUARY 13.—On Monday evening last the Executive Committee of the above society held a meeting at Carr's Restaurant, Strand. Mr. Thomas Bevan presided. It was resolved that the late-flowering show be held as usual. It will take place at the Crystal Palace on December 2 and 3 next. A Floral Committee meeting will be held on the first day. A motion was made to alter the rules relating to judges. In future it is proposed they be honorary, but the proposition must receive the sanction of the general meeting. The draft annual report was submitted for approval, together with the accounts for the past year.

The Floral Committee dinner, to which any member of the Society is invited, will be held on January 27. The annual meeting of the Society will take place on February 3.

DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS'. At a recent meeting of this association, held in the Abbey Hall, Mr. H. J. Jones, of the Kyecroft Nurseries, Lewisham, delivered a practical lecture on Chrysanthemums, explaining their culture from the cutting to the drawing-room and exhibition table. For ninety minutes the lecturer kept his audience fully interested as he treated minutely upon details of culture, &c., from the time the cuttings were taken to the show day when the flowers were staged for the judges' examination. He strongly impressed upon his listeners that attention to the smallest details very often decided whether the first or some other prize would be obtained. The first important point touched upon was naturally propagation, and under this heading advice was given as to the size of cuttings, nature of soil, the best method and time of striking, &c. Then followed directions as to the first shift, size of pots, subsequent shifts, constituents of a good soil, date and timing of buds, topping, housing, temperature, damping, ventilation, selecting and staging for show. There was very little time left for discussion, but much information was gained by the questions asked by Messrs. Hinton, Durward, Judd, Tyler, Wilson, and Goodyer. Mr. G. Hatch, of Cavenham Park Gardens, Mildenhall, Suffolk, sent 12 splendid bulbs of selected Ailsa Craig Onions which had recently been awarded 1st prize at the Bury St. Edmunds Show, and also 1st prize at the Norwich Chrysanthemum Show, and Mr. A. H. Bailey, of Leopold House Gardens, Reading, exhibited two seedling plants of Cryptomeria gracilis.

PANGBOURNE & DISTRICT GARDENERS'. The first meeting of the new session of this association was held on Wednesday, January 8, when a good number of members were present to hear Mr. A. G. Nichol, The Gardens, Strathfieldsaye, read a paper, entitled "A Chat on Vines and their Culture." Mr. Nichols described the proper method of making new Vine borders, also the operations of planting, pruning, training, thinning, &c. A good discussion followed, in which many of the members took part. *E. H. D.*

HORSHAM HORTICULTURAL MUTUAL IMPROVEMENT. The meeting held on January 2, under the auspices of the above society, was given over to a lecture, entitled "Canada of To-day," delivered by Mr. J. Cheal, of Crawley, illustrated by lantern slides. The lecturer gave an account of his recent visit to that Colony, and compared it with a previous one. Several interesting pictures of fruit plantations, Potato fields, spraying of trees, trial grounds, &c., were shown on the screen. *G.*

CARDIFF GARDENERS'.—The first meeting in the New Year of the Cardiff Gardeners' Association was held on the 7th inst., Mr. H. K. Farmer presiding. The lecturer for the evening was Mr. Harold Evans, "The Hardy Plant Nursery." Llanishen, who gave an interesting lecture on "The Water-Garden," which subject he divided into two parts—firstly, plants that live entirely in water; secondly, moisture-loving plants, trees, and shrubs that require to be cultivated adjacent to water. *K. J. B.*

Obituary.

J. R. PETCH.—The death of Mr. J. R. Petch, of Saffron Walden, occurred on Sunday night last in St. Peter's Hospital, Covent Garden, where he had undergone an operation. Mr. Petch, who was 71 years of age, was a well-known horticulturist. He was for some years head gardener to Mr. Samuel Mendel, a cotton merchant, of Manchester, and afterwards was traveller for Messrs. Richard Smith & Co., of Worcester. About 18 years ago he started in business as a seedsman and florist at Saffron Walden, and also travelled in the bulb and nursery trade. Subsequently he disposed of his business and became a traveller for Messrs. Russell & Co., of Richmond. He continued to live at Saffron Walden, and rendered useful service by acting as a judge at some of the flower shows in the district. Deceased leaves a widow and a large grown-up family.

MICHEL CROZY.—We regret to have to announce the death of M. Michel Crozy, at the early age of 38. M. Crozy had only recently succeeded his father, M. Pierre Crozy, the well-known Lyons nurseryman, who, some ten years ago, established a garden at Hyères (France), for the special cultivation of Cannas. Michel Crozy was held in affection and esteem by all who knew him. He leaves a widow and three little girls.

CATALOGUES RECEIVED.

SEEDS.

T. METHVEN & SONS, 15, Princes Street and Leith Walk, Edinburgh.
R. H. BATH, The Floral Farms, Wisbech.
ROBERT VEITCH & SON, 54, High Street, Exeter.
ROBERT SYDENHAM, Tenby Street, Birmingham.
J. D. WEBB & SONS, Wordsley, Stourbridge.
DICKSON, BROWN & TAIT, 43 & 45, Corporation Street, Manchester.
W. DRUMMOND & SONS, LTD., Stirling, N.B.
W. PAUL & SON, Waltham Cross, Herts.
DAVID W. THOMSON, 113, George Street, Edinburgh.
MCHATTIE & Co., Northgate Street and St. Werburgh's Place, Chester.
THOMPSON BROTHERS, 10, Dame Street, Dublin.
COOPER, TAILBY & Co., 90 & 92, Southwark Street, London, S.E. (wholesale list).
HORSNAILL & REYNOLDS, 13 & 15, High Street, Strood, Kent.
HORACE J. WRIGHT, 32, Dault Road, Wandsworth, London, S.W.
W. CUTBUSH & SON, Highgate, London; and Barnet, Herts.
DICKSON'S, Royal Seed Warehouses, Chester.
BROWN & WILSON, 10, Market Place, Manchester.
W. FELL & Co., LTD., Hexham.
CLARK BROTHERS & Co., 65, Scotch Street, Carlisle.
J. R. PEARSON & SONS, Lowdham, Notts.
TILLIE & TURNER, 12, Melbourne Place, Edinburgh.
DANIELS BROS., LTD., Norwich.
CUTBRANS, Altrincham, Cheshire.
STEWART & Co., 6, Melbourne Place, Edinburgh.
BROWN, THOMPSON & Co., 86, Patrick Street, Cork.
TILLEY BROS., 133, London Road, Brighton.
FISHER, SON & SIBRAY, LTD., Handsworth, nr. Sheffield.
LITTLE & BALLANTYNE, Carlisle.
KENT & BRYDON, Darlington.
THOMAS DAVIES & Co., Wavertree, Liverpool.
JAEMAN & Co., Chard, Somerset.
HERD BROS., Penrith.
HOWDEN & Co., Inverness, N.B.
ALBERT F. CRESTONE, 35, Church Street and 1, Market Street, Rotherham, Yorks.
STUART & MEIN, Kelso, N.B.
F. P. DIXON & SONS, LTD., Hull.
GEE & SONS, Biggleswade, Bedfordshire.
BARR & SONS, 11, 12 & 13, King Street, Covent Garden, London.
D. G. PURDIE, 6, Waterloo Street, Glasgow.
AUSTIN & MCASLAN, 89, Mitchell Street, Glasgow.
THOMAS KENNEDY & Co., Dumfries, N.B.
W. SAMSON & Co. and W. & T. SAMSON, 8 and 10, Portland Street, Kilmarnock.
W. THOMPSON & Co., LTD., 29, Shipquay Street, Londonderry.

MISCELLANEOUS.

FISHER, SON & SIBRAY, LTD., Handsworth, nr. Sheffield—Hardy Trees and Shrubs.
FRANK FOLLEY, Guernsey—Chrysanthemums, Dahlias, and Hardy Bulbs.
W. WELLS & Co., LTD., Merstham, Surrey—Chrysanthemums.
W. J. GODFREY, Exmouth, Devon—Chrysanthemums.
WILLIAM WATT, Cupar, Perth, and Dundee—General Nursery Stock.
A. H. GWILLIM, Cambria Nursery, New Eltham, Kent—Begonias.

FOREIGN.

H. CORREVON, Floraire, Chêne-Bourg, Geneva—Seeds of Alpine and Herbaceous Flowering Plants.
HAAGE & SCHMIDT, Erfurt, Germany—Seeds and Plants.
W. ATLEE, BURPEE & Co., Philadelphia, U.S.A.—Farm Annual and General Seed List.
CARL BECK & Co., Quedlinburg, Germany—Seeds.
HARLAN P. KELSEY, Highlands Nursery, Kawana, Saginaw, P. O.
PETER HENDERSON & Co., 35 & 37, Cortlandt Street, New York—Seeds and Nursery Stock.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending January 11, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather*.—On Monday, and until after the middle of the week, the weather was mostly dull, with occasional rain in all districts, heavy snow and sleet in the south-east of England on Tuesday night, and slight snow showers subsequently over various parts of the country. Towards the end of the week the sky became very clear over the whole Kingdom, but clouds soon reappeared in Ireland and Scotland.

The *temperature* was below the mean, except in Scotland N., the deficit ranging from rather more than 1° in Scotland E. to 5° in England S. At some extreme western stations the highest of the maxima were recorded on Sunday, but over the Kingdom generally they occurred on Monday, while in a few places they were registered a day later. In Ireland S. the thermometer rose to 56°, and in England N. to 55°, no district being without a reading as high as 51°. The maxima recorded on Sunday, and at the close of the week, were very low in various parts of England. The lowest of the minima were recorded on the 5th at the great majority of the stations, but on the 10th or 11th in some parts of England. They ranged from 10° in Scotland E. and the Midland Counties (at Balmoral and Raunds), and 12° in Ireland S. (at Birr Castle) to 17° in Ireland N., 23° in Scotland N., and 26° in the English Channel. The lowest grass minima reported were 1° at Balmoral, 4° at Llangammarch Wells, 5° at Birmingham, and between 10° and 15° at many other stations.

The *mean temperature of the sea*.—As a general rule the water was colder than during the preceding week on the east and south coasts, and warmer in the west and north-west, at Ballyglass the increase was as much as 3·9. The actual figures ranged from 45·6° at Plymouth to 37·8° at Ballantrae, and to 37·3° at Margate.

The *rainfall* exceeded the average in all districts except Ireland S. and the English Channel. Measurements of more than an inch were common in the north-east of Britain and in parts of southern and south-eastern England on Wednesday morning. At Heathfield (Sussex) the amount for the 24 hours ending 9 a.m. was 2·06 inches, and the depth of snow still lying was 8 inches.

The *bright sunshine* exceeded the average in England N., N.W., and S.W., and also in Ireland N., equalled it in the Midland Counties, England S. and Ireland S., and was deficient elsewhere. The percentage of the possible duration ranged from 30 in England S.W. to 20 or less in most of the other districts, and to 5 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending January 15.

Again several very low temperatures.—The first five days of the week were cold, but since then there has been a great rise in temperature. On the three coldest nights the exposed thermometer registered respectively 21°, 24°, and 21° of frost. On the coldest day the temperature in the thermometer screen never rose higher than 31°, whereas to-day the maximum reading has been 44°. Notwithstanding the thaw, the ground temperatures are still very low, the reading at 2 feet deep being 3°, and at 1 foot deep 4°, colder than is seasonable. Rain and snow fell on the first two days of the week, but since then the weather has been dry. During the frost there was no percolation through either of the soil gauges, but this morning there has been a little through both gauges. The sun shone on an average for 1 hour 2 minutes a day, or for half an hour a day short of a seasonable duration. On four days no sunshine at all was recorded. The first day of the week was rather windy, but since then calms and light airs have alone prevailed. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 3 per cent. *E. M., Berkhamsted, January 15, 1908.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. F. DAVY, for the past 3½ years Orchid grower and plant foreman at Falkland Park Gardens, South Norwood Hill, S.E., as Gardener to M. JENKS, Esq., Hanover Lodge, Regent's Park, N.W.

Mr. FREDERICK C. LEGGE, for 8 years Gardener to Mrs. NICKALLS, at Patteson Court, Nutfield, Surrey, and 2 years at same address for Sir JEREMIAH COLMAN, Bart., as Gardener to J. F. CAMPBELL, Esq., Woodseat, Uttoxeter, Staffs.

Mr. W. PAYNE, for the past 18 years Gardener to the late C. D. ABEL, Esq., as Gardener to H. F. DONALDSON, Esq., Wood Lodge, Shooters Hill, Kent.

Mr. H. KILBORN, for 3 years Foreman at Adare Manor, Co. Limerick, as Gardener to G. R. DAVIES, Esq., Forest Hill, Hartford, Cheshire. (Thanks for contribution to R.G.O.F.)

Mr. THOMAS WATSON, for the last 4 years Gardener to JOHN BEST, Esq., Warriston House, Edinburgh, and formerly in the gardens of the Rt. Hon. Lord COLEBROOK, Abington, as Gardener to Col. KINNARD, Great Langley Manor, Guildford, Surrey.

Mr. S. J. MARTIN, Gardener to Mr. T. W. COWBURN, at Champneys Gardens, Tring, as Gardener to Surgeon-General Sir JOHN WOOLFRYS, at Woodbury House, Wells, Somerset.

Mr. J. EDGE, late of Millcourt, Alton, and formerly Gardener for some years to the late Lord HARLECH, Tetworth, Ascot, as Gardener to Sir JOHN H. JOHNSON, St. Osyth's Priory, Colchester.

Mr. C. DARLEY, previously Gardener at North Cray Place, Kent, as Gardener to C. C. LUPTON Esq., Ashfield, Old Malton, Yorkshire.

MARKETS.

COVENT GARDEN, January 15.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Acacia (Mimosa), dozen bunches	9 0-12 0	Lilium longiflorum	2 0- 4 0
Anemones, per dz. bunches	2 0- 3 0	— lancifolium, rubrum and album ...	2 0- 2 6
Azalea, white, per dozen bunches	3 0- 4 0	Lily of the Valley, p. dz. bunches	8 0-10 0
— mollis, per bch.	1 0- 1 6	— extra quality	12 0-15 0
Bouvardia, per dz. bunches ...	6 0- 8 0	Marguerites, white, p. dz. bunches	3 0- 4 0
Calla æthiopica, p. dozen ...	4 0- 6 0	— yellow, per dz. bunches ...	3 0- 4 0
— Guernsey	2 0- 3 0	Narcissus, paper white, per doz. bunches ..	1 6- 2 0
Camellias, per dz.	2 0- 2 6	— Double Roman	1 6- 2 0
Carnations, per dozen blooms, best American various ..	2 0- 3 0	— Gloriosa	2 0- 3 0
— second size ..	1 6- 2 0	— Soleil d'Or, per dozen bunches	4 0- 6 0
— smaller, per doz bunches	9 0-12 0	Odontoglossum crispum, per dozen blooms	2 6- 3 0
Cattleyas, per doz. blooms ..	10 0-12 0	Pelargoniums, show, per dz. bunches ..	6 0- 8 0
Chrysanthemums, best specimen blooms, per dz.	3 0- 5 0	— Zonal, double scarlet	9 0-12 0
— selected blms., per dozen ..	2 0- 3 0	Poinsettias, per dz.	6 0- 9 0
— medium, doz. bunches ..	12 0-18 0	Ranunculus, p. dz. bunches ..	12 0-15 0
Cyclamen, per doz. bunches	6 0- 8 0	Roses, 12 blooms, Niphetos ...	2 0- 4 0
Cypripediums, per dozen blooms..	2 0- 2 6	— Bridesmaid ...	3 0- 6 0
Daffodils, p. bunch	1 0- 1 3	— C. Testout ...	3 0- 4 0
— double	1 0- 1 6	— Kaiserin A. Victoria, per dozen blooms..	3 0- 5 0
Eucharis grandiflora, per doz. blooms .	2 0- 3 0	— Madame Hoste	3 0- 3 6
		— Mrs. J. Laing	4 0- 6 0
Euphorbia Jacquinæflora, p. bch.	1 6- 2 0	— C. Mermet ...	3 0- 6 0
		— Liberty ...	2 0- 6 0
Freesias, per dozen bunches ...	3 0- 3 6	— Mad. Chatenay	3 0- 6 0
Gardenias, per doz. blooms... ...	3 0- 6	Safrano (French), per dz. bunches	9 0-12 0
		Spiræa, p. dz. bchs.	5 0- 8 0
Helleborus, per dz. blooms .	1 0- 2 0	Tuberoses, per dz. blooms ...	0 4- 0 6
Hyacinths, Roman, per dz. bunches of 12 blooms ..	6 0-10 0	— on stems, per bunch	1 0- 2 0
Lapagerias, per dz.	1 6- 2 6	Tulips, per dozen bunches ...	8 0-12 0
Lilac (French), per bunch	4 0- 5 0	Violets, p. dz. bchs	1 0- 2 0
		— special quality	2 6- 3 0
Lilium auratum ...	2 0- 3 0	— Parmas, p. bch.	3 0- 4 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d		s.d. s.d.
Adiantum cuneatum, dz. bchs.	6 0- 9 0	Hardy foliage (various), per dozen bunches	3 0- 9 0
Asparagus plumosus, long trails, per doz.	8 0-12 0	Iris fœtida fruits, p. dz. bunches	5 0- 6 0
— — medium, bunch ...	1 0- 2 0	Ivy-leaves, bronze	2 0- 2 6
— Sprengeri ...	0 6- 1 0	— long trails per bundle... ...	1 0- 2 0
Berberis, per doz. bunches ...	2 0- 2 6	— short green, per dz. bunches	1 6- 2 6
Croton leaves, per bunch	1 0- 1 3	Moss, per gross ...	4 0- 5 0
Cycas leaves, each	1 6- 2 0	Myrtle (English), small-leaved, doz bunches...	4 0- 6 0
Fern, English, per dozen bunches	1 0- 2 0	— French, per dz. bunches ...	1 0- 1 6
— French, per dz. bunches ...	1 0- 3 0	Pernettya, p. bunch	0 6- 0 9
Galax leaves, per doz. bunches...	2 0- 2 6	Smilax, per dozen trails	2 0- 3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0	Cyperus alternifolius, dozen ...	4 0- 5 0
Aralia Sieboldi, p. dozen	4 0- 6 0	— laxus, per doz.	4 0- 5 0
— larger	9 0-12 0	Dracænas, per doz.	9 0-24 0
— Moseri, per dz.	6 0-12 0	Erica gracilis, doz.	10 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0	— hyemalis, p. dz.	9 0-15 0
		— melanthera ...	12 0-18 0
Aspidistras, green, per dozen ...	18 0-30 0	Euonymus, per dz.	4 0- 9 0
— variegated, per dozen	30 0-42 0	Ferns, in thumbs, per 100... ...	8 0-12 0
Asparagus plumosus nanus, doz.	9 0-12 0	— in small and large 60's ...	12 0-20 0
— Sprengeri, dz.	8 0-10 0	— in 48's, per dz.	4 0-10 0
— tenuissimus per dozen ...	9 0-12 0	— in 32's, per dz.	10 0-18 0
Azalea indica ...	30 0-42 0	Ficus elastica, dz.	8 0-10 0
Begonia Gloire de Lorraine, p. dz.	8 0-15 0	— repens, per dz.	4 0- 6 0
Callas, per dozen .	10 0-12 0	Genistas, per doz.	10 0-12 0
Cinerarias, per dz.	10 0-12 0	Hyacinths (Roman), per dozen pots	10 0-12 0
Chrysanthemums, per dozen ...	9 0-12 0	— Dutch ..	10 0-12 0
— best disbudded	18 0-24 0	Kentia Belmoreana, per dozen	18 0-30 0
Clematis, per doz.	8 0- 9 0	— Fosteriana, per dozen	18 0-30 0
Cocos Weddelliana, per dozen	18 0-30 0	Latania borbonica, per dozen ...	12 0-18 0
Crotons, per dozen	18 0-30 0	Lilium longiflorum, per dz.	21 0-25 0
Cyclamen, per doz.	9 0-12 0	— lancifolium, per dozen ...	18 0-24 0

Plants in Pots, &c.: Average Wholesale Prices (Contd.)

	s.d. s.d.		s.d. s.d.
Lily of the Valley, per dozen ...	18 0-30 0	Selaginella, per dz.	4 0- 6 0
Marguerites, white, per dozen ...	6 0- 8 0	Solanums, per doz.	6 0-12 0
Poinsettias, per dz.	8 0-10 0	Spiræa japonica, p. dozen	9 0-15 0

Fruit: Average Wholesale Prices.

	s.d s.d.		s.d. s.d.
Apples (English), per bushel:		Grapes, English Muscats, p. lb.	3 0- 6 0
— Wellington ...	8 0-15 0	— Belgian Gros Colmar, per lb.	0 8- 1 0
— Newton Wonder	8 0- 9 0	— Almeria, barrel	10 0-16 0
Bramley's Seedling	7 0- 9 0	Lemons:	
— King Pippins...	4 6- 6 0	— Malaga, case ..	10 0-13 0
— Blenheim Pippin	6 0- 8 0	— Messina, case	8 0-14 0
Nova Scotian, per barrel:		— Naples, p. case	15 0-22 0
— Ribston Pippin	14 0-16 0	Lychees, per box .	1 0 —
— Gloria Mundi	15 0-16 0	Mandarines, per box	0 6- 1 0
— King's	14 0-16 0	Mangos, per doz.	4 0- 8 0
— Russets ...	18 6-20 0	Nectarines (Cape), per box ...	7 0-10 0
— Greenings .	14 0-16 0	Nuts, Cobs (English), per lb. ..	0 4 —
Canadian, per barrel:		— Grenoble Walnuts, per bag...	7 6- 8 6
Northern Spy .	20 0-21 0	— Almonds, bag	42 6 —
King of the Pippins ...	15 0-17 0	— Brazils, new, per cwt. ...	£5 0 —
Baldwin	20 0-21 0	— Barcelona, per bag ...	32 6 —
N. Greening ..	20 0-21 0	— Cocoa nuts, 100	11 0-16 0
Russets ..	20 0-22 0	Chestnuts:	
Californian:		— Italian, per bag	20 0-21 0
Newtowns, per box	8 0-10 0	Redon, per bag	10 0-12 0
— "Oregon" Newtowns, per box . ..	14 0-16 0	Oranges (Jamaican), per case ...	7 6- 9 0
Apricots (Cape), p. box ..	1 0- 2 6	— Almeria, case..	9 0-10 6
		— Valencia, case	8 0-14 0
Avocado Pears, per dozen	4 0-12 0	— Denia, p. case	12 0-20 0
		— Jaffas, per box	9 0-10 0
Bananas, bunch:		— Californian Navels, p. case	11 0-12 0
— No. 2 Canary .	7 0 —	Peaches (Cape), per box ...	7 0-12 0
— No. 1 ,, ...	8 0 —		
— Extra ,, ...	10 0 —	Pears (English),	
— Giants ,, ...	11 0-15 0	Catillac, per bushel... .	4 6- 5 0
— Jamaica ...	5 0- 5 6		
— Loose, per dz.	0 9- 1 3	— Easter Beurre, per dozen ..	5 0- 6 0
Cranberries, p. case	8 6- 9 0	— Cape, per box	4 0- 5 0
"Custard" Apple (Anona) per doz.	4 0-14 0	— Catillac, Dutch, per basket ...	2 6 —
Dates (Tunis), doz. boxes	4 0- 4 3	— per barrel ..	10 0 —
Grape Fruit, case	7 0- 9 0	— French, p. crate	9 0-10 0
Grapes (English), — Alicante, per lb.	0 8- 1 6	— Winter Nelis, per box ...	16 0-18 0
— Gros Colmar, per lb.... .	0 8- 1 6	Pineapples, each	1 9- 4 0
		Plums (Cape), box	4 0- 6 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes (French), per dozen ..	2 0- 3 0	Lettuces, Cos (French), per dozen	4 0- 4 6
Asparagus, Paris Green, bundle	4 0- 4 6	Mint, doz. bunches	0 9- 1 0
— Sprue, bundle	0 7- 0 8	Mushrooms (house) per lb.	0 9- 0 10
Beans, French, per packet ...	0 10- 1 2	— buttons, per lb.	0 10- 1 0
— Broad (French), per pad ...	3 0- 3 6	— "Broilers" p. lb.	0 7- 0 8
— Guernsey, p. lb.	2 6- 3 0	Mustard and Cress, per dozen pun.	1 0- 1 6
— Madeira, per basket	2 6- 4 0	Onions (Spanish), per case ..	5 0- 5 6
Beetroot, per bushel	1 3- 1 6	— Dutch, per bag	4 0 —
Brussel Sprouts, per ½ sieve ...	1 3- 1 6	— pickling, per bushel... ...	2 0- 2 6
Cabbages, per doz.	0 6- 0 9		
— Greens, p. bag	1 0- 1 3	Parsley, 12 bunches	1 6- 1 9
— red, per dozen	2 0 —	— per ½ bushel .	1 0- 1 6
— Savoys, per tally . ..	3 0- 3 6	Potatos (French), new, per lb. ...	0 2½ —
Carrots (English),		— Teneriffe, cwt.	13 0-14 0
— washed, p. bag	2 6 —	— Algerian, cwt.	20 0 —
— French (new), per pad ...	3 3- 3 6	Rhubarb (English), dozen bundles	0 11- 1 2
Cauliflowers, p. dz.	2 0- 2 6		
— per tally ..	7 0-10 0	Salsafy, per dozen bundles ...	3 6 —
— Italian, basket	4 0- 4 3		
Celeriac (French), per dozen ...	1 6- 2 0	Seakale, per dozen punnets ...	10 0-12 0
Celery, washed, per dozen	0 8-0 10	Spinach, French, per crate .	6 0- 6 6
Chicory, per lb. ...	0 3 —	Tomatos, selected, per dozen lbs.	2 6- 3 6
Chow Chow (Sechium edule), p. dozen	3 0 —	— small selected, per dozen lbs.	2 3- 2 6
Cucumbers, per dz.	8 0- 9 0	— Teneriffe, per bundle of four boxes	9 0-12 0
Endive, per dozen	1 6- 2 0		
Horseradish, foreign, per doz. bundles ...	8 0- 9 0	Turnips (English), doz. bunches ..	2 0- 3 0
Leeks, 12 bundles	1 0- 1 6	— per bag ...	2 6 —
Lettuce (French), per dozen .	0 6- 1 0	Watercress, per doz. bunches .	0 4- 0 6

REMARKS.—Apples from Nova Scotia and Canada are now selling more freely as the home grown produce is nearly exhausted, but a small quantity of the variety Wellington from Kent realise high prices. The sale for English black Grapes has considerably improved, but Muscat of Alexandria is scarce and the supply of "Canon Hall" is finished. There is a good demand for Pears, but the supplies are [illegible] small. Nectarines from the Cape [illegible] tenable. South African Strawberries [illegible] market, but the recent severe weather [illegible] deteriorated their condition. Beans [illegible] Guernsey are much dearer, and Cauliflowers [illegible] to sell well at advanced prices. *P. Z.* [illegible] *January 15, 1908.*

Potatos.

Kents: Up-to-Date, 100s. to 110s.; British Queen, 100s. to 110s.; Scottish Triumph, 100s. to 105s. per ton. **Lincolns:** Up-to-Date, 100s. to 120s.; Up-to-Date (Blackland), 95s.; British Queen, 100s. to 105s.; Sir Jno. Llewelyn, 95s. to 105s.; Maincrop, 105s. to 115s.; Royal Kidney, 90s. to 100s.; Evergood, 90s. to 95s. per ton. **Dunbar** (red soil): Maincrop, 130s.; Up-to-Date, 120s. to 130s. per ton. **Dutch:** Imperators 3s. 9d. to 4s. 3d.; Up-to-Date, 4s. to 4s. 6d.; Magnum Bonum, 4s. 3d. to 4s. 6d. per bag. **German:** Up-to-Date, 4s. 6d. to 4s. 9d.; Imperator, 3s. 9d. to 4s. 3d. per bag. The trade is fair, and arrivals heavier the last days, owing to the weather being milder. *F. J. Nicholson, Covent Garden and St. Pancras, January 16, 1908.*

COVENT GARDEN FLOWER MARKET.

The supplies of really good flowering plants are somewhat limited, and, though no very high prices are made, it is sometimes difficult to find just what is wanted. Ericas are plentiful and prices appear rather lower. On Tuesday fairly good plants were offered at 9s. per doz. Azalea indica in various colours sustain fairly good prices, but there are some which are not well flowered, which have to be cleared at a loss on the invoice prices they are imported at. The pink and red shades are more abundant. Spiræas from retarded clumps are good. Liliums are of doubtful quality just now; some good plants of L. Lancifolium rubrum were seen on Saturday, and a few fairly good plants of L. longiflorum, but the supplies are limited. The single Trumpet Daffodils, paper white Narcissus and Narcissus Tchamonios plenus are good. Hyacinths in pots are rather short in the stems. Good Cyclamen are not so plentiful. Marguerites are good, and now that Chrysanthemums are nearly over, better prices will be made for the Cyclamen. Solanums are still very plentiful, and most of those seen are well berried.

Foliage plants are well supplied. Most growers of Azaleas have now taken up the cultivation of A. Mosseri, yet I find some buyers will have the older plant, "Sieboldii." Cyperus Fixus has been good, and the price being low, it is used in the place of more expensive plants. Cyperus alternifolius is not quite so plentiful. Ferns in small pots are usually scarcer from now until the end of February. Small Palms are likely to make better prices.

CUT FLOWERS.

The trade has been very quiet. Carnation growers must feel disappointed with the returns, for prices are low, and it seems impossible to sell the flowers at any price. This morning at closing time there were heaps left on the market. Frances, as seen from some growers, is certainly a pleasing colour. Alpine Glow does not "take" well. Fair Maid is very good, and one salesman told me that he could do better with this than he could with Enchantress. Good scarlet Carnations seem to sell as well as those of any colour. Mrs. Burnett, which now comes from several sources, also sells well. Good white Carnations are in demand, but those of second quality do not sell readily. Of Chrysanthemums, Madame Charnat, from Mr. Henderson, is very good, and also a new white variety of similar form, whilst Lord Brooke still holds out. Yellow Princess Victoria is good. Mrs. J. Thompson and Niveum are the best white varieties. Winter Cheer and Framfield Pink are still seen, but will not last much longer. Jardin des Plants and Allman's Yellow are good for the smaller bunched blooms. W. Seward is a good dark variety. Good Roses are now scarce, and for best blooms of Bridesmaid 8s. and upwards per doz. is asked. Liberty is very bright, but rather small. The imported Roses arrive in good condition. Ulrich Brunner is very good, also Safrano and Madame Nabonnand. Yellow Trumpet Daffodils are of better substance now. Narcissus Soleil d'Or is arriving from Guernsey, also "Gloriosus" and The Pearl (or Scilly white). Tulips are abundant, and prices are considerably lower than they were the corresponding week last year, red varieties, which made from 12s. to 15s. per doz. bunches last year, now realise only from 7s. to 9s., and other colours are proportionately cheap. Best Parma Violets have advanced a little. Liliums vary but little. Many of the flowers of L. longiflorums seen are not of the best quality. L. auratum is rather small. Azaleas, Tuberoses, Camellias, &c., are fairly plentiful. Gardenia maintain their price. White Lilac is making advanced prices. *A. H., Covent Garden Market, January 15, 1908.*

ENQUIRY.

WANTED A NUT-MILL.—In the *Journal* of the R.H.S., Vol. xxxii., pp. 144-151, is an extremely interesting article, by Dr. Josiah Oldfield, on "The Value of Fruit as Food." On page 149, in meeting the objection that nuts are indigestible, he says: "An Orange's Nut mill will at once transform shelled Barcelonas or Walnuts, Brazils or Almonds, into a fluffy, snowy meal—dainty, digestible, full of nutrient fat." Could any reader tell me where such a mill can be got, and at what price? *A. C. Bartholomew.*

Answers to Correspondents.

CARBIDE OF CALCIUM: *E. Franklin.* This substance consists of compounds of carbon and lime; it is not of much value for plant growth and must always be used with a certain amount of caution. It can, however, be employed for the vegetable garden where the soil is already rich in organic matter (humus), with which it will combine and assist in the nitrification of the nitrogenous matter to form nitrate of lime. About 7 lbs. per pole of ground, equal to half a ton per acre, may be spread over the surface and dug in during the winter or early spring, so that it may become well incorporated with the soil before the time comes for seed-sowing.

CLUB-ROOT IN BROCCOLI, &c.: *L. I.* Only soils subject to the troublesome disease of Club-root, it is wise to withhold farmyard or stable manure altogether for a time, as this manure tends to develop the fungus. Soils infested with this disease should be dressed with an application of about one ton of gas-lime, applied in the winter and dug in. Ordinary quick lime can also be used with equal benefit. 10 to 15 cwt. per acre, equivalent to 7 lbs. or 10½ lbs. per pole or rod of ground. As the gas-lime contains certain properties which are poisonous to growing plants, it is best to dig this material into the soil when trenching; ordinary quick lime can be forked in nearer to the surface, but it should get well mixed in the soil before planting. The Club-root disease is very frequently carried by young plants from the seed-bed, therefore apply some lime to the patch of ground where you raise the plants. Be careful never to dig in diseased plants, nor throw them upon the manure heap or into a piggery, as the disease is not killed by passing through the stomach of an animal. Always destroy the affected plants by burning.

GARDENERS' TESTIMONIALS: *Head Gardener.* From your letter it would appear that you have received illiberal treatment at the hands of your late employer. If you think your case is sufficiently good, consult a solicitor.

HOPS REFUSE: *Taplow.* Spent Hops from a brewery can be used for the garden. They can be dug in as soon as received, when they will decompose in the soil and form humus matter and nitrogen. They are best suited for gross feeding plants, such as those of the Cabbage family. Half a ton to the acre or 7 lbs. per pole of ground would be a suitable application. A slight dressing of lime spread over the surface of the ground and dug in with the Hops will assist in their decomposition, and help to sweeten the soil.

HYACINTHS: *H. & S.* On dissecting the bulbs we were unable to discover any rudimentary inflorescences, a circumstance which would point to the probability that the bulbs were not in the best condition for forcing.

LIMESTONE AND CHALK: *G. F. S.* In nature lime generally occurs as chalk, which is a soft form of carbonate of lime; when pure it will contain about half its weight of lime. Limestone consists of lime combined with carbonic acid gas, and in some localities it is also combined with magnesia, when it is called magnesia limestone. For light, sandy soils quick lime made from chalk is to be preferred, while for the heavier and more clayey soils quick lime made from limestone is generally considered the best, because it is more caustic. If you can obtain, close at hand, lime made from chalk, by all means use it, as freight is a consideration when lime has to be carted from a distance. There are several wholesale firms scattered over the country who distribute lime made from limestone; it is ground finely, and delivered in sacks at about 25s. per ton. For pastures, chalk lime answers every purpose, and about 1 ton per acre should be applied once in five years. January or early in February is a good time to apply the lime.

LINNEAN SOCIETY: *R. D., Cape Town.* The entrance fee is six guineas, and the annual subscription three guineas. The address is Burlington House, Piccadilly, London, W.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *G. McC.* Apple Queen Caroline.—*W. H. C.* The Apple is Pile's Russet. We cannot name the Pears from such small fruits.

PLANTS: *F. H.* We cannot undertake to name varieties of Chrysanthemums.—*J. S.* Catasetum tridentatum.

ROYAL HORTICULTURAL SOCIETY: *R. D., Cape Town.* Write to the secretary, at the address given in our last issue.

RULES FOR JUDGING: *C. L.* Copies of the Royal Horticultural Society's rules for judging may be obtained of our publishing department, price 1s. 7½d. each, post free.

STRAWBERRY MILDEW: *W.* The chemist is quite right, it is potassium sulphide that was recommended, not potassium sulphate.

SWEET PEAS FOR MARKET: *W. Nav.* There are a great many varieties seen in the market, and some of the newer ones may supersede those which have been most popular. At the present time, Miss Willmott is one of the most popular varieties of the rosy-salmon shade; other good varieties are Lady Grizel Hamilton, mauve or lavender; Dorothy Eckford, white; Salopian, red (but King Edward VII. and Queen Alexandra may supersede Salopian); Hon. Mrs. Kenyon, cream or primrose; Black Knight, Countess Spencer, and Gladys Unwin. Paradise is a favourite variety with florists. Navy Blue is the best of the blue shades, but there is not so much demand for Sweet Peas of this colour.

TO PRESERVE INFLORESCENCE OF SEAFORTHIA: *J. R. B.* The inflorescence of Seaforthia elegans is of considerable size, and its preservation in spirit would cost you much trouble and expense. Another method would be to place it in a vessel, afterwards gently filling up the vessel with fine, dry sand. By heating the sand to a temperature of 100° or 120° Fahr. the inflorescence would dry very quickly, and after removal from the vessel would be likely to keep intact. A simpler but less satisfactory method would be to suspend the specimen head downwards in a very dry atmosphere. In the drying process portions of the inflorescence would fall, but this perhaps would not destroy the value of the specimen for your purposes. Why not preserve a selected portion of the inflorescence rather than attempt to keep the whole specimen?

TULIP BULBS: *W. J. L.* We have dissected the bulbs, and are unable to find any signs of the formation of flower spikes. Probably they were too young, or they may have failed to perfectly mature last season, in which case they would be unsuitable for forcing.

COMMUNICATIONS RECEIVED.—G. Wallis (your letter has been forwarded).—J. O'B.—G. F. T.—H. B., Croydon Hort. Inst. Imp. Soc.—G. P. J. Douglas Bros. Ltd.—Rev. George H.—American Colony.—S. A.—Jerusalem.—S. B.—J. J. James W.—C. T. D.—J. H. I.—J. G. F.—R. H. H.—R. H.—R. H. M.—Twenty years' reader.—Hortop.—G. F.—F. L. W. W.—R. L. C.—W. H. D. Roy. Meteorological Soc.—W. Coutts (the letter has been forwarded).—Sir Herbert Maxwell.—E. P. W.—G. R.—J. M.—H. M. V.—H. J. C.—F. J. A.—Chester Paxton Soc.—Shropshire Hort. Soc.—F. W. Cave.—A. S.—J. W. B., Melbourne (photograph with thanks).—Soc. Roy. d'Agric. et de Bot. de Gand.

Photograph by E. J. Wi...

MONTANOA MOLLISSIMA, A GREENHOUSE SPECIES: RAY FLORETS WHITE, DISC FLORETS YELLOW.

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Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

VINE CULTURE IN NEW ZEALAND.

(See Supplementary Illustration

THE British gardener has just cause to be proud of the magnificent bunches of Grapes that are to be seen at our Fruit Exhibitions. Beyond all question they bear favourable comparison with the best that are grown in any other part of the world. There is no branch of exotic fruit-culture in which we excel so much as that of producing Grapes in their highest state of perfection.

But if the Colonist on the far-distant shores of New Zealand enjoyed equal facilities for producing Grapes similar to those we admire so much, I am convinced that he would run his brother at home a hard race for supremacy. When travelling in the Antipodes a few years ago it was my good fortune to visit many fruit-growing establishments and note their contents. In the course of my tour I had the great pleasure of meeting several gardeners that I knew before they ventured out to pitch their tent on the land of the New Dominion. In no case did anyone say he regretted the step he had taken; all admitted the hardships and uphill battle of the first few years, but their proud boast is, "We are now our own masters." There is no grand nobility in the Colonies with stately homes and magnificent gardens. All here is industry, each striving in his own way to make an independent, comfortable, and happy home for himself and his family.

The vegetation of New Zealand is truly wonderful, especially in the North Island, where, during my visit in December and January, Sweet Peas from 6 feet to 7 feet high might be seen in almost every garden, and, to all appearances, they would grow 2 or 3 feet higher before the autumn set in. Roses grow and flower splendidly. For instance, it is not uncommon to see the well-known variety Frau Karl Druschki with blooms as large as a well-grown incurved Chrysanthemum. I was informed that no stimulants are used in producing these splendid flowers. During the mild winters, horses and cattle graze on pastures all the year round, and in consequence little or no farmyard manure can be obtained. I mention these matters to show what can be done in a country where Nature has been so generous in providing a rich soil, with a genial climate suitable for the production of food for both man and beast.

On the slopes of Henderson Hills, 10 miles north of Auckland, there may be seen several newly-planted vineyards, but as the vines have not yet reached a bearing condition I can only say they looked promising. The favourite variety seems to be Black Hamburgh.

The method adopted in growing them is to plant the vines in rows 4 feet to 5 feet apart, and about 4 feet from plant to plant. A strong stake is driven in the ground to each vine; these stand about 4 feet high, and at about 18 inches from the ground a wire is stretched from end to end of the rows.

The young shoot is tied to the stake, and is stopped when it reaches the top. Next year this shoot is tied to the wire and produces fruit, another young shoot taking its place as leader. When the fruiting rods have yielded their crop they are cut out and their successors take their places on the wire. At present these vineyards are but in their infancy. As the bush gets cleared they may extend into hundreds of acres in this favoured district. The vineries of Mr. Mason, who left England nearly half a century ago, are situated near Auckland. They are span-roofed, of various sizes, all erected in very primitive fashion. Notwithstanding this drawback, the vines yield enormous crops of Black Hamburgh in what may be described as useful-sized bunches, well finished, and as black as Sloes.

My next visit was to the fruit gardens of my nephew and namesake at Otahuhu. Here everything is modern and up-to-date. He has three span-roofed vineries, each 100 feet long and 20 feet wide. In two of these the vines have been planted four or five years. The only preparation the borders get is a thorough forking over, a dressing of bone-dust, and, after planting the vines, a covering of litter is provided.

At the time of my visit the Grapes were well advanced in colouring, showing splendid bunches and berries hanging all over the roof from top to bottom, many bunches weighing from 3 to 4 lbs. each. The varieties Mr. McIndoe grows are Black Hamburgh and Barbarossa, Pearson's Golden Queen, Gros Maroc, Gros Colmar, and Mrs. Pearson. The black varieties are black as black can be, but what appeared most remarkable was the clear, bright golden-yellow colour of Golden Queen, with such a "finish" as I have never seen it develop in Britain. In New Zealand it bears abundantly and is the most popular yellow Grape grown. The third vinery was erected last year, and is planted entirely with Gros Colmar, the vines being planted outside, and for the first year are trained up on the roof, while the inside of the vinery is entirely filled with Tomatos. They had reached their allotted space in as fine rods as anyone could desire. I was told that at pruning time they would be shortened back to 6 feet, then taken through holes in the sides of the house.

MR. KNIGHTS' VINERIES.

My next place to visit was Mr. Knights' fruit gardens at Mangere, near Ellerslie. Here I found several vineries, all span-roofed of various lengths and widths, apparently home-made structures. The varieties grown there are principally Black Hamburgh and Golden Queen, with a few rods of the same varieties I saw at Otahuhu. The crops are marvellous, certainly the most wonderful I have ever beheld in any part of the world, the bunches appearing as if hanging just clear of each other all over the roof. Notwithstanding the great crop, bunches and berries are a good size; both black and yellow varieties were splendidly coloured. Mr. Knights informed me that, beyond forking over the soil and giving a good dressing of bone manure, the borders had not received any preparation whatever. I noticed the roots had an almost unlimited run in what appeared to be deep, warm soil that may have at some time been the lava thrown up from a neighbouring volcano now defunct. Many of these are to be seen in this district. I may add Mr. Knights and his wife hail from Jersey, and he has brought his Grape-growing knowledge to some purpose to New Zealand.

The accompanying photograph (see Supplementary illustration) was taken a few days after my visit to Mangere, and faithfully depicts one of the houses containing Black Hamburgh in the condition I saw it.

ST. MARTIN'S, NEAR CHRISTCHURCH.

The fruit gardens here are owned by Messrs. Ross and Leighton; who seem to take a delight in doing everything thoroughly well. The vineries are numerous and all have span-roofs, and are substantially built. Once inside the houses, it is easily to be seen they are managed by a master hand. The vines are all grown on the single rod system, planted 3 feet apart and closely pruned to short spurs regularly placed on each side of the rod. They were vigorous, and carrying heavy crops of handsome bunches of well-coloured, highly-finished Grapes. Messrs. Ross and Leighton apparently adopt the system of devoting one house to one variety.

Black Hamburghs were in splendid condition, also Golden Queen, which here as at Otahuhu and Mangere, were finishing in a

clear, golden-yellow colour. The house devoted to Gros Guillaume was a wonderful exhibition of this usually shy-bearing variety. Each rod produces from 12 to 16 bunches of from 3 lbs. to 4 lbs., compactly set with berries of large size and jet black in colour. Here, too, the roots have an unlimited run in warm, friable soil. Mr. Leighton is a pupil of Mr. Hunter, late gardener at Lambton Castle, Durham, and the vineries and vines show unmistakable signs of his previous experience in those vineries at Lambton in its palmy days of Grape-growing some 30 years ago.

In summing up the cause of such clean, healthy, vigorous vines, and wonderful crops of highly-coloured Grapes to be seen everywhere in the New Dominion, I attribute it more than anything else to the clear, warm atmosphere and the maiden, loamy soil, coupled with constant, careful attention by skilful cultivators. *J. McIndoe, V.M.H.*

FASCIATION IN A HOLLY.

OUR illustration, fig. 24, portrays a somewhat unusually fine example of a fasciated branch of Holly, which we received from Mr. W. T. Grace, of Hampworth Gardens, Downton. The causes that bring about fasciation are obscure, and would form a promising subject for further investigation. Sometimes the peculiarity can be induced to appear in individual plants as the result of over-feeding, and it is not infrequently supposed to be directly traceable to this cause. But a little reflection will show that the stimulus given by rich nutriment only serves as the means of causing a tendency already present in the particular plant to materialise. The fact that only an individual here and there of a number of plants grown under similar conditions exhibits the character in question at once proves that the cause is deeply seated in the plant itself, and is not attributable solely to the effects of overfeeding. Whilst in Lilies, Tropæolums, Thistles, &c., comparatively few individuals are thus affected, there are others, e.g., Celosia cristata, some varieties of Sedum, &c., in which it occurs in a considerable proportion of the offspring of every generation. The investigations of De Vries seem to indicate that the tendency to fasciation may be regarded, from the point of view of heredity, as being analogous to that which causes some plants, e.g., Stocks, to throw out a certain percentage of double-flowering individuals in each generation. But in these potentially fasciated individuals the property of fasciation may lie dormant, unless the stimulus of abundant nutrition calls it out. This proximate dependence on excessive feeding has led many persons to overlook the much more important fact that the only real function of the food in the matter is to make the plant show what it already can do, and not to impress upon it a new character. It seems not unlikely that much of the improvement in our ordinary vegetables, consequent on intensive cultivation, may primarily be attributed to similar causes.

In the fasciated stem of our specimen the pith has undergone a considerable relative increase, and constitutes about three-quarters of the cross-sectional area of the stem in the upper banded portion. It might have been expected that the flattened expansion would have assumed the histological character proper to the leaf, that is to say, the green chlorophyll-containing cells might have shown some modification in the direction of producing palisade parenchyma. Such is, however, not the case, and the cortex in every respect, save in its contour, resembles that of the normal young branch, and, like the latter, it forms a layer of cork from its peripheral cells.

FORESTRY.

LARCH APHIS AND BLISTER.

BE the connection between Larch aphis and disease what it may, it is to prevention, not the cure, of either or both that attention must be directed. Neither the aphis nor the fungus causing the blister is a new organism. The fungus, Dasyscypha calycina, has been proved to have existed in the natural Larch forests of central Europe long before its ravages attracted attention in Britain. As for the aphis, I do not know the facts about its distribution, but I can remember its presence in South-west Scotland many years before the Larch disease made its appearance.

FIG. 24.—FASCIATION IN SHOOT OF HOLLY.

Mr. Simpson contributes little or nothing (p. 22) to diagnosis by the one example which he says "will suffice." He does not give a single detail of the Dumfriesshire Larch wood in which the disease appeared suddenly and universally, except that it stands on a hillside. Of the soil, aspect, age of trees, distance of planting, he tells us nothing; only that during a very dry summer the trees were badly infested with aphis, and that the disease broke out subsequently. There is nothing in this sequence to warrant the assumption of cause and effect. Rather does the sudden exuberance of both parasites, animal and fungoid, suggest a common predisposing agency namely, lowered vitality in the trees. No phenomenon in biology is more familiar, though few may be so difficult to explain, than the manner in which the vigour and fecundity of parasites are stimulated in proportion to the impaired vitality of the host. In the case of these Dumfriesshire Larches, assuming that their vitality had been impaired, either by the dry summer taking effect upon trees planted in pure forest, which is unnatural to the European Larch, or by some other agency, the parasites already present among them would receive a simultaneous stimulus to develop and propagate. The aphides would attract attention first, pullulating in millions, like lice on an ill-nourished animal, but the blisters caused by the fungus would not be apparent before the lapse of two or three seasons. Were the European Larch such a vulnerable creature as to be incapable of sustaining with safety any lesion of bark or fracture of branch, it would be no tree for British woodlands. But it has a century and a half of good service to its credit, and we have daily evidence that Larches may be severely wounded, yet remain perfectly healthy, repairing the damage even when in close company with others suffering from Dasyscypha. The source of the disease lies deeper than branch or bark; the nidus is provided through an impaired constitution. True, the fungus obtains access through wounds, but if the constitution of the tree is vigorous, it will sustain a moderate population of aphides without much detriment, and either reject, or severely localise, the fungus.

The vitality of young Larches may be, too often is, impaired by causes within the planter's control. I beg to suggest the following as the commonest and most easily preventible conditions predisposing to disease:—

(1) Mismanagement of seedlings; lining off in a trench cut too shallow to allow the roots to be fully extended downwards.

(2) Allowing the rootlets to dry up during transport from distant nurseries, or in moving trees from the home nursery to the planting ground, especially during the parching weather of March.

(3) Careless arrangement of the roots in planting, especially when notching is the method employed.

(4) Planting too deep, which causes fresh rootlets to be thrown out from the collar.

(5) Allowing grass, the worst enemy of newly-planted trees, to throttle the young plants during two or three summers after planting. The luxuriance of ground herbage in our humid climate may be held accountable for the greater virulence of Larch disease in Britain as compared with Continental forests.

(6) Planting European Larch pure, a condition in which, unlike the Japanese Larch, it is hardly ever found in a wild state.

The Japanese Larch (L. leptolepis), on the other hand, is described as growing naturally in pure forest. The amazing vigour of this species enables it to overcome many of the dangers that lie in wait for the European Larch, notably that of rank grass and herbage. It is true that Dasycypha has been found upon a Japanese Larch here and there, but the vitality of the species is so great that, if it is maintained as the trees approach maturity, there is little cause to fear that they will succumb to blister. Within 300 yards of where I sit writing, there are small patches of the fungus both on Corsican Pine and Scots Pine, but the vitality of these trees is so great that it can make no progress. If, however, a bad outbreak of sawfly should lower that vitality by destroying the foliage in successive seasons, I should anticipate that Dasycypha would go ahead. Sawfly, be it observed, cannot be reckoned a parasite in the same sense as aphides. It is an external foe, like rabbits, locusts, or white butterflies, its abundance, greater or less, being independent of the morbid or healthy condition of the plant attacked. *Herbert Maxwell, Monreith, January 13.*

WEATHER AT ROTHAMSTED IN 1907.

FROM the meteorological records of the Rothamsted Experimental Station, Hertfordshire, we learn that the year 1907 was characterised by a deficiency of rain and a deficiency of bright sunshine; upon the whole, the weather has shown a year of gloom. There were seven months recording a low rainfall, and five months giving an excess. As regards temperature, there were five months below average and seven months above average, the great feature of the year being its low night temperatures.

The bright sunshine showed six months above and six months below the average records.

March was noted for its abnormally warm sunny days. It was the month of highest sunshine for the whole year, a total of 206.4 hours being recorded, which is 92.5 hours in excess of the average amount for this neighbourhood. The large quantity of bright sunshine for March caused the ground at 1 foot deep to be 5° warmer than is usual for the time of year, which was very beneficial for the germination of small seeds in the garden and for spring-sown Corn.

April was the wettest month that has occurred at Rothamsted for the past 25 years. There were 17 rainy days and three slight falls of snow. The total rainfall for the year was 27.4 inches, showing a deficiency of seven-tenths of an inch compared with the average at Rothamsted extending over the past 54 years. Although the total rainfall was less than the average, the actual number of rainy days for the year was 21 in excess of the usual number, with 10 slight falls of snow.

April, June, and October were the months of greatest rainfall, over 11 inches being measured during these three months. September was the month of largest deficiency of rain, there being a falling off from the average of nearly 170 tons of water on each acre of land.

The mean temperature for the whole year was 47.9°, which is exactly the average record at Rothamsted. December, the last month of the year, was noted for its extreme mildness, the mean temperature being 2.2° above the normal. There were several days when the warmth was as great as during several days of May. In the flower gardens around here were to be seen many blooms of Roses, Pansies, Violets, and Primulas.

The bright sunshine for the year amounted to 1,557 hours, being 49 hours deficient. The first three months of the year gave 123 hours of bright sunshine in excess; the next five months, which included the usual growing period of our field and garden crops, recorded 191 hours of sunshine less than the average for the district.

June weather was generally showery, cold, and dull; both grass and grain crops were exceedingly backward. The ears of Corn were a considerable time in pushing themselves free of the sheath, which is always a sure indication of a low yield of grain per acre. The blooming time of the grain crops was about a fortnight later than is usual at Rothamsted.

Hay harvest did not commence until the middle of July, and in fact there is but little really good well-cured hay to be found from this year's crop. As one travelled about the country it was no unusual thing to see a field of meadow hay still uncarried, bleached and sodden with rain, in the second week of August.

September, with its glorious weather, seemed to come, as it were, to atone for the shortcomings of the months immediately preceding, and registered 185 hours of bright sunshine, or 24 hours in excess of the average, and the mean temperature was 57.6°, showing 1.8° above average. The Corn harvest did not become general until the middle of September, being about three weeks later than usual.

October was a month of excessive rainfall and over average temperature, but deficient sunshine. Both November and December gave more than normal temperature and over average sunshine.

The following table shows the rainfall of each month for the past year of 1907 at Rothamsted, with the average amount of rainfall for each month of the previous 54 years, and the difference of 1907 above or below the average record:—

RAINFALL AT ROTHAMSTED, HERTS.

Months.	Rainfall 1907.	Average Rainfall of 54 years.	1907 Above or below the average (1).
	Inches.	Inches.	Inches.
January	1·25	2·39	- 1·14
February	1·18	1·81	- 0·63
March	1·31	1·84	- 0·53
April	2·83	1·83	+ 1·01
May	2·40	2·19	+ 0·21
June	2·61	2·41	+ 0·20
July	2·21	2·52	- 0·31
August	1·80	2·65	- 0·85
September	0·78	2·46	- 1·68
October	1·89	3·44	- 1·55
November	2·44	2·60	- 0·16
December	3·10	2·30	+ 1·10
Yearly Total	27·41	28·14	- 0·73

(1) The sign in the last column (+) signifies above the average, and the sign (-) below the average.

The rain-gauge, which is one-thousandth part of an acre in dimension, stands 2 feet above the surface of the ground, and is about 420 feet above sea-level.

The above data shows a total rainfall of nearly 27½ inches, against an average for the previous 54 years of slightly over 28 inches, being three-quarters of an inch deficient. Calculating these figures up to the acre, we find that during the whole year 2,768 tons of water has fallen on each acre of land, and if it had not been for the excessive rainfall of October and December, which recorded 828 tons of water in excess of the average, the underground water supply of this district would have been abnormally low, resulting very probably in a water panic.

The next table shows the mean temperature in the shade for each month of the year 1907, with the excess or deficiency at the Rothamsted station during the past 29 years; also the number of hours of bright sunshine recorded for each month, and the number of hours above or below the average record.

MEAN TEMPERATURE AND BRIGHT SUNSHINE AT ROTHAMSTED, HERTS, FOR EACH MONTH OF THE YEAR 1907.

Months.	Mean Temperature.		Bright Sunshine.	
	1907.	Above or below average.	1907.	Above or below Average.
	Degrees.	Degrees.	Hours.	Hours.
January	37·0	+ 0·2	66·4	+ 15·4
February	36·3	— 2·0	85·2	+ 15·3
March	42·5	— 1·6	206·4	+ 92·5
April	45·8	— 0·2	143·1	— 26·3
May	51·2	— 0·1	164·4	— 31·5
June	55·5	— 1·9	160·2	— 13·2
July	57·0	— 4·0	170·6	— 57·9
August	58·4	— 1·6	174·5	— 32·0
September	57·6	+ 1·8	185·1	+ 24·2
October	49·2	+ 1·2	97·3	- 8·5
November	43·6	— 1·1	58·1	— 0·8
December	39·9	+ 2·2	45·8	- 2·3
For the year	47·9	0	1557·1	- 48·9

The mean temperature for the year was 47·9°, being exactly the average record.

Each of the four last months were warmer than the average, although the bright sunshine was but little above average, except in the case of September.

The bright sunshine was 326 hours less than was recorded in 1906. During the present year the sun shone but 4 hours 16 minutes on each day throughout the year, against 5 hours per day in 1906. *J. J. Willis, Harpenden.*

PLANT NOTES.

SAINTPAULIA IONANTHA.

I do not know of any plant which gives better returns for the small amount of labour needed to bring it to perfection than does this little stove flowering species. If well grown, it forms a mass of the loveliest blue colour, from 1 foot to 18 inches in diameter, and if staged lightly at the cool end of the stove, and interspersed with some silvery-foliaged plants, as Caladium argyrites or Dracæna Sanderæ, it will form an object of great beauty. If the dead flowers be picked off occasionally, the plants will continue to develop an abundance of bloom the whole season through. Early in February, from healthy plants, sever good sound leaves with stalks of about 3 inches long, and insert the petioles in light, sandy soil; or, if pressed for room, as is often the case at that season of the year, insert them in the material beneath the plant stages, in a perpendicular position, as if the leaves are allowed to rest on the rooting material they will damp off. As soon as they have formed small crowns with a few leaves, remove the old leaf, and pot the little plants into 3-inch pots, using a compost of loam and leaf soil in equal parts, with enough sand to keep the whole porous. Place them on a shelf as near to the roof-glass as possible, to induce them to make close, compact plants. As soon as these pots become filled with roots, transfer the plants to 5-inch pots, using compost similar to the last,

but with an addition of some good fertiliser at the rate of a 4-inch potful to a barrowful of soil. In most cases 5-inch pots may be considered large enough for the plants to flower in, and in these they will form dense plants 15 or more inches through them, in a period of six or eight months. If still larger plants are required, transfer them into 8-inch pots, using compost and fertiliser as before, and they will quickly make lovely specimens quite 18 inches through, and amply repay any extra time and labour expended on them. Great care must be exercised after each potting that the plants are not over-watered until the pots have become well filled with roots. After this stage they must on no account be allowed to become dry at any time, but should be assisted with slight top-dressings, or with diluted liquid manure applied at alternate waterings. Plants raised from seed do not give as good results as those raised from leaves. *D. Wilmshurst, Coronation Cottage, Hurstmonceux, Sussex.*

SPECIES OF PRIMULA AND P. HYBRIDS FOR WINTER FLOWERING.

YELLOW-FLOWERED Primulas, which bloom abundantly in the winter months, are plants which have great value as cut flowers, and the best of these are P. floribunda, P. f. Isabellina, and P. kewensis, a cross between the first named and P. verticillata, obtained in the Royal Botanical Gardens, Kew. P. floribunda has a flower stalk about 1 foot in height, and flowers arranged in a twirling manner at three stages thereon; colour, deep yellow. The leaves possess strong ribs and nerves, and are somewhat hairy. P. verticillata has lanceolate leaves of a whitish green tint, the underside covered thickly with meal. The flower stalks are stiff, mealy, and of considerable height, and the blooms arranged in stages.

The umbels are pale yellow at the base of the flowers, and the latter are of a trumpet shape. The tube is about three times as long as the diameter of the same. The flowers have a pleasant fragrance. The hybrid P. Kewensis unites the good properties of both parents, and it has strong ribbed green leaves, and the deep yellow blooms and abundant flowering habit of P. floribunda, the fine fragrance, the long, tubular flowers, and the encircling garland of leaves of P. verticillata, but the flowers are twice as large. The floral stages are arranged at from 3 to 4 inches apart, and the flowers appear almost simultaneously.

GALEGA (TEPHROSIA) GRANDIFLORA.

A BRIEF note by Mr. Adam Heydt in Moller's *Deutsche Gartner-Zeitung*, No. 44, 1907, concerning the uses to which this Papilionaceous species may be put has interest for gardeners who have conservatories and large glasshouses under their care. The plant is a tolerably strong grower, well adapted for growing in large pots or small tubs, and well cultivated plants find excellent uses in the garden, and perhaps this is a better place for it than as a pot plant. The colour of the butterfly-like blossoms is a rosy carmine. The best sort of soil for the plant is rich loam, leafmould, and as much sand as will secure porosity. The plant should be raised from seed, cuttings seldom being certain to grow. Galega Hartlandii, a rare species, is propagated in the spring by division.

NICOTIANA SANDERAE AS WINTER FLOWERER.

THIS species of Nicotiana has become in a short space of time a favourite subject for out-of-doors beds and groups in gardens in which the more or less free modes of decoration are allowed, the effects of the bright and pleasing tint of the flowers being always good if a sunny aspect is afforded them. In shady or even partially shady positions, the plant does not grow as strongly or flower so freely. As a winter-flowering species, Nicotiana is grown to a lesser degree. In the pages of a foreign contemporary, I observed recently a note on this subject, in which a correspondent gives his experience with N. Sanderiana, and shows with what facility the plant may be grown for winter blooming. The seeds should be sown in warmth in the latter half of the month of June in pans, and the seedlings pricked off into pans when large enough to be handled, and placed in an ordinary cold frame, and on reaching a few inches in height they should be transferred singly to small pots, with an occasional small shift into larger ones, till they come to the stage at which the flowering shoots appear—that is, not later than the early part of October. Should no flowering shoots appear before that date, the plants will fail to give satisfaction, as the required degree of sunshine is missing in all northern European countries. Plants cultivated in this manner will bloom continuously throughout the winter till March and April, and afford extremely fine effects. The winter temperature should be not less than 50° to 55° Fahr.

There are other methods by which this plant can be brought into bloom in the late winter months; thus, for example, the plants kept over from late spring sowing which may not have shown any blooms, may be put into a moderately warm greenhouse before they get injured by cold weather, and in February be transferred to larger pots. They soon develop flowering shoots, and when in full bloom they may be placed in the greenhouse or conservatory among the ordinary inmates, such as Primulas, Cinerarias, and various bulbous plants, and the like.

After the chief flowering season is passed, if well supplied with manure water, they soon commence to flower again in perfection. N. Sanderiana, and likewise N. affinis, exhibit varieties differing in the colours of the bloom, a circumstance adding greatly to the attractiveness of the plants. *F. M.*

DIANTHUS ARBOREUS.

OF the large number of species of Dianthus which are known in gardens, few are of shrubby habit. What is probably the giant of the genus in this respect is the subject of the present note. It has long been in cultivation in this country, but on account of its somewhat tender habit has not met with the appreciation it so richly deserves. The plant, from which the illustration at fig. 25 was prepared, is one of a number cultivated in the Royal Gardens, Kew, which withstood the winters of 1905-6 without protection in a border facing to the north-east. The severe weather in March of 1907, which was accompanied with cold northerly winds, cut all these plants down to the ground. At the time the photograph was taken (in July, 1906) the specimen illustrated was three and a half years old from a cutting, and was over 4 feet in height and about 5 feet in diameter. The habit of the whole plant reminds one of that of a large Tree Carnation. The stems are densely clothed with leaves in the lower part, the flowering portion being erect, slender, and bearing very few leaves. The leaves are opposite and decussate, linear, acute, slightly glaucous, the upper surface canaliculate, lower convex. The flowers are erect, sweetly scented, and borne in profusion in terminal corymbose heads. The calyx is ¾ inch long, forming a long slender tube, light green in colour, and covered in the lower part with numerous light green bracts. The corolla is salver-shaped, 1½ to 2 inches in diameter, and consisting of either four or five obovate, serrate, rose-coloured petals. This species should succeed well in the milder parts of these islands, where, under favourable conditions as to soil and situation, it would rapidly form a large bush. It is a native of the Grecian Archipelago, also of the island of Crete, and a good figure of the species appears in Sibthorp's *Fl. Graeca*, tab. 406. *C. P. Raphl.*

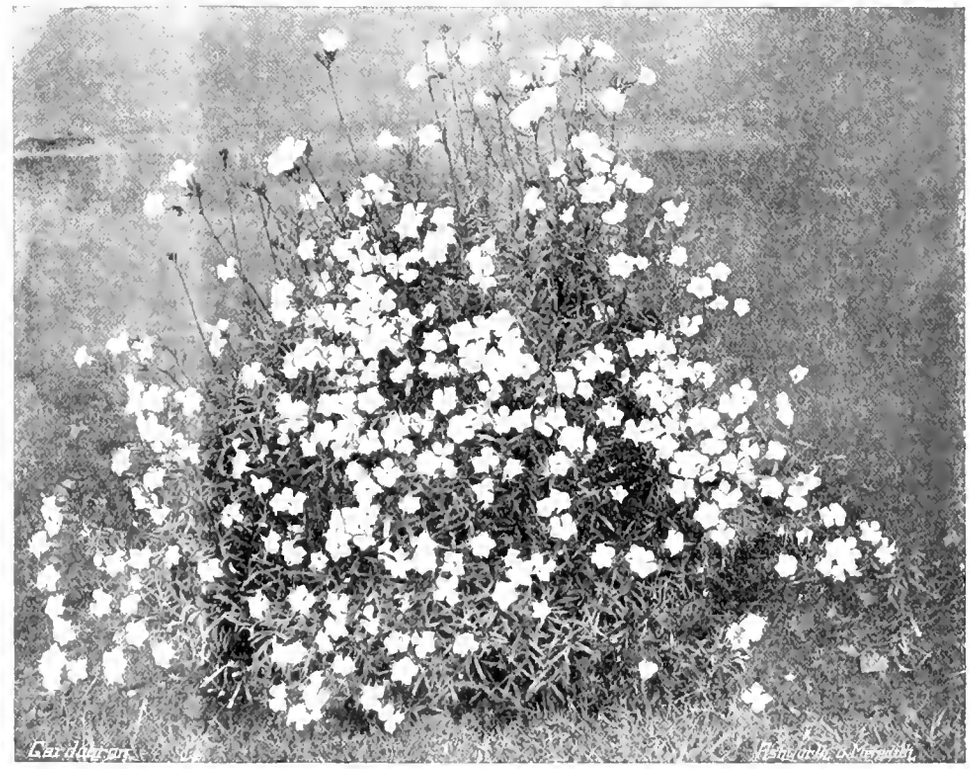

FIG. 25.—DIANTHUS ARBOREUS: FLOWERS ROSE COLOURED.

FLORISTS' FLOWERS.

THE ALPINE AURICULA.

I HAVE read the short note by *A. D.* at page 428, Vol. xliii., and I certainly did not wish to convey the impression that the edged or florist's Auricula was the only type in existence. What we may term the Alpine Auricula, for want of a more correct name, is equally important as a garden favourite. Primula pubescens is supposed to be the original species from which the so-called Alpine Auricula has been evolved, but the show or "florist's" type of Auricula has an equal claim to be termed Alpine Auricula, as it grows naturally in a similar position. For garden purposes the one is the "show" Auricula, the other the "Alpine" Auricula. The Alpine type is also divided into two classes or sections, the yellow-centred varieties and those having white or cream-coloured centres, and it is rather curious that all the white-centred varieties have purple margins of some shade or other. The important point in the colour is that it should shade off to a lighter tint at the margin.

The yellow-centred varieties possess very richly-coloured margins, crimson maroon, crimson, or shades of red; but their standard of excellence is similar to that of the white centres, and in each case the colour is lighter at the margin. The fanciers insist that the self-coloured show Auriculas should possess an unshaded edge, and the Alpines a shaded edge. The show varieties should have a dense coating of farina on the centre of the corolla, but the Alpines ought to have no farina anywhere. *A. D.* asks for "stiff erect stems, bright pleasing colours, large rounded pips, and impressive beauty." Well, I can assure *A. D.* we have all this in the Alpine Auricula. Of course, there is still ample room for improvement, but improvement is going on every season. Last season notable additions were made to the white ground section. The best of them was exhibited at the National Auricula Society's exhibition in London last season, and was named Martin M. Smith by request; it not only obtained the Award of Merit of the Royal Horticultural Society, but also a First-Class Certificate of the National Auricula Society. Moreover, it was awarded "Premium" as the best Alpine Auricula in the exhibition in 1907.

Other very fine and distinct varieties were exhibited, showing an all-round advance on the year's work. One named Argus, raised by Mr. J. J. Keen, of Southampton, was well shown and greatly admired. It has been in cultivation for several seasons; it is also included in the varieties with white centres.

The *Gardeners' Chronicle* usually gives a list of the certificated florists' flowers, and it will be seen that there is a good record of new Auriculas of the Alpine section. This type of Auricula is well adapted for hardy border culture, and there are numerous very beautiful varieties to be obtained at a cheap rate; but the Auricula is not a plant that grows rapidly, and from the offset stage until the plant is fully developed it takes about 18 months. I am writing now of the choice varieties, such as would be recognised at the Auricula Society's exhibition. This section is well adapted for culture in the open garden, and the best position for them is in the rock-garden or the front row of herbaceous borders, either as single specimens or planted in masses; they soon become established, and will grow and increase freely for several seasons if left undisturbed. Six to a dozen plants of one variety planted 6 to 9 inches asunder in a clump or mass make a striking object in nooks in the rock-garden; and the plants always thrive better if set out on the north or shady side of a piece of rock or stone. The Auricula does not take kindly to a sunny position, and if the heat of the sun is aggravated by the heat thrown off by heated rock or stone the plants remain small, and produce but small trusses of bloom. A generous soil is required, and a compost inclined to clay suits the plants better than a sandy soil; if the soil is light with a gravel subsoil it is easy to dig out the natural soil and replace it with a few spadefuls of a suitable compost. This ought not to be thought too much trouble, for every lover of a garden knows that no garden in itself contains the best kind of soil for every plant he desires to cultivate, and if success is to be attained it must be by providing the soil which each species or variety requires. Some plants will not thrive in light, sandy soil, but will succeed well on a clayey loam; others require fibrous peat; some do well on loam over chalk; and the enthusiastic amateur will take care to provide each plant with the special compost suitable to its needs.

Such a garden, provided with the soil necessary for the various plants, was that owned by the late Mr. George F. Wilson at Weybridge. I well remember being shown round his garden two or three years after Lilium auratum was introduced, and amongst other treasures of the family of Lilium I measured a plant of L. auratum 11 feet in height. Mr. Wilson remarked that it ought to be 11 feet high, as it had 11 feet in depth of good compost to grow into. Other handsome specimens of this and other Lilies were provided with large beer or paraffin casks sunk into the ground to the rims, and these were filled with the special compost best adapted to their needs; the same careful method was adopted at Wisley.

Miss Willmott's garden at Warley Place is the best illustration of a garden known to me where the requirements of the plants are carefully provided for. Of course, very few can hope to be so fortunate, but everyone can have a garden full of well-grown plants if they are careful to define its limits. It is surely better to have 50 plants in a thriving condition than 500 struggling for existence in unsuitable soil or unfavourable conditions.

These remarks may seem to be a digression, but I want to point out that, in order to grow the Auricula well, some attention must be given to its requirements, and if this be done it is one of the easiest plants to grow either in the open garden or under glass. Some amateurs may say—But why grow plants under glass if they will grow and thrive out of doors? The only reply to this is that the Auricula is a favourite flower, and the beauty of the flowers is more fully developed under glass, where they are protected from the uncertain climate of Britain in the month of April. The cultivation of the Auricula in flower-pots is very similar to that of the show Auricula; moreover, many persons prefer the Alpine varieties in the first instance, but in time they usually transfer their appreciation to the show varieties. It is much easier to get up a stock of the Alpine section, but in both there is a considerable difference in the number of off-sets produced from varieties in the same group. Take, for instance, the white-edged Acme; in, say, six years, it might be possible to obtain 80 or 100 plants from one, but the white-edged John Simonite has not given me one off-set in six years. I do not know any Alpine variety that is anything like so slow of increase. The following is a selection of the best Alpine Auriculas known to me, which can be supplied by dealers in these plants:—

Admiral, gold centre. **Argus,** white, claret colour, shading to a pale tint. **Boadicea,** centre cream coloured, with purple margin. **Byron,** bronzy yellow, with gold centre. **Dean Hole,** centre deep yellow, with maroon-crimson margin. **Duke of York,** very similar in colour to the last one, but a more refined flower. **Firefly,** centre rich yellow, with crimson shaded margin. **Ganymede,** centre cream coloured, with reddish brown margin. **General Buller,** of correct form, possessing gold centre, and reddish crimson margin. **Melanie,** centre white, and blue purple margin. **Mrs. Markham,** centre gold coloured, with maroon and red margin: **Perfection,** of large handsome form, crimson and gold; **Rosy Morn,** bronzy yellow, with gold centre; **Teviotdale,** one of the best white-centred varieties. **The Bride,** distinct shade of rosy apricot, with gold centre. **Thetis,** centre cream coloured, with maroon purple margin; **Uranie,** centre yellow, with deep red margin. In every instance the colour is deepest at the yellow disc, shading off to the lightest tint at the margin of the corolla. *J. Douglas.*

NOTICES OF BOOKS.

*THE PLANTS OF THE BIBLE.

THIS little book is a useful accompaniment to the *Bible Herbarium* and *Palestine Herbarium* issued by the American Colony. The majority of the plants briefly described are quite correct, but a good many plants are doubtful, so that it does not do always to speak positively, *e.g.*, the author writes of "Spices" that the R.V. gives "gum tragacanth," "correctly, no doubt." But four other Hebrew words are rendered "Spices," all implying a "sweet odour," while that in Genesis, referred to, means "made into a powder." Gum tragacanth has no scent. It flakes without making a powder. The Almug I make out to be the Yew, from various reasons given in my *Plants of the Bible* (Masters). The Sandal wood being a tropical tree is less likely, as the Almug was seemingly some tree of Lebanon. Aloes (Aloe vulgaris) is not the Lign-aloes, but was probably used, like Galbanum, for fixing the more evanescent scents. Apple appears to be the Quince, as being "scented." The Christ-thorn was more probably Paliurus, as a very common shrub, with very flexible and spiny branches, and therefore suitable for twisting into a crown. "Husks" were the carob, as the Greek word implies, but also the fruit that the Baptist ate; the error appears to have arisen from a transcriber substituting a Hebrew G for the R in *choreb*, which turns the word from "carob" to a "locust." As our Lord used the word *krinon*, the common Greek word for Lily, there does not appear to be any good reason to imply that He meant Anemone; *krinon* was not used in any indefinite sense. "Rie" is referred to *Vicia ervilea*, because the Arabic *Kirsenni* is supposed to be the same as the Hebrew *Kussemeth*, but "spelt" is much more probable. The above are some of the more doubtful interpretations, but the little book will be found useful to those interested in the plants of the Bible. *George Henslow.*

†MUTATIONS, VARIATIONS, AND RELATIONSHIPS OF THE ŒNOTHERAS.

THE work of De Vries on the origin of species in the Evening Primrose, Œnothera Lamarckiana, deserves the attention of the practical gardener, no less than that of the student of evolution. De Vries is the first to have caught a plant in the act of giving rise to new species.

One or two of our more go-ahead seed-men and plant breeders have been quick to see that they can gather from a study of De Vries' work information of incalculable value to them. And the time will shortly be when no breeder of plants can afford to dispense with an intimate acquaintance with this class of facts.

It is now about 20 years since De Vries first found Œnothera Lamarckiana on a disused Potato field at Hilversum, near Amsterdam, and started the famous series of pedigree cultures which enabled him to study in detail the origin of over a dozen new species.

The interest aroused in the Evening Primrose itself by this work on it has, perhaps naturally,

* Prepared by the American Colony (pamphlet 6 by 4 inches, pp. 48). Vester & Co., Jerusalem, Palestine. [illegible]

† By D. T. Macdougal, A. M. Vail, and G. H. Shull. Published by the Carnegie Institution of Washington.

taken its most active form in America, its native home. The book before us—the outcome of work carried out in the Botanical Garden at New York, the station for experimental evolution at Cold Spring Harbour, Long Island, and in the Desert Botanical Laboratory at Tucson, Arizona—is valuable both to the specialist and to the novice; to the former on account of the wealth of new material which it contains; to the latter, because some of the illustrations of the newly-arisen species are far the best that have been published so far.

But the book is primarily for the specialist. It pre-supposes a familiarity with de Vries' results, which can be best obtained from *Species and Varieties: their Origin by Mutation* (Open Court Publishing Co.), pending the appearance of the translation of *Die Mutations Theorie*, the first volume of which is expected this year.

[1] LES ARBUSTES D'ORNAMENT DE PLEINE TERRE.

THIS little book gives in a compendious form a useful description of the chief ornamental shrubs in cultivation. An introductory chapter deals briefly with the cultivation and arrangement of the plants in the garden. The figures that accompany the text are unequal, some being decidedly good, whilst others, especially the half-tone reproductions, are poor in quality. The book deserves commendation, and the name of the author, who is the head of the experimental cultural establishment of Messrs. Vilmorin-Andrieux & Co., is a sufficient guarantee of the accuracy of the information it contains.

[1] Par S. Mottet. Paris: Librairie Agricole.

The Week's Work.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Cordylines (*Dracænas*).—Those plants that have become bare of leaves at the base should be put aside for stock purposes. Cut off the tops if these are in good condition, and insert them in sandy soil in small pots. Then strip the rest of the leaves off the stem and place the plants in a light part of the house. After the elapse of a few weeks the dormant eyes will be showing, when a small piece of the stem about an inch long with each eye should be cut straight across; if there is more than one eye showing on the piece of stem, the others should be cut off. Insert the pieces in an upright position in small pots in a light sandy soil and place them in a good bottom heat; there will soon appear a fine young shoot from each eye. This is by far the best manner of raising young Dracænas, for these raised in this way make the best of plants and last for a very long period without showing flower. As soon as the next set of eyes on the old stems appear, treat them likewise. The old stock keeps pushing up the eyes and seldom do any of these fail to start when treated this way, but if all the stem is cut up at once very often the eyes lowest down the stem fail to move. Great care should be exercised in watering these before the young shoot appears, as too much moisture at this stage is liable to cause them to rot. Repot the little plants as soon as the roots reach the side of the pot.

Freesias that are showing bloom should be given weak liquid manure each time they are watered. Place four neat thin stakes in a 6-inch pot, and a piece of raffia tape tied round them will answer admirably for keeping the flowers in an upright position. The plants should be kept in a position near to the glass in a cool house.

Cinerarias.—The earliest of these plants will be coming into bloom and should be kept as cool as possible, ventilating the house on every favourable occasion. If green fly makes it appearance, fumigate the house at once or the blooms will be crippled and the plants spoiled. The soil being more or less exhausted, a liberal supply of some favourite artifical manure should be given, as Cinerarias are gross-feeding plants; and strength is required in the plant to develop all the flower-spikes possible.

Begonia Gloire de Sceaux is now flowering freely and should be kept in a rather dry atmosphere of intermediate temperature. The fallen petals should not be allowed to lay on the leaves of the plant, as these are liable to damp very quickly. This Begonia requires liberal feeding all through the spring, but the manure water must be applied in a diluted condition.

Rhododendron Nobleanum.—This Rhododendron (see fig. in *Gardeners' Chronicle*, March 14, 1896) will now be appreciated among the best forced plants for the decoration of the mansion, and conservatory. The plants should be removed from the forcing house to a cooler atmosphere as soon as the buds show signs of bursting.

Chrysanthemums for large blooms.—Cuttings inserted early last month should now be rooted. Place them on a shelf near the glass in a cool house. A cold vinery or Peach house affords as good a position as can be got for them at this stage. Place a few small tiessels over the hot-water pipes and a couple of boards about a foot wide, covered with an inch of ashes, securing that the boards are about 2 feet from the glass; the plants will then grow slowly and gain strength. The ashes should always be kept damp, as very little water can be given the plants at this stage, or they would get what is commonly called the "yellows." Do not ventilate from the front or bottom ventilators unless on very mild days, and then only a little at a time. If there is bright sunshine, slightly spray the plants overhead with the syringe at about 2 o'clock in the afternoon.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Heudre, Monmouthshire.

Cucumbers.—It is only by skilful management, even if the means are favourable, that a regular supply of Cucumbers can be maintained throughout the winter, but as the days lengthen growth will be more active, and the plants will acquire increased fruitfulness. Remove any weak or superfluous growths and stop the strong ones, but not sufficient at one time to cause a severe check to the plants. Thin out the fruits at an early stage of growth. At night an atmospheric temperature of from 65° to 70° should be preserved, rising a few degrees by day, in accordance with weather. Atmospheric moisture should be promoted by damping the surfaces in the house, and during bright weather the plants should be subjected to spraying. Encourage the roots by affording them periodical top-dressings of a compost consisting of moderately rough fibrous loam, lightened with broken-up horse droppings and flaky leaf soil, to which a little bone meal or some similar fertiliser may be added. Attend carefully to the matter of watering, using only tepid water for this purpose or for spraying the plants. Sow seeds for raising a further batch of plants, using pots measuring 3 inches in diameter; cover them with a piece of glass, and plunge them in a hot-bed having a temperature of 80°. As soon as the plants are through the soil, place them in a position near to the glass, and when well rooted, and each plant has made a rough leaf, they may be planted in their permanent quarters. For planting at this season we select a lean-to house, provided with a trellis arranged near the glass, and plant singly upon warm hillocks of compost placed 4 feet apart, upon a bed of tree leaves, with hot water pipes beneath.

Tomatos.—At the end of the present month seeds should be sown for raising the chief summer crop. Take shallow pans, and after the provision of means of drainage, make them two-thirds full with a fine sandy compost. Place the seeds at about 1 inch apart, lightly covering them with compost, and protect them with sheets of glass. As soon as the plants appear, remove the glass and place the pans upon a shelf in a house in which the heat at night will be maintained at about 55° or 60°. As soon as they are large enough to handle, carefully lift them and pot them in 3-inch pots. Carefully ventilate the structure in mild weather, and maintain a moderately low temperature. When the plants have filled the pot with roots, repot them into others, 6 inches in diameter, making the compost—loam lightly mixed with leaf soil and coarse sand sufficiently firm to promote sturdy growth. Excellent varieties include Sunrise and Frogmore Prolific (red) and Golden Jubilee (yellow). Fruiting plants should be afforded heat that will not fall below 55° or 60° at night, and may rise 5° or even 10° by day when the weather is mild. Extra care must be exercised in the giving of water, and stimulants at this season, more especially if the plants are planted out, instead of being in pots, as is the best method to adopt for winter fruiting plants. Admit air as opportunity offers, and attend to the pollinating of the blossoms at mid-day.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Cherries.—If the winter pruning and training of Cherry trees has not already been done, this work should be given attention at the first opportunity. The main pruning of dessert Cherries should always be done as far as possible in the summer. Trees that were given proper attention in that season will now only require to have most of the remaining spurs shortened to two buds. Dessert Cherries should never be cultivated in very rich soils or they will grow too vigorously, and the consequent severe cutting be conducive to "gumming." If the roots are in a good condition, the kind of soil in a particular garden should afford the best guide as to when and how to apply stimulants. Trees growing in poor soils often produce more fruit buds than those growing in richer soils; such trees should be treated liberally with stimulants at any season of the year, but similar feeding would be very injurious to trees growing in richer land.

Morello Cherries.—These trees require different treatment in regard to pruning, as they bear on shoots made in the preceding year. Remove any old branches that can be spared and all misplaced growths and weak shoots, leaving as many of the young growths as can conveniently be laid-in at distances of about 4 inches apart. As soon as the pruning and nailing is completed, the trees should be thoroughly syringed with some effective insecticide, choosing a fine day for carrying out the work, so that the trees may have a chance of becoming quite dry before night.

Apricots.—The bloom-buds of Apricots are the first of all fruits to expand, and a very little mild weather causes them to show signs of bursting. The pruning and nailing of these trees should be given attention as early in the year as convenient. The bloom-buds are also very easily injured by frost, and some kind of protection should be in readiness to place over the trees as soon as the buds show signs of requiring it. The pruning of Apricot trees should, as far as possible, be carried out during the growing season, and the winter pruning will then not be of a very severe character. Remove any shoots that were overlooked in the autumn, and any ill-placed spurs, laying in any young shoots for which there is ample space. Very strong shoots on young trees should be left their entire length, training them at least 1 foot apart, as, by cutting them hard back, "gumming" would be likely to result. By careful pinching in the spring, these shoots can soon be induced to produce plenty of spurs.

THE FLOWER GARDEN.

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

Plants in frames.—After the cold weather already experienced plants in unheated frames, such as Echeverias, Veronicas, Gaillardias, Pentstemons, Campanulas, Violas, Salvia Pitcheri, &c., should be cleansed of all dead leaves, &c., and air should be admitted to the frame on every favourable opportunity. The shoots of Pentstemons and Violas may be pinched, but not those of the Veronicas, these latter flowering much earlier and freer if the centre stem is left intact.

Sweet Peas should now be sown in 4-inch pots placed in cold frames. Give attention to the plants raised from autumn-sown seeds in the open. Birds and insects very often being troublesome at this season, it may be necessary to apply nets, and dustings of lime or soot. Autumn-sown Sweet Peas generally compensate for the little extra care required in their cultivation; they yield long-stemmed, large, richly-coloured flowers. If the seeds are sown thickly in the autumn, the plants may be transplanted in early spring without suffering any serious check to growth.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Diseases and pests.—When Orchids are cultivated in the best conditions they are less liable to the various diseases which attack them. The fleshy pseudo-bulbs and leaves of many kinds are nevertheless sometimes attacked by the disease known as "spot." When once plants are badly affected with this malady, it is difficult for the cultivator to restore them to health, and if he succeeds, it will still need several years' good treatment to efface all traces of that which perhaps was contracted in one season. The principal causes of disease amongst Orchids are: bad air, extremes of atmospheric temperature, insufficient or excessive applications of water at the roots, overfeeding of such plants that are assisted with manures, and last, but not least, the evils that result from dirt and parasites. Scales are the worst enemy, and difficult to eradicate, as they conceal themselves under the outer sheathing of the pseudo-bulbs. The kind like a stock seed is very troublesome, as it not only attacks the leaves, bulbs, and flowers, but also the roots. It increases rapidly, and if remedial measures are not immediately taken, it will quickly spread over a collection, especially if ants are plentiful, for they carry it from place to place for food. Fortunately, it is far more easily got rid of than other kinds, as it is the only kind of scale that is injured by fumigation, and again it does not seek the undersides of the leaves so much as other insects, so that its work is nearly always in sight. For removing the small white and brown scales that affect Ærides, Vandas, Cymbidiums, Cattleyas, &c., spraying with some safe insecticide must be employed. Here we use a kind known as Mitchell's Reliable Insecticide with satisfactory results. Thrips and green fly give trouble sometimes at this season, but frequent fumigations with a safe vaporising compound will keep these in check. Orchids have other enemies in the shape of slugs, snails, wood lice, and cockroaches. Lettuce leaves, sliced Potatos and Carrots, and bran in small saucers, placed about the houses can be used as traps, and with the aid of a lamp at night, diligent search amongst the plants will make it possible to keep down these pests.

Calanthes.—There are many very handsome varieties and hybrids of the deciduous section of Calanthes, but owing to their rarity they are not generally known. C. vestita and C. Veitchii are kinds most extensively grown for decorative purposes, the latter being one of the most popular hybrid Orchids ever raised. These are cultivated in most large gardens, and even in places where Orchids are not made a speciality Calanthes are often found in the most satisfactory condition. I do not advise, as the plants go out of flower, turning the pseudo-bulbs out of the pots, entirely divesting the roots of all soil and storing them thickly in boxes, unless for exigencies of space, as I believe they are better left alone until they start into growth. A common mistake often made with these plants is that of leaving them about in cold, draughty places, in conservatories or elsewhere. The pseudo-bulbs so treated never start so well, nor do they produce such fine growth as others that are kept quite dry in an atmosphere having a minimum temperature of 55 degrees. In such conditions the plants obtain the thorough and complete rest that is so necessary to their well-being, yet their "eyes" are not chilled or checked, and, therefore, start away vigorously in spring.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Peas.—Autumn-sown Peas which are intended to produce an early supply under glass, whether in pots, boxes, or sown in borders, should receive abundance of air whenever the conditions of the weather are favourable. Never apply fire-heat except in the severest of weather; Peas at all times suffer if subjected to hard forcing. Apply neat, twiggy sticks immediately growth commences in order to ensure the plants being kept in an upright position, and add a surface dressing when the plants are from 3 to 4 inches in height. Make further sowings under glass either in pots, boxes, or the dwarfer kinds in pits or frames. There are so many new and improved varieties, both as regards cropping and edible qualities, that it is almost a waste of means to cultivate the old white-seeded sorts. Gradus, Early Giant, Edwin Beckett, and Early Morn may be classed among the very best for early cropping, and are but a day or two later than those which are in every way inferior.

Broad Beans.—Though not generally grown under glass, these are quite worthy of anyone's attention. Seeds may be sown at any time during the present month, placing four seeds in 8 or 10-inch pots, which should be half filled with soil, adding more soil when the plants have reached the top of the pots. Place the pots in moderate heat until the seedlings appear, after which subject them to much the same treatment as Peas. Afford the plants an abundance of air when in flower and pinch out the points when a free set has been assured. Beans so cultivated will be found to be ready for use several weeks before those in the open. Aquadulce and Leviathan are both excellent varieties for pot-culture.

Artichokes (Jerusalem).—The whole of these may now be lifted whenever the weather is favourable, and if it is intended to grow them on the same ground next season, trench the soil and work in amongst it a liberal addition of farmyard manure. This crop will do remarkably well on the same site for many years if this rule is observed each season. The smaller tubers may be planted immediately the work is completed. The white-skinned variety is much to be preferred from every point of view to the old red kind.

Rhubarb.—When it is intended to make a new plantation, the earlier it is carried out in the year, assuming the weather is favourable, the better. The ground should be deeply trenched, applying abundance of manure, and land which is of a stiff, retentive nature should be given liberal dressings of such materials as mortar-rubble, road-sand, and wood-ashes. Among the very best sorts are Hobday's Giant and The Sutton, both thoroughly distinct and worthy a place in any garden. Rhubarb is easily increased by division of the stools. Little difficulty will now be experienced in forcing Rhubarb in the open garden. Place suitable pots or tubs over the crowns, and add sufficient fermenting material (consisting chiefly of leaves) to create a gentle warmth.

Seakale may now be brought forward in the same manner as just recommended for Rhubarb. The produce is generally superior when grown in this way to that forced indoors.

PUBLIC PARKS AND GARDENS.

By JAMES WHITE, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Acquisition of sites.—Among the many problems which urban authorities are called upon to solve, the selection of a suitable site for a park or playground, which will best suit the requirements of the community, is frequently one of some difficulty. This difficulty sometimes presents itself in small towns as well as those of larger size, but in these cases the conditions are not so bad. In the busy centres of commercial and industrial cities the land famine has become very acute, and, in consequence of the high prices demanded one is tempted to say extortionate prices the progress of the establishment of open spaces and playgrounds, apart from the larger parks, is seriously hampered. This is a point on which one is at times constrained to speak somewhat strongly. We daily see the necessity for more open spaces in closely-built towns for the well-being of those who cannot afford to live in healthier localities. Recognising the shortcomings of the past, why, we ask, should the perpetuation of the evil be permitted in the present, to the detriment of the health of both present and future generations? We see agricultural land, by the accident of circumstance, through its proximity to an expanding city, rising an hundredfold in price; large blocks of tenements are built upon it, accommodating, it may be, a dozen families in each, but not a square yard is set aside by the owner for the purpose of the recreation of the hundreds of toiling beings who of necessity will have to live in these modern abominations of four or five-storied tenements. While disliking grandmotherly legislation, one is forced to ask the question why it should not be made compulsory on the part of every landlord, whose property is so greatly enhanced in value by the outgrowth of a city, to set aside a portion of the area, say one acre in ten, as an open space and playground for the benefit of the children of the community whose existence has been the cause of the increase of his wealth? A few landlords, to their credit, do recognise their responsibilities in this matter; but unfortunately the very paucity of the number who do so only emphasises the necessity for some stronger powers than exist for compelling others to do the same. This question should not have any place in party politics. It is one which ought to be dealt with on the plane of common humanity, and the man, no matter of which party, who has the courage and strength to formulate and carry into law such a necessary piece of legislation will deserve well of his country.

Looking ahead.—In so stating my views on a subject which is painfully acute in many of the larger and older towns in our country, I strongly advocate a policy of looking ahead. This policy, which is so important in regard to the case of small playgrounds, is equally applicable to that of the larger areas which fall more properly under the designation of public parks. Some readers may ask, what has a park superintendent to do with these matters? The reply is, any person responsible for the management of a department under a corporation or other local authority should study how his department can best serve the interests of the community whose servant he is. Questions dealing with the general policy of a corporation will, of necessity, from time to time arise, which may directly or indirectly affect his particular department, and the man who keeps himself acquainted with the various phases of municipal work will best be able to deal with points which the council or committee expect that he, from his technical knowledge, should be in a position to express an opinion upon, when any scheme is under their consideration.

THE APIARY.

By CHLORIS.

Care of the hives.—The time is fast approaching when the bees may be expected to take a much-needed cleansing flight. Some beekeepers will be eager to overhaul the hives, and all will be bustle and commotion. Those who are wise will be in no hurry to examine the brood chamber, but will be content to see if the roofs have been leaking, and, if so, they will remedy the defect, at the same time removing all wet quilts and substituting dry ones.

The use of strong-smelling chemicals, &c.—I am not about to discuss the use or abuse of the various chemicals which are written about and advertised as a certain cure for the various ills that befall bees, but it is my intention to relate a fact which I gleaned during a holiday spent among those who purchase the honey which we produce. I was examining some sample of honey, upon which a chemist, with a large honey business, wished me to express an expert opinion. He then related how he had nearly ruined his connection by purchasing from a new source when his regular source failed through the bad season. It seems the honey looked quite as good as any he had ever bought. He sold it in the usual way, and one of the first to purchase was a very good customer. The next day the lady returned, saying she was certain the chemist had had some very strong-smelling chemicals near it, as it had that taste and smell. He apologised, asking her to return it and he would replace it, thinking himself that some untoward accident had happened. Before the customer just named had time to return the section, a second customer called and made the same complaint, then he thought there was something wrong with the honey. So there was; every section smelled strongly of naphthalene, and the only use he could put it to was to make it up mechanically. If any beekeeper use anything strong-smelling as a preventative of disease, they will be well advised not to have it in the hives during the time the bees are busy storing.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JANUARY 28—
Roy. Hort. Soc. Coms. meet.
Nat. Rose Soc. Com. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—39

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 22 (6 P.M.): Max. 42°, Min. 33
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, January* 23 (10 A.M.): Bar. 30·4; Temp 41°, *Weather*—Foggy.
PROVINCES.—*Wednesday, January* 22 (6 P.M.): Max. 40° Guildford, Min. 32, Newcastle-on-Tyne.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND THURSDAY—
Perennials, Gladiolus, and other Bulbs, Azaleas, &c., at 12; 1,000 Roses at 1.30; by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

TUESDAY, WEDNESDAY, AND THURSDAY—
Sale of a fine assortment of Nursery Stock by order of Mr. John Fraser, at The Nurseries, South Woodford, by Protheroe & Morris, at 11.

WEDNESDAY—
Border Plants, Begonias, Gladiolus, &c., at 12; Roses and Fruit Trees, at 1.30; Palms, Azaleas, and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Choice Imported and Established Orchids from various sources, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Experiments on Heredity.

About sixty years have passed since Darwin published the results of his remarkable investigations on the origin of new species, and proved that the facts of variation, coupled with the enormous death rate to which all organisms living in a state of nature are subject, provide the clue to the processes concerned in the production of new races.

Experience has amply confirmed the truth of the main principles of the Darwinian theory, for variation and mortality are still the cardinal points on which the doctrine of evolution hangs. But our attitude towards the problem itself has altered somewhat, and we are especially anxious at the present time to discover what is really involved in variation itself. For in the correct understanding of variation lies the kernel of the whole matter.

There are two main views as to the nature of variation itself, and the means whereby it is brought about. The one looks on the environment as the principal cause, whilst the other regards variation as the necessary outcome of an internal and intrinsic change in the constitution of the varying individual, and one that may be altogether independent of the influence of external conditions. A third party adopts an attitude of compromise, and considers the differences which arise to be due partly to inherent change, and partly to change in the environment.

Everyone who has endeavoured to produce new races of plants knows that hybridisation is a powerful engine with which to work. It is often said that in this manner we can "break the constitution" of a plant, and that the rest of the process is thenceforth a matter of selection. Others, again, assert that cultivation is the important condition, that instability of character is thereby engendered, and that in this way it becomes possible to start selection of new and desirable varieties.

These are rather vague statements when one endeavours to ascertain what they really mean, but each of them serves to disclose certain suggestive aspects of the large problem involved, and, moreover, they are just the two aspects which are now being experimentally studied, under the names of Mendelism and Mutation.

We are still very ignorant of the real nature of what are known as mutations—that is, alterations in the inherent structure of an organism which causes it to differ from its fellows, even when exposed to a similar environment. Variation of individuals from each other is universal, and mutations are sometimes spoken of, though quite improperly, as though they were merely of the nature of large variations. But this is far from being the case. As a matter of fact, the permanent, as opposed to the fluctuating, differences are sometimes, perhaps often, extremely minute, and are only to be detected by an expert. But they are distinguishable from the fluctuating variations in that they are stable, and they must, therefore, represent a real change in the constitution of the individual that possesses them.

We include under the term Mendelism a vast amount of new facts concerning the way in which parental characters are distributed amongst the offspring of each generation, and whatever may be the ultimate explanation of the exact machinery whereby the results are obtained in nature, nothing can lessen the immense importance of the knowledge thus recently acquired. For it enables us in a great measure to control, as well as to predict, the results of particular operations in a way that was formerly quite impossible. Naturally, many things are still obscure, and we are coming to recognise that the individual characters themselves are not always as simple as they may appear to be, nor are they always strictly comparable with each other. But the well-known formula $D + 2DR + R$ is found to apply to many of the instances in which, for want of full analysis, it formerly seemed to fail.

It is very important that the meaning of this formula should be properly appreciated, and perhaps no excuse is needed for recapitulating the facts upon which it rests.

It often happens in different races of the same species that a particular character, for example, stature, may be one of the features that distinguishes one race from the other. And when this is the case, the character in question may depend on some relatively simple structure present in the germ cell, which becomes evident as the individual which develops from it becomes mature. Thus Mendel found that certain races of dwarf and tall Peas respectively always bred true in regard to stature. But when the dwarfs and talls were hybridised, he did not get individuals which graded from dwarf to tall, but the whole offspring was tall. On allowing the flowers of this first generation (often distinguished as the F1 generation) to be self-pollinated, and sowing the seeds that resulted, he obtained in the second (the F2) generation, talls and dwarfs in the proportion of three of the former to one of the latter. Further experiments showed that the dwarf always bred true, and that some of the talls did the same, but that an average of half the whole offspring, consisting of individuals which were indistinguishable from pure talls, were really hybrid in character, inasmuch as they threw out dwarfs in each generation. Now, the fact that the hybrids of the F1 generation were all tall, whilst, when they were mated together, dwarfs appeared in the next one, shows that the dwarf character contributed by one parent was present, but was rendered latent in the offspring by the simultaneous presence of the other character, that of tallness. And a careful analysis of the results renders it almost certain that the germ cells formed in the pollen tube and in the embryo-sac of the ovule respectively, each contain only *one* of these two characters, until a mingling occurs at fertilisation.

The chances of a germ cell mating with another germ cell containing either the same or the opposite character are exactly equal, and if we confine our attention to the two opposing characters only, there will be four possible unions, namely, tall × tall, tall × dwarf, dwarf × tall, and dwarf × dwarf. But when the property of tallness is present, the dwarf character is latent, so when the hybrids are mated, there will be three talls to one dwarf. The three talls are not all alike. One in every three is purely tall, whilst the other two are still hybrid; and as the tall character is dominant (D) over the latent or recessive (R) character we see that the result may be expressed in general terms by the formula already alluded to.

This is a very simple case. Many other examples could be mentioned that are far more complex, but they would demand for their discussion far more space than we are able to give. We may, however, remark in passing that an increasing number of so-called reversions are susceptible to Mendelian interpretation, and thus are brought well within the domain of experimental treatment, and the results of these investigations are throwing considerable light on the nature of the mechanism of heredity.

An account is given in another column by Mr. A. W. Sutton of his remarkable and important experiments on the hybridisation of species of Brassica. The value of such experiments extends far beyond the immediate gain in the production of new forms of economic value, though this result has also been achieved. The manner in which the characters of the parents sometimes disappear in the F1 hybrid is, of course, what one would anticipate, but the apparent reversion to worthless, wild forms is suggestive in the highest degree, especially when it is found that in the F2 generation the cultivated characters may reappear, though in a modified form. It is evident that a further field is opened up for research along valuable lines that, as yet, have hardly been touched. We would especially refer to the behaviour of such characters as fleshiness, and their

distribution amongst the hybrids. The remarkable way in which this feature behaves is specially interesting when we reflect that it is one that is particularly liable to be affected by the environment. Everyone knows how differently fleshy plants develop according to whether they are grown in good, or in poor neglected soil. It is, therefore, of considerable importance to find that this character, which has sometimes been appealed to as proving the all-importance of the environment, should so clearly indicate its primary relation to the inner constitution of the organism as determined by the fusion of the parental germ cells. The facts seem to point to the conclusion that the exhibition of certain characters of this sort can only appear if the properties on which they depend are already present in the individual, but that on the other hand they may lie more or less dormant unless they are stimulated to expression by a suitable environment.

ROYAL HORTICULTURAL SOCIETY.—At the meeting of the Committees of this Society on Tuesday next, January 28, in the Vincent Square Hall, Westminster, a lecture on "Self-Coloured Photographs of Switzerland and the Swiss Flora" will be delivered by Mr. T. ERNEST WALTHAM, at 3 p.m., illustrated with lantern slides. Mr. A. W. SUTTON will read a paper on Brassica hybrids at the meeting of the Scientific Committee at 4 p.m. in the Lecture Room, and will illustrate his lecture by lantern slides.

R.H.S. GUILD.—With the view of keeping past and present students and employés in the gardens of the R.H.S. in touch with one another and with the work of the Society, it has been decided to form a R.H.S. Guild. A half-yearly magazine will be issued, comprising articles and letters contributed by members, notes on the work of the Society in the gardens at Wisley, exhibitions, &c., general notes of horticultural interest, and a list of members with their addresses. An annual dinner will probably be arranged for the first day of Holland Park Show. The fee for membership is provisionally fixed at 5s. a year. Old Chiswick and Wisleyites are asked to communicate with the hon. sec., Mr. R. J. WALLIS, R.H.S. Gardens, Ripley, Surrey.

THE DEVON AND EXETER HORTICULTURAL SOCIETY will hold its autumn show on Friday and Saturday, October 23 and 24, in the Victoria Hall, Exeter.

CHESTER PAXTON SOCIETY.—At a meeting to be held on February 1, a lecture on "The Common House-Fly" will be delivered by Mr. R. NEWSTEAD, A.L.S., F.E.S., &c., illustrated by lantern slides and specimens. On February 15 the subject of the lecture will be "The Flora of India and Ceylon," by Mr. JOSEPH THOMPSON, illustrated by a series of lantern slides, and on February 29, "Herbaceous and Alpine Plants," by Mr. W. S. SHARP.

THE THIRD QUINQUENNIAL INTERNATIONAL CONGRESS OF BOTANISTS.—In 1905, at the wish of the Vienna Congress of Botanists, the Belgian Government agreed to the holding of the Congress of 1910 at Brussels, and M. TH. DURAND and Prof. ERRERA were appointed chairmen of the executive committee. Less than two months afterwards Prof. ERRERA died suddenly, and the Count OSWALD DE KERCHOVE DE DENTERGHEM, who had accepted the position vacated by the death of Prof. ERRERA, died also in March, 1906. The question of the transfer of the State Botanic Garden of Brussels being put forward, the Government asked the International Association of Botanists to hold the third Congress (1910) elsewhere and to hold the fourth Congress (1915) at Brussels instead. Action in this sense was agreed upon, but in July last the idea of holding the third Congress at Brussels was again taken up by M. HELLEPUTTE, Minister of the Board of Agriculture *ad int.*, and the Baron DESCAMPS, Minister of the Science and Art Department. The Baron DE MOREAU D'ANDOYE, formerly Minister of Agriculture, kindly accepted the position rendered vacant by the death of the late Count DE KERCHOVE. A preliminary meeting was held on January 16 in the State Botanic Gardens at Brussels, M. DE MOREAU presiding, and there were present MM. TH. DURAND, president of the committee of organisation, DE WILDEMAN, general secretary, HEGH, secretary, VAN DER VAEREN, treasurer, and VAN AERDSCHOT, assistant-treasurer, MM. PROOST and VAN OVERBERG (general directors), together with the best known of the Belgian botanists. The provisory lists of honorary members and the members of the Executive Committee, and Sub-committees, were elaborated. The programme and rules of the Congress were also discussed. A second meeting will be held on Wednesday, January 29.

EMIGRATION TO NEW ZEALAND. The High Commissioner for New Zealand desires to direct special attention to the fact that persons suffering from consumption and unable to provide for their maintenance inside a sanatorium cannot be allowed to land in New Zealand. Indigent sufferers are required to return by the next boat leaving after their arrival, and it is therefore specially important that consumptive patients of that class should be warned not to go to New Zealand.

"WILLING'S PRESS GUIDE."—The receipt of the issue of this work for 1908, being the thirty-fifth year of its existence, reminds us of the useful information it contains upon the publications of the United Kingdom. In addition to an exhaustive list, the publications are classified into counties, types, and according to their frequency of issue, and information on many other matters is given. It is published at the price of one shilling.

FRUIT IN THE BERLIN IRRIGATION MEADOWS.—The annual report of the deputation for the Rieselfeldern, or water meadows, contains some interesting matter. The peculiarity of a water meadow is that it requires a great number of roads or tracks. With the view of making these broad roads (6 yards) of use financially, they are planted with fruit trees, and most of these are now ten years old, and are coming into bearing. Until recently the trees have been let to yearly tenants, but the owners will now cultivate the trees and harvest the crop at their own cost. The result throughout has been most satisfactory, for whereas in previous years the income in the form of rent in no year has exceeded 8,000 mk., in two years the fruit sales brought in 84,000 mk., and the last year 100,000 mk. The present year the crop of Apples and Pears amounted to several thousand centner, and was disposed of by direct sales.

DR. HERMANN GRAF ZU SOLMS-LAUBACH.—This well-known Professor of Botany at Strassburg, and Director of the Botanical Garden at that city, relinquishes his post at the conclusion of the present semester. He was at one time a frequent correspondent of this journal, and his various contributions on botanical matters have been noticed in its pages. He will be succeeded by Prof. Dr. Friedr. Oltmanns, Director of the Botanical Gardens at Freiburg.

BANANAS VERSUS PLUMS IN ENGLAND.—The abundant crops of Plums which have been experienced in England during the past season have, it is stated, been the cause of a discussion carried on in many newspapers as to the relative food value of this native fruit compared with the imported Banana. This discussion, states the *Agricultural News* (West Indies), has chiefly centred round the Victoria Plum and the Canary Banana. A well-known West of England paper has taken a prominent part in debating the question, and has advanced in its columns a mass of figures and arguments in support of the assertion that English Plums are 50 per cent. cheaper, on the basis of their nutritive properties, than Canary Bananas, and also far better adapted for English consumption, from a health point of view, than the imported fruit. Plum growers, it is urged, should adopt the methods which have been utilised with so much advantage by Banana producers and dealers, and, by the judicious dissemination of literature, impress upon consumers the nutritive value of the home-grown fruit. By this means, it is hoped, English Plums will largely displace Bananas on the home market. Without for a moment wishing to disparage the qualities of the delicious English Plums, it is obvious that there is no comparison between this fruit and the Banana as regards food value. The latter contains nearly ten times the amount of albuminous constituents possessed by the Plum; it also contains more than ten times the amount of sugar, and rather more mineral matter. The nourishing properties of the Banana have been long recognised in England, and the fruit has come to stay. Further, the uncertain nature of the English Plum crop, and the fact that this fruit is available in its fresh condition for only a short period of the year, give it no chance of displacing the Banana, which can be obtained in fresh supply from January to December.

THE PRICKLY PEAR IN AMERICA.—Although the spread of this plant has aroused considerable apprehension in South Africa and Australia, it forms one of the important economic food-plants in Mexico, where it is largely grown for the sake of its edible fruits. A recent number of the *Bulletin of Plant Industry* is devoted to a lengthy report on this Cactus, which goes by the name of Tuna in Mexico, and it seems to suggest that the plant may possibly rise in general esteem. One disadvantage associated with the fruits lies in their prickly character, and another in the disagreeable sensation, at least to most non-Mexican people, produced by the seeds. It is well known that BURBANK has cultivated forms which, so far as the vegetative organs are concerned, are spineless, and afford valuable food for cattle in hot, dry districts, but even these possess more or less spiny fruits. The same capacity for variation is also associated with the fruits, of which there are many distinct sorts recognised by the Mexicans. Some of these, like the Tuna naranjada, contain much less seed than other sorts, and the general impression derived from reading the report is that the Opuntia is decidedly worth taking up with the view of breeding new races of economic value. If these efforts should be seriously undertaken, and should meet with success, it may be possible to replace the unpopular sorts that at present are rampant in South Africa and Australia by desirable varieties. The principal disadvantage of the fruits as now grown seems to lie in their tendency to produce constipation; but the fact that, in this respect again, the various sorts differ much amongst themselves, is a hopeful sign for the future.

Publications Received. *The Art of Landscape Gardening*, by Humphry Repton. Edited by John Nolen, A.M. Published by Archibald Constable & Co., Ltd. Price, 12s. 6d.—*The Book of Garden Pests and Plant Diseases*, by R. Hooper Pearson. Published by John Lane. Price, 2s. 6d.—*A B C and A Y Z of Bee Culture*, new edition, by A. I. Root and E. R. Root. Published by the A. I. Root Company, Medina, Ohio. Price, $1.50.—*The Sweet Pea Annual*. Price 2s.—*Sweet Peas and their Cultivation*, by Charles H. Curtis. Published by W. H. & L. Collingridge. Price, 1s. and 1s. 6d.

NOTES ON BRASSICA CROSSES.*

THE practical culture of plants for seed naturally affords many opportunities of studying the processes of nature, which the ordinary pursuits of agriculture and horticulture do not, and it was probably on this account that I was invited some years ago, with my friend, Mr. Harry Veitch, to represent the Royal Horticultural Society on a joint committee, with Mr. Bateson representing the Evolution Committee

FIG. 26.—BRUSSELS SPROUT WITH CABBAGE HEAD.

of the Royal Society, in order to note and record any natural phenomena which might illustrate the theory of evolution.

I was first led to commence this special series of experiments in Brassica crosses by the statement of a writer in one of the agricultural journals, to the effect that various plants of the Brassica tribe, including some of those most important to agriculturists, would not cross naturally, or, in other words, seed-crops of these plants might safely be grown in close proximity without any fear of inoculation. As a practical seed-grower, this statement could not fail to arrest my attention, because experience had always shown that, while certain Brassicas could safely be seeded close to one

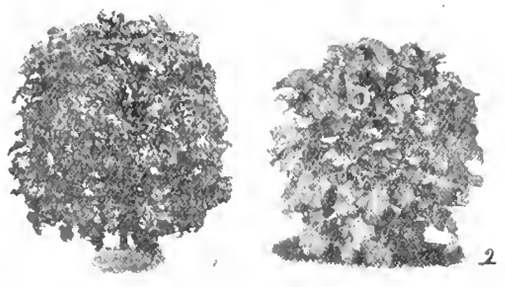

FIG. 27.—(1) A HARDY CURLED FORM OF 1,000-HEADED KALE. (2) THE PARENT FORM OF 1,000-HEADED KALE, FOR COMPARISON.

another, other could not be so grown for seed without injury. Possibly the fact that *some* members of the Brassica family will not intercross may have led the writer to conclude that this was true of all. However this may be, I decided to put the question to a practical test, and in the year 1900 set out several plantations for seed. The plants obtained by sowing the seed were duly examined, and afterwards reported upon in various agricultural and horticultural papers in the spring of 1902.

The results were very much in accordance with my expectations, and, in some cases, confirmed the unfortunate result which occasionally follows when a farmer inadvertently allows two crops to seed near one another.

I did not anticipate that new types of much practical importance to agriculturists or to gardeners would result from these experiments, because we have already an almost endless variety of economic plants of the Brassica family, most, if not all, of which have reached their present state of perfection through a long period of careful selection from a single type, each seeded year by year in perfect isolation. At the same time, there were possibilities of new combinations, and it is interesting to note that some have been well fixed and are likely to become very popular vegetables or plants of economic value.

The following were seeded side by side and allowed to intercross naturally:—

Green Kale, Variegated Kale, Thousand-headed Kale, Savoy, Brussels Sprouts, Drumhead Cabbage, Garden Cabbage, Red Cabbage, and Couve Tronchuda.

The hybrid plants obtained from seeding all these types together were most nondescript in character. The majority were discarded as being of no practical value, but the following are likely to be useful in the future, and some are being perpetuated —

A Brussels Sprout with Cabbage head (fig. 26).

A plant like Thousand-headed Kale, but with curled leaves (fig. 27).

A plant like Thousand-headed Kale, but with large, tender leaf stalks similar to those of Couve Tronchuda.

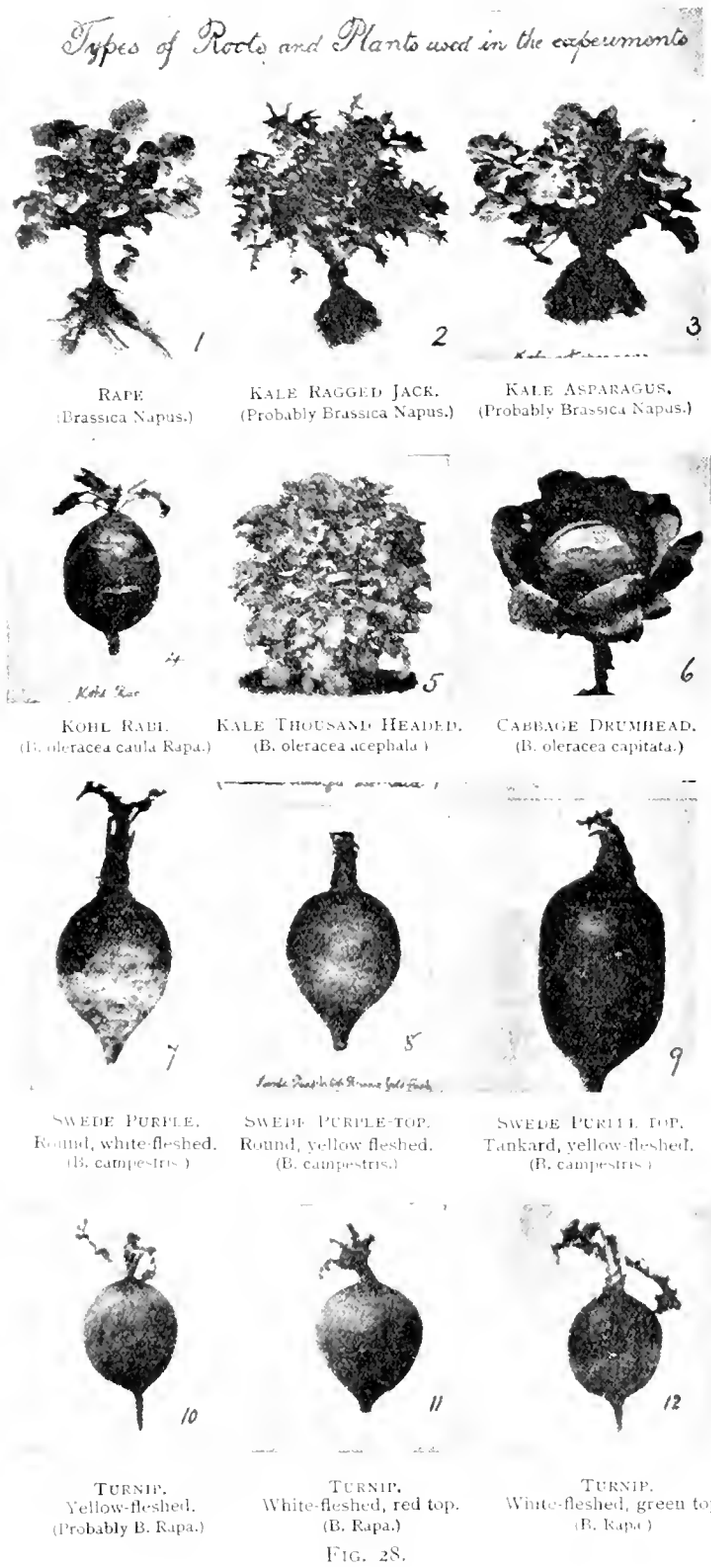

FIG. 28.

* Extracts from a paper read before the Linnean Society, January 16, 1908.

A hearting or heading form of Couve Tronchuda.

Having seen the results from seeding various forms of the Brassica oleracea side by side, I decided to continue the experiment by including other types of Brassicas, such as Rape, Swede, and Turnip (B. Napus, B. campestris, and B. Rapa respectively). These, with Kales, Cabbages, and Kohl Rabi, were seeded side by side in 1902, and, as in the case of the original experiments in 1900, I obtained a most extraordinary collection of hybrids, but there was no trace of any of the Cabbage class being affected by Rape, Swede, or Turnip, nor were any useful novelties obtained. I showed the results of these crosses to my friend, Professor Percival, Director of the Agricultural Dept., Reading College, and we determined to see whether crosses could not be obtained between Brassica oleracea and some types of Brassica Napus, Brassica campestris, and Brassica Rapa, by artificially fertilising the flowers *under such controlled conditions as would make it almost impossible that any chance fertilisation of the flowers should vitiate the experiment.*

There are, as many persons are aware, two distinct types of Swede, besides scores of more or less different varieties. These two distinct types are the yellow-fleshed Swede and the white-fleshed Swede. There are also two distinct types of Turnips, the yellow-fleshed Turnip and the white-fleshed Turnip. There has been a vulgar tradition that the yellow-fleshed Turnip is a hybrid form between the yellow-fleshed Swede and the white-fleshed Turnip, and so generally accepted has the tradition been in some quarters that yellow-fleshed Turnips have been commonly known as "hybrid" Turnips. But opposed to this tradition is the fact that there is no authentic record of any yellow-fleshed Turnip of commerce having been produced in this way, nor has any chance seeding of a yellow-fleshed Swede side by side with a white-fleshed Turnip given rise to a hybrid form at all corresponding to the yellow Turnip.

If the yellow-fleshed Turnip does not owe its origin to a cross between a yellow-fleshed Swede and a white-fleshed Turnip, from whence have we obtained the yellow-fleshed Turnip? Again, are Swedes, whether yellow-fleshed or white-fleshed, so closely related to Turnips, whether yellow-fleshed or white-fleshed, that we may conclude they have a common origin, or do they differ so specifically that we must admit a separate origin? It is, of course, well known that,

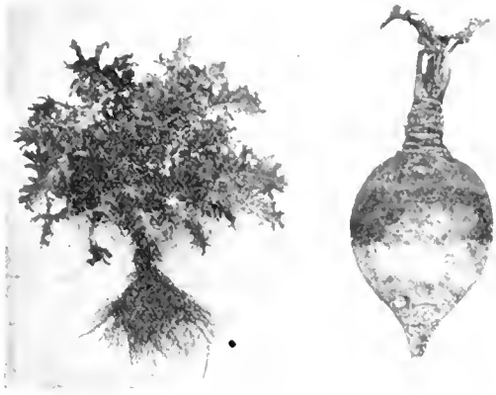

FIG. 29.—PARENT PLANTS RAGGED JACK KALE × WHITE SWEDE.

though in England Swedes are known as Swedes, and Turnips as Turnips, yet in Scotland and in Ireland farmers generally use the word "Turnip" to describe both Swedes proper and Turnips of all kinds. We, therefore, decided to take the leading types of Brassicas most commonly used on the farm or in the garden, and individually cross them with each other, taking every due precaution as to the emasculation of the flowers to be pollinated.

I may at the outset state that these first crossings, made in 1904, gave us, when any combination occurred, just the results in F1, which experience had led me to expect, and, conversely, when no combination occurred, this was also in strict agreement with previous experience. But when Professor Percival, Mr. Bateson, myself, and others met to examine the plants of F1 in the autumn of 1905, we saw at once that, by "selfing" these plants, we should have an unique opportunity of testing the Mendelian theories, which led Mr. Bateson to feel confident that in F2 we should find the "progeny" splitting up and giving us back again the parental types in definite proportions.

The plants of F1 were not hand-pollinated, but well isolated and covered in with tiffany or muslin. The types taken for the experiment were: — Rape, Ragged Jack Kale, Asparagus Kale, Kohl Rabi, Thousand-headed Kale, Drumhead Cabbage, white-fleshed Swede, yellow-fleshed Swede, yellow-fleshed Turnip, and white-fleshed Turnip (fig. 28). The number of crosses attempted was about 86, although if all the possible combinations had been tried the total would have been 210. Many of these attempted crosses, as we naturally anticipated, gave no seed at all, perhaps indicating that cross-fertilisation was impossible. Another group gave seeds which were poor or immature and would not germinate. Still another group gave seeds which grew into plants and roots, and these, when planted out for seed, were either killed by the weather or were sterile and produced no seed. The general character of these plants resulting from the crosses was, of course, that of mongrel or bastard types, and in only a very few cases could the experiments be continued to the second generation, probably owing to sterility. The point, however, which I wish to specially emphasise is that, where the experiment was continued to the second generation, we found in almost every case the hybrid form split up, and gave us in F2 plants, a certain number of which resembled the parental types, whilst others were intermediate types.

FIG. 30.—HYBRID (F1) RESULTING FROM CROSSING RAGGED JACK KALE WITH WHITE SWEDE.

Taking first the cases in which no seeds were produced from the original crosses. Rape did not cross with Kohl Rabi, Thousand-headed Kale, or Drumhead Cabbage.

Ragged Jack and Asparagus Kale did not cross with Kohl Rabi, Thousand-headed Kale, Drumhead Cabbage, or with white Turnip.

Thousand-headed Kale and Drumhead Cabbage crossed with none but Kohl Rabi.

Neither white-fleshed Swede, yellow-fleshed Swede, yellow Turnip, nor white Turnip would cross with the Cabbage class.

The next group consisted of plants of F1, which, when put out for seed in 1906, proved sterile, or were destroyed by the weather. They were: — Asparagus Kale on yellow-fleshed Swede; white Turnip on Asparagus Kale; Ragged Jack Kale on yellow-fleshed Swede; yellow-fleshed Swede on Ragged Jack Kale; Rape on yellow-fleshed Swede; Rape on white-fleshed Swede; white-fleshed Turnip on Rape; yellow Turnip on Rape; yellow Turnip on Ragged Jack Kale; white Turnip on white Swede; Rape on yellow Turnip; yellow Turnip on yellow Swede; yellow Turnip on Ragged Jack Kale; yellow Turnip on white Swede; yellow Turnip on white Turnip; white Turnip on white Swede; white Turnip on yellow Turnip; white Turnip on yellow Swede.

The last section is that resulting from crosses which, having produced hybrid forms in F1, have also produced plants or roots in F2, splitting up, as I have already indicated, into forms resembling the types first cross-fertilised, and other intermediate forms. They are as follow:

Kohl Rabi on Thousand-headed Kale: 207 plants grown, 154 bulbing, 53 non-bulbing; proportion of bulbing plants about 3 to 1.

Thousand-headed Kale on Kohl Rabi: 201 plants grown, 135 bulbing, 66 non-bulbing; proportion of bulbing plants about 2 to 1.

Kohl Rabi on Drumhead Cabbage: 215 plants grown, 45 bulbing, 170 non-bulbing; proportion of bulbing plants about 1 to 4.

Drumhead Cabbage on Kohl Rabi: 195 plants grown, 46 bulbing, 149 non-bulbing; proportion of bulbing plants about 4 to 13.

Thousand-headed Kale on Drumhead Cabbage: 204 plants grown, 176 much like a dwarfer type of Thousand-head, 26 Cabbage-like, and 2 resembling rather the Brussels Sprouts.

Ragged Jack Kale on white Swede (figs. 29, 30, 31): 198 plants grown, 160 bulbing, 38 non-bulbing; proportion of bulbing plants 4 to 1. Foliage, Swede-like 142, Ragged Jack-like 38, intermediate 18.

White Swede on Ragged Jack Kale: 191 plants grown, 136 bulbing, 58 non-bulbing; proportion of bulbing plants about 5 to 2. Foliage, Swede-like 156, Ragged Jack-like 33, intermediate 5.

Purple-top yellow round Swede on Asparagus Kale: 208 plants grown, 178 bulbing, 30 non-bulbing; proportion of bulbing plants about 6 to 1. Foliage, Swede-like 126, Asparagus Kale-like 82.

GENERAL CONCLUSIONS.

From the foregoing it will be seen that Brassica oleracea (Cabbage type) will not cross outside its own class; but that Brassica Napus, Brassica campestris, and Brassica Rapa (Rapes, Swedes, and Turnip) crossed with each other and produced hybrids, although many of these hybrid plants failed to produce seed, and could not therefore be perpetuated.

FIG. 31.—OFFSPRING OBTAINED FROM SELF-FERTILISING THE HYBRID SHOWN IN FIG. 30.

There is no doubt that the origin of these latter types is very obscure, and much confusion exists in their classification.

It seems also a fair deduction to make that, as it was impossible to perpetuate the hybrid forms between white and yellow Swede, white and yellow Turnips, white Turnip and Swede, yellow Turnip and Swede, or vice versâ (for the reasons above mentioned), it is probable they do not owe their existence to a cross with a wild form. *Arthur W. Sutton.*

RAILWAY RATES.

MOVEMENT BY THE GROWERS.

THE public in general, and nurserymen and market-gardeners in particular, owe a debt of gratitude to the *Daily Telegraph* for having enabled growers to bring to public notice the hardships which they suffer under the present railway regulations. Such a policy cannot but be productive of good to both parties, inasmuch as railways rely upon the trader for a large proportion of their profit, and a reasonable complaint left unremedied is apt to militate against that expansion of trade which it should clearly be to the interest of the railways to promote. It is, of course, equally true that without adequate provision for transit of goods commerce must suffer proportionately.

The correspondence in the *Daily Telegraph* opened on the 14th inst. with an interview with Mr. George Monro, of Covent Garden, on the subject of railway hardships as they affect the grower. This was soon followed by letters from such well-known growers as Mr. Cuthbertson (Dobbie and Co.), of Mark's Tey, Mr. Charles A. Pearson, of Nottingham (writing officially as honorary secretary of the Horticultural Trades' Association of Great Britain and Ireland), Mr. Jackman, of Woking, Mr. Wm. G. Lobjoit, of Hounslow (writing officially as vice-president of the Market-Gardeners', Nurserymen and Farmers' Association), in addition to Messrs. Edward H. Lewis and Son, of Covent Garden, and "R. E. M." Readers may be interested to hear that the latter initials modestly hide the identity of Mr. R. E. Moore, the able counsel who has recently revised the short Act of Parliament drafted on behalf of the Joint Railway and Parliamentary Committee as a sample (for Mr. Lloyd George's perusal) of the practical remedies required to mitigate the growers' grievances. By the time these lines appear in print probably other letters from the trade will have been published, and it is certainly encouraging to those who have for so long laboured to obtain ventilation of this subject in the daily Press to find that their efforts have at last met with success. For the reasons which are explained later, growers now have a chance which may not again occur during the present generation, and it is to be hoped that, in their own interests, they will seize without delay the opportunity thus offered. As Mr. Charles A. Pearson points out in his letter above referred to, the only hope of securing amendment is to convince "the man in the street" of the reality of the grievances, so that those in authority may be induced to take a right view of the matter. But to achieve this object it is necessary to bring forward concrete *instances* of the hardships which exist. Every grower meets with such instances in the course of his business, and if a short letter from each one were published in the *Daily Telegraph*, relating his special troubles in respect of high railway rates, refusal of reasonable compensation for damage, careless handling of goods, unreasonable delay, want of proper facilities, or unfair treatment generally, an overwhelming body of evidence would be forthcoming to support the case of the growers. Knowledge of railway law is quite unnecessary for this purpose. It is *facts* which are needed. The technical points of the matter, and the remedies advocated, are being dealt with by the members of the Joint Railway and Parliamentary Committee, which represents the numerous associations of traders who deal in perishable goods. The members of this committee, under the presidency of Mr. George Monro, have made a special study of the subject, but, to a large extent, they must obviously rely on the individual trader to supply them with the requisite amount of information.

Those who desire to have further assistance or information on the subject should communicate at once with Mr. H. W. Goodall (at his offices in the Tavistock Hotel, Covent Garden, London), the secretary to the committee.

It is evident that there is not a moment to be lost. Already the railways are combining in an attempt to force up rates, and are commencing their campaign. Let those who fancy this danger to be imaginary or in any way exaggerated read and digest the following announcement which appeared in the *Daily Telegraph* on Saturday last.

INCREASED RAILWAY RATES.

PROPOSED JOINT CONFERENCE.

"A special meeting of the members of the Railway Companies' Association was held in London yesterday, when consideration was given to a proposal to promote a conference with a view to raising and adjusting the existing railway rates.

"At the time of the railway settlement the question of the restrictions under which the companies at present suffered in this direction was brought forward, and the President of the Board of Trade then promised fully to investigate the subject.

"A conference, to be attended by representatives of the railway companies, merchants, traders, and other interested bodies, is favoured, as against a Royal Commission, which it was originally suggested should be appointed to inquire into the whole question and report.

"Mr. Lloyd George is giving his support to the holding of a conference, as a result of which some definite and joint action will, it is expected, be decided upon."

The matter is thus put very gently and diplomatically for the Railway Companies' Association, but the paragraph openly confesses that it is desired to force up railway rates. And what more does it imply? At the worst, it may tempt some to give credence to the rumour that the railway companies are endeavouring to induce the Government to enter into a bargain whereby, in consideration of the railway companies raising the wages of their servants (a comparatively small section of the labouring classes in comparison with the working population of the country), instead of providing the necessary funds by increased internal economy and a sounder commercial policy, the railways are to be allowed to force up rates. If the prices of fruit, vegetables, and other foods are to be thus increased, it is well to bear in mind that, although part of the cost may fall on the consumer, the whole of the increase certainly will not do so having regard to the competing prices of foreign growers who import their produce at specially-reduced railway charges far below those paid by home growers. Furthermore, in so far as a portion of the increased rates falls on the consumer, undoubtedly "our food will cost us more," and, without any corresponding benefit, the pinch will thus be felt by the gardener and working classes in common with the rest of the public. This is a point upon which both Free Traders and Tariff Reformers will, presumably, be in agreement. It may be suggested that the above argument does not assist the nurseryman and seedsman. But surely the plea in their case is even stronger, because the young fruit trees and seeds supplied by them are to the market-gardener what "raw material" is to the manufacturer.

At the best, the newspaper extract quoted above shows that a conference between the representatives of the various railway companies and the traders is to be held under the auspices of the Board of Trade, for the purpose of discussing not only the existing obsolete classification of goods (which bears so hardly upon the grower), but even the question as to whether railway rates should be raised, lowered, or remain unaltered, the various trades being considered piecemeal.

Each trade will doubtless protest that it must be spared, and that if increased income for the railways is essential, it is some other trade which must suffer. And which trades are most likely to gain benefit from this conference, or, at all events, to emerge least unharmed from the ordeal? Obviously those who take care to make known their special trade grievances and press for amelioration. Who could complain if the interests of growers should be overlooked or misunderstood by the President of the Board of Trade if the growers themselves remain silent and inert during the struggle? This was the attitude of the growers (principally owing to want of proper organisation) in the year 1888, when in effect the present classes for goods were fixed, and the trade has suffered in consequence ever since.

It is rumoured (though one is not yet in a position to make any authoritative announcement on the subject) that the proposed conference will consist of only a few members (many trades being left out) in addition to three independent persons nominated by the Board of Trade. If such is to be the case, it is earnestly to be hoped that at least one of the trade representatives will be specially qualified to speak on behalf of the fruit, flower, and vegetable trades, they being amongst the chief sufferers. Failing this, it is of vital importance that full information should be supplied by other means both to the trade representatives and to Mr. Lloyd George himself. Vague statements will be useless; practical instances, with dates and figures, will be absolutely necessary.

Nurserymen and market-gardeners must now be prepared to work out their own salvation, and every individual grower can lend valuable aid. First, by writing to-day to Mr. Goodall, at the Tavistock Hotel, giving instances of trade grievances under present railway regulations. Secondly, by vigorously strengthening the hands of those trade organisations which have taken the matter up; and, thirdly, by at once directing the attention of Members of Parliament to the subject. *H. Morgan Veitch.*

HOME CORRESPONDENCE.

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

THE YELLOW FRUITED MIRABELLE PLUM (see pp. 28 and 44).—There is a good-sized tree of this Plum growing in the orchard here, and we get good crops of fruit from it in most seasons. In the past season it bore the heaviest crop I have seen in the past nine years. It is planted near the red-fruited variety, and together they have a very pretty effect when in fruit. There are two other trees of the red variety; one is a very large tree, and had it not been well supported by a dozen large struts, every branch would have been broken down by the weight of fruit. Both varieties make a good preserve, and are useful in the kitchen in many ways. Our trees are well sheltered by rows of Walnut trees; being so early to flower these Plums are liable to be cut by spring frosts and the cold winds that we get in this district. We are so near the chalk that the soil is much drier and warmer than in many localities. If trees were planted in less favoured situations they would probably fail to crop. *S. Burgess, Northdown Gardens, Margate, Kent.*

——— This variety has been grown here since 1886, when the late Duke of Rutland brought some trees home from Cronberg, in Germany: they have grown well, and are now 16 feet high, and the same in diameter. I would not advise anyone to plant this Plum extensively in the Midland or Northern districts; it bears freely, but requires a warm season to ripen its fruit. Last year many of them failed to reach their full size here. In warm seasons, when they ripen better, the fruits are much appreciated for the making of tarts and preserves, owing to their excellent flavour, when cooked, which is very similar to that of Apricots. I consider the variety worthy of a place against a wall for this reason, although the fruits are very small and have scarcely any flavour before they are cooked. The late Duke told me the variety was very plentiful in some parts of Germany. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

PEAS.—Probably too many varieties of Peas are cultivated in gardens. Anyone requiring seed Peas, and especially the amateur, must be rather bewildered when perusing the long list presented to his gaze in most of the seed catalogues now published. The chief point is to grow varieties suited to the soil and position; for instance, an exposed garden without protective walls in a bleak locality is a bad situation for tall-growing varieties. As Mr. Bartlett (page 410, Vol. XLII.) pointed out, Pears are in many instances sown far too thickly, and a hint should be taken from his remarks for application to the Sweet Peas. They require deep cultivation to be satisfactory during a dry, hot summer, with something in the shape of good rotten manure for the roots to grow in low down, out of the immediate reach of the scorching rays of the sun. During the past summer I was much impressed with the Peas grown by Mr. Edmunds at Whitchurch, Hants. The varieties were William Hurst, Gradus, and

Duchess of Albany. The two latter varieties were cultivated in rows some distance apart, with a breadth of Potatos between the rows. The variety William Hurst produced a grand crop, and as a dwarf variety requiring no stakes it is scarcely excelled. Another dwarf growing variety cultivated by Mr. Edmunds had larger pods, but was neither so full in the pod nor as early as William Hurst. It is very beneficial to Peas to sow them in a shallow trench, that when artificial watering has to be resorted to they may receive a good soaking and reap the benefit of its application, after which they should receive a mulching of short manure to hinder evaporation. Years ago we raised our early Peas in small pots for planting out First Crop or Ringleader—but with that system I do not now agree. We sow seeds outdoors in a sheltered position, and protect and encourage them to grow when they appear through the ground and subsequently. *George Potts, Woodcoteside, Epsom.*

PREVENTION OF CORRUPTION ACT, 1906.—It is proverbial that onlookers see most of the game, and as I am in the position of neither giving nor receiving secret commission, I should like to contribute a few remarks, since, with your usual impartiality, you are publishing letters on both sides of this question. First, I wish to say I am convinced that the general public recognises the gardener to be what he undoubtedly is, viz., a hardworking, honest, simple fellow—attributes which, be the reason what it may, are shared by most of those who pass their lives in daily companionship with Mother Earth. If the average gardener were told that he would sell his honesty for a small commission on orders he would be sincerely indignant at such an imputation. At the same time, one is bound to recognise that the giving of commission *secretly* is a practice which may *unconsciously* influence the judgment of the receiver more than he himself suspects, and, in any case, may, by the mere temptation of the thing, tend to increase the number of black sheep which are to be found in every fold. Secondly, it is correct that this new Act aims impartially at secret commissions in every trade. It affects equally the coachman, the gardener, the chauffeur, and the business manager; indeed, all who are entrusted with the duty of buying goods for their employers, including such a person, for instance, as the managing director of one very large trading concern (of whom I heard recently) who draws a secret commission of several hundreds a year from certain coal companies. Thirdly, it is useless, from the purely practical point of view, to discuss whether the intentions of the gardener who accepts secret commissions are honest or not. It simply does not matter. The really vital question is what view the judges will take in case of prosecution, and as Sir E. Fry was for many years a judge, his letter at least shows what amount of mercy the judges will extend towards any unfortunate offender who comes before them. Lastly, I do hope that the gardener, for his own sake, will not put his head into a noose from which there can be no withdrawal. I suppose that those nurserymen or seedsmen who decide to run the risk will not pay the secret commission themselves, but will entrust that dangerous duty to some unfortunate representative, and when things begin to leak out, as they always do in this world, what will happen? Let the gardener study human nature (or at least remember what one reads almost every week in the daily papers) and draw his own conclusions. The representative's first thought will naturally be to save himself, and the usual way to do that is to "turn King's evidence" and give information against the other guilty person in return for a free pardon for one's-self. The gardener, in his simplicity and loyalty will not think of doing anything of this sort, and so he will inevitably be made the scapegoat, and be left to bear the odium of prosecution, while the tradesman's representative goes free. The trap is obvious. *Onlooker.*

——— Having had over 50 years' experience as a gardener, I read with much interest Sir E. Fry's letter on p. 439, Vol. xlii., and those that have been written since in these columns on the same subject. On reading the first-named letter, I came to the conclusion that the writer, from long experience of wrongdoers, was naturally influenced in his view of the actions of gardeners in this matter. In saying this, I do not for one moment defend the principle of offering or taking what are termed discounts on business done by the employee for his employer. It is no secret that employers generally have long known there were such gifts, and have made their arrangements with their gardeners in accordance with that knowledge, taking care to rate these gifts at a much higher scale than in practice they ever reached. I know as a fact that the leading indoor servants and gamekeepers in gentlemen's places have on the average received far larger sums as "gifts" from their employers' guests than gardeners have from any outside source. All the same, these said employees were paid their salaries or wages as agreed upon when entering their several services. However, it is the future we have to face not the past. What I should like to see done is the whole thing abolished. Gardeners will never take the position their general intelligence and responsibility entitles them to as citizens until this is effected. The motto "I serve" need be no more derogatory in their case than in that of a judge of a High Court or any other position in life. To those who have reasonable employers, I would say, take a favourable opportunity of bringing the subject before them, and ask for a more fitting salary than has hitherto been paid, on the understanding that no gifts in any shape will be accepted. To employers I would say: put into practice the words many of them profess to believe in, viz., "Lead us not into temptation," by paying their gardeners a reasonable wage according to the skill and responsibility required of them. To gardeners generally I would add: try hard to become members of or subscribers to one or all of the well-known and well-managed societies, begun and carried out for their benefit, viz., United Horticultural Benefit Society, Gardeners' Royal Benevolent Institution, Royal Gardeners' Orphan Fund, and British Gardeners' Association. Allow me to quote an extract from a well-known gardener in the south, received the day before I saw Sir E. Fry's letter. He said: "There is an awful stir and bother amongst the trade and gardeners hereabouts, circulars and letters are flying about respecting discount, some saying they are sorry and some the opposite. Oh, the rottenness of the whole thing!" *H. J. Clayton, Wharfe Bank, Ulleskelf, York.*

——— W. remarks on p. 44 that gardeners are not taking Sir Edward Fry's letter on this subject in the best spirit. Allow me to inform W. that we who have been traduced in the letter in question are much the best judges as to how the letter should be regarded Our employers are given quite a wrong impression about our "honesty and morality" One thing which has surprised me in this correspondence is the curious fact that someone informs us nearly every week that the Act applies to others besides gardeners and seedsmen. Let me inform all such that we understand this perfectly—even gardeners read newspapers, but it will be quite soon enough for us to defend engineers, &c., when they have been attacked *Looker-on.*

——— Some of the facts stated in Sir Edward Fry's letter on this subject, which appeared in your columns a few weeks ago, have been adversely criticised by correspondents, some of whom occupy head gardeners' positions and no doubt are men of integrity, who make the best interests of their employers their first consideration But surely we are not expected by their arguments to be convinced that there are no black sheep in the gardening ranks, or that there are no unscrupulous members in the seed and nursery trade. I may say here that, taking gardeners and the seed and nursery trade together, compared with any other class of traders and their customers, they will compare favourably so far as men of integrity and straight dealing are concerned. But having had an experience of 12 years or more as head gardener and 26 years as nurseryman, I regard the Act as extremely necessary Some of your correspondents have mentioned that gardeners' remuneration is small; but better be poor than dishonest These remarks are not intended in any sense whatever to make an indictment against the trade or their customers, but rather to point out the fact that in the interests of the honest trader and customer, and as a preventive of the unscrupulous dealings of the dishonest, the Act was a necessity. *Nurseryman.* [This correspondence must now cease —ED.]

THE PROPOSED VEGETABLE EXHIBITION.—Considering the national importance of the Potato and its value as a food product to the civilised world, I am not quite sure if *Onlooker*, on p. 43, was quite justified when he stated that few except those interested will regret the disappearance of the Potato Society. He asks any of its late supporters of what value was it in furthering Potato culture among the masses? Certainly, *Onlooker* is justified in asking such a question. As one of those supporters, I may say distinctly that the Society did do useful work in many ways other than in the promoting of an annual show, as *Onlooker* can easily see if he will take the trouble to read up the reports in relation to the Society. No doubt five or six varieties would be ample in *Onlooker's* locality, but I doubt very much if those same varieties, which in his opinion are the best, would be as popular in other parts of the country, and, again, are his five or six popular sorts of to-day likely to be so in a very few years' time? Few things deteriorate in the vegetable world sooner than varieties of Potatos. Hence the necessity of a stimulus for the encouragement and production of new sorts. I do not, of course, pretend that all the varieties staged at an exhibition are of value from a commercial point of view, but they are all interesting, and possibly many of those having little commercial value are useful for crossing purposes. Then, as to the wrong naming or using one variety for several names. I do not say this has never been done, but as one of the judges at the late Potato Show, in which there was a good competition, my colleagues and self gave this matter our most careful consideration, and I am perfectly prepared to say that the large and important collections were not only distinct, but true to name. Is it not a fact that in nearly every special society, I care not whether it be fruit, flowers, or vegetables, there are varieties placed before the public which are of little value from a commercial point of view, but are, nevertheless, beautiful and interesting? It is merely prophecy for *Onlooker* to say that should a vegetable society be promoted, as suggested by *A. D.*, it would meet with the same fate as the Potato Society. I am not so certain as to this. On the contrary, I am of opinion that there is ample room for such a society if properly organised, one that could offer good prizes and hold its exhibition at the right time of year. *Onlooker* says that vegetables are given a prominent place at nearly all our shows, but that the visitors are little interested in them. This is not my experience. If *Onlooker* is a judge at our shows, and probably he is, let him make an example of those who stage specimens wrongly named and not in accordance with the schedule. If he knows that this practice is carried on to the extent he describes, surely he would thus be doing the general public a great service *E. Beckett.*

——— *Onlooker's* grounds for objecting to the proposed vegetable exhibition are hardly logical, as pressed to a conclusion they would equally weigh against having any shows at all. If vegetables are well provided for at provincial shows, it is idle to assume that they are so in London, the place of all others where it is needed to show the vast population what good vegetables are We have scores of plant and cut flower shows, but only one show devoted to that most important food product—fruit, and not one to vegetables. Everything for the ornamental and trivial, nothing for the essential and economic! But if it be useless or needless to encourage vegetable culture by shows, is it not equally useless to encourage plants, flowers, Roses, Carnations, Dahlias, Auriculas, Chrysanthemums, Sweet Peas, and other flowers with the aid of exhibitions? This description of argument or objection is unreasonable. As human food one good Cauliflower is worth fifty ordinary flowers, but they are not ornamental, hence they are to be counted as vulgar. *A. D.*

FLOWERING OF BAMBOOS.—In the grounds of which I have charge there are some plants of Bamboos of sorts. They have, I believe, been planted some 15 years or so, in strong, yellow loam at the back of a herbaceous border, and have done well. At the present time two or three of them are about 15 feet in height, and

have been much admired by visitors for their healthy and bright appearance. Last summer one of the best of them was a mass of flowers, but it is now losing its foliage, leaving only bare canes. I am told that they always die after flowering, and am anxious to know if this is so. *S. H. J.* [Some species die, but you have not stated which species has suffered in your garden. See an article by Mr. W. J. Benn in *Gardeners' Chronicle*, September 5, 1903, p. 169.

ONONIS ARVENSIS.—Mr. C. H. Middleton observes (*Gardeners' Chronicle*, January 18) Ononis arvensis (syn. spinosa) "succeeds best in the full sun, . . . and seldom thrives in over-moist, low ground and damp, shady places." My experience, as a result of growing both slips and seeds, under a hand glass in a soil and air kept perpetually wet, was, that in two years the plants developed no spines at all, and passed into a form closely resembling O. repens. *G Henslow, Leamington.*

SOCIETIES.

THE HORTICULTURAL CLUB.

"RECENT ADVANCES IN PLANT BREEDING."

JANUARY 14.—After the usual monthly dinner of this club held on the above date, Dr. J. B. Farmer, F.R.S., taking the chair, Mr. E. A. Bunyard addressed the meeting on the above subject, with special reference to Mendel's work, pointing out the immense advantage which the publication of the Mendelian experiments and the law of heredity which they indicated had given to selective culture of every kind, the old-fashioned guesswork with all its uncertainty and consequent loss of time and labour being now largely replaced by the knowledge that, given a conjunction of certain characters by crossing or hybridising, certain definite results were practically sure to appear in their progeny. Mr. Bunyard, in his experiments, had followed Mendel's example by selecting the Pea tribe as material, and found the results fairly confirmatory; he had, however, conceived the idea that the so-called dominant and recessive characters were not necessarily of a distinct nature. Taking for instance wrinkled and round Peas, or white, pink or blue flowers, he was of opinion that the difference was merely one of development, the wrinkled Peas being an advanced form of the round, while as regards colour it was frequently to be noted that the unopened flower buds might be of a recessive tint, and the dominant tint developing gradually as the flowers matured, passing from white through pink to bluish tint as they faded. Mr. Bunyard illustrated his remarks in a very clear manner by means of black and white cardboard discs, the black representing dominant and the white, recessive characters, each of which was present in mixed offspring either in a latent or patent form, and subsequently made their appearance in F2 or the next generation in strict conformity with the law of chance which underlies the Mendelian law. Thus if 200 wrinkled Peas, for instance, be thoroughly mixed with 100 round ones in a bowl, and taken out in pairs by a blindfolded person, these pairs would come out in definite ratios of round and round, wrinkled, and wrinkled and wrinkled, precisely in the same proportions as they would reappear by the Mendelian theory and experiments. This indeed is the logical result to be expected from the segregation of the two different character potencies existing both in the pollen grains and in the ovules of the plants concerned. In the subsequent discussion, in which Dr. Farmer, Messrs. Dunbishire, Bilney, Cuthbertson, and Dinery took part, the value of Mr. Bunyard's observations was fully recognised, and many interesting points in connection with the subject brought forward, Dr. Farmer pointing out the probable extreme complexity of the units which form what are termed characters, and Mr. Cuthbertson adding some interesting remarks about his own experiments, citing the singular fact that wrinkled Peas appeared to be correlated with lilac or purple flowers. Mr Dinery considered that much of the literature relating to the Mendelian principles ignored to too great an extent the possible disturbing influence of the spontaneous adoption of new characters due to sudden "sporting," since any tendency in this direction would be apt to upset results entirely.

Mr. Bilney referred to hybrid Orchids as evidencing in the first generation intermediate characters on very diverse lines, which on Mendelian principles should not be the case, but Mr. Bunyard considered that such cases lay outside the scope of the Mendelian experiments which dealt as far as possible with known pure forms. Dr. Farmer, in conclusion, pointed out the great value of such meetings in bringing together the scientific and the practical man, each being thus able to profit by the knowledge of the other to the mutual benefit of both.

LONDON DAHLIA UNION.

JANUARY 15.—The annual meeting of this society was held in the Horticultural Club Rooms on the above date, Mr. John Green presiding. The secretary having read the report and balance-sheet for the year ending December 31st, 1907, it was unanimously approved and adopted.

EXTRACT FROM THE REPORT.

Though only constituted as a Society in 1904 your Committee are gratified to report that the result of the year's working has been of a most satisfactory nature.

The Annual Exhibition was again held in the Gardens of the Royal Botanic Society at Regent's Park. It was generally acknowledged by all who visited the show to be the finest yet held under the auspices of the Union.

It is satisfactory to note that at the end of the year's working the Union has a balance of assets over liabilities amounting to £11 6s. 8d., and thus after carrying on a bolder propaganda for bringing the work of the Union before the notice of the Dahlia loving world.

Your Committee are at present unable to state definitely the place and date of the Exhibition for 1908. They are at present in negotiation with the various authorities in regard to same and will decide the matter as early as possible.

Mr. John Green was re-elected president for the ensuing year, and the retiring members of the committee, Messrs. Caselton, Cuthbertson, Gordon, and Mortimer were also re-elected.

The following officers were re-elected: Mr. W. Stephens (treasurer), Mr. E. F. Hawes (secretary), and Mr. R. Ballantine (auditor).

It was decided to offer two Gold "Dean" Memorial Medals for Pompon Dahlias in 1908, one in the trade section and the other for amateurs.

On the motion of the treasurer, Mr. W. Stephens, seconded by Mr. J. T. West, a honorarium of £5 5s. was voted to the secretary, Mr E. F. Hawes, for his services in connection with the union during the past year.

The president, Mr. John Green, informed the meeting that he had arranged to carry out a large trial of Dahlias in all classes at Dereham, during the present year, and gave the members an invitation to appoint a deputation to inspect and report upon these trials. This was cordially accepted, and the selection left to the committee.

It was also resolved to hold the annual meeting in January instead of December as formerly, and that in future all meetings be held on Monday afternoons at 3 p.m.

SOCIÉTÉ FRANCAISE D'HORTICULTURE DE LONDRES.

ANNUAL DINNER.

JANUARY 18.—A representative gathering of members and friends took place on the above date at the Cafe Royal, Regent Street, to celebrate the nineteenth anniversary of the foundation of this useful and flourishing institution. Mr. Harry J. Veitch occupied the chair, and among the numerous company present we noticed Messrs. Edward Sherwood, George Schneider, M. Lagear, M. Delanone, M. Huguenet (editor of *La Chronique*), Messrs. George Gordon, R. Hooper Pearson, G. J. Ingram, J. McKerchar, W. Howe, T. Bevan, J. H. Witty, J. Weathers, F. Such, D. Ingamells, B. Wynne, J. Gaskill, and others.

The speech of the evening was that of "La Société Française d'Horticulture de Londres," and the chairman, in the most cordial manner, expressed his pleasure at being invited to preside over the meeting. He had many pleasant recollections of France, and his relations with Frenchmen had always been of the most agreeable nature. For many years he had watched the progress of the society, and he was pleased to find that it now numbered 700 members. It had therefore, assumed an importance beyond question. He was proud to think that the young Frenchmen who came to this country thought they could learn something to their advantage, and whatever they did learn he hoped would be of profit. The rules were admirable and gave every satisfaction. He found that although his firm was included among the life members, yet he himself was not, and he would take it as an honour if they would accept him in that category. Mr. Veitch said that during the past 50 years progress in horticulture had been extraordinary. He then gave some interesting details concerning the improvement of Crotons, Dracænas, Orchids, Caladiums, Begonias, &c., rendering homage to the efforts of French growers such as MM. Maron, Bleu, Lemoine, and Schneider, the latter of whom was the first to raise hybrid Ferns. In many things, said the chairman, we have obtained much from France, and we owe a debt of gratitude to her for our knowledge in various respects. The young men of to-day will have to step into the places of their elders, and it will behove them to use their opportunities to the best advantage. Competition is keen, and the chairman of last year reminded them that American Apples are rapidly invading the markets of Europe. To keep to the front they would have to study horticulture thoroughly and to work hard. He hoped they would bear that in mind, or they would not succeed. He did not believe in all work, but it must be work first, and when that is done they could then enjoy pleasure. He was glad to express thanks for much kindness received in France. Fifty years ago he was there with Messrs. Vilmorin, who were kindness itself, and the same might be said of all the others whose nurseries he visited; especially did he remember Thibaut and Kitleet, Vetmer, Chantin, Margottin, and Truffaut. He was glad to testify that round Orleans, too, he was, although a mere youth, most cordially received, and he had never forgotten it. Personally he would always be pleased to help them or their friends. He had pleasure in proposing continued and increasing success to the society, coupled with the name of their president, Mr. George Schneider.

Mr. Schneider replied, thanking Mr. Veitch for the kind words he had used towards France. Mr. Veitch's kindness to the young foreigners in his employment was proverbial. The visit of the society to his residence at East Burnham would not be easily forgotten, nor the hospitality that their chairman had so generously offered them on that occasion. Owing to his kindness they had largely been enabled to found and maintain the society, hence he had a double claim on their consideration as chairman that evening. The success of the society was also in a measure due to those English friends and supporters who find employment for their young men, who, as M. Ph. de Vilmorin reminded them two years ago, are not rivals nor competitors, but pupils who come to learn our language and methods, and return home there to help in maintaining the good relations that have always existed between the horticulturists of the two countries. "Success to English Horticulture" was then proposed by Mr. Schneider.

The reply came from Mr J. McKerchar, who explained that he was neither English nor French. As some of the speeches were in French, Mr. McKerchar hinted that he could have replied in a language that probably no one present could have understood. If this were Gaelic, our reporter is grateful for his forbearance. He concluded by proposing the toast of "Past Chairmen."

Mr. Harman Payne, one of the oldest English members of the society, replied. He regretted they had recently lost one of their number by death, Mr Arnold Moss. Another who had promised to be there, M. Philippe de Vilmorin, was detained in Paris owing to the serious illness of his mother. They were pleased, however, to see several others present, notably Mr. Bevan and M. Lageat. All the past presidents were glad to hear of the continued progress of the society, and to count themselves among the friends of their devoted president, Mr Schneider, whose recent decoration by the French Government was a proof of the appreciation of his services to the society and to horticulture generally. In his work he had been helped by his brother

officers, one of whom, M. Ripard, had kindly undertaken the floral decoration of the tables, for which their thanks were due. On behalf of the officers, M. Ripard replied.

The toast of "The Horticultural Press," proposed by the last speaker, was responded to by Mr. George Gordon, and M. Lageat having proposed "The Chairman," Mr. Veitch, in acknowledging this toast, proposed "The French Press." The editor of *La Chronique*, M. Huguenet, alluded to the forthcoming Franco-British Exhibition and the gradual drawing more closely together of the two nations.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

JANUARY 23.—The annual meeting of this Institution for the Election of Pensioners is being held on Thursday afternoon as these pages are sent to press.

RESULT OF ELECTION.

There were 52 candidates, and the nineteen whose names are given below were successful:—

	Number of Votes.
James Mack	3,671
William Cookson	3,455
William Swanborough ...	3,307
George H. Green	3,073
James Chesher	2,972
William Edwards	2,797
Robert McAdam...	2,788
Mary Manderson	2,633
Euphemia Clinging	2,543
John Stanton	2,535
Nehemiah Blandford	2,498
George Little	2,496
Thomas J. Foote	2,481
Ann J. Solman	2,452
William Pooley	2,426
Charles Kinns	2,360
Robert Maher	2,357
Alexander Clark	2,338
William Moore	2,370

In addition, the following candidates were elected by the general meeting on the recommendation of the Executive Committee:

Susan Hale. William Jones.

Owing to the liberality of Mr. Arthur W. Sutton and Mr. George Monro, the candidates, Thomas Jones and Laura Stockwell, were granted one year's pension each.

THE SURVEYOR'S INSTITUTION.—The next ordinary general meeting will be held on Monday, January 27, at 8 o'clock, when a paper, entitled "Some Urban Land Problems," will be read by Mr. A. W. CRAMPTON (Fellow). The annual dinner of the Institution will be held at the Whitehall Rooms, Hotel Metropole, on Wednesday, February 26, at 7 o'clock precisely.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending January 22.

Another sudden change in temperature. The first three days of the week were exceptionally warm for the middle of January—usually the coldest period of the year, but since then a return to cold weather has taken place. On the warmest day the temperature in the thermometer screen rose to 53°, or about 12° higher than is seasonable, whereas on the coldest night the exposed thermometer registered 14° of frost. The ground is still cold, the temperature at 2 feet deep being 1°, and at 1 foot deep 2°, colder than is seasonable. There has been no rain or snow worth mentioning for nearly a fortnight, consequently no measurable quantity of rainwater is now coming through the percolation gauges. The sun shone on an average for 1 hour 47 minutes a day, which is about the average duration for this part of January. On four days no sunshine at all was recorded, but, on the other hand, on one day the sun was shining brightly for nearly six hours. On the first three days the wind was rather high, but since then calms and light airs have alone prevailed. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 5 per cent. On two days the air remained saturated with moisture throughout the whole day, and on one morning there was a thick fog. The Winter Aconite came first into flower on the 20th, which is its average date for the previous 21 years, but three weeks earlier than last year. *E. M., Bekkamstad, January 22, 1908.*

MARKETS.

COVENT GARDEN, January 22.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia (Mimosa), dozen bunches	9 0-12 0
Anemones (capillare), per dozen bunches	2 0- 5 0
— double pink ...	1 6- 2 0
Azalea, white, per dozen bunches	3 0- 4 0
— mollis, per bch.	1 0- 1 6
Bouvardia, per dz. bunches ...	6 0- 8 0
Calla æthiopica, p. dozen	4 0- 6 0
— Guernsey ...	2 6- 4 0
Camellias, per dz.	2 0- 2 6
Carnations, per dozen blooms, best American various ...	2 0- 3 0
— second size ...	1 6- 2 0
— smaller, per doz. bunches	9 0-12 0
Cattleyas, per doz. blooms ...	10 0-12 0
Chrysanthemums, best specimen blooms, per dz.	3 0- 5 0
— selected blms., per dozen ...	2 0- 3 0
— medium, doz. bunches ...	12 0 18 0
Cyclamen, per doz. bunches	6 0- 8 0
Cypripediums, per dozen blooms..	2 0- 2 6
Daffodils, p. bunch	9 0-12 0
— double	0 9- 1 0
— Golden Spur ...	0 10- 1 3
— H. Irving ...	0 9- 1 0
— Princeps ...	0 9- 1 0
Eucharis grandiflora, per doz. blooms ...	2 0- 3 0
Euphorbia Jacquinæflora, per bunch	1 6- 2 0
Freesias, per dozen bunches ...	2 0- 3 0
Gardenias, per doz. blooms... ...	3 0- 6 0
Helleborus, per dz. blooms ...	1 0- 2 0
Hyacinths, Roman, per dz. bunches of 12 blooms ..	6 0-10 0
Lapagerias, per dz.	1 6- 2 6
Lilac (French), per bunch	4 0- 5 0
Lilium auratum ...	2 0- 3 0
— longiflorum ...	2 0- 4 0
— lancifolium, rubrum and album	2 0- 2 6
Lily of the Valley, p. dz. bunches	8 0-10 0
— extra quality ...	12 0 15 0
Marguerites, white, p. dz bunches	4 0- 6 0
— yellow, per dz. bunches ...	3 0- 4 0
Narcissus, paper white, per doz. bunches ...	2 0- 3 0
— Double Roman	1 6- 2 0
— Gloriosa ...	2 0- 3 0
— Soleil d'Or, per dozen bunches	4 0- 6 0
Odontoglossum crispum, per dozen blooms	2 6- 3 0
Pelargoniums, show, per doz. bunches ...	6 0- 8 0
— Zonal, double scarlet... ...	9 0-12 0
Poinsettias, per dz.	6 0- 9 0
Ranunculus, p. dz. bunches ...	12 0-15 0
Roses, 12 blooms, Niphetos ...	2 0- 4 0
— Bridesmaid ...	3 0- 6 0
— C. Testout ...	4 0- 6 0
— Kaiserin A. Victoria, per dozen blooms..	3 0- 5 0
— Madame Hoste	3 0- 3 6
— C. Mermet ...	3 0- 6 0
— Liberty ...	2 0- 6 0
— Mad. Chatenay	3 0- 6 0
Safrano (French), per dz. bunches	9 0-12 0
Spiræa, p. dz. bchs.	6 0- 9 0
Tuberoses, per dz blooms ..	0 4- 0 6
— on stems, per bunch	1 0- 2 0
Tulips, per dozen bunches ...	8 0 12 0
— best doubles ...	2 0- 2 6
Violets, p. dz. bchs	2 0- 3 0
— special quality	2 6- 3 0
— Parmas, p. bch.	3 0- 4 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum cuneatum, dz. bchs.	6 0- 9 0
Asparagus plumosus, long trails, per doz.	8 0-12 0
— — medium, bunch ...	1 0- 2 0
— Sprengeri ...	0 6- 1 0
Berberis, per doz. bunches ...	2 0- 2 6
Croton leaves, per bunch	1 0- 1 3
Cycas leaves, each	1 6- 2 0
Fern, English, per dozen bunches	2 0- 3 0
— French, per dz. bunches ...	1 0- 3 0
Galax leaves, per doz. bunches ..	2 0- 2 6
Hardy foliage (various), per dozen bunches	3 0- 9 0
Iris fœtida fruits, p. dz. bunches	5 0- 6 0
Ivy-leaves, bronze	2 0- 2 6
— long trails per bundle... ...	0 9- 1 6
— short green, per dz. bunches	1 6- 2 6
Moss, per gross ..	4 0- 5 0
Myrtle (English), small-leaved, doz. bunches	4 0- 6 0
— French, per dz bunches ...	1 0- 1 6
Pernettya, p. bunch	0 6- 0 9
Smilax, per dozen trails ...	2 0- 3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldii, p. dozen	4 0- 6 0
— larger	9 0-12 0
— Moseri, per dz.	6 0-12 0
Araucaria excelsa, per dozen ..	12 0-30 0
Aspidistras, green, per dozen ...	15 0-24 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, dz.	8 0-10 0
— tenuissimus per dozen ...	9 0-12 0
Azalea indica ...	30 0-42 0
Begonia Gloire de Lorraine, p. dz.	10 0 15 0
Callas, per dozen..	10 0-12 0
Cinerarias, per dz.	10 0-12 0
Chrysanthemums, per dozen ...	9 0-12 0
— best disbudded	18 0 24 0
Clematis, per doz.	8 0- 9 0
Cocos Weddelliana, per dozen	18 0-30 0
Crotons, per dozen	18 0-30 0
Cyclamen, per doz.	9 0-12 0
Cyperus alternifolius, dozen ..	4 0- 5 0
— laxus, per doz.	4 0- 5 0
Daffodils, per doz. pots	9 0-12 0
Dracænas, per doz.	9 0-24 0
Erica gracilis, p. dz	10 0 15 0
— hyemalis, p. dz.	9 0-15 0
— melanthera	12 0-18 0
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100. ...	8 0 12 0
— in small and large 60's ...	12 0-20 0
— in 48's, per dz.	4 0-10 0
— in 32's, per dz.	10 0-18 0
Ficus elastica, dz.	8 0-10 0
— repens, per dz.	4 0- 6 0
Genistas, per doz.	10 0-12 0
Hyacinths (Roman), per dozen pots	10 0-12 0
— Dutch	10 0-12 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*)

	s.d. s.d.
Kentia Belmoreana, per dozen	18 0-30 0
— Fosteriana, per dozen	18 0-30 0
Latania borbonica, per dozen ...	12 0-18 0
Lilium longiflorum, per dz.	21 0-25 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0-30 0
Marguerites, white, per dozen ...	6 0- 8 0
Poinsettias, per dozen	8 0-10 0
Selaginella, per dz.	4 0- 6 0
Solanums, per doz.	6 0-12 0
Spiræa japonica, p. dozen	9 0-15 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples (**English**), per bushel:	
— Wellington ...	8 0-12 0
— Newton Wonder	7 0- 8 0
— Bramley's Seedling	7 0- 9 0
— King Pippins...	4 6- 6 0
— Blenheim Pippin	6 0- 8 0
Nova Scotian, per barrel:	
— Ribston Pippin	14 0-16 0
— Gloria Mundi	15 0-16 0
— King's	13 0-15 0
— Russets ...	18 6-20 0
— Greenings ..	14 0-16 0
Canadian, per barrel:	
— Northern Spy..	18 0-19 0
— King of the Pippins ...	15 0-17 0
— Baldwin ...	16 0-18 0
— N. Greening...	20 0-21 0
— Russets ...	19 0-21 0
Californian:	
— Newtowns, per box	8 0-10 0
— **"Oregon"** Newtowns, per box	14 0-16 0
Apricots (Cape), p. box	1 0- 3 0
Avocado Pears, per dozen	4 0-12 0
Bananas, bunch:	
— No. 2 Canary .	7 0 —
— No. 1 ,, ...	8 0 —
— Extra ,, .	10 0 —
— Giants ,, .	11 0-15 0
— Jamaica ..	5 0- 5 6
— Loose, per dz.	0 9- 1 3
Cranberries, p.case	8 6- 9 0
"Custard" Apple (Anona) per doz.	4 0-14 0
Dates (Tunis), doz. boxes ...	4 0- 4 3
Grape Fruit, case	7 0-12 0
Grapes (English):	
— Alicante, per lb.	0 8- 1 9
— Gros Colmar, per lb ...	0 9- 2 0
Grapes, English Muscats, p. lb.	4 0- 7 0
— Belgian Gros Colmar, per lb.	0 8- 1 0
— Almeria, barrel	10 0-16 0
Lemons:	
— Malaga, case...	10 0-13 0
— Messina, case	8 0-14 0
— Naples, p. case	15 0-22 0
Lychees, per box...	0 10- 1 0
Mandarines, per box	0 6- 1 0
Mangos, per doz.	4 0- 8 0
Nectarines (Cape), per box ...	7 0-10 0
Nuts, Cobs (English), per lb. ...	0 4 —
— Walnuts, per bag	7 6- 8 6
— Almonds, bag	42 6 —
— Brazils, new, per cwt. ...	60 0-65 0
— Barcelona, per bag	32 6 —
— Cocoa nuts, 100	11 0-16 0
Chestnuts:	
— Italian, per bag	20 0-21 0
— Redon, per bag	10 0-12 0
Oranges (Jamaican), per case ...	7 6- 9 0
— Almeria, case..	9 0-10 6
— Valencia, case	9 0-17 0
— Denia, p. case	12 0-24 0
— Jaffas, per box	9 0-10 0
— Californian Navels, p. case	11 0-14 0
Peaches (Cape), per box ...	7 0-12 0
Pears (English), Catillac, per bushel... ...	4 6- 5 0
— Easter Beurré, per dozen ..	5 0- 6 0
— Cape, per box	4 0- 5 0
— Catillac, Dutch, per basket ...	2 6 —
— per barrel ..	10 0 —
— French, p. crate	8 6- 9 0
— Winter Nelis, per box ...	16 0-18 0
Pineapples, each ...	1 9- 4 0
Plums (Cape), box	4 0- 6 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichoke (French), per dozen ...	2 0- 3 0
Asparagus, Paris Green, bundle	4 0- 4 6
— Sprue, bundle	0 7- 0 8
Beans, French, per packet ...	0 10- 1 2
— Broad (French), per pad ..	3 0- 3 3
— Guernsey, p. lb.	2 6- 3 0
— Madeira, per basket ..	2 6- 4 0
Beetroot, per bushel	1 3- 1 6
Brussel Sprouts, per ½ sieve ...	1 3- 1 6
Cabbages, per doz.	0 6- 0 9
— Greens, p. bag	1 0- 1 3
— red, per dozen	2 0 —
— Savoys, per tally ...	3 0- 3 6
Carrots (English), — washed, p. bag	2 6 —
— French (new), per pad ...	2 9- 3 3
Cauliflowers, p. dz.	2 0 2 6
— per tally ..	7 0 10 0
— Italian, basket	3 9 1 3
Celeriac (French), per dozen ..	1 6- 2 0
Celery, washed, per dozen ...	0 8-0 10
Chicory, per lb.	0 2½- 0 3
Chow Chow (Sechium edule), p. dozen	3 0 —
Cucumbers, per dz.	8 0- 9 0
Endive, per dozen	1 6- 2 0
Horseradish, foreign, per doz. bundles ...	8 0- 9 0
Leeks, 12 bundles	1 0- 1 6
Lettuce (French), per dozen ..	0 9- 1 2
Lettuces, Cos (French), per dozen	3 0 4 0
Mint, doz. bunches	0 9- 1 0
Mushrooms (house) per lb.	0 9-0 10
— buttons, per lb.	0 10- 1 0
— "Broilers" p.lb.	0 7- 0 8
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions (Spanish), per case ...	5 0- 5 6
— Dutch, per bag	4 0 —
— pickling, per bushel... ...	2 0- 2 6
Parsley, 12 bunches	1 6- 1 9
— per ½ bushel	1 0- 1 6
Potatos (French), new, per lb. ...	0 2½
— Teneriffe, cwt.	13 0-14 0
— Algerian, cwt.	20 0
Rhubarb (English), dozen bundles	1 0- 1 1
Salsafy, per dozen bundles ...	3 6
Seakale, per dozen punnets ...	10 0 12 0
Spinach, French, per crate ...	6 0 6 6
Tomatos, selected, per dozen lbs.	2 6 3 6
— small selected, per dozen lbs.	2 3- 2 6
— Teneriffe, per bundle of four boxes ..	9 0-13 0
Turnips (English), doz. bunches ..	2 0- 2 6
— per bag ...	2 0 —
Watercress, per doz. bunches	0 4 0 6

REMARKS. Large consignments of Apples have arrived from Canada and Nova Scotia this week, consequently prices for most varieties are considerably lower. There is a decided improvement in the demand for English Grapes, and prices are generally dearer. Oranges are scarcer, especially of the finer grades from Denia and California. Bananas that have not been frosted are selling well. The trade for Cut flowers continues to be good. Tomatos from Teneriffe are now showing signs of "waste," with no result that "sound" packages are dearer. *Covent Garden, January 22, 1908.*

Potatos.

Kents: Up-to-Date, 100s. to 110s.; British Queen, 100s. to 105s.; Scottish Triumph, 100s. to 105s. per ton. **Lincolns:** Up-to-Date, 100s. to 115s., Up-to-Date (Blackland), 90s. to 95s.; British Queen, 95s. to 105s.; Sir Jno. Llewelyn, 90s. to 100s.; Royal Kidney, 85s. to 95s.; Evergood, 85s. to 95s.; Minerop, 110s. to 115s. per ton. **Dunbar:** Up-to-Date, 120s.; Maincrop, 130s. per ton. **German:** Up-to-Date, 4s. 6d. to 4s. 9d.; Magnum Bonum, 4s. 6d.; Imperator, 3s. 9d. to 4s. per bag. **Dutch:** Up-to-Date, 4s. 3d. to 4s. 6d.; Magnum Bonum, 4s. 3d.; Imperators 3s. 9d. to 4s. per bag. Trade is quiet, with much heavier arrivals. In consequence prices lower. *F. J. Nicoborn, Covent Garden and St. Pancras, January 22, 1908.*

COVENT GARDEN FLOWER MARKET.

The mild weather on Monday tempted some growers to send to the market Cinerarias and other tender plants, but 10 degrees of frost were recorded on Tuesday morning, and this checked the trade for such plants. Indian Azaleas are now a prominent feature, and are very good as received from several growers. Genistas are fairly well flowered. Erica hyemalis holds out well, but is not quite so good as it was a few weeks ago. E. gracilis and the tall pyramidal plants of E. melanthera are well flowered. Lilium lancifolium rubrum in pots is very good. L. longiflorum is scarce. Daffodils Golden Spur and Telamonius plenus (Double Van Sion) are now plentiful. Spiræa japonica and S. Astilboides floribunda from retarded crowns are well flowered. Begonia Gloire de Lorraine is not quite so plentiful just now. Cyclamen are being sent by several growers, but the quality is variable. Marguerites are not quite so abundant. Dutch Hyacinths in white, pink, and pale blue shades are plentiful, all are now grown with three bulbs in each pot. Roman Hyacinths are very good. Tulips in boxes, in all colours are excellent this season. Ferns are well supplied in all sizes. A. Sieboldii and the variety Moseri are plentiful in well matured plants, but some with soft new leaves are seen, these do not withstand the cold. Many imported plants of Dracæna australis are present.

CUT FLOWERS.

Daffodils are now coming from various sources. The English-grown flowers of Golden Spur, Henry Irving, and Double Van Sions are very good. Prices are maintained fairly well. Tulips being over-abundant, the prices have fallen. Couronne d'Or is very fine from several growers. This Tulip sells at better prices than almost any other variety. Tournesols are very good. Most of the single varieties now seen have fairly long stems, but others have short ones, and these latter are offered at low prices. Liliums vary but little: flowers of the best quality are not over plentiful. Prices for Carnations are lower. Chrysanthemums are holding out well, and are now making good prices. Roses are rather more plentiful. Catharine Mermet and Bridesmaid are the best pink varieties at the present. Callas have been selling at prices varying from 4s. to 7s. per dozen. Imported flowers have fallen off a little. Good paper-white Narcissus have increased in price to 3s. per dozen bunches, and Soleil d'Or, to 4s. or 6s. Mimosa (the true Acacia dealbata) is now very fine. *A. H., Covent Garden Market, Wednesday, January 22, 1908.*

TRADE NOTICE.

MR. H. JESKINS, for the past 8 years Gardener and Steward to F. RAINES, Esq., Southmoor, Acaster Malbis, York, has been appointed Nursery Manager to Messrs. MICHIE & Co., Alnwick.

ENQUIRY.

SPOTTED ASPIDISTRA.—I have seen an Aspidistra with ordinary green leaves, except that they are spotted with creamy-white spots not much larger than a pin's head. Some leaves are variegated in the ordinary way, but the majority are spotted, otherwise the plants, of which there are four, are perfectly similar to the type. The plants have been under the cultivator's observation for seven years. Is this variety rare? *T. C.*

Answers to Correspondents.

APPLE. *W. P.* The injury has every appearance of being the result of frost.

CODIÆUMS (CROTONS) LOSING THEIR LEAVES: *A. L.* Without knowing the exact cultural conditions, it is difficult to advise you in this matter. It is certain, however, that the plants are suffering from a check, and this may have been brought about by a variety of causes, such as too little atmospheric warmth, an overdose of manure, sulphurous fumes from the stokehole, dryness at the roots, &c. A healthy Croton requires much water, and if extra firing has to be done to keep up the necessary degree of heat the plants should be examined daily. As you cannot replace the leaves, the plants should be cut back and the roots kept rather drier until new growth appears, after which time, if given good cultivation, they will soon form decorative plants. Crotons require a minimum atmospheric temperature of 60° all through the winter.

CELOSIA. *J. G. F.* So far as we can judge from your letter it would be difficult for the fumes from the blocks to enter the house, but this matter you must determine for yourself. If they could escape into the house, and the blocks have been recently been creosoted, you may depend upon it the plants would suffer. It would be wise to employ blocks that were creosoted some months ago.

GRAFTING OF PLUM TREES: *A Twenty Years' Reader.* If the weather is not frosty you may head your Plum trees back at once, for if left until the sap commences to rise they would bleed in consequence. If you saw off the tops cut the part over afterwards with a sharp knife. No time should be lost in cutting the scions; it is a much better plan to do this early than to leave them until they are required, when probably the buds would have started growth; the consequent check then given them might entail their loss. In selecting grafts secure good, firm shoots, and lay them in the ground about 9 inches deep in the manner you would plant a cutting, treading the soil firmly about them to exclude air. The best method of grafting your trees would be that known as "crown" or "rind" grafting, and illustrations of this method have often been given in *Gardeners' Chronicle*. The operation should be commenced when the sap is found to be rising, and such branches as were previously shortened back to within 18 inches to 2 feet of the main stem, if measuring 6 inches or more in diameter may have three grafts placed on each. Commence by making a longitudinal cut with the point of the knife down the bark about 3 inches to 4 inches long; this length gives the branches more power to withstand wind, &c., than a shorter graft. Next take the graft, which should be about 7 inches long, and cut it in an oblique manner and the same length as the longitudinal cut in the bark. By gently easing up the bark on the stock with the knife the graft may be pushed down into position, and should then be tightly bound with raffia or soft twine, and covered over either with clay or grafting wax, so as to effectually prevent the entrance of air. It is advisable to place moss over the clay, to prevent it from becoming so dry as to crack and fall. The best kind of clay is that which has been ground up at a brick yard. With each barrow load of clay mix one bucketful of fresh cow manure. There is a book, translated from the French of De Breuil, which treats fully on the process of grafting, and may be had from our publishing department, price 3s. 8½d., post free.

HONEYCOMB. *T. G. H.* There is nothing abnormal about the colour of the sample comb. The scent is unusual, but may be caused by the peculiar aroma of the nectar gathered. It would have been better had a sample of the honey been sent in the comb. Pieces of comb are often built in spaces similar in shape to those received. We should think you are labouring under a mistake about the amount of wax a hive ought to contain, for there is not more than a pound to be obtained from 10 frames of comb. You ought not to have opened the hive at all since the beginning of October; by so doing you have allowed heat to escape, and the bees have probably died from exposure to cold. They are naturally in a condition similar to that you describe. If the bees were not fed sufficiently to nourish them through the winter, that is, with syrup, they should have been given candy, and made quite snug and left alone. No honey should have been taken from the hive. There does not appear to be any disease, but, to be on the safe side, wash the hive well with a disinfectant and expose it to the atmosphere before using it again.

IRISES: *C. Day.* The position you describe would answer very well for Iris Kæmpferi, this species succeeding best when treated as marsh or semi-aquatic plants. Slight shade should be afforded the flowers by trees or bushes, because the large outer segments of the flowers are not capable of withstanding the hot sun for a long period. A variety with deep blue flowers is Blue Bird, and if you require a combination of blue and yellow in one flower, Charmer may be selected. Gold Bound is the variety nearest approaching a good yellow; but all the varieties are so beautiful, that in order to see them at their best a collection should be cultivated. In such a position as you describe, a very pretty Bog garden could easily be formed, and it would constitute an attractive feature of the garden. Many plants will winter in your locality (Truro) that would perish in less favoured districts.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. ***Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*** **PLANTS:** *Horton.* 1, Oncidium carthaginense; 2, Zygopetalum intermedium.—*Fernside.* Cymbidium giganteum, and a very good variety of this species. Its flowers also having been produced in a cool house are darker than when the plant is grown warmer.—*J. K.* We cannot undertake to name varieties of Violets.—*R. H., Hampstead.* 1 and 2, Varieties of Hedera Helix; 3, Gnaphalium sylvaticum; 4, Carex sp. (insufficient material for identification); 5, Luzula sylvatica.—*F. S.* Ruellia Portellæ.—*T. A.* 1, Odontoglossum Andersonianum; 2, Odontoglossum gloriosum; 3, Oncidium cheirophorum; 4, Tetramicra bicolor; 5, Octomeria diaphana.—*F. D., Northampton.* 1, Reinwardtia trigyna, commonly known in gardens as Linum trigynum; 2, Scolopendrium vulgare; 3, Nephrodium molle; 4, Pteris cretica albo-lineata; 5, Blechnum occidentale; 6, Cyrtomium falcatum.—*G. C., Exeter.* Salvia leucantha.

PALM SEEDS: *F. Colman.* It is not possible to name the seeds received with any degree of certainty. We do not think they possess much commercial value, and two kinds out of the four received are worthless, being already dead.

RHODODENDRONS (AZALEAS) LOSING THEIR LEAVES: *R. M.* The fact that your imported Azaleas continue to lose their leaves since being potted points to the plants having suffered a severe check. A probable reason would be that the plants, after being lifted, were unduly exposed at some time, with the result that the fine roots became very dry; this in itself would be sufficient to cause the injury. If this condition was unnoticed at the time of potting, the roots of the plants may suit that the fine roots became very dry; pear sufficiently damp. Writers of the weekly Calendar on "Plants Under Glass" have frequently drawn attention to this important detail. On the other hand, over-watering would also cause the leaves to fall. Azaleas, like all hard-wooded plants, require extra care in the matter of watering, extremes in either case being detrimental to the health of the plants.

SOBRALIA LEAVES DECAYED: *G. J. H.* If the leaves sent are from the old stems, they are merely passing off in the usual way. But if they were taken from the newest growth, they may have been affected by a sudden and temporary fall in the heat of the house to too low a degree at some time. Insufficient pot-room or drought at the roots might produce a similar effect. Sobralias are among the easiest of Orchids to cultivate. They require abundance of water while making their tall reed-like stems. Removal to a vinery or other tolerably cool house for a period following the flowering stage is beneficial to the plants.

COMMUNICATIONS RECEIVED.—W. Botting H.—Ch. Pynaert—J. O'B.—H. B. W.—Beckenham Hort. Soc.—J. D. G.—I. J.—F. B.—R. P. B.—J. S.—J. H.—T. H.—Mrs. A. P.—B., South Devon—J. D.—F. M. G. H. J.—A. D.—J. S.—T. C.—F. J.—H. L. & Co.—J. M.—C. H. H.—P. A.—W. W.—Hortop—W. H. D.—A. J. S.

INTERIOR OF VINERY IN MR. KNIGHT'S FRUIT GARDEN AT MANGERE, NEAR AUCKLAND, NEW ZEALAND.

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THE

Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

USES OF THE MOTOR IN HORTICULTURE.

NO great industry can live which is entirely dependent upon the pleasure-loving tendency of the nation. There must be some material benefit gained, either directly or indirectly, and upon this foundation only can the support of the public be retained. It is more usual for an amusement to evolve out of a provision for a necessity than for the necessity to become apparent when catering for an amusement.

Whatever might have been the objects aimed at by the pioneers of the bicycle and the motor industries, they certainly first catered for a fashionable pleasure, and now, in the case of the bicycle, it is almost entirely purchased on account of its utility, whilst the industrial motor is rapidly asserting itself as being an indispensable part of the equipment of every business.

When opening up a new country, attention must first be given to methods of transport. However fertile a country may be, however rich in minerals, cheap the labour, or well supplied with natural power for driving machinery—all these are without value unless the means of transport are good, and the want of these facilities has led to the abandonment of many rich tracts of land, rich in everything but means of transport. Robinson Crusoe is not the only instance of a man who, having built a boat, has been unable to launch it!

Transport facility is the fundamental basis of the prosperity of countries, counties, or districts. In England we have, it is true, unequalled systems of railways and roads and good canals, but still there is something lacking. The railways are excellent for passenger and nearly all classes of goods traffic. The roads form the medium by which the railway station is reached. The canals can only be regarded as a means of transporting, at a minimum cost, such heavy commodities for which accelerated delivery is not essential.

Something intermediate between the railway and horse transport by road, which would bring hitherto isolated districts again into the front ranks of industry, and into fair competition with their more favoured neighbours, has for many years been needed. There can be no doubt that the industrial motor at length solves this difficulty, and its general adoption will only be a matter of time.

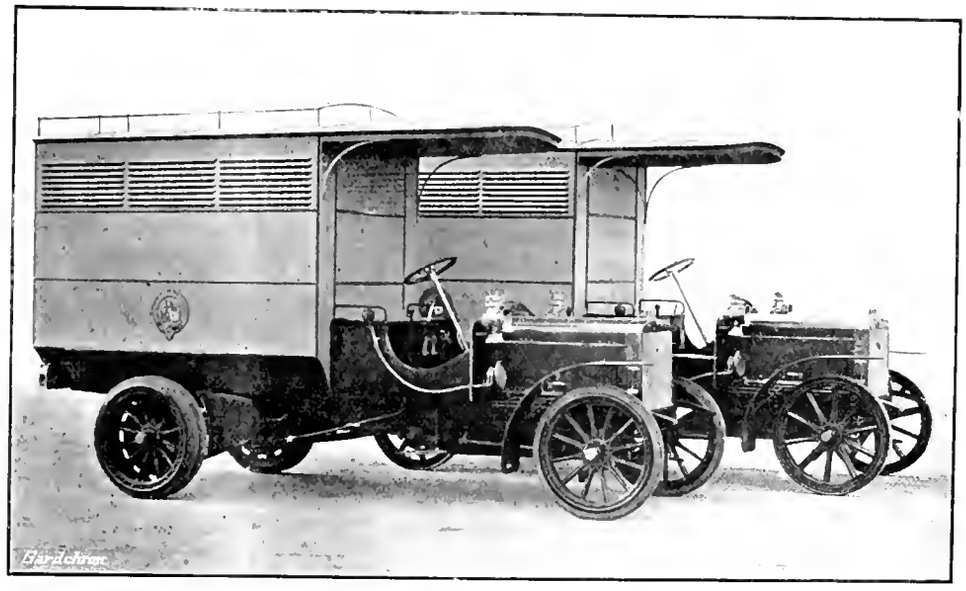


FIG. 32.—MOTOR DELIVERY VANS FOR NURSERYMEN; ONE WITH SOLID RUBBER, AND ONE WITH IRON TYRES.

It is not so much the improvement of the motor that is now required to gain its popularity, as a more general knowledge of its mechanism and management. That there will be improvements in the design of the industrial car is certain, but even to-day it is sufficiently reliable to make its use far more economical than horse traction, and to render its owner, in a great measure, independent of railway companies.

To nurserymen, florists, and market gardeners, it will no doubt prove itself to be of the very greatest value. These industries are essentially field industries, but up to the present it has been very necessary that the ground under cultivation should be in close proximity to a market town or railway station. For this reason the site is often chosen more because of its locality than for the natural advantages offered by the soil. Cultivation combined with expenditure will, of course, put the latter fault right. But the first cost of the land must also be large, and, if held under tenancy, the rent must be high, for any such land as this comes under the category of "accommodation" land. But the produce must be marketed quickly, therefore it is better to pay for the site than to lose more than its value in loss of sales. In addition to this, should the selected town or city be one of prosperity, as the population increases the owner must be continually questioning himself as to whether the land would not yield him a more lucrative income under buildings than under cultivation. That such a time does arrive is evident to everyone who is familiar with the suburbs of large cities. Around London this is very noticeable, though the demand for garden produce is greater there than it has ever been.

No one suffers more at the hands of railway companies than the market gardener; his goods are perishable and are easily damaged, therefore they must be handled quickly and with care. Special vans must be built to meet the requirements for flowers and delicate fruit. The railway rates are proportionately high; but the question is: Does the grower get the value for his money? It would seem that he does not, if we may judge from what happens in years when fruit and flowers are plentiful. In such years as these it is found that the sale of the fruit does not pay the expenses of gathering and placing it on the market. Yet even in the height of our fruit season hundreds of tons of foreign fruit and flowers are imported and sold. This anomaly must surely be due mainly to the cost and conditions of carriage.

These difficulties have been mentioned in order that the utility of the motor may be more readily understood. It means that the enterprising grower, having adopted the motor vehicle, need no longer be tied to certain districts because of the special facilities of the railway services offered. He need not pay high prices for land in such districts; but he may choose his ground anywhere within a 50-mile radius of the market he wishes to serve, or in a central position within reach of several markets.

He may select a vehicle suitable to the requirements of his business, and, to a great degree,

suitable to the price he can afford to pay. There is not, however, very much difference in the prices of the best makes having equal load capacity and of similar design.

For loads of over 3 tons there is nothing yet placed on the market that can compare with the 5-ton steam waggon, both for moderate first cost and economy in working expenses. A vehicle of this description may be purchased for £500, and another £75 will be all that is necessary for accessories, including the cost of a trailer. The latter may be dispensed with if the purchaser has a horse van he is able to spare in cases of emergency. The shafts may be taken off this and replaced by the trailer bar for attachment to the back of the steam waggon.

To a limited extent these vehicles are already used for bringing garden produce into Covent Garden Market, and there can be no doubt that, once the growers are fully alive to the great saving which is possible by this form of transport, they will become increasingly popular.

The main difficulty lies in finding a sufficient amount of traffic to keep the vehicle employed throughout the year; but even should it be necessary for it to remain idle for a certain portion of the year, there would be nothing with which to debit it but the interest on the capital invested—a trifling amount as compared to horse maintenance during slack times. The greater convenience and saving in time and cost will amply repay users for any limited periods of enforced idleness. *Hugh Miller, C.E., M.E.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

COLUMNEA MAGNIFICA.

THE figure of this splendid species—by far the finest yet introduced—was drawn from a specimen communicated for the purpose by Mr. W. E. Gumbleton, of Belgrove, Queenstown, who has been very successful with it. Although discovered about sixty years ago in the province of Veraguas, Panama, by the well-known collector of Orchids and humming-birds, Julius von Warscewicz, who brought back dried specimens of it which were described by the Danish botanist Oersted* in 1858, C. magnifica was not known in cultivation till 1906, when it was introduced by Lemoine, who received it from Carlos Werckle, a collector in Costa Rica. We are indebted for the collector's name to Mr. Gumbleton, who, in answer to our enquiries, has kindly supplied the following information:

"Columnea magnifica grows freely in an intermediate house, and is now flowering freely in my conservatory, from which frost is just kept out by an ordinary circumambient flue. Its brilliant flowers remain in beauty of freshness for many weeks, which adds much to its value as a decorative plant. . . . It strikes readily from cuttings, which bloom in quite a small state and soon make nice plants. My tallest stem is 15 inches in height. I received it from Lemoine in February, 1907."

The closest ally of C. magnifica is C. rotundifolia, Salisbury, *Paradisus Londinensis*, t. 29. The latter plant was subsequently figured as "Columnea scandens" in the *Botanical Register*, Vol. x., t. 805, and *Botanical Magazine*, t. 1614,

FIG. 33.—COLUMNEA MAGNIFICA: FLOWERS FLAME-COLOURED.

and is still cultivated under that name in England. The true C. scandens, however, which is figured in *Botanical Magazine*, t. 5118, differs from C. rotundifolia, not only in the nature of its calyx and corolla, but also in its geographical distribution. Full synonymy of the two species may be found in Urban's excellent account of the West Indian Gesneraceæ,* and we shall therefore confine ourselves to a very brief comparison.

C. ROTUNDIFOLIA.—Pedicels and base of calyx covered with purplish hairs; calyx-lobes acuminate from a broadly triangular or ovate

* Centralamericas Gesneraceer ved A. S. Oersted, Kjobenhavn, 1858.

* J. Urban, Symbolæ Antillanæ, Vol. ii., p. 360 (1901).

base, deeply toothed. Native of St. Vincent, Grenada, and Trinidad.

C. SCANDENS.—Pedicels and calyx with dirty whitish hairs; calyx-lobes linear-lanceolate or subulate-lanceolate, entire or only slightly toothed. Native of Dominica and Martinique.

The disc of C. magnifica is represented, just as in C. rotundifolia and C. scandens, by a single posticous gland only, which differs, however, in being emarginate instead of entire.

In retaining the name Columnea magnifica for the species introduced by Lemoine, we have relied on its general agreement with the description given in Hanstein's *Monograph of the Gesneraceæ*,* which differs in several respects, however, from the original description by Oersted; there is just a possibility, therefore, that Oersted and Hanstein had different species before them, and it seems desirable, on that account, to enumerate the chief differences in the two descriptions:—

OERSTED.	HANSTEIN.
1. Leaves very shortly petioled.	1. Leaves shortly petioled.
2. Stem tomentose.	2. Stem hirtose-villose
3 Calyx tomentose.	3 Calyx hirtose-villose.
4. Lateral corolla-lobes hardly united to the hood (galea).	4. Lateral lobes less united to the hood than the two lobes of the hood are to one another.

Differences 2 and 3 might be simply due to a different application of technical terms; but 1 and 4 are more difficult to reconcile, for one could hardly call the leaves of the plant now in cultivation "very shortly petioled," or state that the lateral lobes of the corolla are "hardly united" to the upper! The lateral lobes are united, as a matter of fact, for more than half their length, and the leaves have a very respectable petiole, as petioles go in Gesneraceæ (see fig. 33).

The position then is as follows: if we are right in assuming that Hanstein described the same species as Oersted, then Oersted's description is very inaccurate; if, on the contrary, Oersted's description be a good one, then the plant which we now have in cultivation is a new species. The matter can only be settled by examination of the type specimens, which are not in this country.

In conclusion, we may give a short description of the species now in cultivation.

COLUMNEA MAGNIFICA, Hanstein, in *Linnæa*, xxxiv., 401 (Oersted ?).—Stem erect, attaining a height of 1 foot or more, hirsute-villous, as are also the petioles and pedicels. Petioles under half an inch long; blade of leaf oblong to oblanceolate, acute, obscurely serrulate, 1 to 2½ inches long, ¼ to ¾ inch broad, roughish with appressed hairs all over the upper surface, hairs mainly confined to the veins on the lower surface. Flowers axillary, solitary or two together, borne on the upper part of the stem. Pedicels ½ to ¾ inch long. Calyx densely villous at the base; lobes lanceolate, serrate, over ½ inch long. Corolla flame-coloured 2½ inches long; tube 1¼ inch long; lower lip consisting of a single lobe, reflexed when the flower is fully expanded, linear-lanceolate, ¼ to 1 inch long; upper lip consisting of the lateral lobes and the completely united posticous lobes (= hood); lateral lobes spreading, adnate to the hood for more than half their length; hood arched, entire. Gland of the disc solitary, posticous, emarginate. Ovary villous. Native of Costa Rica (and of Veraguas, Panama, according to Oersted).

It will be noticed that none of the flowers in the accompanying illustration are fully expanded; in the completely opened flower the anterior corolla-lobe points nearly straight downwards, and the lateral lobes are very spreading. The writer, when examining a specimen presented to the Kew Herbarium by Mr. Gumbleton, kept it in water for over a week without any signs of flagging, and was able in consequence to observe the fully developed flower.

* *Linnæa*, Vol. xxxiv., p. 401.

One view of the pollen grains is well shown at the right-hand bottom corner of the illustration, namely, as they appear when dusted dry on to a slide. Other views (which may be seen on examination in water) show them circular or trigonous. *T. A. Sprague.*

FORESTRY.

THE LARCH APHIS AND BLISTER.

SIR HERBERT MAXWELL misapprehends the word "suffice" in my former letter. I meant that the Dumfriesshire case sufficed as an example of the blister following aphis in a most suggestive way. Sir Herbert complains that "I did not give a single detail." I stated that from what I saw and was told the trees were free from disease up to a considerable age, to about 20 feet high, as I judged; then the aphis came and the disease followed the aphis quickly. That was a detail, indicating both "cause and effect," and if it could be confirmed in a sufficient number of cases, as I think it could be, it would suffice. "Soil and aspect" were there before and after the disease and may be eliminated, as may also Sir Herbert's "conditions" at p. 51 which the plantation had long survived.

Assuming that I have stated the facts correctly, can Sir Herbert explain the attack otherwise? The formation, I think, was whinstone, and distance between the trees about the usual thing after thinning.

As to constitutional vigour resisting the disease, what does Sir Herbert call "vigour" in the Larch? I offer no dogmatic opinions, but some of the worst diseased plantations I have ever seen were amongst the most vigorous also, the growth being 3 feet 6 inches to 3 feet 10 inches annually. I am almost convinced that a Larch that grows at a moderate pace and ripens its wood well, resists disease best, and it was the disease called "gumming," or blister, in certain stone fruits, like the Peach, that first caused me to think so. "Gumming" is caused by a fungus similar to the Larch fungus in its nature and action [?], and it is always worst on the most vigorous but ill-ripened trees. Well-matured wood is a preventive. Most gardeners know that.

The late John MacDonald, forester to the Duke of Athol, in his evidence before the Committee of 1887, firmly "held" to the belief that blister was caused by the aphis, and few had longer or better opportunities of knowing. He repeated that opinion to me at Dunkeld, and was emphatic about it, because the one followed the other (see Blue Book, 1887, p. 52). Sir Herbert Maxwell's opinion that the freedom of the Japanese Larch from disease is due to its vitality is not borne out by the facts so far. If it was a case of comparative vigour, the Japanese species might be expected to suffer in a less degree only, but it is immune as far as is yet known, and there are weak plants in all plantations of the Japanese species as well as among the common Larch.

The recorded cases of disease in the Japanese Larch need vouching for. I know the principal plantations in England and Scotland, but cannot procure a diseased example. The two most important cases ever published, and vouched for by two teachers of forestry in well-known universities, never existed, and the other so-called cases have not been vouched for. One may sometimes see slight gumming on Japanese Larches as on other trees, when injured by a shot or something of that kind, but the fungus cannot be found, search as you may. Gumming exudations may often be seen on the common Larch where there is no fungus, and the casual observer calls these disease. I should feel obliged by anyone sending me a little slice of bark showing the Larch fungus at the cup stage on the Japanese Larch, and they ought to be capable of being found at this season if they exist. The more one sees of the Larch disease the more unsettled their convictions become. I would like to know to what extent the disease is found to prevail on iron impregnated soils. In parts of Yorkshire, where iron-stone and coal prevail, the disease is seldom very destructive in my experience, and on the Wealden clay in Sussex, largely impregnated with iron, it is the same. The cleanest skinned Larch, at the disease stage, I have ever seen were in Sussex in pure Larch plantations grown for Hop poles 2½ and 3 feet apart, and they had been stripped of their lower branches with a knife making numerous wounds. The bark in these cases was remarkably smooth and clean. There seems to be no doubt that the disease is assisted by outside influences, but the real resisting power seems to be within the tree, wherever the power is derived from. *J. Simpson, Sheffield.*

FLORISTS' FLOWERS.

WINTER-FLOWERING CARNATIONS.

A NOTE on Tree Carnations appeared in a recent issue of the *American Florist*. The writer, Mr. C. W. Johnson, evidently a commercial grower, a specialist working on American lines, and therefore putting his plants on "benches" instead of potting them as we should do, after assuming that the early-planted and indoor-grown plants had now reached that stage when an occasional application of a fertiliser will greatly benefit them and stimulate their growth, goes on to say that the stems and calyces of the flowers are good guides in applying manures to Carnations. If the stems have begun to stiffen greatly, and to be brittle and break off at the nodes with the lightest touch, and the calyx of the flower to split, these are trustworthy signs of over-feeding, and the cultivator should be guided accordingly.

The condition of the plants should determine whether to make the application in liquid form, or to add it to the soil as a surface dressing. If the plants show many buds and shoots on the verge of forming buds, the plants will be greatly benefited if the manure be given in liquid form. The application of a fertiliser at this stage of growth increases the size of the blooms without causing them to diminish their substance or spoil their texture. The fertiliser should therefore be of moderate strength, and as often applied to the soil as this can be done without causing a soddening of the latter. When much fire-heat has to be employed to keep out frost, as is the case in the northern United States, the soil of which the beds consist should be examined down to the bottom, in order to find out its condition of the soil as regards its moisture. Liquid manure should not be applied to the plants when the soil about their roots is at all on the dry side, but clear water instead, allowing the plants time to absorb it before applying manure water, in order to prevent them absorbing a dangerous quantity of the latter. The substances best suited for making liquid manures for Carnations are cow, sheep, and chicken dung, the first two in the proportion of half a bushel to a barrel of water, and of the last named a quarter of a bushel will be a safe quantity. A small quantity of fresh soot and bone meal will increase the fertilising properties of the cow and sheep manures. If these manures are not applied by a pump and hose, but with the watering pot, it is an easy matter to add clear water in the pots if it be considered of too great a strength. Backward plants may be assisted by light top-dressings of powdered sheep's dung, bone meal or wood ashes scratched into the soil, care being taken not to afford so much as to cause soft growth.

Stock plants from which large quantities of cuttings are expected should be afforded nitrogen very sparingly, or the grass cuttings will emit roots with difficulty.

SPECIMEN PLANTS FOR VASES AND TUBS.

THE furnishing of terraces adjacent to the mansion and other positions of prominence in the garden during summer with tubs, vases, or similar receptacles containing half hardy or tender plants, while contributing largely to the interest and adornment of the grounds, generally entails upon those responsible for their management a considerable amount of work and forethought.

The custom in many gardens of retaining certain subjects permanently in tubs throughout the year is commendable; instances such as Agapanthus umbellatus and Hydrangea Hortensia will occur to everyone conversant with this branch of garden management. These, however, take up considerable storage space in winter, and a change of occupants is desirable. The labour entailed in furnishing vases being considerable, care should be taken to employ plants of pronounced character in leaf or beauty of flower. Among the former, Musa Ensete, the Abyssinian Banana, is without a rival as a foliage plant; the bright-red colour which suffuses the underside of the midrib is a conspicuous feature of this plant, while the graceful form and unbroken outline of the leaves combine to make a plant of noble habit.

Plants can be raised from seeds sown in pots singly during March, and placed on a brisk bottom heat. Germination will probably take place within three weeks, and the seedlings may be shifted into larger pots as soon as the first leaf has fully developed. Employ rich soil, and afford the plants liberal shifts, loam and well-decayed manure in equal parts being used in the final potting.

In this locality we are generally able to place our plants in their summer quarters in the second week in June, but the selection of a suitable date must be governed by local conditions, which vary in different parts of the country.

Plants 6 to 7 feet high are quite common in the first year and where practicable, the old plants may be retained for use the second year by simply cutting away all the leaves, except those undeveloped in the centre. The plants may then be packed closely together in any cool orchard-house which is frost-proof. It need scarcely be remarked that a position sheltered from winds is of primary importance to this plant.

Cycas revoluta, which is annually imported to this country from Japan, as dormant stems, produces a quaint effect as a tub plant; the leaf colouring is a trifle heavy, yet, when skilfully employed as a foil to flowering subjects, the result is often pleasing.

Stock plants of Wigandia Vigieri and Solanum robustum which were raised from seeds in the previous autumn, if introduced to heat in January and pushed on, make vigorous specimens early in the summer. A pretty effect results by employing this Wigandia in the centre of a vase, and forming the ground and edges with Campanula isophylla alba.

Solanum robustum is densely clothed on the stem with a russet felt-like substance, while the leaf surface is more or less clothed with yellow spines; the stems also develop spines, though they are less prominent than those on the leaves.

FIG. 34.—SPECIMEN PLANTS ON THE TERRACE WALL AT WALMSGATE.

Rich soil and frequent supplies of manure water when in full growth are the salient features in the cultivation of Wigandia and Solanum.

Two good foliage plants for shaded positions are Fatsia japonica (Aralia Sieboldii) and Woodwardia radicans, a North American Fern, whose leaves arch gracefully from the stem, and often reach to the ground.

Flowering subjects.—During the past two seasons I have employed a single-flowering Pelargonium for furnishing a low terrace wall. It is called "Soldier's Tunic," a name singularly descriptive of the colour of the flowers. Cuttings are rooted in small pots during autumn; in spring these are placed in an early vinery, and as soon as the roots are active they are shifted into 6-inch pots, using a rich potting soil. As soon as the plants are well rooted into these pots they are placed in pots 9 inches in diameter, and finally into the vases, which are about 18 inches across by 15 inches deep.

Early in the season the main shoots are trained out flat, subsequent growth filling out the centre; all flower-buds are removed until June, and from July till October the vases appear like huge balls of orange scarlet. The individual trusses are always very large from this treatment, and the diameter of each plant is about 5 feet.

There is scarcely any plant which affords so pleasing a shade of lavender as Plumbago capensis; it is, however, liable to cause disappointment, unless it is thoroughly well rooted at the time of planting; used in conjunction with some of the large pink-flowered Verbenas, it affords a pleasing effect. Verbena "The King" produces a larger individual "truss" of a deeper shade of pink than Verbena "Ellen Willmott"; but the latter variety is much the best plant for "filling up."

Streptosolen Jamesonii, a useful greenhouse subject, also makes a successful vase plant; the colour, a bright orange-yellow, is not frequently seen, so that it offers a welcome change. The flowers are produced freely upon two-year-old plants, though, to ensure the maximum freedom of flowering, it is advisable to restrict the roots. There is scarcely any plant to rival well-grown specimens of Heliotrope President Garfield or H. Lord Roberts when cultivated in small vases placed in such positions that it is possible to look down upon them.

Erythrina crista-galli is usually a conspicuous feature in some of the London parks during autumn. The colour of the flowers is a brilliant scarlet-crimson, which, combined with their singular form, rarely fails to excite interest and admiration. It requires a long season to grow and liberal treatment to secure fine specimens. A moist atmosphere is essential when grown under glass, otherwise the plants readily fall victims to red spider. *T. S., Walmsgate Gardens, Louth, Lincolnshire.*

THE PROPAGATOR.

As the days lengthen, a commencement may be made in striking cuttings, seed sowing, and grafting, in the propagating house or hot-water pits. Beds of tree leaves and stable litter under ordinary garden frames are very successful under good management, but involve unremitting attention to ventilation in order to get rid of excess moisture arising from the fermentation of the materials of which the hotbed consists. A steady bottom and top heat must be maintained by means of linings of warm materials, of which a large mass should always be kept in readiness. Such hotbed frames are of great use in raising early Cucumber plants, and later on for starting the earliest Melons. In such frames cuttings of Solanums, such as robustum, pyracantha, and others employed in the flower garden; Wigandia caracasana, from shoots arising from the root-stocks, which have been started in a warmth of 55°; Ficus elastica, and others. Similarly cuttings of Lobelia erinus varieties, and Verbena hastened into growth, may have the ends of the stems cut off and inserted in pots filled with a compost of sandy loam three-quarters and leaf-mould one-quarter, surfaced with silver sand. The stock plants will furnish plenty of other cuttings if kept near the light in a warm house.

It is yet early to begin the general propagation of bedding plants, a fortnight hence being a more suitable time, before the general rise of the sap in the plants. There are, however, others of which seeds may be sown, as Pyrethrum aureum, Tagetes, Lobelias, and ornamental species of the Gourd family; Verbena venosa, and tender annuals, for flowering at an early part of the season. I may mention for early sowing, Cockscombs, Celosias in variety, Rodanthes, Acroclinium, Primula sinensis, Gloxinias, and Amaranthus.

Stove and tender shrubs.—Gardenias, Ixoras, Allamandas, Jasminums, and Cydonia japonica may now be grafted on a mild bottom heat, as also Camellias and Daphnes; also Roses

generally, on stocks specially potted up in the previous autumn, and consisting of Manetti or Rosa canina. Cuttings of such succulents as Echeveria, Pachyphytum, and Sempervivum may be inserted in sandy soil in well-drained pans, the soil being surfaced with sharp sand. A shelf in an intermediate house, where there is plenty of light, is the best place for them. Leaf cuttings of the following may be inserted this month and the next, viz., Echeveria, Aloe, Rochea falcata, Cotyledon, Bryophyllum, Peperomia, the herbaceous Begonias Thwaitsii, xanthina, Rex, splendida, and argentea. In the case of these plants the leaf should be removed from the plant close to the shoot or stem, leaving but little of the midrib. When the leaf is inserted in the soil of the cutting pot, a callus develops at the base, and later the roots and one or several shoots form at this point. It is essential that the leaves chosen should have reached a certain degree of maturity, those obtainable at about the middle of the plants, in order that they may be capable of withstanding the moist medium in which they will be placed, as well as of forming a new individual. If the grower wishes for a considerable number of plants, he can cut through the midrib on the under side and place the leaf flat on the soil. *F.*

VEGETABLES.

THE GARDEN SWEDE AS A WINTER VEGETABLE.

In some parts of the country the soil is not suitable for the white Turnip. In Scotland and the northern counties the ordinary white-fleshed Turnip, so common in the south, is by no means a favourite for winter supplies, or even at other seasons of the year; the yellow, or as they are often called the red Turnips, are more appreciated, and in some instances these are superior, as the flesh is less watery and the flavour is all that could be desired. My present note concerns the value of the Swede as a winter vegetable. There are two or three distinct varieties of garden Swede, and these are much hardier than the Turnip; indeed, the Swede grown for use in mid-winter may be kept good until the spring, and such roots must not be classed with the common Swede. They differ in growth and texture; they are not coarse; they have a very small top-growth, and the flesh is sweet and wholesome. The culture is very similar to that of the Turnip, and much depends upon soil and locality as to when the seeds need to be sown. We make two sowings in southern counties, one for raising roots for use from October to January, and another for furnishing a supply three months later. In many gardens where large quantities would not be required, one sowing would suffice. The roots may be wintered well in a clamp, or in a well-drained soil; they may be left in the open and used as required. From sowings made in August or September, good roots may be obtained that will winter well if not of too large a size. As regards varieties last season, I had a very fine variety on trial which stood the severe weather in January perfectly well in the open in the south. This was Crimson Top Table Swede, a variety with orange-coloured flesh, and one that is remarkably hardy, making a splendid winter vegetable. There is also a small white garden Swede much the same as the yellow one in growth and hardiness, but it is a pure white; I do not think the flavour quite equal to that of Crimson Top. Where the yellow flesh is not appreciated the white variety may be grown, and there will be no lack of good roots all through the winter months, and at a period of the year when good garden Turnips are not to be obtained. Roots for consumption in winter should not be cultivated on recently manured land, as they would grow less solid and therefore be incapable of keeping well. *G. Wythes.*

FRUIT REGISTER.

PEARS IN JANUARY.

Winter Nelis is a Pear of medium size and one of the finest late Pears. The fruits should be left on the trees until they will readily leave the spurs, and the gathering should be carefully done, laying each fruit on wood wool, so that no bruising will take place. This variety requires a warm position to grow in, and the fruits need to be thinned.

Easter Beurré is much larger than Winter Nelis when well grown, and needs to be extra well grown to bring out its best qualities. The fruits are very appreciable in January. This Pear, if grown on light soil and against a wall, requires a lot of water, and the fruits should be thinned rather severely.

Glou Morceau is good at Christmas time and for a week or two afterwards, provided the fruits have been thoroughly matured before gathering. It is large. The trees should be planted against a south-west wall to bring the fruits to perfection, when they are buttery and very delicious.

Nouvelle Fulvie, at its best during January, has a refreshing flavour when the fruits are well developed. This variety bears fairly well, and should be thinned early.

N. Plus Meuris. The fruits of this variety are small to medium size, and in use from January to April, according to the condition it has attained. Pears of this class should be brought on artificially as occasion demands for consumption.

Olivier de Serres.—This is a very sweet fruit, and an excellent cooker, with a skin covered in russet-brown. The variety is a prolific bearer and hardy; it should be always included in a collection of late Pears. The fruits will keep in good condition until February and March, but may be used in January.

Joséphine de Malines. This is a very fine Pear when well matured, but unless it is thoroughly ripe it is not good. At its best it is rich and delicious. The fruits are in season in January and February, and can be hastened in January quite easily if placed in a warm atmosphere. The trees require a rather warm position.

Triomphe de Jodoigne is a large and handsome fruit in season at Christmas.

Bergamotte Esperen. This variety is a finely flavoured fruit when well developed and grown in a warm position; it needs to be severely thinned.

Le Lectier.—A fine large Pear, highly perfumed, and very juicy. It is a good bearer, and is quite the Doyenné of its season, which extends from January to March. The fruits need to be thinned with extra severity.

Marie Benoist. The fruits of this variety are large, but not always of the best flavour. It varies considerably, in some places being very good. It is a good late variety and always useful for cooking. The tree succeeds well as a cordon, pyramid, or a fan-trained tree. The fruits are in season from December to February.

Passe Colmar.—This fine late Pear has a very rich, pungent flavour, but on some soils is inclined to be gritty; I believe this condition is solely caused by dryness at the roots. This variety is good in March, and I have kept it in good condition until April.

Prince Eticard is a roundish fruit and a valuable late Pear, being of good flavour. The tree is a prolific bearer, and the fruits are in season in January.

Beurré de Naghin.—A modern variety, and illustrated in *Gardeners' Chronicle*, December 28, 1907. I have not found this Pear in season so early as at Christmas yet, but it will keep till March very well, and must be extra well ripened to be at its best. It cooks splendidly.

Chaumontel.—A large, richly-flavoured variety when well developed, otherwise not much good. It requires a warm position, when it is an admirable Pear, most agreeably perfumed. This Pear is grown very extensively in the Channel Islands, where it is superb.

Bellissime d'Hiver is a fine Pear for cooking purposes, and succeeds well as a pyramid on the Quince stock, being, moreover, very hardy.

Duchesse de Bordeaux is a fair size when well grown, has a russety appearance, and a rich Beurré flavour. It succeeds well when grown as cordons, and is in season from the end of January until March.

Beurré Rance is one of the best late Pears, and has a refreshing flavour. It is a variety that should be well grown, and needs to be lifted or root-pruned occasionally, and should be cultivated against a south-west wall.

Doyenné d'Alençon is a fine January Pear; one that requires a good wall, high-class treatment, and severe thinning of its fruit.

Catillac.—This Pear is about the best for stewing purposes, and may be kept easily until April; it does well whether trained as a cordon, pyramid, fan, or horizontal espalier. Naturally, the best fruits are those obtained from wall trees, although I have seen heavy fruits from large standard trees, and in a warm autumn, when they are allowed to hang to thoroughly ripen, they are excellent.

Hardy's Prince of Wales.—This is a very fine Pear of great merit and of a nice size for dessert purposes. It bears well on the Quince stock and on quite young trees.

Knight's Monarch.—I have kept this Pear in good condition until March, and it had still a good flavour. The trees sometimes drop their fruits, but for all that they should be thinned severely, because the fruits are produced in large clusters.

Duchesse de Mouchy is a good late cooking Pear and a fine keeper. *H. A. Cook, Leonardslee gardens, Horsham.*

APPLE COX'S ORANGE PIPPIN.

The best Apples to plant are often discussed at this season of the year, and Cox's Orange Pippin is always mentioned in the first three. Although fruit of this variety usually commands prices twice as high as other varieties, the trees are sometimes alleged to be rather shy. I would point out Cox's Orange Pippin should always be planted with other varieties of Apples near at hand, in order that the pollen of the blossom may be crossed and in this way the fruits set much more freely. A good plan is to plant Cox's Orange Pippin intermediately with another sort. In this way there is a good chance of the trees cropping freely. *Free Lance.*

FOREIGN CORRESPONDENCE.

HISTORY OF PHILODENDRON CORSINIANUM.

I read on p. 25 of the *Gardeners' Chronicle* for January 11 a reference to the description of × Philodendron Corsinianum in the *Botanical Magazine*. Briefly, the history of this plant is as follows. × Philodendron Corsinianum belongs to a very interesting series of hybrids raised more than 20 years ago in the public gardens of "Le Cascine," in Florence, by the foreman, Mr. Ferdinando Ragionieri (now head gardener to H.E. the Prince of Venosa, at Albano, near Rome), and the Director, Cav. A. Pucci. The beautiful Lælio-Cattleyas Arnoldiana and Ridolfiana, sent out by Messrs. Sander & Sons, some good Cypripediums, Alocasia pucciana, distributed by Mr. Godefroy Lebœuf, A. Luciani, distributed in Belgium, some Bromeliads, many fine Calaniums, &c., were among the hybrids raised there. × Philodendron Corsinianum is a cross between P. Lindenii ♂ and P. lucidum ♀. It was dedicated to H.E. the Prince Corsini, then Mayor of Florence. The entire stock of the plant was purchased by Messrs. Makoy, of Liege. *Dr. A. Ragionieri, Castello, near Florence, Italy.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Cypripediums.—Probably no other large genus of Orchids contains so few kinds that are difficult of cultivation. There is hardly a species or hybrid of Cypripedium but will thrive well if cultivated in a suitable degree of heat. Moreover, fogs are not so destructive to the flowers of Cypripediums as they are to many other Orchids which bloom at the same time. The species C. insigne, of which there are many fine varieties; C. Charlesworthii, C. Fairrieanum, C. Spicerianum, C. villosum, C. Boxallii, and their hybrids C. Leeanum, C. Euryades, C. nitens, C. Prospero, C. Niobe, C. Arthurianum, C. Actæus, C. Calypso, C. Lathamianum, C. Hitchinsiæ, and many others are all desirable kinds that flower during the winter season. This section is best accommodated in a cool, intermediate temperature at all times, as when grown in a hot, moist atmosphere, flowers of the best quality are rarely produced. It is not absolutely necessary to have a special house for the cultivation of these Orchids, as they may be grown with a fair amount of success in an ordinary greenhouse, where the heat in winter does not fall below 45°, provided great care be paid to watering and damping in winter, and that requisite shade is given in summer.

Potting the plants.—Whilst some plants of Cypripedium are still making a display, there are many that have ceased to flower. These should be examined to ascertain if re-potting is needed, and those plants that require fresh rooting material should be given attention forthwith. If large specimens are required, root-bound plants should be given a liberal shift, as the majority make roots freely. Copious supplies of water being needed when the pots are filled with roots, perfect drainage must be provided, and this should be covered with a layer of sphagnum-moss or loam fibre to keep it from becoming choked with the finer soil. When potting Cypripediums, the crown of the plant should be kept rather lower than the rim of the pot, and the compost made moderately firm about the roots. The compost should consist of good fibrous loam one-third, turfy peat one-third, and one-third leaf-soil and sphagnum-moss in equal parts, with a good sprinkling of coarse silver sand and small crocks, mixing the whole well together. If the mixture when used is in a fairly moist condition, no water will be required after the operation for some days; then a thorough soaking should be given.

Seedlings.—Where the raising of these plants from seed is practised, there will be small seedlings at this season in need of pricking off. If this operation is done forthwith, it will enable the little plants to get hold of the compost before the summer arrives. Seedlings standing singly in small pots, if well rooted, may be afforded a slight shift. The compost employed during the early stages should consist of equal parts peat, leaf-soil, and chopped sphagnum-moss. When the plants are moved into pots 3 inches in diameter, a small quantity of loam may be added to the compost, increasing the quantity to one-third when they are nearing the flowering size.

Sowing the seed.—Seed which has ripened and been gathered during the winter may now be sown. The surface of newly-potted plants make the best seed-beds, and these should be given a thorough soaking of water a day or so prior to sowing. Afterwards, afford water carefully till such time as the seed gets embedded in the compost, making use of a fine rose watering can to keep the surface moist. Occasionally the pots may be dipped in a vessel of water to half their depth, which will moisten the compost at the bottom of the pot.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

The rust of Chrysanthemums.—This pest should be dealt with in a very drastic manner, as nothing that I know of will kill it in the way of an insecticide or solution without destroying or damaging the plant also. With a little trouble at this time of year any infected collection can be cleaned. The best and simplest way to deal with it is to take one of Wolff's garden pencil protectors and after sharpening the small end of the protector, use this as a puncher on the infected part of the leaf. The man in charge of the collection of plants will soon get to know the rust in the leaf before it comes out into a powdery form, by holding the leaf up to the light and looking through, or using a magnifying glass until he gets used to the appearance of it on the underside of the leaf. When discovered take the leaf in one hand and the puncher in the other, and simply press over the spot of rust, cutting it clean out. Care should be taken to commit all the bits to the flames, this being the only method for destroying the pest. At this date the plants or cuttings are small, and there are not many leaves to look over. The rust should never be allowed to burst its spore cases and propagate itself. As near as I can tell, it takes about six weeks from the time a spot bursts and the spores are deposited on the under side of the leaf until it shows itself again and is ready for distribution. If this mode of destruction is strictly attended to, there will not be a spot on the plants by the time they are in 6-inch pots. The plants should be looked over twice a week at the start when rust appears, and at a certain stage it comes up in a day when in a close, humid atmosphere. I have practised this treatment ever since the rust came to this country, and have always kept clear, although each season some is introduced here on newly-purchased plants, these are always kept by themselves and examined for about two months until pronounced clean. Should rust be found on newly-purchased plants in a garden near to a large town, there is less need to trouble about it, as it will not propagate so readily there, the atmosphere being impregnated too much with sulphurous fumes to favour the growth of the rust when the plants are placed out-of-doors.

Violets in frames should be examined for any damped leaves or flowers, and these very carefully removed, for at this time of year the leaves are very crisp and may easily be broken, and, if so, are certain to damp off. Flowers are showing freely now, and plenty of fresh air should be admitted to the plants on every favourable occasion as long as the temperature is above 32°. If frost and rain be kept out of the frames, exposure to all the sunshine that is possible is all that is required.

Clivias.—The earliest will now be showing signs of flowering, and should be placed in a warmer atmosphere, and where they will obtain plenty of light; as the plants grow in leaf simultaneously with the flower, a liberal supply of nutriment should be afforded in a liquid form; and as soon as the flowers begin to expand, the plants should be removed to a cooler house. By using the same plants for forcing every year and in the same rotation, it becomes almost the plant's natural habit to start away readily into bloom in the spring.

THE HARDY FRUIT GARDEN.

By E. BOWMAN, Gardener to The Dowager Lady NEWTON-BUTLER, Warter Priory, Yorkshire.

Insect pests. After the pruning and training of the trees are completed, every fruit-grower whose ambition it is to have healthy trees and fine fruit will take the opportunity now offered him to destroy all insect pests, or, at any rate, to use such efforts as are possible to keep them in check, carefully raking up all prunings, and removing the surface soil from badly-affected trees and conveying them to the smoulder heap. American blight is the worst pest that attacks Apple trees, and it is one of the most difficult to eradicate. Where Apple trees are badly affected, only those who pay close attention to them during the season of growth and spray them during the winter can hope to have them in a clean and healthy state. Mussel scale is another most persistent pest, which not only attacks the bark and rind of the stems and shoots of the trees, but the fruit as well, if measures are not taken to destroy the insect. The caustic soda solution, so many times recommended in the Calendars of the *Gardeners' Chronicle* for animal and vegetable parasites, is still the only safe and effective remedy to use by those who make their own wash. There are, however, so many cheap preparations now obtainable which are of use in destroying insect pests that it is scarcely necessary to go to the trouble of making one's own. The cheapest and one of the best sprays for large or small orchards that I have used is V.1 Fluid for winter spraying and V.2 for summer spraying, both of which are safe and effective against all garden pests. The best manner of applying these and other sprays to large trees is by means of Vermorel's knapsack sprayer; and for small gardens a hand syringe with a spraying nozzle does equally well. Care should always be taken to choose a mild day for carrying out the work, to put on an old suit of clothes, and wear leather gloves.

Pear midge.—This is a most serious pest to deal with, and is very prevalent in the Midlands and South of England, more so, indeed, than in the North. Williams' Bon Chretien and Doyenné du Comice are varieties that seem to suffer more than any others. It is very difficult to suggest any remedy, but by collecting all Pears that fall to the ground, pulling all deformed fruits from the trees, and removing the surface soil at this season, conveying both to the smoulder fire, something may be done to fight the pest. In addition, fresh soil should be substituted for that taken away, and the addition of 1 lb. of kainit to the square yard, ½ lb. in the autumn and ½ lb. in the spring, repeating the operation the following season, will improve the results. The surface soil cannot be removed from areas of orchards under grass, but the swollen Pears can be picked up and burnt, and kainit applied with good effects.

Loganberry.—This is a useful addition to our list of hardy fruits, and should find a place in every garden. Although not quite a novelty, the fruit is not so well known as it deserves to be. The plant is of vigorous growth, therefore it should be planted at from 6 to 8 feet apart. Treated similarly to the Raspberry, the Loganberry fruits freely, and it does well in many gardens where the former is not a success. The plant may be grown on rough fences, walls having a north aspect, or on pillars as single specimens. After fruiting, the older canes should be cut away, and the stronger of the young ones laid-in thinly. The fruit ripens during July and August.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Cherries and Plums.—Established trees of these fruits growing in pots, plunged in a bed of coal ashes outdoors, should, if it be desired to advance the ripening season of the fruit, be now placed in a light and adequately ventilated glass-house. In arranging the trees ample space should be afforded so as to let plenty of light and air reach them. Cherries and Plums, especially during the early stages of growth, are very readily injured by high temperatures due to artificial means; and until the trees come into blossom the temperature should not exceed 45° Fahr., and the house should be ventilated by day and night, whenever the weather will permit of this being done, so as to ensure a gentle movement of the air of the house. The trees, just previously to the blossoms expanding, should be fumigated, and when the flowers have expanded, a moderate degree of artificial warmth must be afforded and maintained, together with a tolerably free ventilation, so that a damp, sluggish state of the air may be avoided and the setting of flowers accelerated. Excepting during flowering, the syringe may be made use of in the morning if the day promises to be fine. A moderately moist atmosphere may also be maintained. Cordons and other forms of trees should be similarly treated to the pot trees, and great care in every case should be taken in applying water during the early stages of growth.

The making of a vine border.—The winter is a suitable season for the formation of a border which is to be planted in the spring. Many are the ways recommended for doing this, and success is obtained by widely different methods. Some cultivators place the vine border wholly outside the vinery, others entirely inside, while others place it inside and outside. When properly made and managed, and the surrounding conditions are suitable, a border may be quite satisfactory whatever the form. A border may

be made about 4 feet in depth, and it may be provided with a properly constructed concrete bed, if the soil be clayey or otherwise of an unsuitable nature; and it should be adequately tile-drained with 1 foot of carefully arranged brick or stone rubble placed over the entire bottom of the border, so as to readily drain the soil and prevent the lodgment of water. Having done this, there will be space for 3 feet of compost, is not too deep if drainage is good. It is always desirable to make a border in sections of about 4 feet in breadth, adding to the front as the roots are found to require further space, until the full breadth is reached. Where provision is made for an external and internal border, it is better to plant the vines in the inside one, and let their roots permeate it throughout before making a border outside the vinery. Good turfy loam, if possible off limestone or chalky formations, should constitute the chief proportion of the compost used; and to this, after it has been roughly broken, there should be added, according to its texture, more or less crushed mortar rubble, wood ashes (from greenwood), and finely broken bones. Other fertilisers, the effects of which are of comparatively short duration, are sometimes employed; but these can be more economically and beneficially applied after the vines have become established and are in need of assistance to bring their fruit to perfection. The chief requirement at the first is abundance of healthy roots, ready to absorb nutriment when it is mostly wanted. The materials when put together should be in a fairly dry state, and be made firm during the progress of the work.

Vines for planting.—These should be kept in a late vinery, and water applied to them with caution, so as not to cause the bursting of the buds before they can be planted, directions for which will be given in due course.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

A concrete example.—In regard to my remarks last week as to the necessity for looking ahead, let me emphasise this by a concrete example. Few of our large cities have escaped the evils created by the shortsightedness of the governing authorities of past generations in respect to their neglect in the reservation of open spaces, and the city which I have the honour to serve has suffered probably as much as any other. This city, however, in recognising the evils of overcrowding, has adopted and continues to pursue the policy of "looking ahead," and it may be of interest to many readers if I attempt to outline the progress made. Prior to the middle of last century the city had only one large open space, which to all intents and purposes was a common, though from its proximity to the river Clyde it was the favourite place for the bleaching of the household linen of the citizens, and came to be designated "The Green," which name it yet bears. It was also the favourite rendezvous of the people, and much of the civic history is interwoven with the old park. The great expansion of the city which began in the early part of last century with the tendency westwards—and seawards—with the consequent disappearance of the green fields and woods which adorned the suburbs, caused serious concern in the minds of thoughtful citizens as to the necessity of preserving some of the "beauty spots" from destruction. To think was to act, and the result was the purchase of a notable place, which was then out of the city boundary. With the wants of the western section of the city supplied, the civic authorities next turned their attention southwards, as the city was rapidly extending in that direction, and another place outside the municipal boundary was secured. As indicating the feeling which arose through the action of the awakened spirit in the corporation, when the matter was discussed in council, the vote was even and the decision to purchase was only carried by the casting vote of the Lord Provost. Everyone now agrees that if ever a chairman deserved honour for the exercise of wisdom and courage at a critical moment, when so great a principle was involved, it was on that occasion. The purchase in question was laid out as a park and managed by the corporation for over thirty years before it was included within the city area, and has been referred to by many other municipalities, when engaged in discussing similar schemes, as an outstanding example of looking ahead to meet future requirements in the development of an expanding city. A few years later, another space was secured for the north-eastern district, and so important had this factor become in city life that when the last great extension of the municipal area was under consideration by the authorities, most of the suburban burghs affected made it one of the conditions of amalgamation that their respective districts were to be provided with a park within a given time after annexation. Thus with the increase of the city within the past generation, the parks have increased fourfold and the smaller places to a greater extent. Some of the areas were secured at very reasonable prices, the owners appreciating the policy of the council in regard to the welfare of the health and vigour of the rising population, as well as to the improvement of the amenities of the city. Several had to be paid for at very high prices, while others were given by public-spirited citizens. The last park presented, though six miles from the centre of the city, is a place of much natural beauty, and so well served by the municipal tramways that it has become a favourite resort, and on holidays and Sundays when the weather is fine the number of visitors who enter the gates is frequently estimated to exceed twenty thousand. To those interested in parks, it is very gratifying to note that the appreciation of these places by the public is causing some of our generous-minded countrymen to make their gifts for the benefit of those less fortunate in life than themselves, take this form.

THE KITCHEN GARDEN.

By L. BUCKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Digging and trenching.—This important work should be pushed forward as quickly as possible so that the soil brought up from the bottom may receive all the benefit possible from the winds and frost which may occur between now and the time for seed-sowing and planting. In very wet weather, especially on heavy land, it is not advisable to attempt this work when the ground is in a soddened condition, but full advantage should be taken of all dry weather.

Trenches for crops.—Good trenches for such vegetables as Peas, Runner Beans, Leeks, and Celery should now be taken out. Throw out the soil on either side, wheel in and fill up the trench with manure, and leave it exposed to the atmospheric influences.

Pea and Bean sticks.—A good stock of these should now be got together and stored in their respective sizes, and during wet days they may be got under cover and trimmed and sharpened ready for use.

Onions.—Those raised from seeds sown in boxes at the beginning of the year will need pricking out into other boxes, placing the plants at distances of 3 inches all ways. Use a compost consisting of three parts fibrous loam, one part manure from an old Mushroom bed, one part well-decayed leaf-soil, adding a dash of bonemeal and sufficient road grit to ensure it being quite porous. It should be used in a moderately dry condition and be made very firm. Place the boxes in an atmospheric temperature of from 50° to 55°, and expose the young plants to the full light. Frequent light syringings with tepid water will be beneficial to them.

Leeks should be treated similarly to the Onions except that no bone-meal should be added to the compost, and the plants must be inserted much deeper in the soil than Onions. Afford them the same degree of heat.

Parsley is in demand the whole year through, both for garnishing and flavouring various dishes. Consequently seeds should be sown both early and late in the season. The most successful manner of producing a good supply all through the summer is to sow seeds in a box at this season, raise them in a gentle heat, and plant out the seedlings on well-prepared ground early in April at a distance of 12 inches apart all ways. A well-grown bed of Parsley of a good variety is a most refreshing and pleasing addition to a kitchen garden. Late sowings which were pricked off in cold frames should have the lights entirely removed when the atmospheric temperature out of doors reaches 40°. Remove any decaying leaves from the plants, and dust the plants over with soot. Stir the surface soil.

THE FLOWER GARDEN.

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

Propagating house.—It is well at this season to have, in addition to hot-water pipes, a good hotbed for the propagation of such plants as Lobelia, Heliotropium, Verbena, Ageratum, Iresine, Fuchsia, &c. Sow seeds of Begonias, Salvias, &c., in pots or pans, and cover the pans with pieces of glass until the seedlings appear. For raising plants suitable for subtropical bedding, sow seeds of Daturas, Giant Hemp, Eucalyptus, Chamæpeuce, Centaurea candidissima, Grevillea robusta, Acacia lophantha, and Hollyhocks.

Calceolarias.—Give attention to the shrubby kinds used for bedding, which are generally wintered in cold frames, such as Golden Gem, General Havelock, Victoria, Burbidgii, and amplexicaulis. Stop the plants at about the fourth leaf, with the exception of those intended for forming standards, *C. amplexicaulis* being the best for this purpose. Our plants of this species intended for that purpose are now in 4-inch pots, and are about 2 feet in height. When they attain 4 feet we shall stop the plants, so as to induce them to form heads, and afterwards repeatedly stop them as growth continues, until the plants are placed out of doors. This species, when grown in this manner, with its clusters of soft lemon-yellow flowers, is much appreciated when bold groups or masses are formed; the plants prefer a good loamy soil. Standards of Iresine, of which *I. Lindenii* and *I. Herbstii* may be considered the best, should be cultivated on single stems to the desired height, and treated in the same manner as advised for Calceolarias. We cultivate white and yellow Marguerites upon the same principle.

The planting of shrubs.—Autumn may be the most favoured time for planting, but when the ground has been well prepared and exposed to frost, planting may with equal success be carried out in the month of February. Of suitable plants as single specimens, or as groups to afford pleasing effects at all seasons, there are noticeable at the present season *Cryptomeria japonica*, whose foliage is browny-crimson in tint; Golden Privet, a good companion plant, when the variety is true; Common Lavender, with its hoary grey foliage and at all times acceptable fragrance; Arbutus Unedo, the so-called Strawberry tree, which was unfavourably affected by the weather last season, few fruits having set, but the smooth, shining green leaves are always attractive; Phillyrea is an evergreen of much beauty; Buxus sempervirens variegata pendula, as a single specimen, is at the present a very conspicuous shrub; Laurustinus was flowering at Christmas, and will be so at Easter; Cytisus Andreana, the wood and twigs of which are of a beautiful green tint, with flowers of yellow and crimson that come in the early summer months; and, lastly, Spanish Broom, with its round, slender, green, twiggy branches, whose flowers last from June to September. A good effect is produced when the winter-flowering Jasminum nudiflorum is planted in the shrubberies, and the growths are fastened to Larch stakes, &c. Buddleia variabilis Veitchii is a conspicuous plant during the winter, by reason of the grey felted stems and leaves, and from June to September on account of its pyramidal terminal clusters of blooms, some of which measure 2 feet in length. The flowers are fragrant and of a lilac colour. Sea Buckthorn (Hippophae rhamnoides), so showy with its bright orange berries in the winter, and the silvery-grey foliage in the summer, will grow in almost any soil, and is a most picturesque shrub in the shrubbery or on the lawn.

Dahlias.—Firefly, Victoria, and others of the Cardinalis type, when planted with good taste, are amongst the most ornamental of flower garden plants. Our plants were lifted in the autumn and stored in boxes with leaf-soil and sand around the roots and put away in a dry, unheated greenhouse. They are now being removed bodily to slightly warmer quarters to be divided into pieces when the fresh roots become visible. These will be placed in small 48's in a compost consisting of leafmould, sand, and loam, in an atmospheric temperature of about 55°. When well established they will be removed to cold frames. Seeds of Dahlias may now be sown in heat.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

Appointments for February.

THURSDAY, FEBRUARY 6—Linnean Soc. meet.

TUESDAY, FEBRUARY 11—
Roy. Hort. Soc. Comm. meet. and Annual Meet. of Fellows. Annual Dinner of Hort. Club. British Gardeners' Assoc. Ex. Council meet.

FRIDAY, FEBRUARY 14—
Roy. Gardeners' Orphan Fund Annual Meet. and Elect. of Candidates.

THURSDAY, FEBRUARY 20 Linnean Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich=38°4.

ACTUAL TEMPERATURES:—
LONDON: *Wednesday, January 29* (6 P.M.): Max. 43°; Min. 37°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, January 30* (10 A.M.): Bar. 30·1; Temp. 41°; *Weather*—Fair.

PROVINCES.—*Wednesday, January 29* (6 P.M.): Max. 40° Guildford; Min. 35° North-East coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Herbaceous Plants, Liliums, Begonias, Gladiolus, Ferns, &c., at 12; Rose Trees at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Border plants and perennials, Lilies, Begonias, and other bulbs at 12; Roses and Fruit Trees at 1.30; Azaleas, Rhododendrons, Palms, &c., at 5, 1,021 cases Liliums from Japan at 1; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
A collection of rare and curious Orchids; Orchids in flower and bud; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

The Gardeners' Benevolent.

The brief report of the annual meeting of the Gardeners' Royal Benevolent Institution that we were able to insert in our last issue affords a correct indication of the present condition of the premier gardening charity. The information is gratifying in the sense that it shows what a great amount of excellent work is being done by generous-minded supporters towards relieving the absolute necessities of aged gardeners and their widows, in many cases saving them from the indignities of parish relief or even the workhouse. In view of what has been accomplished in this matter and the disinterested efforts that are being made by the Executive Committee and officers, it would be ungrateful not to record the general result with appreciation. The Committee is composed of gentlemen whose names command the highest respect amongst horticulturists, and when they decided that the funds of the Institution warranted them in advising the election of eighteen additional pensioners, they undoubtedly recommended the highest number possible under the circumstances. Owing to a recent death, one more was added at the last moment, making the number nineteen, and after the election, and in exercising the power invested in the Committee by Rule III., Clause 10, two of the unsuccessful candidates, who had sought election on five occasions, were added to the roll, making the number twenty-one. Still further additions were made possible by the liberality of Mr. Arthur W. Sutton and Mr. George Monro, each of whom promised to provide a year's pension for one candidate. The candidate receiving Mr. Sutton's gift was a gardener who is totally incapacitated by disease at the age of forty-three, and for Mr. Monro's gift a destitute widow was found, aged 82 years, whose husband had been a gardener all his life, but had never held a position that enabled him to make any provision for old age or for his widow. Thus there were twenty-three new pensioners placed on the funds.

So far so good, but when we consider the proportion of those elected with the total number of deserving applicants, we feel obliged to appeal to our readers for additional support. Twenty-nine sought election and failed, including one, at least, whose case has been before the subscribers five times. Is not this fact in itself ample justification for the importunity of the Committee in their endeavours to obtain new subscribers, and should it not be the means of awakening those who have not previously associated themselves actively with this movement, to bestir themselves and assist in the beneficent work for which the Institution exists? The only satisfaction in the circumstances is the knowledge that the candidates who suffered disappointment at the recent election will receive from the Institution some help at least during the year that will elapse before they can again seek election.

It may be pointed out that a gardener or his widow is not eligible for election who has not attained the age of sixty years, unless the candidate is totally incapacitated by accident or incurable disease. Every care is taken by the Committee to investigate each case presented to them, and only such are recommended for election to the subscribers as conform perfectly to the rules, and are actually in need of relief. It cannot, therefore, be held that the list of candidates is swelled by the addition of cases that might be allowed to wait without causing the candidates to suffer serious privation. The sole reason for rejecting any of them is that the income from all sources is insufficient to meet the increased amount of financial liability that their election would place upon the Institution. Considering for a moment the principal sources of income, these may be said to be three, and include contributions from members of the horticultural trade, from gardeners, and from the general public, the general public in this sense being represented by proprietors of gardening establishments. The horticultural trade has nobly responded to the claims of the Institution in the past, and we feel sure that, as a body, it will continue to do so; it is evident that more money is now required than heretofore, and if any representatives of the trade can afford to increase their donations and subscriptions, or if the suggestion made by Mr. Arthur Sutton at the general meeting that all the firms may possibly see their way to increase the support they have already given the Institution, Mr. Harry J. Veitch and his Committee will be the more encouraged in the carrying out of their arduous work.

The amount contributed by professional gardeners might be increased if all gardeners could be sufficiently convinced of the value of the help the Institution affords and the pressing need that exists for larger funds. It is not meant that those who now contribute should give an increased amount, but rather that those who are not at present on the books at all should commence to subscribe one guinea a year. This contribution represents rather less than three farthings a day, and many gardeners could possibly afford this if they made up their minds that the necessities of the case demand it. But an appeal can also be made to gardeners on business grounds. If they should ever need the help of the Benevolent Institution themselves, they will receive one hundred preference votes at the election for every guinea previously subscribed to the funds, and those who subscribe for twelve or more years will be practically certain that their case will be successful. We feel, therefore, that, notwithstanding the inadequate remuneration gardeners in general receive for the skilled services they render their employer, an appeal may conscientiously be made to them to help as far as their means will allow.

The general public at present contribute a large share of the income, and their donations are obtained in great measure in connection with the annual festival dinner. The proprietors of gardens might be induced to help still further if their gardeners would, in a larger number of instances, lay the claims of the Institution before them. But in this connection it is probably true that the gardener who would succeed in enrolling his employer among the annual subscribers must first become a subscriber himself, because help is always more readily afforded those who show that they are themselves doing what lies in their power to provide for future needs.

Another source of income is that of legacies, the Institution having gained more than £3,500 in this manner. Those who have the opportunity of advising others in the matter of making provision for the future disposal of their estates should try and induce them to include the Gardeners' Royal Benevolent Institution in the list of legatees. A few supporters of the Institution make it a practice to throw open their grounds to the public at certain seasons of the year, and the small sums paid for admittance on such occasions are handed over to the charity; some use their influence in obtaining collections at horticultural exhibitions, or in the organising of concerts for the same purpose, and it is more than probable that others could afford help in one way or another, and thus contribute to increase the total income.

In addition to the general fund, which is mainly employed for the provision of pensions of £20 per year for a male or £16 a year for a female, there are the Victorian Era and Samaritan funds, which claim the attention of the charitable. The Victorian Era Fund is used for the granting of temporary aid to those unsuccessful candidates who are awaiting election and who were at some period subscribers to the Institution, whilst the Samaritan Fund is available for giving help to those who alike await election but who were never subscribers. Both funds are valuable, but the claims of the Samaritan Fund are irresistible. It is the only fund that enables the Committee to make a grant of money in cases of acute distress where

temporary assistance is most called for. We have read letters from the friends of the recipients of such help, and feel that if it were possible to print them they would move even the most indifferent to a sense of their responsibilities in regard to the exercise of benevolence.

In view of the many good friends the Institution has lost during the past year through death, it is a source of satisfaction to find that young men continue to come forward to fill the vacancies thus caused. Mr. Martin H. F. Sutton, who presided at the friendly supper at the conclusion of the annual meeting, showed by his presence and speech that in future years he will be amongst those who will do their utmost to help in mitigating the sufferings of those who are unable to meet their own necessities.

It may be stated here that the next annual Festival Dinner will take place on June 24 at the Hôtel Métropole, when Lord Aldenham will preside. We hope all will unite to make the event as successful as possible, and those who are willing to act as stewards on that occasion should send an intimation to this effect to Mr. George J. Ingram, the secretary.

OUR SUPPLEMENTARY ILLUSTRATION.—Of the numerous and remarkable members of the genus Hæmanthus, H. Katherinæ, Baker, the subject of the accompanying illustration, stands out far in advance of all the rest not only in regard to the beauty of its flowers and foliage, but also the ease with which it may be cultivated in an ordinary greenhouse. It was first described in the pages of this journal in 1877, p. 656, by Mr. BAKER, who named it in compliment to Mrs. KATHERINE SAUNDERSON, wife of the gentleman who first sent dried specimens, which he had collected in Natal, to be determined at Kew. Living plants were introduced shortly after by Mr. KEIT, of the Natal Botanical Gardens, and a figure appeared some years later in the *Bot. Mag.*, t. 6778. Unlike most of the members of the genus, this species is practically evergreen, as the new set of leaves, which appear contemporaneously with the flowers during spring and early summer, commence to push up before the fall of those of the previous year, bursting through near the base of the old leaves and reaching a height, when vigorous, of from 2 to 2½ feet. The leaves are from four to eight in number, elliptic-lanceolate, 12 to 18 inches long, 3 to 6 inches broad, light green in colour, their sheathing bases forming an erect stem-like structure surmounted by the spreading leaves. The flowers are borne in densely-flowered globose umbels—that of the plant figured being 10 inches in diameter—on stout, erect peduncles, which usually rise a little above the foliage. The perianth is bright scarlet, spreading, 1½ to 2 inches in diameter; segments lanceolate, slightly reflexed with age. Filaments erect, bright scarlet, 1½ to 2 inches long; anthers, pale yellow; stigma equal or slightly exceeding the stamens. The long stamens give the whole inflorescence a most beautiful feathery effect, beneath which is the dense mass of the spreading scarlet flowers. H. Katherinæ is closely allied to, and often confused with, the tropical African H. multiflorus, also the West Tropical African H. cinnabarinus, both of which species are deciduous, require tropical conditions, and may be readily distinguished from the first-named by the fact that in H. Katherinæ the inflorescences are borne on separate and distinct peduncles, lateral to the leaves, while in both of the tropical species the inflorescences spring direct from the centre of the leaves.

R.H.S. GUILD.—In regard to the proposal to form a Guild of R.H.S. students, as mentioned in our last issue, we are asked to state that a meeting for this purpose will be held in the lecture room at the Vincent Square Hall on February 11, at the conclusion of the annual general meeting of the Royal Horticultural Society.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual general meeting of the members of this society will be held at Essex Hall, Essex Street, Strand, on Monday next, February 3, at seven o'clock in the evening. The president, Mr CHARLES E. SHEA, will preside. In addition to the ordinary business the meeting will be asked to consider, and if approved to adopt, the following resolution, viz: "That in rule 16 the words 'No member of any committee shall be eligible for nomination as a judge at any of the society's exhibitions' be deleted, and that the word 'Honorary' be inserted at the beginning of the rule." The new rule will then read as follows: "Honorary judges at the various exhibitions shall be appointed by the executive committee. The votes shall be taken by means of voting papers."

HORTICULTURAL CLUB. The annual dinner of the club will be held on Tuesday, February 11, at 6 p.m., at the Hotel Windsor. Ladies are specially invited to attend this function. The annual meeting will take place at 5 p.m.

THE KEW BULLETIN (1908, No. 1) contains an interesting account of the fruit fly, which has proved a troublesome pest in the Orange plantations of Australia and elsewhere. It is the same insect, Ceratitis capitata, which is known in Malta. Various remedies are discussed, and experiments are described which are being tried in various Orange-growing districts in the hopes of discovering a remedy. A Brazilian beetle is known to prey on the pest, but too much hope must not be based on this. We know that the ladybird at home fails to keep the aphis in check, and at present spraying seems to provide the best means of fighting it. The matter may unfortunately assume an interest for growers in this country, as the fly is stated to be rapidly increasing in the neighbourhood of Paris, where Apricots and Peaches are suffering seriously from its attacks.

THE RAINFALL IN 1907.—A number of correspondents have sent us information of the amount of the rainfall in their districts during the past year. We can only refer to the subject briefly, owing to the pressure upon our space. Mr. J. SHORT, writing from Freeland Lodge Gardens, near Woodstock, records a total rainfall of 28·09 inches, which fell upon 151 days. Mr. G. BENTLEY, Shugborough Gardens, Stafford, records 30.17 inches; Mr. J. B. LOWE, D'Abernon Chase Gardens, Leatherhead, gives a total for the year of 25.53 inches against 24·90, which fell in 1906. Our correspondent states that the heaviest fall occurred on August 17, and this amounted to 1 inch. October was the wettest month of the year in this district, and September the driest. Mr. H. PARR, Trent Park Gardens, New Barnet, states that the amount registered there was 24½ inches. Mr. J. B. ALLAN, Osberton Gardens, Worksop, informs us that the warmest day in 1907 was May 12, when the thermometer registered 83 in the shade; the coldest being January 24, when there was 21 of frost. The total rainfall was 21·18 inches, being 1.16 inches less than in 1906. Mr. W. A. COOK, Leonardslee Gardens, Horsham, registered the large amount of 25·94 during the year. Mr. THOMAS WYTON, Abbeystead Gardens, near Lancaster, the larger amount of 55.39½; Mr. FRED. LEACH, The Avenue Gardens, Bromppard Spike, Exeter, 31·62 inches; Mr. H. YOUNG, Shirenewton Gardens, Chepstow, Monmouthshire, 42.98 as against 39.34 inches in 1906. October was the wettest month, furnishing 7.85 inches. These gardens are situated 536 feet above the sea level. Mr. H. WILSON, Cold Orton Hall Gardens, Ashby-de-la-Zouch, registered a total of 29.53 inches at his observatory at 540 feet above sea level.

THE GARDEN CLUB OF THE FRANCO-BRITISH EXHIBITION.—The Garden Club now being formed in connection with the Franco-British Exhibition is under the direction of a strong committee, presided over by the Earl of JERSEY, and including, among others, Viscount SELBY, Lord ALVERSTONE, Lord BLYTH, Lord DESBOROUGH and Lord STRATHCONA. It will possess one of the most magnificent and commodious club houses ever constructed for a summer club in any part of the world, as may be gathered from the fact that the building has a frontage of 300 feet, and a depth of over 130 feet. Ladies are qualified for membership, and a special reception room and drawing-room, together with a suite of boudoirs, will be set apart for them in the club house, where the men will also be provided with a smoke room and several dressings rooms. The façade of the great dining hall is composed entirely of large glazed panels, and its doors and windows open directly upon gardens, in the centre of which is an ornamental sunken band-stand. There is likewise a spacious banqueting hall, nearly 100 feet long, and somewhat smaller rooms in which private dinner parties may be given by members, while on the lower floor and on the terrace above are numerous partly-closed spaces, which will be found suitable for small dinners and luncheons, in addition to a score of private dining rooms. The catering of the club has been placed in the hands of Messrs. LYONS & Co., whose charges will be on the same moderate scale as at the Trocadero Restaurant. The executive is to be congratulated on having made such a favourable arrangement, as it has been the custom in all previous exhibitions to add at least 25 per cent. to the cost of everything in the way of refreshments consumed in the grounds. It may be mentioned here that the prices at the restaurants and buffets throughout the exhibition will be the same as those which usually obtain outside it. The subscription to the club, which includes entrance to the exhibition, is three guineas for gentlemen, and two guineas for ladies, but for those living over 25 miles from Shepherd's Bush the subscriptions are respectively two guineas and one guinea and a half.

SOCIETE FRANCAISE D'HORTICULTURE DE LONDRES. Referring to our report of the annual dinner of the above society in last week's issue, we notice in *La Chronique* (the only French paper published in London) a full report of the proceedings and an excellent portrait of HARRY J. VEITCH, Esq., F.L.S., V.M.H., who presided on that occasion.

BIBLIOGRAPHY OF THE CHRYSANTHEMUM.—To those of our readers who are interested in the Chrysanthemum from a literary standpoint, we may draw their attention to the very comprehensive bibliography of the flower compiled by Mr. HARMAN PAYNE, which appears in the December number of the journal of the National Horticultural Society of France. The article, which, we understand, will be issued in separate form, was prepared by request of the Chrysanthemum Committee of that society, and includes all the known pamphlets and treatises on the flower that have been published in Germany, England, Australia, Austria, Belgium, France, the United States, Holland, Italy, New Zealand, and Portugal.

LANTANA PERFUME. The common Lantana, which was introduced into Ceylon during the earlier part of the last century, has proved a very aggressive weed, taking possession of waste or unoccupied land wherever the climate is hot and damp enough for it to thrive. It forms impenetrable thickets, and is very objectionable to the traveller on account of the necessity of cutting a road through it, and the thorny character of the plant as a whole. A correspondent to the *Tropical Agriculturist* states that a planter in the Wynaad (western slopes of the Neilgherries in S. India) has succeeded in extracting a valuable perfume from the flowers. It is rather difficult to credit this, as most persons find the odour of the plant and flowers exceedingly disagreeable. Unless, therefore, the writer was mistaken in his identification of the plant, probably the essential oil undergoes some change in constitution during the process of extraction.

THE ACREAGE AND LIVE STOCK RETURNS OF THE BOARD OF AGRICULTURE AND FISHERIES is the important source of the statistical information on the relative proportions between the different kinds of agricultural products that obtain from year to year. Some of these statistics are of especial interest to some of us at the present time. It appears that the number of small holdings (i.e., from 1 to 5 acres) already forms nearly a fifth (21.46) of the whole number of holdings in Great Britain, and that, taking England alone, the proportion is very nearly the same. Of course, the proportion of *acreage* of small holdings is very much less. The total acreage under crops and permanent grass has changed but little during the last 20 years, if we make allowance for periodical fluctuations, but there has been a marked turnover from arable land to grass, which has been going on fairly steadily during the last 20 years. Thus there were nearly 3,000,000 acres less land under the plough in 1907 than in 1878. Doubtless this is partly due to the depreciation in the price of corn, and to the rise in labour. Grass land is cheaper to manage than is arable land, but its value to the community is also lower, and the rural population which it will support and employ is considerably smaller. It remains to be seen how far legislation is capable of influencing the economic conditions that have led to the existing state of things, but in connection with small holders, it may be noticed, that, as shown by the returns, the acreage under small fruit has steadily increased from 36,724 acres in 1888 to 82,175 acres in 1907.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM MINOS, YOUNG'S VARIETY

OUR illustration (fig. 35) represents a flower of this beautiful hybrid between Cypripedium Spicerianum and C. Arthurianum (Fairrieanum × insigne), reproduced from a photograph, of the specimen for which Messrs. J. & A. A. McBean, Cooksbridge, Sussex, obtained a First-Class Certificate at the Royal Horticultural Society on January 14 this year. The variety was raised a good many years ago by the late Reginald Young, of Liverpool, and has been shown on several occasions, but failed to get the highest award, although many experts deemed it worthy. Messrs. McBean showed the plant at its best, and at last succeeded in obtaining a First-Class Certificate. The dorsal sepal is white, tinged and veined with purplish-rose from a small green base. The petals and lip are of a shade of honey-yellow with red-brown.

HOME CORRESPONDENCE.

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

WHAT IS AN HERBACEOUS PLANT?—Although it may not be altogether an easy matter to decide whether a certain plant is "herbaceous" or not, surely there can be no doubt as to the meaning of the word "herbaceous" itself? Perhaps the simplest and plainest definition of "herbaceous" is *non-woody*. Consequently trees, shrubs, and under-shrubs cannot be "herbaceous." Last year I had occasion to object to the following remarks in the official report of the R.H.S. examiners in connection with the school teachers' examination, viz.: "Several candidates stumbled over the term 'herbaceous,' using Carnations, Pansies, and other evergreen plants as illustrations." I asked the secretary of the R.H.S. whether an "evergreen" plant henceforth was to be barred from being "herbaceous." The question was evaded, and I was referred to some indefinite but well-known stock definitions as to the word "herbaceous." My special attention was also drawn to the R.H.S. "Rules for Judging," Sec. 179, in which it is stated that "herbaceous are (*sic*) plants with stems which die down yearly, but having root stocks remaining alive through several winters." I was also referred to Sec. 180, which defines "Carnations, Pinks, Arabis, Thrift, &c., and also "tufted evergreens which do not die down in winter," as "suffruticose"—that is, "plants of a more or less shrubby growth." It is obvious from these quotations that the R.H.S. "Rules for Judging" require amending. At present, because an herbaceous plant happens to be *evergreen*, the R.H.S. "Rules for Judging" make it into a "plant of a more or less shrubby growth." Fancy such evergreen plants as Meadow Grass, Pansies, Violas, Thrift, Arabis, Aubrietias, Houseleeks, Daisies, Cerastium, Stachys lanata, Spiræa filipendula—not to mention many others—being "suffruticose." The thing is ridiculous. It also appears from the "Rules for Judging" that the mere adjective, "herbaceous," implies that a plant must be "hardy" as well as "perennial." So that annuals and biennials—which are, of necessity, "herbaceous"—are excluded from the group to which they naturally belong. As every qualified gardener knows, an herbaceous plant (*i.e.*, a *non-woody* plant) may be either "hardy," "half-hardy" or "tender"; it may also be "deciduous" or "evergreen"; and again it may be "annual," "biennial," or "perennial" in its nature. Each group may be subdivided in other ways, if necessary. Thus "hardy herbaceous perennials" may include (i.) such bulbous plants as Liliums, Tulips, Daffodils, Hyacinths, &c.; (ii.) tuberous-rooted plants like Dahlias, Anemones, Ranunculi, Artichokes, &c.; and (iii.) those with fibrous roots. So far as the discussion in your pages has gone, surely because a woody plant like the Fuchsia, for instance, gets killed down by the frost, it does not become herbaceous. It is naturally a woody plant when properly developed, and will add new wood each year to its frame under normal conditions. It is a mere accident that the plant cannot stand our winters in all parts, and has to start afresh each year. The same may be said of many other woody plants. In the great winter of 1879 and 1880 I think many exotic trees and shrubs were killed down to the ground by the frost, but new growths were afterwards developed from the uninjured perennial root-stock. I fear if we were to leave the word "herbaceous" out of schedules, as Mr Jenkins suggests, it would be possible to include any tree or shrub—big or little—as a "hardy perennial" at least, if not a "hardy border perennial," and then the judges would have a lively time of it. *J. Weathers.*

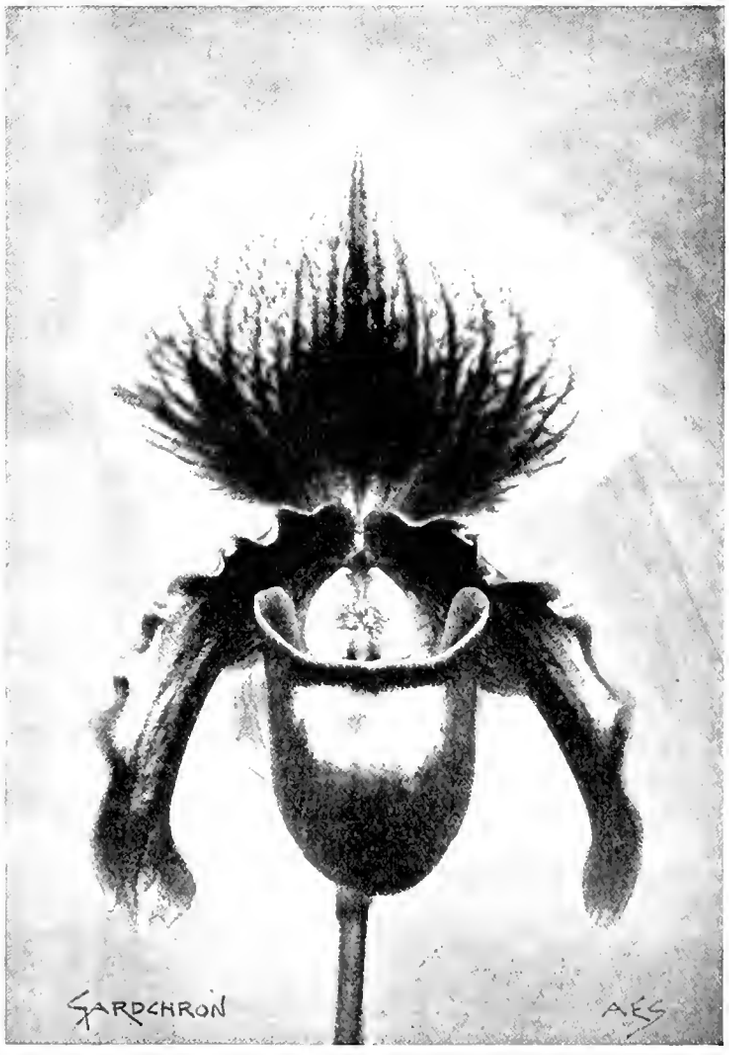


FIG. 35.—CYPRIPEDIUM MINOS, YOUNG'S VARIETY.

HERBACEOUS PERENNIALS.—It is to be hoped that compilers of schedules for flower shows will ponder seriously before altering their schedules as suggested. The schedule-maker knows best what he wants and has a perfect right to get what he asks for and nothing else. In asking for herbaceous perennials, or hardy herbaceous perennials, it is clear that Romneya Coulteri, Phygelius capensis, Fuchsia Riccartonii, Canterbury Bells, and Sweet Peas are not what is wanted, viz., herbaceous perennials; therefore they must be excluded from this class. The mere accident of a plant not being everywhere hardy does not alter its character. You mention that Pansies would be excluded, and rightly so. They would, no doubt, appear in their proper place. *R. L.*

NUMBER OF SPECIMENS IN EXHIBITS OF VEGETABLES.—On p. 43 *H.K.* brought to notice a much-needed reminder to schedule-framers and committees of flower shows. Not only many of the lesser societies, but a goodly proportion of the leading provincial societies (including the Shropshire Horticultural), fail to place any limit to the number of specimens necessary for individual dishes in collections of vegetables. A few societies limit the exhibitor to the same number as they state for single dishes. This arrangement with some varieties makes a fair display, but take the case of Cauliflowers, three specimens being usually called for in single dish classes. This number would look sadly deficient at the back of either a six or a nine variety class, and the same might be said of several other vegetables if staged under a similar restriction. To state a case: the first and second prize winners in the champion class at Shrewsbury last August staged ten and six Cauliflowers in their respective collections of nine distinct kinds of vegetables. Now, supposing these two collections had been equal in excellence, and points given to that effect, would the fact of the one staging ten Cauliflowers, and the other only six, have carried any weight with the judges, seeing that the arrangement of both collections left nothing to be desired? Neat and effective staging is sometimes taken into consideration in a close contest, and properly so, as the appearance and difference between a well-finished collection and a slovenly one, even if the vegetables are of equal merit, is only too apparent to everyone interested in the growing and showing of good vegetables. *B., South Devon.*

RAILWAY RATES.—The article by Mr. H. Morgan Veitch, published in the last issue of the *Gardeners' Chronicle*, is to the point, but it is not overdrawn. It is quite time the Government and the railway companies realised that market-gardeners and nurserymen have built up one of the most important of our national industries, and one that would immeasurably benefit all concerned, from grower to consumer, if it was given reasonable encouragement instead of being penalised by another industry, viz., the railways. They are useful—so are we—and we should be more beneficial still to the public if we received fair treatment. Is it not a farce that one industry should dictate terms to another without an opportunity of getting any benefit by competition? The state of the matter is shortly this. A farmer has land and grows Wheat, which the railway will carry a certain distance for 8s. per ton, and will find warehouses and men to handle it several times, and must protect it from wet, or it is spoiled. If that same farmer goes to greater expense and grows fruit, the railways compel him to pay them three times as much carriage, whilst they give the produce less attention, and are put to no expense for warehouses. If he spends still more, building glass to protect his crops, and becomes a customer to the railway companies practically all the year through, he must pay still more. Why there need be such a complicated classification passes any sane man's comprehension, as it costs no more to haul a truck load of fruit or Tomatos than a truck of coal. Now, let us look at the benefit of the trade to the railway companies. If Wheat is grown they get about two tons to the acre, if Potatos, at least six to eight tons, and so on, in increasing amounts, until I leave your readers to work out the tonnage grown under glass, and the immense trade in other ways brought to the railways in coal, manure, building materials, &c., besides extra passenger traffic. When Sir Charles Owen explained to the L. & S.W.R. shareholders that the lower dividend for 1905 was caused by the bad crops of fruit in the Channel Islands, and also of Potatos in France, he gave the game away, as firstly, he acknowledged that our "insignificant" trade could affect the railway companies' dividends; secondly, there were good crops in the Channel Islands, but, owing to the oppression of the L. & S.W. Railway and G.W. Railway companies, after they had combined, the growers pluckily joined together and formed "The Guernsey Mutual Transport Company," which took £20,800 in 18 months, every penny of which came out of the railway companies' pockets; thirdly, Potatos were a larger crop than usual in France, but, owing to the bad delivery, the salesmen chartered their own steamers, and got a much better service. Crops were good for the grower and for the salesman in both cases, but bad for the railway companies, owing to their own mismanagement. This shows what can be done in some cases, but there are many others in which there is no possibility of doing without the railway companies, and the last chance of retaining some competition between the different companies is being done away with by the system of combining, which is becoming more and more prevalent every year. We contend that, for their own benefit, they should encourage a trade and not stifle it, and their shareholders should protest against their revenues being diminished by such unbusinesslike methods. What will be left in country districts for their goods trains if they succeed in handicapping their market-gardening carrying trade out of existence? It is stated that the fact of raising the rates on Potatos from Lincolnshire to London, which they were allowed to do by the Railway and Canal Commissioners, has resulted in about £30,000 less freight through hundreds of acres going out of cultivation as far as that produce is concerned, another instance of their blind folly. The Prince of Wales said that Englishmen must "wake up," and that applies more particularly to those on the horticultural side of agriculture, if not to agriculture generally. I am pleased to state that a good proportion of the nurserymen have subscribed to the Joint Railway and Parliamentary Committee, representing other perishable foods as well as fruit, and I hope that all will do so, as it is clearly a case where union would be strength. It is only by showing a united front that we can succeed in getting better treatment. I apologise for taking up so much of your valuable space. *Geo. Morse, President of the Joint Railway and Parliamentary Committee.*

BRANCHES OF THE B.G.A. The executive council desire to inform gardeners that they are prepared to support efforts to form branches in any part of the United Kingdom. They will on application arrange to send a delegate to address the meeting, provide handbills for distribution, and pay the initial expenses for hiring a room. In the case of the establishment of a branch, with a properly constituted committee and secretary, the council are prepared to assist the branch with the necessary stationery and literature. The executive council also suggests that at least four meetings be held during the year, and, if possible, papers of general gardening should be read, in addition to the general business of the branch. The secretary of each branch is also invited to send up reports embracing any items of gardening interest in addition to the reports of business done. A branch of the B.G.A. may be formed wherever a mutual improvement society (composed of professional gardeners) exists. *J. Weathers, Secretary.*

THE FLORISTS' ART.—Those people who bewail the want of taste in floral arrangements should be able to lay down principles for the benefit of the ignorant. I believe that until any individual has acquired a distinct impression in his mind of the attributes of beauty in form and colour; or, in other words, has an educated eye to perceive what is appropriate, he cannot make the most of the material at his command. This so-called good taste is to a certain extent inborn, but it can be acquired, not as *F. M.* (see page 439) would have us believe by imitation of other people's work, but by cultivating the feeling for all that is beautiful in nature and art. Decorative work (I do not mean bouquet or wreath-making, or any such artificial methods of the professional florist) is practised daily in all country houses of any pretensions. *A. H.* writes ignorantly when he says that gardeners have, as a rule, little practice in this work. I have seen quite as good decorations, on special occasions, in houses and churches (carried out with but limited materials) as any professional florist could supply. Arrangements that give pleasure and satisfaction to one's employer and his guests cannot fairly be termed failures. Whatever some people may say, "taste" has been analysed and explained and it has fixed rules and principles that cannot be ignored in the world of nature and art. It seems to be forgotten by those who advocate flower-show arrangements as models, that such places lack the artistic background and accessories found in the rooms of a private house, and these are of as much importance as the plants and flowers themselves. *F. Street, Ardwell, Wigtownshire.*

———Some of the groups to be seen at the shows give excellent colour effects which might be useful in a conservatory or winter garden, although too elaborate for some of the cramped positions which private gardeners are often called upon to decorate. I have sometimes had a fireplace pointed out to me, the hearth not more than 2 feet wide, with instructions to make a nice group of plants, with some good Palms at the back; but the plants must not project over the raised stonework in front, or the dancers would knock them over. There was not much room for rustic bridges, pretty Bamboo stands, imitation lakes, cork, &c. Moss and suitable plants, and foliage to hide the pots, had to be used instead. I quite agree with *A. H.* (page 30) regarding the danger incurred by exhibitors in breaking away from the old-established designs, the would-be pioneer running a serious risk of being rewarded, not with the laurel wreath, but with the wooden spoon. I also agree with him about the shower (?) bouquets, many of them being like some November showers—rather heavy. *F. M.* (p. 439) seems to think very little of our efforts at table decoration, but has he considered the difference between a table at many of the exhibitions, with plenty of room to make an effective design, and that of many dining-rooms, loaded with all manner of things before the gardener starts his work? I have looked at many of the former in the hope of getting some new ideas for home decoration. These tables generally had a more or less elaborate centre-piece, and the design carried from it to each corner, instead of the tall lamp, surmounted by a sunshade, and surrounded by the usual two silver mugs and four ornamental spoons, while the space from the centre to each corner of tables I have had to decorate was generally occupied by a regulation design of water bottles, menu cards, salts, peppers, &c., the remainder, except about 10 inches all round for places, often being well covered by squat dessert dishes, sweets, preserved ginger jars, &c. Let us have some tables of this sort at the shows, and then we shall doubtless witness something instructive, which would be doubly so if we could see the same table dressed night after night with different designs, in the way that many of us have to do in private establishments. I should not think that any gardener who had the slightest knowledge of table decoration would use any other than suitable foliage and flowers for artificial light. The one thing in which I am inclined to think that some gardeners fail, in comparison with florists, is in the making of floral tributes for interments, those gardeners who have not had the opportunity of seeing and handling some of the finest florists examples generally making them too dense and flat. The letters on this subject have reminded me of an incident which occurred not many years ago. I had the flowers to arrange in a moderate-sized drawing-room; there were just 36 vases in this room (much against my wish), ranging from small glasses with one Rose bloom, to large jugs with such flowers as Pæonies, the latter perched on stands about 6 feet high. A visitor, after a critical survey of this exhibition, remarked that flowers were all very well in their way, but this room reminded him of nothing so much as a "florists shop." *Oxfordshire.*

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 28.—The society's hall was on this occasion better filled than on the last one; flowering subjects being exhibited in larger quantity, more especially Orchids, Cyclamens, and Primulas.

Floral Committee.

Present: W. Marshall, Esq., and Messrs. Chas. T. Druery, Henry B. May, Jas. Walker, Walter T. Ware, G. Reuthe, J. W. Barr, R. C. Notcutt, R. W. Wallace, C. Blick, F. Page Roberts, Jas. Hudson, R. Hooper Pearson, Arthur Turner, W. Cuthbertson, Herbert J. Cutbush, W. P. Thomson, T. W. Turner, E. H. Jenkins, W. J. James, and Edwd. Mawley.

Messrs. SUTTON & SONS, Reading, showed an extensive collection of Cyclamens, which included White Butterfly, Giant Salmon Pink Superb Fringed, in variety, crimson self, and white, with crimson edge; deeply and lightly fringed; and purple, any of which is a pleasing change in form and in colouring. There were also specimens of C. Papilio, the winged Cyclamen; C. Salmon Pink, of lesser size than Giant Salmon Pink. The plants were dwarf, compact, and well-flowered, with small, stocky leafage, not in the least degree drawn up by warmth. The exhibit was backed with small Grevilleas, and in front were Isolepis gracilis. (Silver Floral Medal.)

The GUILDFORD HARDY PLANT NURSERY, Millmead, Guildford, exhibited a collection of species of Veronica not in flower, but interesting, as showing habit, foliage, &c. The varieties shown were V. decumbens, V. anomala, V. pinguifolia, V. macroura, V. Newryensis, V. ligustrifolia, a seedling with white flowers, and evidently an early blooming variety; V. cupressoides, V. Kirkii, V. carnosula, V. Stuartii, V. decussata, V. epacridia, V. Hectori, V. buxifolia, and V. rakaiensis. Other exhibits consisted of Andromenda calyculata, several hardy European Ericas, Rhododendron myrtifolium, with leaves of a claret tint, &c.

Ferns were largely shown by Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, in the usual capital manner of this firm. Notable specimens were Nephrolepis exaltata superba, Platycerium alcicorne majus, P. Stemmaria, Davallia Veitchii, D. retusa, Pteris Childsii, Lomaria ciliata, Asplenium Veitchii, Nephrolepis todeoides, Platycerium Hillii, and Nephrolepis Whitmanii. This firm exhibited some handsome Dracænas, viz., D. marginata rosea, D. Monarch, D. His Majesty, and D. Edith May; Codiæum Baron F. Selliere, with a yellowish white midrib and edge, and C. B. Comte, a green leaf irregularly blotched with yellow. (Silver-Gilt Banksian Medal.)

Messrs. W. CUTBUSH & SONS, of Highgate and Barnet, showed forced plants of a hardy nature, inclusive of Pyrus Malus floribunda, Magnolia Lenne, M. conspicua, Prunus triloba, Rhododendron Jacksonii, blush-white small flower trusses, Orange bushes, small Conifers, such as Retinosporas, Cryptomeria elegans, and Thuiopsis borealis compacta. There were some Cork boughs filled with flowering plants of Iris reticulata, I. Danfordii, I. Sindjarensis of a cerulean-blue tint, I. Histrio, &c. A number of Tree Carnations were also shown as pot plants and cut blooms, viz., Lilian Pond, a white, fairly double flower of good substance; Mrs. Burnett, Saint Louis (a bright scarlet), My Maryland (white—a robust flower), and The President. (Silver Flora Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., exhibited Cacti, succulents, Sempervivum species, Sedums, Saxifragas, hardy Primulas; the new stellate Primula named Streatham, a pyramidal habited P. sinensis, the blooms of which are very thin in substance, but they make a good show. There were shown plants of P. obconica grandiflora, with flowers of various tints.

Mr. H. BURNETT, Carnation specialist, Forest Road, Guernsey, exhibited a number of choice varieties of Carnations, long-stemmed, as the fashion of the day decrees they should be. Many of the less recent varieties were included in the exhibit, and some that were new, viz., Miranda, white, suffused with faint pink; Aurora, a fancy with crimson flakes on a pale-yellow ground; Marmion, scarlet edged with white; and a number of beautiful novelties, which we hope to inspect later. The variety Mrs. H. Burnett was finely shown, as also Pink Enchantress. (Silver Banksian Medal.)

The Misses HOPKINS, Mere Gardens, Shepperton, exhibited rock plants; also some tubers of Tropæolum tuberosum, grown at "Mere."

Messrs. H. CANNELL & SONS, Swanley, Kent, were the exhibitors of 60 plants of varieties of Primula sinensis, the flowers of which in many instances are 2 inches in diameter, with overlapping petals that are wavy and dentate. The colour ranged from white, through rose, crimson, and blush to purplish-crimson and deep crimson. (Silver Flora Medal.)

Mr. L. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed Aucuba japonica vera, Eleagnus picta aurea, E. macrophyllus, Eurya latifolia, Ivies, Buddleia asiatica, the exhibits differing but little from those that were observed at the previous meeting. (Silver Banksian Medal.)

Messrs. HUGH LOW & CO., LTD., Royal Nurseries, Bush Hill Park, Enfield, showed excellent Cyclamen grandiflorum, Salmon King and C. giganteum in varieties, plants in flower of Euphorbia jacquiniæflora, and a large number of Carnations in stands and glasses. (Silver Banksian Medal.)

A small exhibit of hardy flowers and plants came from Messrs. BARR & SONS, King Street, Covent Garden.

Alpine plants, such as Saxifragas, Hellebores, Colchicums, Snowdrops of species, hardy Ericas, Sternbergias, Hepaticas, Cyclamen, &c., were shown by Mr. G. REUTHE, Hardy Plant Nursery, Keston.

Messrs. J. WATERER & SONS, LTD., American Nursery, Bagshot, showed a large number of varieties of Holly, representing the best of these. They were mostly in pyramidal form, a few round-headed ones only being inserted in the group. There were several yellow and red-berried plants loaded with fruits. The yellow variegated green Holly "Moonlight" is a very distinct, showy variety. (Silver Flora Medal.)

Mr. T. ERNEST WALTHAM, 97, Upper Tulse Hill, S.W., showed several coloured stereoscopic slides of Rhododendron flowers. The process is so far perfected that the venation and texture of a flower or leaf are reproduced faithfully. The flowers reproduced were crimson and white ones, and nothing seemed lacking in the effect produced. A scarlet Gladiolus spike was likewise shown.

A Bronze Banksian Medal was awarded Mrs. MILLER for floral studies in water colours. The following subjects were very pleasing: "A Water Garden," "Sweet Peas," "A Marlow Garden," "Golden Pomp," the season "Autumn," with masses of Helianthus, Tritomas, Gaillardia, and other flowers of that season; "Bastion Steps," overgrown with Rambler Rose; "Rhododendrons at Howth," a wilderness scene of Ferns and flowers; "A Garden is a Lovesome Thing," this latter representing a wide herbaceous border filled to its fullest capacity with flowers, blue the predominant note, as given by Larkspurs and Borage. "The Other Side of the Latch" was a pretty bit of perspective.

A Silver Flora Medal was awarded Miss FARRER, Shaa Road, Acton, London, W., for floral studies that showed considerable technical knowledge, truthful colouring, and accuracy of drawing. The exhibits consisted of 10 pictures of flowers.

A Bronze Banksian Medal was awarded Miss SUMNER JONES, "Sherborne," Wellesley Road, Chiswick, for water-colour drawings of garden flowers very true to nature.

AWARD OF MERIT.

Nephrolepis exaltata var. Amerpohlii.—This is another plumose variety of the popular Nephrolepis, of dwarfer habit than the others. It is very compact, and the fronds are said to become 4 inches in depth, so plumose is the development. Shown by Messrs. H. B. MAY & SONS.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, H. Little, W. Boxall, A. A. McBean, J. Wilson Potter, F. J. Hanbury, R. G. Thwaites, F. M. Ogilvie, W. Cobb, W. H. Young, A. Dye, W. P. Bound, H. G. Alexander, H. A. Tracy, W. H. White, H. Ballantine, W. Bolton, R. Brooman-White, N. C. Cookson, C. J. Lucas, H. T. Pitt, and H. Graire, of Amiens.

Major G. L. HOLFORD, C.I.E., C.V.O., showed four new hybrids, of which the best was Cypripedium Merlin (insigne × illustre), the petals and lip of which were yellow-veined and tinged with red-brown; the very large dorsal sepal pure white, with a yellowish base bearing some dark purple spots. The others were C. Bianca (Prospero × insigne Sanderæ), a good flower, showing much of Prospero; Lælio-Cattleya Goldfinch (L.-C. Warnhamiensis × C. aurea), of a reddish gold colour; and Cattleya Cyril (Harrisoniæ × Percivaliana).

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged a fine group, at the back of which were some pretty hybrid Odontoglossums, good varieties of O. crispum, Lælia anceps, and other graceful varieties. In the centre were a selection of the clear yellow Lælio-Cattleya Andromeda, with two L.-C. Prospero, yellow with ruby front to the lip, and two of the reddish orange L.-C. Golden Oreole. At intervals were selections of the handsome Cattleya Octave Doin, C. Enid, and other showy hybrids. (Silver Flora Medal.)

Messrs. J. & A. A. McBEAN, Cooksbridge, staged an extensive and well-arranged group of finely-grown Odontoglossum crispum, and white varieties of Lælia anceps, chiefly L. a. Schroderiana, and Sanderiana. An attractive feature in the group was made by mingling many specimens of the dark scarlet Epiphronitis Veitchii with the white flowers of the other plants in the group. (Silver Flora Medal.)

Messrs. JAS. CYPHER & SONS, Cheltenham, had an effective group of fine Cypripediums, which included the handsome C. George Moore, C. Mrs. Bostock, a very large flower with the petals and lip like C. villosum giganteum, and with a fine apple-green dorsal sepal, bearing black spots, the margin being white; a very good selection of C. Euryades, C. aureum, C. Leeanum, C. insigne, &c. Colour was given to the group by good examples of Cattleya Trianæ, that named Princess Ena being white, delicately tinged with rose. In the centre was a grand example of Cymbidium Winnianum, with 10 spikes, and some hybrid Calanthes, good Lælia anceps, &c., were included. (Silver Flora Medal.)

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, staged a very fine group, in which were several good forms of Cypripedium insigne, some plants of the original rose-tinted form of C. Helen H., and one of the new C. Helen H. variety Armstrongiæ, a very pretty cream-white flower with small violet spots; and other Cypripediums; also two varieties of the pretty Cymbidium Woodhamsianum (Lowianum × eburneo-Lowianum), and a selection of species including Bulbophyllum Godseffianum, and Odontoglossums, one O. Pescatorei, having a very distinct labellum bearing many small rose spots; various Masdevallias, &c. (Silver Flora Medal.)

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed a select collection of fine specimens of Cypripediums, which included four very fine forms of C. Euryades, that known as Sir Trevor Lawrence's variety being a superb form with large white dorsal sepal marbled with purple at the back and spotted with purple and rose on the face. A fine C. Minos with seven flowers, a grand form of C. Mons. de Curte, three plants of the yellow C. insigne Sanderianum, and one of a new variety named Ochre King, with large flower of a greenish ochre yellow colour, were also included. (Silver Flora Medal.)

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, staged an attractive group, a remarkable feature in which was made by a large number of Cypripediums obtained by crossing fine forms of C. villosum and C. Euryades, the resultant plants varying in form and colour in the most extraordinary manner, some resembling the best forms of C. Euryades with fine white dorsal sepal spotted with purple and rose, and others having the dorsal sepal bright purplish rose with pure white margins, and many being intermediate between the two extremes named. The cross is named Countess of Carnarvon, and the best varieties are very handsome. Messrs. VEITCH also showed Brasso-Cattleya Orpheus, variety

rosea, some good specimens of the fragrant and pretty Trichopilia suavis, a plant of Neobenthamia gracilis with a head of pure white flowers, varieties of Odontoglossum Pescatorei, &c. (Silver Banksian Medal.)

Messrs. MOORE, LTD., Rawdon, near Leeds, staged a nice group, principally of fine Cypripediums, among which were the leading forms of C. aureum, including strong specimens of Monarch and virginale; an exceptionally fine form of C. Charlesianum, and a good plant of the allied and favourite C. Ville de Paris; C. Saturn and a very pretty and finely-coloured hybrid between C. Leeanum Albertianum and C. insigne Chantinii. Also in the group were several showy hybrid Odontoglossums, one having the inner halves of the segments almost entirely of a rose-purple colour. Among species the singular Bulbophyllum comosum, with two drooping heads of hairy white flowers, and the singular yellow and purple Maxillaria porphyrostele were noted. (Silver Banksian Medal.)

Messrs. HEATH & SONS, Cheltenham, had an interesting group of Cypripediums, Cattleya Percivaliana, &c. Among the Cypripediums were the handsome C. Mrs. Wm. Mostyn, Chardwar variety; the finely-shaped C. Aureole (Lathamianum giganteum × Boxallii) with flowers of thick texture, the emerald-green dorsal sepal bearing rows of blackish spots, the margin being white; C. Charlesworthii roseum, an insigne variety, with white dorsal sepal, the lower half delicately tinged with lilac-pink from a small green base; good C. Mons. de Curte, and many fine plants of C. Leeanum giganteum. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Enfield, staged a neat group, in which were Cypripedium aureum, Surprise, Œdippe, virginale, Hyeanum, and others. C. Thompsonianum, C. Swinburnei magnificum, and other Cypripediums; four plants of the bright rose Lælia Gouldiana, Odontoglossum blandum, varieties of Oncidium ornithorhynchum, one being white tinged with lilac, Arpophyllum spicatum, Cymbidium Wigianianum, &c. (Silver Banksian Medal.)

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed the new and fine Cypripedium Rajah (Io grande × Swinburnei magnificum), a large flower of very thick substance and attractive colouring. The large ovate acuminate dorsal sepal is white on the upper half, greenish-white at the base, from which radiate small blackish lines. The middle area is bright rose, with darker lines. Petals large and broad, dark rose-red, with several large raised black spots furnished with hairs on the margin. Lip large, brownish rose.

Messrs. LINDEN & Co., Brussels, showed Odontoglossum crispum "Jean Linden," the magnificently-blotched home-raised variety, which was illustrated in the *Gardeners' Chronicle*, December 22, 1906, p. 418, but now greatly improved; the pretty O. Notteanum (Loochristiense × Wilckeanum); O. exultans variety formosum (crispum × excellens), a large yellow flower, handsomely blotched with red-brown; and three Cypripediums, the result of seeding from forms of C. insigne.

AWARDS.

AWARD OF MERIT.

Cypripedium Fairrieanum, Cookson's variety, from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman). A superb variety, and the darkest which has yet appeared, almost the whole of the dorsal sepal being of a deep claret colour, only a little white showing through in small patches at the base. The reverse of the dorsal sepal is coloured like the face, and the rest of the flower is also very dark. Mr. COOKSON showed another equally dark form with an undeveloped bloom.

Cypripedium F. Sander, from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). A very remarkable Cypripedium, the origin of which is somewhat obscure. The leaves, which are narrow and pointed, have a very thin dark-green reticulation. The flower, which is of fine form, has a showy and flat dorsal sepal of pale emerald-green, densely blotched with large glossy chocolate-brown blotches, the upper part being white with purplish spots, as in some of the best forms of C. nitens. Petals and lip well-formed, honey yellow tinged and veined with chocolate-purple. Staminode large, yellow.

Cymbidium Gattonense (Lowianum × Tracyanum), from Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate. A very worthy production, with flowers as large as those of C. Tracyanum, but deeply coloured and marked as in the best C. giganteum. Sepals and petals greenish-gold colour, closely lined with purplish red. Lip broad, cream-white, marked with red, and having a hairy disc as in C. Tracyanum. The cross is interesting, as it disproves the supposition that the natural hybrid C. Ansonii is of this parentage.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (chairman), and Messrs. W. Bates, Alex. Dean, W. Pope, R. Lye, Geo. Kelf, H. Parr, J. Davis, G. Reynolds, James Vert, Owen Thomas, C. G. A. Nix, W. Poupart, Jos. Cheal, and A. R. Allan.

Messrs. J. PEED & SON, nurserymen, Roupell Park, West Norwood, displayed a considerable number of Apples, showing signs of careful attention to their cultivation in their generally fine size and freedom from blemishes. There were very fine specimens of the varieties Bismarck, Withington Fillbasket, Lord Hindlip, Dumelow's Seedling, Blenheim Pippin, Lord Derby, and Alfriston. (Silver Knightian Medal.)

A splendid exhibit of Potatos, chiefly kidney-shaped varieties, was shown by Mrs. DENISON, Little Gaddesden (gr. Mr. A. G. Gentle). Their only fault lay in the general large size of the tubers. Other exhibits from the same garden were bulbs of Cocoanut, Ailsa Craig, and Record Onions. These were simply enormous. (Silver-Gilt Knightian Medal.)

LECTURE ON SELF-COLOURED PHOTOGRAPHY.

The lecture given at this meeting was one on "Self-Coloured Photography of Switzerland and Swiss Flora," given by Mr. T. Ernest Waltham, and illustrated some new and combined processes of his own invention for obtaining photographs in purely natural colours. The Chairman (Mr. A. W. Sutton, F.L.S.) expressed the hope that the lecturer would kindly give his hearers some idea of his mode of working, for their possible guidance, but this, in view of impending patents, was, Mr. Waltham explained, hardly practicable. The slides indicated by the title of the lecture were preceded by a number of others, and illustrated firstly a magnificent series of floral photographs embracing Cactus Dahlias, Cattleyas, Dendrobiums, representing fine types, in natural colours, and of amusingly exaggerated dimensions, but beautifully exemplifying the capacity of the art of reproducing apparently the thing itself instead of merely a monochrome picture in black and white. Some interesting views of Holland House and the Japanese garden there were followed by some of Wisley, where a grand specimen of Spiræa Aruncus in full bloom, Gunnera scabra of gigantic dimensions, and several general views embracing a neat one of the Water Lily pond, were so well brought out that the onlooker actually seemed to be present in the garden. The views in Switzerland were grand, commencing with winter scenes taken after heavy snowfalls, where snow-laden Conifers, picturesque old châlets, and bold rock-effects amid deep drifts seemed to transport the beholder to the heart of the Alps, some imposing views of glaciers adding to the illusion. Having thus given a general idea of the conditions under which Alpine plants thrive in their native habitats, a series of extremely interesting slides followed, showing a number of the species in their natural habitats, Epilobium rosmarinifolium, Dryas octopetala, Silene (Gypsophila) repens, the Martagon Lily, Holly Fern, and Green Spleenwort, yellow Aconite, Gentiana lutea, G. acaulis, and G. bavarica, Rosa alpina, Ranunculus aconitifolius, Lychnis flos-Jovis, and yellow Foxglove being exhibited in their true colours amid associated vegetation of many kinds, some singly and others in groups precisely as nature assorts them in the bold, rocky fastnesses they adorn. Then suddenly the beholders were transported back to home again by a view of a woodland clearing carpeted with golden Primroses, but the next slide afforded a moonlight view of the Lake of Geneva; the lecturer frankly explaining that photographic moonlight views were really "moonshine" in the satirical sense, as they were actually taken by sunlight and toned down.

A series of six stereoscopic views by the lecturer of some of Messrs. Waterer's Rhododendrons was shown in the Hall, and revealed apparently the very flowers themselves, the double pictures giving an impression of substance which the lecturer regretted could not be imparted to views upon the screen.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

[The result of the election was published in our last issue.]

JANUARY 23.—The sixty-eighth annual general meeting was held at Simpson's, Strand, on the above date, Mr. Harry J. Veitch, treasurer and chairman of committee, presiding.

Following the reading of the minutes of the last meeting, &c., the secretary, Mr. G. J. Ingram, read the ANNUAL REPORT OF THE EXECUTIVE COMMITTEE as follows:—

The committee in submitting their annual report, together with a statement of receipts and expenditure (as certified by the auditors) for the year 1907, again have the pleasure of congratulating the subscribers and donors to the institution on its continued success.

At no former period in the sixty-eight years of its existence has so much been done in the way of affording permanent and temporary assistance to the unfortunate members of the horticultural community—gardeners, market growers, nurserymen, &c., and the widows of such—as during the past year. Over £4,000 has been disbursed in permanent aid alone. That this happy condition has obtained is a matter for thankfulness, and the committee feel it is also an encouragement to the subscribers and others whose generous liberality has enabled them to carry on the work with so much benefit to those who, through illness and misfortune, have been obliged to seek assistance from the charity, and have not sought in vain.

At the beginning of 1907 there were 227 pensioners on the funds—123 men and 104 widows—receiving annuities of £20 and £16 per annum respectively for life. During the year twenty have died, one man has been removed to an infirmary under medical orders; another, a widow, to an asylum owing to her mental condition, and another has left England for America to reside with her son. Of the men who died, three left widows, whose circumstances being such as to render them eligible, have been placed on the funds without election to receive the widows' allowance of £16 a year each for life, under Rule iii. 13. The committee now recommend an election this day from an approved list of fifty-two candidates, to fill the vacancies created. Fully sensible of the urgent needs of many of those who are appealing for aid, the committee sincerely wish they were in a position to assist a larger number, but this they feel cannot safely be done without the assurance of an additional income to meet the extra liability which would necessarily be incurred.

The "Victorian Era Fund" and the "Good Samaritan Fund" still prove a source of much benefit and comfort. From the former fund nearly £200 has been distributed amongst the unsuccessful candidates at the last election who had formerly been subscribers, in terms proportionate to the length of time they had subscribed, and from the latter fund £176 has been given in small amounts as temporary relief to numerous applicants—whether subscribers or not—whose cases were of a most distressing and pathetic nature. The committee again beg to draw attention to the value and utility of these two funds—the one helps the candidate awaiting election, whilst the other bestows temporary help in cases of emergency. As the income only from these funds is available, special contributions earmarked for either of them will be warmly welcomed.

The annual festival dinner which took place at the Whitehall Rooms of the Hotel Metropole on June 20th last, under the presidency of the Hon. Walter Rothschild, M.P. (trustee), was most successful, and resulted in a substantial sum being raised towards carrying on the work. The committee desire to place on record their gratitude and indebtedness to the chairman for his earnest advocacy of the claims of the charity, and for his generous contribution to the funds. They also take this opportunity to express their sincere thanks to those gentlemen who acted as stewards or collectors, to the contributors of flowers, to the horticultural Press for their gratuitous and invaluable help, to Mr. James Hudson, V.M.H., for superintending the decorations; and to other friends throughout the country who in any way, directly or indirectly, contributed to the gratifying result attained. Grateful thanks are likewise tendered to the Right Hon. Mary Countess of Rosebery, for again allowing her beautiful gardens at Holland House to be opened to the public on the occasion of the great summer flower show of the Royal Horticultural Society, part of the proceeds obtained therefrom being handed to the institution; also to the Right Hon. Earl Beauchamp, Madresfield Court, and Sir Frank Crisp, Bart., Parkfield, for similar kindnesses for the same object.

To the "Geo. Monro" concert committee they offer their acknowledgment for £210 contributing to the funds. Sincere thanks are likewise accorded to N. N. Sherwood, Esq. (trustee), for his gift of £50 to the unsuccessful candidates at the last election; and to Arthur W. Sutton, Esq. (member of committee), for kindly supplying a similar amount for a year's allowance in support of an incurably paralysed candidate. Very gratefully do the committee also acknowledge the services rendered by the hon. treasurers and hon. secretaries of the several auxiliaries which continue to be a source of strength and support, not only in obtaining additional financial aid, but in maintaining, as well as creating interest in, the operations of the charity.

It is with great pleasure the committee have to announce that the Right Hon. Lord Aldenham will preside at the sixty-ninth anniversary festival dinner in aid of the funds on Wednesday, June 24th next, at the Whitehall Rooms, Hotel Metropole. They hope his lordship will be warmly supported by every lover of gardening and flowers, and that the festival will prove as successful in furtherance of the cause of benevolence as those in previous years. The names of gentlemen willing to act as stewards will be much appreciated.

The committee, unfortunately, have again with sorrowful and melancholy regret to refer to the large number of losses by death amongst the friends and supporters of the institution they have sustained during the past year. They would especially mention the Marquis of Bristol and Maxwell T. Masters, Esq., M.D., F.R.S., both of whom were vice-presidents for over forty years, and took a keen and lively interest in the institution, Dr. Masters being always ready to help forward the work. Among others who have passed away are Sir Alex. J. Arbuthnot, chairman of committee for a short time some years ago, Mr. James H. Veitch, also formerly a member of committee, and Lord Battersea, the Hon. Mark Rolle, Sir Michael Foster, Baroness Burdett Coutts, Mr. J. Hill White, one of the founders and hon. treasurer of the Worcester Auxiliary, and Mr. R. B. Cater, of the Bristol and Bath Auxiliary.

The loss of these long tried and generous-hearted friends will be severely felt, and their vacant places most difficult to fill. Still, the committee feel confident that those who remain in their midst will not relax their efforts, but will do all they possibly can to obtain fresh supporters to take the places of those who have been removed.

With much gratitude the committee acknowledge the practical aid and sympathetic help afforded them in their work, and they now very earnestly appeal to every well-wisher of this National (unsectarian) Horticultural Charity for further exertions and interest on its behalf, so that the beneficial work which has been carried on with such signal success for the poor and needy for so many years may continue to be maintained.—HARRY J. VEITCH, Treasurer and Chairman of Committee; GEORGE J. INGRAM, Secretary.

Mr. Harry J. Veitch, in moving the adoption of the report and balance-sheet, referred to the work the institution had done during the past year. The number of pensioners on the books was larger than at any previous time, and a sum of £4,334 was disbursed. Reference was also made to the losses sustained by the institution during the past year in the death of some of its principal supporters, mention being made of the late Dr. Masters, Mr. J. Hill White, and others. The report was adopted.

Following the adoption of the report, Mr. Harry J. Veitch was re-elected treasurer, Mr. G. J. Ingram, secretary, and the retiring members of the committee, auditors, and arbitrators were also re-elected.

The meeting afterwards proceeded to the election of pensioners, and the result was briefly recorded in our last issue.

There were no fewer than 48 voting papers returned unsigned, and were, consequently, forfeited. These papers represented 355 votes.

STATEMENT OF RECEIPTS AND EXPENDITURE FOR THE YEAR ENDING DECEMBER 31, 1907.

RECEIPTS

	£ s. d.	£ s. d.
To Balance		1,001 13 2
,, Amount on deposit		3,580 0 0
,, Annual subscriptions	1,464 17 6	
,, Donations at and in consequence of festival dinner, including collecting cards and special gifts	2,796 14 3	
,, Legacy, the late H. Aston, Esq.	19 0 0	
,, Grant from Exors. Edward Poole Estate	64 0 5	
,, Return of Income Tax	42 19 8	
,, Dividends	937 15 3	
,, Sale of waste paper	0 8 6	
		5,317 4 7
		£9,898 17 9

EXPENDITURE.

	£ s. d.	£ s. d.
By Pensions and gratuities, including Mr. Sherwood's and Mr. Sutton's gifts		4,033 14 9
,, Expenses annual meeting and election		0 10 1
,, Rent, fuel, lighting, cleaning, &c., &c., including salaries of Secretary and Clerk	566 18 5	
,, Printing and stationery, including Annual Reports, Lists of Subscribers, Polling Papers, and Appeals	137 1 11	
Less advertisements in Annual List	48 6 10	
	88 15 1	
,, Expenses festival dinner	203 17 5	
Less dinner charges	150 0 6	
	53 16 11	
,, Postages, including Annual List, Polling Papers, Appeals, &c.	40 13 4	
,, Advertisement, "Fry's Charities"	3 3 0	
,, Wreath	1 3 9	
,, Travelling Expenses	9 5 6	
,, Carriage, telegrams, insurance, repairs, and incidental expenses	8 5 7	
,, Bank charges	0 3 6	
		781 5 1
,, Investment in India Three per Cent. of grant from "Edward Poole Estate"		64 0 5
,, Placed on deposit		3,880 0 0
Balance with Treasurer	*1,123 18 10	
,, ,, Secretary	5 1 8	
		1,129 0 6
		£9,898 17 9

In accordance with the rules of the Gardeners' Royal Benevolent Institution, we certify that all our requirements as Auditors have been complied with, and we report to the subscribers that we have compared the books, together with the bankers' certificate of securities deposited with them, and that the balance-sheet is a true and correct account of same. We also wish to add that we find the books well kept.

T. SWIFT,
BERT J. MONRO,
J. WILLARD.

January 21, 1908. * Required to meet the quarterly payments on January 1, 1908.

VICTORIAN ERA FUND.—BALANCE SHEET, 1907.

RECEIPTS.

	£ s. d.	£ s. d.
To Balance, January, 1907		200 4 9
,, Donations, 1907	13 13 0	
,, Dividends	155 0 6	
,, Return of Income Tax	8 3 2	
	178 18 8	
	£379 3 5	

EXPENDITURE

	£ s. d.	£ s. d.
By Gratuities	193 12 0	
,, Balance, December 31, 1907	184 11 5	
		379 3 5
		£379 3 5

GOOD SAMARITAN FUND.—BALANCE SHEET, 1907.

	£ s. d.	£ s. d.
To Balance, January 1907		230 17 7
,, Donations	75 5 0	
,, Dividends	64 5 2	
,, Return of Income Tax	3 6 2	
	142 16 10	
	£373 17 5	

	£ s. d.	£ s. d.
By Gratuities	166 10 0	
,, Balance, December 31, 1907	207 7 5	
		373 17 5
		£373 17 5

Audited and found correct | T. SWIFT, BERT J. MONRO, J. WILLARD.

January 21, 1908

THE FRIENDLY SUPPER.

In the evening a company of about 60 persons assembled at the "Friendly Supper," the chairman for the evening being Mr. Martin H. F. Sutton. After the loyal toasts had been received with enthusiasm, the chairman proposed that of "Our Institution—its continued prosperity."

Mr. Sutton said that "the Gardeners' Royal Benevolent Institution is a national institution, and is worthy of the deepest affection on the part of all those who know anything of its objects and its methods. On the front page of our toast list we are reminded that it has now reached the sixty-ninth year of its existence, or, to put it in another way, that it is within two years of attaining to the age of "three score years and ten," which has been stated to be man's allotted span of life. True though that undoubtedly was in days gone by, that limit is constantly exceeded now, though whether greater intellectual powers are concomitant with greater longevity is probably an open question. However that may be, there is one great difference between the individual and the subject of this toast, in that, while the individual in his 69th year has usually seen his best days, this institution was never more vigorous and prosperous than at the present day. During those years it has distributed no less than £117,000 in relief, and only those who are in close touch with the work or are privileged to see some of the letters of gratitude received can form any true idea of how deeply that relief has been appreciated. Its work has brought comfort and happiness into the lives of hundreds who would otherwise in many cases have been entirely destitute, and I feel sure I am within the truth when I say that all those relieved have proved worthy of the assistance the institution was able to give them. In reviewing the past then, we should be deeply thankful for all that has been accomplished through the kind help of many friends, but we cannot on that account be content to rest on our oars. Comparatively large though the income of the institution is, it is by no means commensurate with the needs of the deserving cases that are constantly brought before the committee, and a far larger list of donors and subscribers is needed than at present exists. I honestly believe that no class of the community is more worthy of help in time of trouble than the gardener: I would go further, and venture to say that no skilled labour obtains a smaller wage than does that of the gardener. Many years of patient plodding work are necessary before a man is competent to take charge of a garden of any size, and even when such a position is secured it is difficult for the holder to save a sum that will in any way meet the needs of his declining years. The Gardeners' Royal Benevolent Institution is therefore a very real boon to him; it brings help just where it is required, and it is worthy of the unstinted support of all. In proposing this toast I have the great pleasure of coupling with it the name of one who has done as much if not more than any living man for this great work. I give you the toast of the Gardeners' Royal Benevolent Institution coupled with the name of Mr. Harry Veitch."

Mr. Harry J. Veitch, in responding, stated the amount of money that had been distributed during the year, and testified to the progress the institution was making. At the same time, the needs of the case were progressive also, and the committee were certainly anxious as to the future. Many liberal supporters of the institution had been removed by death during the year, and it was therefore essential that new subscribers should be obtained and the income of the institution increased. It was gratifying that even so many as 21 fresh pensioners had been elected that day, and they were very grateful to Mr. Arthur W. Sutton and Mr. George Munro

for making that number up to 23. He (Mr. Veitch) was also pleased to announce that Mr. Sherwood had signified his intention to give a sum of £25 for distribution amongst the most necessitous cases. Other toasts included "The Committee, Honorary Officers, and Country Friends," proposed by Mr. George Paul and responded to by Mr. W. A. Bilney and Mr. Peter C. M. Veitch. "Our Chairman," proposed by Mr. Edward Sherwood, and "The Secretary, Mr. G. J. Ingram," proposed by the chairman.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JANUARY 9.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Ward, Warburton, Shill, Sander sen., Cypher, H. Smith, P. Smith, Ball, Parker, Cowan, Keeling, and P. Weathers (hon. sec.).

There was a capital display of plants, Cypripediums being prominent in consequence of the competition for Messrs. Sander and Sons' Challenge Cup.

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. Mr. Herd), staged a good group of Cypripediums, to which a Silver Medal was awarded. Cypripedium × Earl of Tankerville was the most notable of the plants in this group, and was awarded a First-Class Certificate, a similar award being made to C. insigne var. Berryanum. C. × Hitchensiæ var. vivicans, C. insigne var. Thomas Mills, C. × nitens var. "Queen of Yellows," C. × Grovesianum, C. × aureum var. Eric, and C. × Francis received Awards of Merit.

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), had a magnificent collection of Cypripediums, which was well worthy of the Silver-Gilt Medal awarded to it. A large number of the plants contained in this group have previously been certificated by the Society, and it is, therefore, unnecessary to enumerate them here. Cypripedium × Venus, Rann Lea var., was awarded a First-Class Certificate, while C. insigne var. Monarch, and C. × Archimedes var. Excelsior received Awards of Merit.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), gained a First-Class Certificate for Cypripedium insigne var. A. J. Balfour, a fine form produced by hybridisation of two varieties of C. insigne. C. × Prince of Wales, from the same collection, received an Award of Merit.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), competing for Messrs. Sanders' Cup, gained a Silver Medal, and in the competition for Thompson's Cup was awarded a Silver-Gilt Medal. Cypripedium × Mrs. Moseley, likewise C. × Leeanum var. Avalanche, and C. × Buchanianum, Warburton's variety, received Awards of Merit.

Messrs. CHARLESWORTH & Co., Bradford, exhibited a new hybrid, viz., Odontioda × Craveniana, a choice plant produced by Cochlioda Nœtzliana × Odontoglossum maculatum. (Award of Merit.)

J. MACARTNEY, Esq., Bolton, gained a Bronze Medal for Cypripediums, and a Silver Medal for a miscellaneous collection of plants. Cypripedium × St. Vincent and C. insigne var. J. Macartney received Awards of Merit.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), was awarded a Silver Medal for Cypripediums; C. × Juno, Craven's var., and C. villosum var. Mrs. Cary Batten received First-Class Certificates.

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherby), sent an interesting group of plants, which was awarded a Silver-Gilt Medal. The group consisted principally of well-grown Odontoglossums, species and hybrids, and made a cheerful change from the large display of Cypripediums. Odontoglossum × Lambeauianum var. Jasper received an Award of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), gained an Award of Merit for Cypripedium Godefroyæ, Oakdene variety, which was shown with a few other good plants.

Mr. J. ROBSON, Altrincham, exhibited Cypripedium × Hera var. Madeline. R. FARRER, Esq., Carnforth (gr. Mr. Proudlock), staged a few good Cypripediums, the best of which was a fine specimen of C. × Leeanum var. Clinkaberryanum. J. CYPHER & SONS, Cheltenham, had a nice display of miscellaneous Orchids; some choice forms of Lælia anceps were noticeable in addition to a number of well-grown Cypripediums. (Silver Medal.) Messrs. KEELING & SONS, Westgate Hill, Yorks., were awarded a Bronze Medal for a miscellaneous group. Messrs. HEATH & SONS, Cheltenham, were awarded a Silver Medal for a group of Cypripediums. Mr. W. SHACKLETON, Bradford, received a Bronze Medal for a group, in which were a few plants of botanical interest. R. ASHWORTH, Esq., Newchurch, was awarded a Silver Medal for a nice group of Odontoglossums, with a few other plants added. Messrs. H. LOWE & Co. staged a small collection of Cypripediums. (Vote of Thanks.) Messrs. MOORE & Co., Rawdon, Leeds, were awarded a Bronze Medal for a group of miscellaneous Orchids.

ROYAL METEOROLOGICAL.

JANUARY 15.—The annual meeting was held on the above date at the Institution of Civil Engineers, Great George Street, Westminster, Dr. H. R. Mill, president, in the chair.

After the report had been adopted, the president presented the Symons Memorial Gold Medal to Monsieur Léon Teisserence de Bort, of Paris, which had been awarded to him by the council "in consideration of the distinguished work which he has done in connection with meteorological science, especially the study of the upper air."

The president then delivered an address. Dr. Mill is the Director of the British Rainfall Organisation, and he spoke of his own work, and dealt with the subject of "Map Studies of Rainfall." He said that the special problem which he had before him was to determine the normal annual rainfall of the British Isles in relation to the general configuration of the land, and to ascertain how the rainfall of individual years and months, and even of the constituent showers was related to the normal. The most useful method of working towards this end is by the preparation and study of maps of rainfall. He then described the methods which he adopted in preparing annual, monthly, and daily maps of the distribution of rainfall, and also referred to cyclonic and thunderstorm rains. The rainfall showed an unmistakable relation to configuration.

Dr. Mill, in conclusion, said: It happens that rainfall is not only the most difficult of all the meteorological distributions to map accurately, it is also the one which is of the greatest importance, for by rain the rivers are fed, and the rivers both water and drain the land. Every year makes clearer the vast national importance of accurate knowledge of the rainfall of a county, for the problem of the rivers is becoming acute. The growing populations of the great towns are tapping the upper waters and diverting the water from its natural channels, and at the same time they are polluting the lower courses with the waste of the factories and the streets. Toll is taken all along the banks of industrial streams for raising steam and carrying on the multitudinous processes of manufacture. There is sometimes anxiety as to whether the waterways can be kept sufficiently supplied to float the water-borne traffic or to fight the silting action of the tides, and there is growing alarm as to the possibility of fish traversing the depleted and polluted streams to reach their spawning beds. Of recent years the value of the water power which may be generated in the lonely and lofty places amongst the western heights of Great Britain, where the rainfall is large and unfailing, has been recognised, and chemical works for the production in electric furnaces of what a few years ago were rare substances are becoming familiar features in Wales and the Highlands. In Ireland, too, the rainfall is an unrecognised source of wealth which as yet has not been drawn upon to any appreciable extent. The increasing strenuousness of the struggle for the possession of large water supplies is producing in England, and especially in Wales, a great amount of local jealousy and strife, for the boundaries of parishes and counties coincide but rarely with water-partings, and the argument has been brought forward again and again that the rainfall of one county should not be diverted for the use of the inhabitants of another. The feeling is intensified when the boundary to be crossed is that of a historical division of national importance like the boundary between England and Wales; but I think that the map-study of rainfall can do something to suggest the lines on which such disputes should be settled. Although the exceptional deluges of a thunderstorm or a great depression fall with equal and impartial heaviness on the hills of the west or the flat plains of the east, the common everyday rains are precipitated on the high lands and in the mountain valleys which cross the track of the prevailing wind in much greater abundance than on level and low stretches of country. Most of the rain is borne to our islands from the Atlantic, and when it comes torrentially, it is of the air, and no boundary checks it; the largest annual falls come down on and near the watersheds, because there the land produces its maximum influence as a rain compeller.

From the high ground the rivers seek the plains, carrying off the excess of rainfall into the less liberally-watered districts. The Dee, the Severn, the Wye, and the Usk restore to England part of the rains which the Welsh mountains have abstracted as the air passed over them. The high rainfall of the whole Pennine districts sometimes, by circuitous routes across the comparatively dry plains of the east, swells the volume of fresh water that pours into the Humber. The Thames itself receives the comparatively high rains of the Cotswolds, the Chilterns, and the Downs, and forwards the water slowly through less and less rainy districts, until it reaches the sea in the driest part of England. Thus, I think, at least as good an argument can be drawn from this consideration of physical geography in favour of supplying the great towns of the east from the large precipitation of the west, as can be drawn in the opposite sense from the artificial divisions of political geography. It seems to me that care for the water supply of the country, coming as it does from the air that knows no bounds across the land, is by no means a parochial but, in the fullest sense, a national matter, and should be dealt with in the interests of the nation as a whole; the units of sub-division when such are required being the natural units of river basins.

BRITISH GARDENERS' ASSOCIATION.

AT the last meeting of the Executive Council, Mr. C. Foster in the chair, ten new members were elected, bringing the total up to 1,138. A discussion took place as to converting the quarterly *Journal* of the Association into a monthly publication. It was eventually decided in favour of a "monthly" after the next quarterly issue, which would complete the year, and subject to full details as to cost to be submitted at the next meeting. A resolution in favour of legislation in Parliament for the establishment of old age pensions was carried, and Messrs. Lewis and Little were appointed a sub-committee to watch the procedure and report any progress made. A sub-committee was also appointed to prepare a practicable scheme for the examination of gardeners, the details to be ready by the annual meeting.

ENQUIRIES AND REPLIES.

ASPIDISTRA WITH SPOTTED LEAVES.—The Aspidistra *T. C.* enquired about on p. 64 is an old and fairly well-known kind, its name being Aspidistra lurida punctata. It cannot be regarded as rare, yet at the same time it is uncommon, the reason in all probability being that its style of variegation renders it less effective for decorative purposes than either the ordinary green or variegated-leaved forms. In a catalogue published in 1876 by Messrs. E. G. Henderson & Son, of St. John's Wood, this particular variety is quoted at 3s. 6d. each. H.

MICROLOMA LINEARE (CORAL CLIMBER OF SOUTH AFRICA).—I have just received from a well-known importer of South African plants three good healthy plants of the above-named beautiful and gracefully growing plant received by him from Port Elizabeth, where it is found growing wild at the base of low, scrubby bushes, round the branches of which it twines its slender, wire-like stems, as shown by Harvey on the 92nd plate of the first volume of his

Thesaurus Capensis. The flowers are produced in bunches of from five to seven, and are of a tubular form and a bright crimson carmine in colour; hence its native name of Coral Climber. It is also known under the synonym of Ceropegia tenuifolia, as described by Thunberg. A lady correspondent who has seen it growing wild in its native country writes to me about it in the following laudatory terms: "Yes, I known Microloma lineare well, and it is very pretty, with clusters of small crimson-scarlet flowers of a waxy texture which shine like jewels. The seed-pods also are interesting, being full of the silk usual amongst Asclepiads. There is another variety, M. sagittatum, but it is not so ornamental as M. lineare." I shall be glad to hear if this plant has yet blossomed in the United Kingdom, and whether any readers of the *Gardeners' Chronicle* have seen it in cultivation. It is by no means new, having been introduced about 1823. *W. E. Gumbleton.*

BISULPHIDE OF CARBON FOR VINE BORDER.—Will any reader who has used bisulphide of carbon for destroying insects in a vine border kindly state what is a safe quantity to use to the cubic yard, and if this insecticide is non-injurious to the roots of the vine if applied when they are in a dormant condition? *W. H. D.*

WANTED A NUT-MILL.—The Nut-mill enquired about by Mr Bartholomew on p 48 of the last issue can be obtained at Mr. T J Pilson's, dried fruit merchant, 88, Gray's Inn Road, near the Holborn Town Hall, and the price is, I think, 2s 6d each *Correspondent*

——— The Nut-mills can be obtained from the Eustace Miles Restaurant Co., Ltd., Chandos Street, Charing Cross, W.C. Prices 1s. 6d and 3s 6d., postage extra A small book of recipes for the making of dishes of Nuts, &c., will be supplied gratis, if a stamped addressed envelope is sent I strongly recommend Mr. A. C. Bartholomew to procure both *T. W Cook, Talaere Gardens, Prestatyn*

Answers to Correspondents

AN ASPARAGUS PLUMOSUS PLANT IN BAD CONDITION: *H. Churchman.* The plant is literally starved. You should shake it out of the tub or pot, cut away all dead and dying roots and top growths, dividing the mass into three or four portions and potting each separately, letting the new soil—chiefly good loam—trickle down among the roots, making it firm as you fill up. Give a good application of water and place the plant in a moderately warm house for three months.

BACTERIA: *Curious and K. B., Malvern.* The benefit to be expected from applying the bacteria for leguminous crops depends on the condition of the soil. It is throwing money away to use it on soils that are already rich. These already are fully inoculated. The poorer the soil the more likely is benefit to accrue. But the matter is still in the experimental stage. Why not try a small plot, and compare it with the produce in untreated parts of your garden?

BLEEDING OF MUSCAT VINE: *A. K.* You cannot stop the flow of sap by any artificial means, but it will cease of itself some time after leaf-growth begins. If very excessive, it may cause a weakening of the vine, but nothing serious is likely to occur.

CHRYSANTHEMUMS: *Jno. F* You have certainly given the plants plenty of manure Your trouble probably arises from the fact that the plants yet to bloom have had to complete their growth late in autumn, and the shoots are insufficiently matured to produce good flowers If this is the case all the manure in the world will not put matters right, but an excessive use of them would have an effect contrary to that which you wish. It is not uncommon for Chrysanthemums which flower at the end of January or later to yield very small blooms such as you have sent us

FORCED ROMAN HYACINTHS: *H. Churchman* Apply water till the yellowing of the leaves shows that the year's work of the bulb is done, then afford less and less by degrees, and afterwards dry the bulbs off. Another way is to plant the pottuls of bulbs in the shrubbery border or in the turf of the lawn and let them die off naturally, marking the spot with a stout peg. They will afford a few flowers in the spring each year, but Roman Hyacinths are only successful in favoured districts.

FRONDS: *Asplenium.* The specimen is infested with common "Scale" insects. Cut off the fronds and thus cause the plants to make a fresh start.

GARDENER'S NOTICE: *Devonshire, Interested.* It is customary for head gardeners living on the premises to receive one month's notice terminating the engagement.—*L. B. W.* The matter would depend upon the construction to be placed on the first intimation that was given you, whether it was a notice or not.—*F. J. M.* We do not know that either of you could successfully claim more than one week's notice. If the cases were taken to the courts they would probably be decided in accordance with what could be proved to be the custom.

GLORIOSA SUPERBA: *E. H., Liverpool.* The tubers that are softening do not appear to be attacked by bacteria, and we fail to detect the cause of the failure. These soft parts are soon covered with the common blue mould, which has always been regarded as a saprophyte. It is possible that sometimes it may become parasitic. We have inoculated sound portions of the tubers with the material of the soft parts, but only the common blue mould has resulted. Destroy all the diseased tubers to prevent its spreading to healthy plants.

LATE CHRYSANTHEMUMS: *J. E. R. N.* If you read the remarks published in the "Market" columns of this journal during the past two months, you will see the names of the best late-flowering Chrysanthemums that have been sent to Covent Garden Market. See also reply in "Answers to Correspondents" in the issue for December 14, p. 424.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *J. Coombs.* The specimens are insufficiently good for determination.—*Subscriber* The specimen is insufficient; probably a Juniper.

PLANTS: *Ichabod* Epidendrum ciliare.—*Veritas* 1, Plemothallis obovata; 2, Oncidium sphacelatum; 3, Oncidium altissimum. 4, Pteris umbrosa.—*O. H* Reineckia carnea. *W. H. C.* 1, Begonia nitida alba; 2, Begonia subpeltata variety; 1, Codiæum (Croton) Johannis; 2, Codiæum variegatum.—*No Name.* You have omitted to send name and address, and have addressed the flower to the Publisher when you should have addressed it to the Editor The flower is Cypripedium Harrisianum, the light form often called C. Dauthieri.—*F. A.* Angræcum falcatum, a pretty little Japanese Orchid, easily grown in a cool house.

NEW ZEALAND FLAX SEEDS: *Acacia.* If the seeds have germinative power, they should sprout in a heat of 65°, such as you have afforded. Soaking them in warm water for 24 hours before sowing might be useful, and a bottom heat of 75° would likewise hasten their germination. Sow in rich, sandy loam ½ inch deep.

PALM LEAVES WITHERED: *O. H.* There is no doubt that the fumes of the gas in the dwelling-house causes the damage to the plants. It is possible also that the plants have suffered drought at the roots, and this condition would help to increase the mischief.

PEARS FOR NORTH AND EAST WALLS: *G. R.* In Kent and such favoured counties, the great majority of both early and late varieties of Pears succeed either against north or east walls. The fruit is not quite so large in these positions, but the flavour is equal to those grown on west or south walls, especially if left to hang till very late in the autumn. The following varieties are amongst the best for your purpose:—Pitmaston Duchess, Doyenné du Comice, Marie Louise, Beurré d'Amanlis, Beurre Dubuisson, Beurre Hardy, Clapp's Favourite, Conference, Marguerite Marillat, Triomphe de Vienne, Winter Nelis, and Josephine de Malines. Situated as you are in South Devon, you ought to have no difficulty in growing these varieties well, unless the position is one greatly exposed to violent winds. We have found from long experience that fruits upon north and east walls require frequent waterings, owing to the fact that most of the rainfall comes from the south or west during the summer months. This matter is of very great importance.

PELARGONIUM LEAVES: *A. A.* Puncture by aphis in the young stage of the leaf often develops in the manner shown on the specimens received. Remove all the damaged leaves and the plants will probably grow perfectly natural when there is more sunlight.

SITUATION IN AN ERFURT NURSERY: *C. H. H.* Living is not so cheap in Germany as was formerly the case, and we should doubt the statement that board and lodging can be obtained for 7s. per week, except in very low quarters; 10s. is nearer the mark, and you must be content to live like the native. Tea is almost unknown and very dear; pure coffee is dear. The beefsteak or chop of Old England are rarities, but there are compensations. Where other young persons exist you can also live: it is merely a question of getting used to the conditions. A wage of 14 mk. per week will keep you, provided you have no expensive tastes. You should find a residence of a few years in the centre of the seed raising and plant trade of Germany of great use to you as a gardener.

SNOWDROPS: *H. W.* Your bulbs are attacked by the Snowdrop white mould (Botrytis galanthina), see *Gardeners' Chronicle*, May 2, 1889, p. 275, which mould is the prelude and conidia of Sclerotinia Fuckeliana—at least such is supposed to be the case. There is no remedy but to destroy the diseased bulbs so as to prevent the disease from spreading.

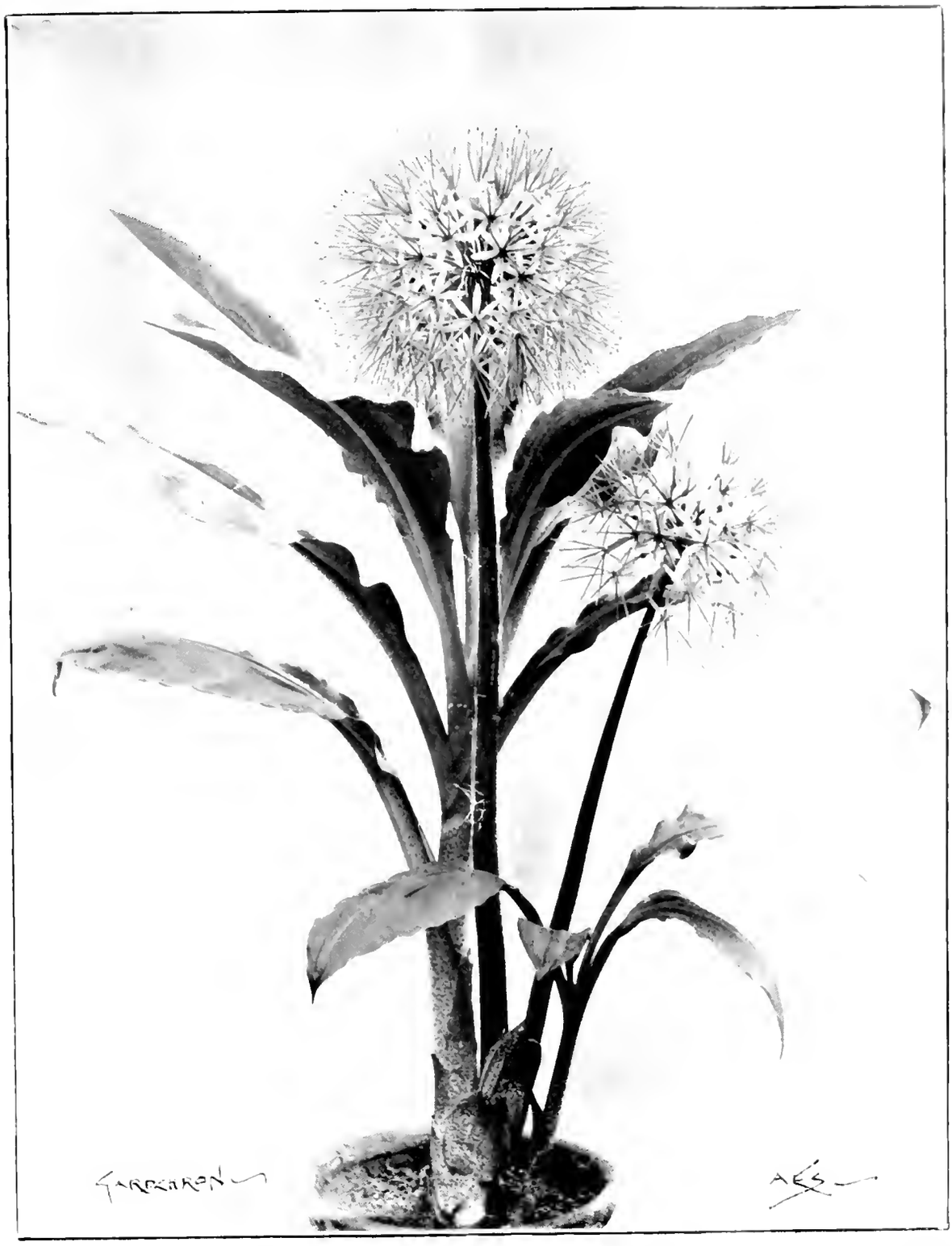
SPIRÆA PLANTS: *A. H.* We think the inflorescences have suffered from strong manure water having been spilled over them. You do not state for what purpose the stamps were enclosed.

TRANSPLANTING A ROSE FROM ONE HOUSE TO ANOTHER: *H. Churchman.* Carry out the operation at any time onwards till the beginning of the month of March—not later, or the plant will have begun to grow at the top. Prepare a large hole, and fill this with fresh rich soil, but do not bring the manure into direct touch with the roots. Make the soil firm below and above the roots.

WEYMOUTH PINE "COCCUS" AND INSECT ON BEECH: *Subscriber.* Can you send specimens of each pest? There are several distinct species of insects which attack Beech trees and Conifers.

YEW TWIGS: *A. S. S.* The swollen buds on your Yew trees are due to the attack of a gall-gnat, Cecedomyia Taxi. If you pick off the leaves you will find a very small orange-coloured grub in the centre This is responsible for the malformation, which is very common in Yew trees

COMMUNICATIONS RECEIVED. S. F. N. J. B. S. H. H. Negley, Pittsburg, U.S.A.—Prof. S., Arnold Arboretum, Mass.—T. S. A. H. A. R. K. J. C. T.—J. Douglas—W. Watson—Chas. Eynaert A. B.—F. B.—Lily Faulore—Reading Gardeners' Association—A. H.—F. G. B. E. M. A. G. S.—Rev. D. R. W. A. Berger, Italy—A. W. W.—W. P. R.—Nurseryman J. Jordy C. K.—F. J.—W. B. L.—C. H. P. Chloris C. H. M.—I. C.—H. S.—Hon. Frances Wolseley (we shall be pleased to receive the book)—H. E. S., New Zealand—J. M.—P. A.—C. P. R.—W. W.



Photograph by C. P. Kent.

HEMANTHUS KATHERINÆ; FLOWERS DEEP RED.

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THE

Gardeners' Chronicle

No. 1,102.—SATURDAY, February 8, 1908.

CONTENTS.

ILLUSTRATIONS.

A SUSSEX WASTE.

WHEN Scotch planters speak of "waste lands," such as it has been often proposed to plant, they commonly have in mind bleak mountain slopes or poor land worth a merely nominal rent, or morasses of still less value, and when they first see the Sussex and Surrey wastes they get a surprise. In the first case, the land is poor, and has always been poor or "waste"; in the second, it is good land that has been allowed to become waste.

An old writer has declared that, when it was desired to reduce good land to the lowest value, the best plan was to make "common" land of it, and if ever there was a striking example it is to be seen in the twenty thousand acres, more or less, now constituting Ashdown Forest in Sussex, and belonging to anybody. According to local tradition, this common was granted or created in the time of one of the Charles's, but under what conditions I have not learned. Some of the natives are rather proud of their derelict forest, and a ride over the ground in a motorcar is now considered quite a treat for a stranger. Anyone longing for the "simple life" might have all his wishes gratified in some of the desolate spots among the whins. I once walked for miles to get a newspaper and failed. In one village of considerable size there was no newsvendor of any sort. The little post office had none to lend or sell, and the ramshackle little public-house of bricks and timber had none either, and the landlord said he did not think one could be got. St. Kilda is better off.

Sussex, according to agricultural returns, is credited with about 18,000 acres of mountain and heath lands, but Ashdown waste appears to be left out, for, although it is neither mountain nor heath, it is certainly "waste" in the sense in which foresters understand the term. Nevertheless, it is mostly first-class agricultural land, or land of fair quality, in a sunny climate, that under cultivation produces the finest crops of nearly all kinds. During the past and other years, we have seen, on cultivated patches of the forest soil, Wheat and Oats over 6 feet in height with well-filled ears.

Sussex is also credited with over 124,000 acres of woods, by far the greater portion of which is, however, coppice worth nothing or next to nothing, and in consequence it is perhaps one of the poorest timber counties in England. I make this estimate from the large proportion of coppice I have seen in many parts of Sussex, and not from the Ordnance map records, which are almost useless for such purposes.

I have often traversed tracts of the "forest" and been struck with the fact that here, within an hour from Victoria Station, or an hour and a half by motorcar, you are plunged into one of the wildest and most barren natural tracts in Britain, much of which is likely to be converted into a suburb of London before long. Crowborough is at present one of the chief building centres there, and already roads, streets, and sewers on an extensive scale are being laid out as fast as contractors can work, and villadom has already begun. Every day, but more especially at week-ends, the express trains from Victoria are crowded with passengers from London to Crowborough.

What strikes one most is the utter waste and neglect of what is called the "forest" or "common land." Nothing is done to improve it, and local proprietors dare not encroach to mend it. There are local laws, I have been told, which confer ownership on any lord of the manor who will plant the land with timber trees and keep the timber crop up for a certain number of years, but attempts to do this have been frustrated, in a dog-in-the-manger spirit, by the commoners who, I am assured, destroy the plantations as fast as they are formed. The "forest" is mostly covered with furze, bracken, briars, thistles, and weeds, except here and there where a patch of grass exists and where an odd cottager's cow or goats, or a few sheep, find scanty pasturage.

The soil, as has been stated, is either good or of fair quality and grows excellent crops and still better timber, and as a planting area I should think it could hardly be surpassed. The forest is a great resort of tourists and gipsies. The latter were an absolute nuisance not many years ago, and had to be dealt with by the authorities, and there are numbers in and about the forest yet of the real Romany type. In some instances they own the bit of land where their encampment is in order to escape police interference. From the road over the hill from Crowborough to Uckfield, a distance of 12 miles or thereabouts, one gets extensive views of furze, heather, and bracken, with here and there a tree—nothing more. In these days, when so much is said and written about the land for the people, one cannot help thinking that if the Sussex wastes are a sample, the less the people have to do with the land the better, for such a scene of utter neglect it would be difficult to imagine. What the land is like, and what might be accomplished by cultivation or planting, anyone can see by the existing plantations and crops, where there are any. There is one large private estate in the forest, not far from Crowborough, reserved to the owners by some far-back privilege; extensive tracts of this estate have been planted in more recent times with Larch, Spruce, and Douglas Fir, &c., and now form a fine feature in the landscape and show what the land and climate could do in the production of timber. Indeed, Sussex was once the finest timber county in England, and might be again. For their age, I have never seen finer Larch, Douglas Fir, Scotch Fir, and Oak, than in Sussex, but the Douglas will soon overtop all other species in height. Young trees, planted about 12 or 15 years ago on certain estates, are now beginning to overtop other kinds of trees five or six times their age. The Scotch Fir is another good subject. On the roadside between Crowborough and Uckfield there is a strip of Scotch Fir in which the trees, for height, growth, shape, and number on the ground, excel almost anything I have seen at home or abroad, but the strip is dense, the trees standing only a few feet apart.

Another evidence of the productiveness of the soil all over the forest is the condition of trees and garden crops round dwellings. In parts of the forest villas are being dotted down here and there among the furze like shanties in a backwoods settlement, and in such small clearings all kinds of crops seem to do well. The heavy Sussex clay is known to be a fertile soil, its only fault being that it is difficult to work in all weathers.

Less than a hundred years ago, I believe, some of the fairest and most fertile portions of the Lothians in Scotland were much in the same state as the Sussex commons are now, but there were no restrictions against the land being brought under high cultivation, and that has been done almost wholly by long-lease tenants, who reclaimed the land and walled the fields—at their own expense—with the stones ploughed up out of the ground.

"Common lands" may serve some purpose, but when they are out of all proportion to the population and its wants, and derelict into the bargain, they are not called for. Perhaps some of the readers of the *Gardeners' Chronicle* can tell more about Sussex than I can. It is a lovely country to look at from the outside, but primitive and far behind in many ways—far behind in its forestry and not much better in its agriculture. *J. Simpson.*

BEGONIA GLOIRE DE LORRAINE AT BRAMHAM PARK.

BEING in the neighbourhood of Bramham Park recently I took the opportunity of calling upon Mr. Cameron, the gardener. My main object was to see the batch of plants of Begonia Gloire de Lorraine, which I had heard were very good. The house devoted to them is a span-roofed structure, about 24 feet in length by 5 feet in width, with the usual centre and side stages. It was a wintry day, and the familiar sound of the ice-breakers at work a short distance away came through the air. Taking the Begonias as a whole, they certainly were the best batch of plants I have seen. They had been grown from small cuttings and leaves obtained from friends last spring. They were rooted in a small propagating case on one of the side stages in the adjoining stove, care being exercised in keeping the atmosphere as healthy and sweet as was possible. Little difference could be seen betwixt those raised from leaves or cuttings. As soon as they had formed roots they were potted into thumb pots in a light compost of one part well-rotted loam from the limestone formation, one part well-rotted Beech leaves, and one part fine peat with a sprinkling of fine charcoal, the whole being well mixed together. A similar compost was used in the later pottings, except that a rather larger proportion of loam was employed. During the summer the plants were cultivated on the side stages or on suspended shelves in the same house, the central bed in which is filled with a fine, healthy lot of Palms and Crotons in variety. As soon as the flower-buds appeared in the autumn a slight dressing of an artificial manure was occasionally sprinkled on the surface of the soil, which in no case exceeded 8 inches in diameter. Some of the largest plants measured over 3 feet 6 inches across. Suspended from the roof there were about 20 baskets, also filled with healthy plants, which presented masses of flowers. In an adjoining compartment I noticed a very healthy batch of Euphorbia jacquiniæflora. All lovers of old-time gardens will be pleased to hear that the present owners of Bramham, Mr. and the Hon. Mrs. Lane Fox, are gradually and very tastefully developing and adding to the well-known beauty of the grounds, which in their main features are probably unique in this country. They were originally laid out in the reign of Queen Anne. *Yorkshire Gardener.*

NEW OR NOTEWORTHY PLANTS.

*MAHONIA ARGUTA, HUTCHINSON.

SP. NOV.

IN the summer of 1907 Mr. F. W. Moore, the Curator of the Royal Botanic Gardens, Glasnevin, sent to Kew flowering specimens of a Mahonia which had been in cultivation at Glasnevin for over 28 years, but had not flowered previously, and was still undetermined. It now proves to be an undescribed species, closely allied to Mahonia paniculata, Oerst. The origin of the plant is unknown, but its nearest allies are natives of Central America, where they occur at altitudes of from 8,000 to 10,000 feet on the slopes of volcanic mountains in Guatemala and Costa Rica.

The species here described may be easily distinguished from M. paniculata by the narrower, entire, or one to three-toothed leaflets, the prominent reticulation, and the smaller petals. The leaves have five pairs of leaflets, and are shorter than the inflorescence; petioles sulcate, 7 to 8 inches long; leaflets lanceolate or oblong-lanceolate, almost sessile, or very shortly stalked, leathery, 2 to 3½ inches long, terminating in a spinous point, entire, or with one to three spiny teeth, shining on both sides; veins and veinlets conspicuous. Panicles crowded at the apex of the branches, almost erect, lax, 12 to 16 inches long; branches elongated, with three or four lemon-yellow flowers to each, compressed and rigid, up to 1½ inches long. Bracts of the branches and pedicels ovate-lanceolate, one or two lines long, acute. Sepals nine; three external small, elliptic, 1½ lines long, three-nerved; three intermediate and the three interior oblong-elliptic, 3 lines long, 1½ lines broad. Petals six, oblong, bifid at the apex, 2 lines long, 1½ lines broad. Stamens six; filaments 1 line long. Ovary oblong, 1 line long. Berry globose, about 3 lines in diameter.

Dr. F. Fedde, in an excellent monograph of Mahonia†, which he has restored to generic rank, makes the following comparisons between the two genera:—In Berberis, in its restricted sense, the leaves are always simple, and may be either evergreen or deciduous; whereas, in Mahonia they are always imparipinnate and evergreen. The simple leaf of Berberis, however, is articulated at the base in the same way as the terminal leaflet of Mahonia, so that it may be looked upon as a reduced imparipinnate leaf.

The inflorescence of Berberis is situated at the apex of a short-shoot, which arises in the axil of a leaf-thorn‡; whereas that of Mahonia arises from the axil of a scale of the winter bud which terminates a long shoot.

In Berberis the flower usually consists of six sepals in two whorls of three, six petals in two whorls, six stamens in two whorls, and a single pistil.

In B. Wallichiana, D.C., B. empetrifolia, Link, B. aristata, D.C., and B. quindiuensis, A.B.K., the number of calyx whorls varies from three to five.

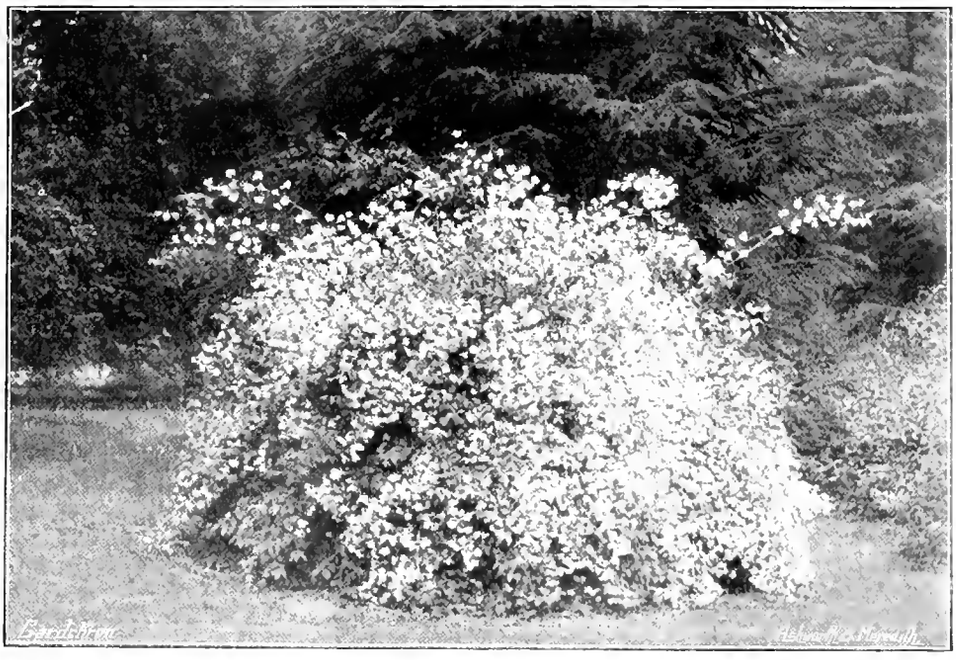
In Mahonia the flower always consists of nine sepals in three whorls of three, and the petals, stamens, and pistil, as in Berberis.

In regard to their leaves and inflorescence, therefore, Berberis and Mahonia represent two different lines of development, and might, accordingly, be regarded as generically distinct.

Nuttall, when establishing the genus Mahonia§, stated that the petals did not possess the nectariferous glands which were constant in Berberis; but Fedde points out that the glands are present in all the species of Mahonia, although sometimes inconspicuous, and hence easily overlooked.

Again, the tooth-like appendages on the filaments, given as a generic character of Mahonia by Nuttall, are wanting in some of the species of that genus, and they are present in the section Odontostemones of Berberis.

It is evident from the above comparison that there is a fairly good case for segregation, although the only constant differences are the simple and compound leaves on the one hand, and, on the other, the relative positions of the inflorescences on the shoots. *J. Hutchinson, Kew.*



(Photograph by C. P. Raffill.

FIG. 36.—PHILADELPHUS GRANDIFLORUS LAXUS.

PHILADELPHUS GRANDIFLORUS VAR. LAXUS.

THE Philadelphus or Mock Oranges as a class are so well known in gardens that it seems almost impossible to suggest anything which is not already well known in regard to them. The object of the present note is, therefore, merely to call attention to a fine form of P. grandiflorus, known under the above name, which possesses characters which render it worthy of the notice of lovers of hardy shrubs. The flowers, which are 2 inches across, are more loosely disposed and are more numerous on the inflorescence, thus displaying their individual beauty much better than those of the type, while they are produced a week to ten days later. The plant is the largest of the genus, and will quickly form a specimen 10 to 12 feet high and as much across. Incidentally the illustration serves to show what a fine effect may be produced by this plant when grown as a single specimen on a lawn, but the flowers being pure white, require the setting of a background of trees in order to be seen to the best advantage. *C. P. Raffill.*

* Mahonia arguta, Hutchinson, sp. nov., affinis M. paniculatæ, Oerst. a qua foliolis angustioribus integris vel dentibus spinosis 1-3 munitis, reticulatione utrinque prominente, petalis minoribus recedit. Folia 5-juga, quam inflorescentia breviora, petiolis sulcatis 17-20 cm. longis; foliola lanceolata vel oblongo-lanceolata, subsessilia vel brevissime petiolulata, coriacea, 5-9 cm. longa, 1-2 cm. lata, spinoso-terminata, integra vel 1-3 spinoso-dentata, utrinque nitida, venis et venulis utrinque conspicuis. Paniculæ ad apicem ramorum congestæ, suberectæ, laxæ, 30-40 cm. longæ, ramulis elongatis 3-4-floris compressis rigidis usque ad 4 cm. longis. Bracteæ ramorum et pedicellorum ovato-lanceolatæ, 2-4 mm. longæ, acutæ. Sepala 3 externa parva, elliptica, 3 mm. longa, 1½ lata; 3 intermedia et 3 interna oblongo-elliptica, 6 mm. longa, 3 mm. lata. Petala 6, oblonga, apice bilobata, 4 mm. longa, 3 mm. lata. Stamina 6, filamentis 2 mm., antheris 1-5 mm. longis. Ovarium oblongum, 2 mm. longum. Bacca globosa, 6 mm. diametro.

† "Engl. Bot. Jahrb.," vol. xxxi. (1902), p. 36.

‡ Fedde states on the authority of Usteri that these short-shoots and leaf-thorns are absent in B. insignis and B. acuminata. An examination of the Kew material proves this to be incorrect; they are present in both, but sometimes wanting in B. insignis.

§ Nuttall, "Gen. N. Amer." (1818), p. 211.

NOTICES OF BOOKS.

* "THE BOOK OF GARDEN PESTS."

THIS, the latest of the books dealing with plant diseases and pests, is especially designed for the cultivator, and we think it admirably fulfils the purpose for which it was written. All people whose business lies with plants ought to be able to recognise and deal with the more commonly occurring pathological troubles that are the inevitable result of intensive cultivation. Every modern gardener, who is worth his salt, aspires to know something more than the mere manual work connected with his profession, and in these days the spread of education has made it a relatively easy matter for anyone who desires knowledge to be put in the way of getting it. Certainly a general acquaintance with the symptoms and immediate causes of disease should form part of the intellectual capital of every cultivator who means to be more than an unskilled labourer, and it is to the intelligent gardener that Mr. Pearson's book will appeal.

It is clearly written, without detailed discussion or technicalities which would be out of place in a small volume, and the subject-matter is well arranged. In a work of this kind, of course, a selection of the more commonly occurring diseases and pests had to be made, and we can congratulate the author on the way in which he has exercised his discretion in this matter. What the gardener wants when he finds a disease is the remedy; he is naturally more interested in the cure than the more purely scientific questions raised in considering the etiology of the evil. He will find a considerable list of remedies given in the early chapters, and their mode of application is fully described. We have noted one or two misprints in the proportions given for making up certain of these; on p. 11, in preparing Lysol, the proportion of this substance to water is given as 508 pints to 22 gallons; probably 5 to 8 pints was what was really intended, as this represents about the correct amount. In the directions for making up Bordeaux mixture, given on p. 24, the requisite amount of copper sulphate is correctly given as 6 lbs., but a few lines further down 84 lbs. is mentioned. But these typographical errors are so apparent that they should hardly prove misleading.

The general subject-matter of the book is arranged according to the classes of plants; thus there is a chapter on "Pests common to many plants," and this is followed by others in which the maladies of tuberous and bulbous plants, miscellaneous plants, fruit trees, vegetables, and so forth, are considered.

The book is well illustrated, and it can be warmly recommended as one which every gardener ought to possess. *J. B. F.*

"THE SWEET PEA ANNUAL, 1908.

THIS is the official organ of the National Sweet Pea Society, and it is a better issue even than that of last year. New features include a catalogue of all known Sweet Peas, a list of inferior varieties, and a series of questions with their answers, as given by experts throughout the country. Some of the answers are not only of slight value, but are not altogether trustworthy. The audits are fully given, but these must always fail to give satisfaction to the seeker after the best things, because in the nature of things the very best of the newer varieties cannot possibly be given justice. That, of course, is a drawback which one expects, but it surely would not be difficult to get a dozen or a score of experts who have opportunities of examining new varieties previous to their being offered to the public to vote on these and to give the result in the Annual. Mr. Hugh Aldersey provides a short and chatty but delightful notice of Sweet Pea enthusiasts. But if one may venture to offer a correction, both Mr. Burpee and he are at fault concerning the dwarf Alyssum maritimum, which originally came from America. Mr. Dicks contributes a short historical note, and Mr. Atlee Burpee, writing from Philadelphia, records his impressions, which are altogether favourable, of what he saw last summer in England and Ireland. Mr. Leak recommends "sheep" netting as supports, and Major Nedwell tells of how he grows Sweet Peas in New South Wales. Mr. Mackereth, of Ulverston, in forcible language recommends the popular vote as the best means of deciding the position of novelties. A warning to growers to beware of "streak" is given by Mr. W. P. Wright, and then Mr. Bathurst, Chudleigh, tells how he produces Gold Medal blooms. There follows a short exposition by Mr. George Gordon on "Principles," and the history of the Reading trials at which 373 "varieties" were subjected to a thorough testing last year, is supplied by Mr. Charles Foster; a short note from Mr. Fox, Wellington, New Zealand, describes Sweet Peas in the Antipodes. The Annual is edited by Mr. Chas. H. Curtis and Mr. Horace J. Wright, and is freely illustrated with portraits and pictures of Sweet Peas, &c. *B.*

* By R. Hooper Pearson. London: John Lane, 1908. p.p. 214. Price, 2s. 6d.

TREES AND SHRUBS.

VARIETIES OF MAGNOLIA GRANDIFLORA.

DR. BEDELIAN remarked in *Gardeners' Chronicle* for December 7 last that all the specimens of M. grandiflora are not of the same habit, and he stated that he had discovered diversities in the direction of the leaves, the petals, and the colour of the veins. Of one variety which Dr. Bedelian describes, he failed to find particulars in several botanical works he consulted. I append the following translation from Professor Mouillefert's particulars of about a dozen varieties described in his *Traité des Arbres and Arbrisseaux*. Dr. Bedelian will perhaps find his specimen to belong to one of these:—

"The varieties in cultivation at present are relatively numerous, amongst which are—*M. angustifolia*, narrow leaved; *crispa*, leaves curled and waved; *gallissomensis*, this is the hardiest variety, and that which makes the finest specimen trees; *macrantha*, large flowers, very fine; *majardiensis*, very beautiful flowers; *nannetensis*, double, and very florriferous; *oxoniensis*, *Lodd. Bot. Cat.*, double flowers; *rotundifolia*, round leaves; *salicifolia*, willow leaved (not the species M. salicifolia); *stricta*, branches upright and close; *ferruginosa*, a rusty-leaved variety, little different from the type, except that the tomentum on the under side of the leaves and shoots has the rustiness more abundant." *J. Murison.*

CYTISUS ARDOINII.

ONE of the most exquisite of all the dwarf Cytisuses or Brooms is that called C. Ardoini, a native of the Maritime Alps, which has been in cultivation for about 40 years, and is viewed with ever-increasing favour by those who are acquainted with this beautiful little flower. As a wall-garden plant it is quite at home, and in the rock-garden it is equally beautiful when properly placed, but it must have a dryish and sunny situation if its beauty is to be fully displayed, and in such its growth is more compact, its flowers are more freely borne, and they seem of better colour than elsewhere. Nowhere do I recollect having seen it so fine as in a sunny wall-garden supporting a bank in the garden of Mr. Hope, of Belmont, near Edinburgh, where a plant was thriving and flowering in the most delightful way a summer or two ago. It revived afresh the admiration I have long felt for Ardoine's Broom, with its decumbent stems, hairy leaves, and bright yellow flowers. Its height is only some 4 or 5 inches, and a good plant, such as that at Belmont, is not easily forgotten. *S. Arnott.*

THE ROSARY.

CULTURAL NOTES.

THE east wind has persisted from the last week in December almost without intermission, and the weather in general has increased in severity. The soil is saturated with the heavy rainfall in most parts of the country, and the gardener is wise who takes the precaution to store plenty of litter, Fern fronds, tree leaves, &c., for use in covering his more tender Roses in the present month.

The mild weather in January that prevailed in some parts of this country caused premature growth of Roses planted in sheltered positions, the buds being now almost ready to burst. All autumn and early winter-planted Roses should have their shoots fastened securely against the wind, and the soil made firm about the roots, should this have been rendered loose by frost. I may here make remarks upon the advantages and disadvantages of budded plants on Briar, Manetti stocks and own-root Roses. Many of the less robust varieties thrive better when worked upon thrifty stocks. The Tea-scented on the de la Grifferie stock, and the Hybrid Perpetual on the Briar and Manetti Own-root Roses, when the varieties are of vigorous growth, are excellent; and another point in their favour is that there is an absence of suckers from the wilding stock. The only remedy against the production of root suckers on worked stocks is to carefully disbud the young plants when they are set out, and again when planted out in lines for budding purposes. Gardeners sometimes unknowingly cultivate these suckers, and then express astonishment that they do not flower like the rest of the plant. When the early-forced Roses begin to show their flower buds, use a slight dressing (a teaspoonful) of Clay's fertiliser or canary guano to a 6-inch pot, stirring the surface a little and affording water to carry it to the roots. A dose of the fertiliser may be applied twice a week till the flower buds show colour, when once a week will suffice, and as the flowers develop in size discontinue the manure altogether. Established plants of Hybrid Perpetuals take from eight to ten weeks to force into bloom, and those potted in the autumn from ten to twelve weeks, according to the variety.

Teas and Noisette varieties will take a few weeks less time. As the sun heat increases with the season, less time will be required to bring on the plants. It may be here stated that varieties of the Hybrid Perpetual class are impatient of hard forcing, and if this is practised the quality of the flowers will be poor. A day temperature of 55° to 60° by artificial means is high enough, but with sun-heat it may rise to 65° without injury to the blooms. In order to maintain a succession of blooms several batches of plants should be grown, and these brought on under glass as may be required. Keep the Rose forcing-house humid, and ply the syringe among the plants on bright mornings, but as the plants begin to show flower, less humidity and more ventilation will be necessary, taking care not to admit air when it is very cold. If aphides appear on the plants, fumigate or vaporise them before the flowers open, and for mildew apply a solution of soft soap and black sulphur (*S. vivum*) to the hot water pipes. The earliest grafted Roses will now be sufficiently advanced for repotting out of 60's into 48's (4½ and 5-inch pots). As potting soil, mellow loam of good quality with a small quantity of decayed manure and sand added thereto will suit the Hybrid Perpetuals; and for Teas, Noisettes and Chinas, a small quantity of leaf-mould may be added to the other substances. In potting the plants keep the point of union under the surface of pot firmly. For drainage use a few small bits of bone and charcoal, which will have a wonderful effect on growth later on. These plants may be returned to the forcing house and kept there till the roots have permeated the new

soil, afterwards removing to a cooler house. Repotting can be continued as fast as they become ready for it until the whole of the stock of plants is finished. Their treatment later in the year will be referred to again. The remainder of the pruning of the plants in the borders may now be completed, *i.e.*, assuming that there is a little artificial heat at command for use in frosty weather when the inside temperature is likely to fall below 45°; with sunheat it may rise up to 55° without any disadvantage if a small amount of air be afforded at the top of the house. The Teas, hybrid Teas, and some of the Noisette varieties are the better for being planted out in borders, and a nice effect is produced when standard plants are mixed among them. Among the newer varieties of the hybrid Tea Roses there are many shades of colour from pure white, cream, pink, and crimson, which almost rival the high-coloured Hybrid Perpetuals, and they have a more prolonged flowering period than those. The varieties Maréchal Niel, Niphetos, Allen K. Richardson, Lamarque, &c., are very good as climbing Roses and for covering rafters, &c. In pruning these climbers the old wood should be shortened back, and all the well-ripened rods retained, merely pinching the unripened ends for flowering during the present season. This will induce all the lower and upper buds to break into flowering shoots later. The house may now be closed for several weeks or till such time as the buds begin to swell after the soil has received a thorough soaking of water. The heat may then be increased to 55° during the day and a moist atmosphere maintained, and the amount of air afforded and regulated in some degree in accordance with the prevailing outside conditions. *J. D. G.*

USES OF THE MOTOR IN HORTICULTURE.

(Continued from page 66.)

WHEN the purchase of a steam waggon or an industrial motor of any description is under consideration, every arrangement should be made to "keep the wheels rolling." It is not unusual, around Covent Garden, to see loaded horse vans standing many hours until the sales of the loads are completed. This method may possibly have its advantages, but, from an economical point of view, it would not apply to a steam waggon. A two or three hours' stoppage is within reason; but if it is probable that the delay will frequently exceed this, arrangements should be made by which the waggon may be unloaded, in order that it may be employed on other work. A steam waggon employed on depôt to depôt work, without undue waste of time in loading and unloading, will easily cover 50 miles in the day over average roads, and will carry a load of 5 tons, or if a trailer is used, 7 tons. If two journeys have to be made instead of one, 40 miles in the day is ample, for allowance must be made for the extra time occupied in loading and unloading.

The cost of such work will amount to about £7 per week, made up as follows:—

	£	s.	d.
Depreciation, 20 per cent. ...	2	2	4
Insurance	0	5	0
Driver	1	15	0
Stoker	1	0	0
Oil, grease, light, &c. ...	0	5	0
Water	0	2	0
Repairs	1	0	0
Fuel (coke), 30 cwt.	0	15	6
	£7	4	4

During the first year, provided that a capable driver is engaged, no repairs should be necessary other than the driver will be able to deal with himself. It is better to pay a little extra for a driver with a good all-round knowledge of the machine under this charge, than to engage a man for a small wage who knows little more than how to steer. Where a fleet of several vehicles are to be employed, it is preferable to provide a repair shop and to employ a man whose sole duty it is to maintain the efficiency of the vehicles. In this way the repairs are spread over the whole year, and the engines are always in perfect tune. It is not economical to do this, unless one vehicle is kept as a reserve only, otherwise much of the engineer's time will be wasted.

The manufacturers will give a guarantee with the vehicle, in which they will undertake to make good any breakage due to inferior or faulty materials used. When purchasing the waggon care should be taken in the wording of this guarantee, for that provided by the manufacturer is not of a very binding nature. With these few precautions, at the end of the year the owner will find himself well on the right side of his repair estimate.

Spare parts must be considered, and it is well to have a complete price list from the manufacturer and compare these prices with those for which spares may be purchased from local engineers' stores and such firms who specialise in motor spares of all descriptions. A guarantee should also be obtained with the waggon that all nuts and bolts, studs, steam, and water fittings are of standard sizes and threads.

It is not advisable when repairs become necessary to call in the manufacturer and give him a free hand. If the waggon has been well chosen there should not be much to be done for a year or more except to the bearings, bushes, and, perhaps, a pinion wheel to be renewed. If the driver is worth his money he will be able to do all this with the assistance of his stoker.

To prevent waste of fuel and oil the former should be weighed out in ½-cwt. sacks and booked to the waggon daily.

Oil and waste should be measured out weekly.

It is necessary to have a "permit" to take water from the town mains, but in the country, clean stream water is much better for boiler purposes, and should always be used when obtainable.

Depreciation depends upon the state of efficiency in which the vehicle is maintained. It does not follow that because 20 per cent. is allowed that the life of the engine will only be five years.

For lack of space, it is impossible to give anything but the merest outline of how a vehicle should be maintained, but the above few hints may be of use. The point is not to neglect anything. An adjustment taken in time will save many a breakdown involving great expense.

Never overload a waggon. If it is built for 5 tons, do not put more than 5 tons on it. If a trailer is used, it is better not to use it when the roads are in bad condition, unless it is necessary to carry bulk rather than weight.

If a long delay in unloading is absolutely unavoidable, the small tractor has an advantage over the steam waggon, in that two trailers may be employed; one of these may be left behind for unloading, whilst that which is empty may be returned for another load. In this way the engine need not be delayed. The working expenses of the 5-ton steam tractor are much the same as those for the 5-ton steam waggon. It lacks the handiness of the latter in manipulation, but for certain work it cannot be beaten. In addition to its use as a tractor, it may be used for driving machinery where the belt drive is employed, and will fulfil all the duties of the ordinary portable engine. There is no reason why the steam waggon should not be so employed, but that the engine, in many cases, is not quite so conveniently arranged.

It is hardly possible to give comparative figures of costs, with railway rates varying as they do in every part of the country; but, assuming that the waggon is fully loaded with 5 tons one way only, and for five days per week, the cost works out at 1s. 5d. per loaded mile, including the cost of the empty return journey. This is at a cost of, approximately, 3½d. per ton mile;

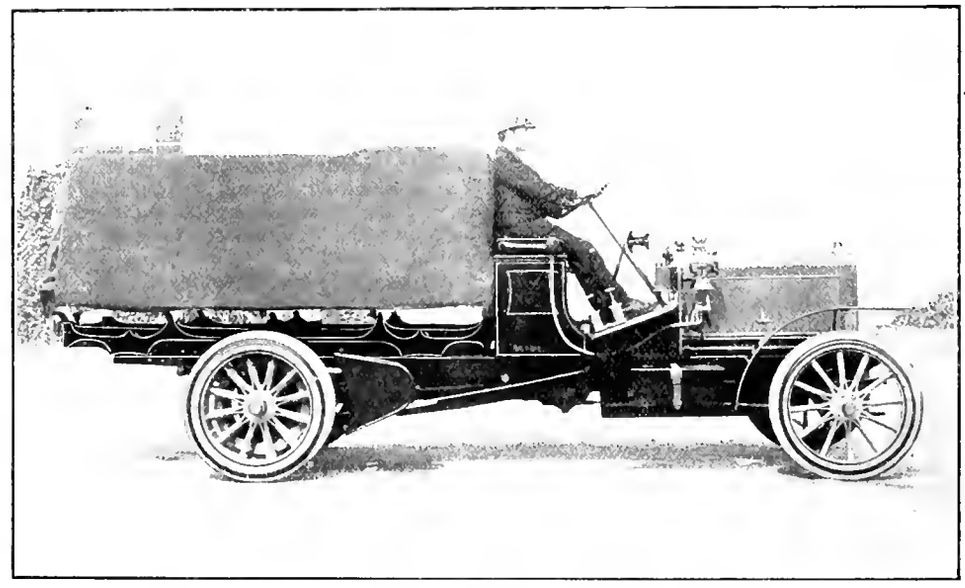


FIG. 37.—THORNYCROFT LORRY, CAPABLE OF CARRYING TWO TONS. PETROLEUM-CONSUMING, FOUR-CYLINDER ENGINE.

but, then, return loads must be taken into consideration, such as manure, coal, and all such stores that are necessary for cultivation. It is fair to assume two-third loads might be obtained for the return journey, and this brings the cost per loaded mile down to 10½d., and the cost per ton mile to a fraction over 2d. Then, the actual cost of marketing 5 tons of produce from 20 to 25 miles distant would be 16s. 8d., or 3s. 4d. per ton. A mathematician is not necessary to prove that this is cheaper than either by rail or horse transport.

There are three points to bear in mind, and these are:—

(1) The best steam waggon obtainable must be purchased.

(2) The best driver obtainable must be engaged and well treated.

(3) The full employment of the waggon must be ensured.

Should the market be 50 miles distant, to arrive at the cost per ton double the above figures, and allow, say, 2s. 6d. for lodgings for the men, and this gives 7s. 2d. per ton.

There are, no doubt, many growers who, not having sufficient haulage work to keep a steam waggon constantly employed, would prefer a

machine which, like the farmer's boy of whom we have all heard, could do "most anything" about the land. Then the agricultural motor is well worthy of consideration; but as the writer is afraid that even now he has approached perilously near to the imaginary line which divides horticulture from agriculture, this subject will not be treated, at any rate for the present.

Hugh Miller, C.E., M.E.

(To be continued.)

VEGETABLES.

EARLY PEAS OF RECENT INTRODUCTION.

DURING the past few years there has been a great advance as regards the quality and size of the earliest varieties of Peas, and though in most instances earliness also is claimed, and there is a gain, there can be no question whatever concerning the two first-named characteristics when we compare the newer varieties which have a Marrow flavour with the small white or green round Peas of former years. Now there is no difficulty whatever in having good early Peas, and

FIG. 38.—"IVEL" MOTORS AT WORK IN A HARVEST FIELD.

these but little inferior as regards flavour to the Marrowfat or summer varieties, but it is only just to add that Marrowfat Peas are less hardy than the older Peas alluded to; and to sow such in a heavy, wet, or clayey soil in October or November is to court failure. At the same time, with some little attention paid to details, this may be avoided; indeed, I have rarely seen satisfactory results from the early autumn sowings in the open ground. The plants have many trials to bear in the shape of rapid changes in the weather, attacks of slugs, snails, and birds. I will therefore note the advantages in frames at the start, whenever cold frames are available; and failing these, note the value of protection in the open ground for a short period of time. This being done, good pods are obtainable at a small outlay in regard to labour and materials.

Frame culture.—There are several modes of cultivating Peas, but I prefer to sow the seeds in pots, in January if possible, and to sow only new seed, the plants from the latter having greater vigour. The pots may be large 60's or small 48's, and if the former, do not crowd the seed; this is a common cause of failure, the seedlings being weak at the start. The soil should be of good quality, and for drainage material use rough siftings of the soil, which enables the subsequent planting-out to be more readily performed. I have also used good-sized pieces of spent hot-bed manure. The soil in the pots should be made firm and not filled-in too much, but plenty of space left for affording water. The pots should then be placed (on a hard bottom so as to keep out worms) in the frames and near the glass, and for a time kept close, to encourage germination of the seeds; in cold weather cover the glass but remove the mats, &c., in fine weather. At the start very little moisture is required, but as soon as the plants are well above the surface ventilate freely whenever the weather permits of this being done.

I have also seen the seed sown on strips of turf and in boxes, troughs, or seed pans, but I prefer pots—the planting out is so readily done; but with plenty of glass at command some of the dwarf growers, which I will presently name, give a splendid return if sown in the frames and grown from the beginning to the finish under glass. Another plan which I have found useful is to sow in 8-inch pots and grow near the glass. Some of the dwarf varieties sown in the month of January will supply pods fit for gathering in April. The new variety Reading Wonder, 12 inches high, is a splendid forcer. Of course, when the plants are intended to be grown in the frames till they form pods a little more space must be afforded, that is, they must be farther from the glass than is needed with pots which are planted out in the early spring. Seed sown to plant out as advised should be ready early in March, and the land should have been prepared some time in advance, and if at all heavy means must have been taken to lighten it. This may be done by a free use of old potting-bench waste soil, and fine burnt refuse or wood ashes are excellent. A rather deep drill is advisable, this being a protection and shelter from wind at the start. The planting should be done firmly, and if possible a south or sloping border should be chosen in the front of a wall for these early crops.

Sowings in the open ground. The same varieties as those advised for sowing in pots should be sown out-of-doors in the south early in February, weather permitting. This crop pays for special attention to cultivation, heavy or wet soil being improved by drainage and by the addition of friable, light materials; these not only benefit the Peas, but the crops of other vegetables that succeed them. I would advise the soil in the trench or drills to be dug out a spade deep, substituting lighter and better soil. There is nothing gained by sowing in wet or frosty weather, as germination is more rapid under better conditions. When sowing, a deep drill should be drawn, and sowings made when the soil is dryish, but no date can be given when to sow, this being dependent on the weather, the season, and the locality. It may be stated that during the last season, seed sown in March produced plants that were in pod in 12 weeks, and these were only protected at the start. With open ground Peas of the Marrowfat type the soil should be friable, and much may be done at the start to assist the crop by using long stable litter, which must be removed in fine weather; by having a deep drill or shallow trench, and by affording the plants support as soon as they come through the soil. It is an easy matter to shake some litter over the rows at night when the weather is cold, drawing the same into the alleys by day. Some gardeners may think that Peas grown in this manner cost too much trouble, but this is not so, and it is well repaid in earliness and good quality at a period when other vegetables are scarce, and the early crops of Peas are worth a little extra attention.

Varieties.—There is a splendid choice of varieties, and one of the first on my list is a new Pea introduced last year—Pioneer, a dwarf plant under 2 feet in height and very robust. It has a dark green pod and is very early, and is excellent for the first crop in the open quarter; seeds sown early in March will be ready towards the middle of the month of May. This indeed is one of the best for an exposed garden that I have ever grown. I have referred to Reading Wonder as a frame or pot variety, and it is a splendid novelty—very dwarf, and its quality excellent for an early Pea; it is equally good for the open ground, and when sown under a wall on a south border, with a wall on the north side, it matures in 12 weeks. Another new Pea that should become a great favourite for cultivating under glass or in the open ground is Sutton's World's Record, which formed a feature at the R.H.S. meeting on May 14 last, and though a taller variety than those noted above, it is a fine forcing variety, a large pod of the true Marrow type, a free bearer, and very early. It is a good variety to sow in pots for planting out, and grown in this way it does not grow so tall, but it affords splendid crops. Another fine Pea is Sutton's Little Marvel, quite different in every respect from the last-named, and it may be called an all-round variety, being equally good for forcing or early cropping in the open; as a proof of its excellence in every point it has received a First-class Certificate, and an Award of Merit from the R.H.S. in a severe test for earliness and quality. For its size Little Marvel is an extraordinary cropping Pea, and is only 12 to 15 inches in height, making it very suitable for small gardens. In my opinion it is greatly superior in every respect to American Wonder or Harbinger.

Another very fine early Pea is Excelsior, a heavy cropper and a fine bearer in poor land. Another remarkably early Pea, and a grand forcing variety, is Carter's Eight Weeks—a suitable name, for when grown in pots it was the first to come into use. It has a good deal of the Marrowfat Pea in its composition, and is greatly superior to the old types of early Peas. One of its parents was William the First, a Pea which years ago proved a great advance upon older varieties. This Eight Weeks variety is 15 inches high, and a splendid early Pea. The Early Morn, a much larger podded Pea than the last-named, is a grand early variety, 3 feet in height, and a rapid grower. It should not be sown very early in warm soils. Carter's Spring Tide is also a very fine early Pea, having dark green pods and possessing the Marrowfat flavour.

It grows from 2 to 3 feet in height. Last season I gave the new Mayflower Pea a trial. It is a cross from Daisy and Wm. Hurst, but it is twice as large as the last-named, very prolific and early, 18 inches in height, and a splendid variety for a warm border. The new Veitch's Langley Gem is another early Pea of fine quality; and the variety Earliest Marrow is excellent for sowing in the month of March. *G. Wythes.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

The approaching need for shading.—The sun is often very powerful towards the end of February, if only for a short time in the day, therefore blinds for shading purposes should be made ready for use without delay. For houses which contain species possessing leaves of a soft texture, blinds made of the rather closely-woven white garden net now so freely used, afford the best shading, as they break the force of the sun's rays, but admit plenty of light. A similar material, but of a lighter texture, should be used on houses devoted to such plants as are not injured by slightly modified sunshine. The blinds should, in all cases, be kept well above the glass, as this allows a current of air to pass freely, which serves to keep the atmospheric temperature of the house from becoming excessively hot. They should also be made to take on and off easily, so that they may be stored under cover during winter. Some gardeners leave them in position in order to use them as a covering for the houses on frosty nights, but I fail to see that this practice is advantageous. The covering of the glass is undeniably a good protection from frost, as I previously pointed out, but when the frost is severe, blinds so used sometimes have to be left down until nearly mid-day, owing to the pulleys and ropes being frozen hard, thus shutting out the light that is so necessary for the plants. At the end of winter and during the early spring, when very cold nights are often followed by warm, bright days, the fixed blinds are useful to cover the glass at night, as the frost is seldom severe enough to prevent them from being freely worked early in the next day. It will be a long time before shading will be needed for more than an hour or so during the middle of the day, and it is not advisable to shade the plants sooner than is necessary. The condition of the plants and the position of the houses in which they are growing will determine how soon it is desirable to commence. If the blinds are put into position early this month, they will be ready for any emergency, be it either as a protection on cold nights, or on the bright, cold days which often prevail during this and next month, when it is impossible to open the ventilators to regulate the heat without causing injurious draughts.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

The Muscat of Alexandria and other Muscat varieties of the Grape require a long season of growth and skilful management to bring the fruit to perfection, and the vines which are to furnish the principal crops should be started at this date, in order that they may pass through the critical stages of growth during the seasons most favourable, and the fruit may colour well and ripen perfectly. The leaves of the Muscat of Alexandria if grown in deficiently-ventilated vineries, or in those which have trellises placed too near the glass, are very liable to be "scalded" by bright sunshine; where such defects exist, they should, if possible, be rectified before the vines are started. The vines and houses having been cleansed, and the borders afforded water and a top dressing in the manner previously advised for late vines, the vineries should be closed, and a night temperature of 50°, rising to about 65° from sunheat, should be employed and maintained with regularity, the vines and interior of the vinery being syringed two or three times daily.

Early-fruiting Muscat vines.—The gardener is usually caused anxiety while these vines are in blossom, but if they are healthy the results are invariably good if a night temperature of 70°, with a rise of 5° or 10° on cloudy days, and an increase of 5° to 10° higher on sunny days is afforded, and the air in the vinery is maintained in a dry, warm, buoyant condition, by judicious ventilation. The pollen may then be distributed with a soft brush at mid-day. The disbudding and stopping of lateral shoots should be carried out a few days before the flowers expand, so that no check may occur, and the sunlight is not needlessly reduced in amount whilst the vines are in flower.

Late Peach houses.—The buds on the trees in these houses will soon be developing naturally, and the trees must be prepared for their season of growth, loosening the branches from the trellises and carefully tieing them in bundles. Having done this, clean the woodwork, &c., of the houses, and coat the walls with limewash. The older branches should be thoroughly washed with a warm, moderately strong solution of Gishurst's compound soap, and the young wood with warm soap suds—4 ounces soft soap to the gallon of water. This operation, if properly done, will clear the trees of red spider and brown scale, though these pests are best dealt with in the season of growth. Peach and Nectarine trees that were properly disbudded and had their shoots stopped and trained-in last summer will have a sufficient number of fruitful shoots, which, at 5 inches apart, will furnish the trellises. If there should be an excess of young shoots, remove as many of the more unfruitful and ill-placed ones as is required, clear away the surface soil of the borders, and top dress them with good loam, mixed with plenty of wood ashes and a smaller quantity of bone meal.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Primulas.—Seeds of P. sinensis, stellata and obconica should now be sown for flowering in the month of November; and shallow pans or 6-inch pots, well-drained, are very suitable in which to sow. The compost employed should consist of equal parts of loam, leaf soil, and sand, the whole being passed through a sieve with ¼-inch meshes, and made moderately firm and quite level on the surface. Before sowing the seeds, the pots should be afforded water, and afterwards covered slightly with a mixture of half loam and sand passed through a very fine sieve, omitting leaf soil for covering as being a cause of damping. Care should be taken in covering the seeds that they are not buried too deeply. Place in a temperature of 60° to 65°, and put a piece of glass on the pans to check evaporation of moisture; and shade the pots, &c., from sunshine. Should the soil need moisture before germination takes place, dip the pots or pans in tepid water until the water appears on the surface of the soil. This is better than applying water with a rose watering-can, as there is then no risk of the surface caking, or of the seeds being washed away.

Begonia seed should also be sown and treated in the same manner as that of Primula, only that after sowing it should not be covered with soil; merely place a piece of glass over the pot or pan and shading from sunshine.

Lobelia and all such very minute seeds are best treated in the same manner.

Seed pots should be examined daily as to the state of the soil, any neglect at this stage meaning partial or total failure. As soon as germination has taken place, the bit of glass should be tilted, more as a prevention of loss from damping off. Strict attention is required to details in raising plants from seeds under glass early in the spring.

Soil.—The repotting of stove plants needs preparation. Fibrous loam and peat of good quality should be chopped into small pieces, the dust shaken out of the peat, and both should be exposed to the air for a few days before the work is begun. Sphagnum-moss should also be picked over, crocks for drainage sifted and placed in sizes ready for use.

Anthurium crystallinum and all the fine-foliaged varieties of Anthurium should now be repotted, using great care in handling them. The most suitable compost for these plants is one consisting of sphagnum-moss one-half, peat one-quarter, and loam one-quarter, with a liberal quantity of wood ashes, charcoal and soft bricks broken to the size of a pigeon's egg. In potting the plants keep the compost well packed up round the collar of the plant, and when new roots appear from this part topdress frequently with sphagnum-moss and a little wood ashes—all Aroids are improved by potash in the soil. Plants that have become unwieldy should be chopped up, and the stem cut up in the manner described for Dracænas, and they should be placed in pure sphagnum-moss till growth takes place. Large plants which are reduced never make fine specimens again, and it is much better to constantly raise young plants.

THE FLOWER GARDEN.

By W. FYLE, Gardener to Lady WANTAGE, Lockinge Park, Berkshire.

Bedding Pelargoniums.—The Pelargonium, if not so popular at the present day as a bedding plant, has but few equals for planting in vases. Where immediate effect is of first importance, the varieties Achievement, Henri Jacoby, Paul Crampel, Madame Crousse, Duke of Edinburgh, and Charles Turner are among the best; plants that are a few years old flower earlier and more freely than one-year-old ones. The ivy-leaved varieties, because of their pendant habit, are suitable for draping vases or window-boxes, planting against walls, or to form pyramidal objects 7 to 8 feet in height in tubs; for this purpose the variety Madame Crousse is unsurpassed. Autumn-struck cuttings should now be potted, according to variety and size, in 4 or 5-inch pots. The ivy-leaved varieties should be furnished with small sticks to which the plants should be fastened as potting proceeds. Do not stop the plants on repotting them. If the stock of plants is insufficient, cuttings should be struck singly in small pots.

Tuberous-rooted Begonias.—Before starting the tubers lay them out at a few inches apart on a layer of leaf-mould, finely sifted peat or silver sand, and put the pans or trays into gentle warmth—55° Fahr.—to induce growth. The single and double-flowered varieties are good as bedding plants, but the single large-flowered sorts are the better ones. Aged plants of fibrous-rooted or shrubby species may now be divided and cuttings taken and struck in heat of 65° to 70° and bottom heat of 80°; and also seeds may be sown. The foliage of these Begonias takes on towards the autumn very beautiful tints, and the flowers are charming.

The rock garden.—Examine the various plants and make firm in the soil any that may have been disturbed by the frosts, remove tree leaves and litter from about the plants, as, if allowed to remain, they may cause the plants to damp off. Mice sometimes cause much injury to rock plants and bulbs, and must be trapped or otherwise destroyed. The position of a rockery, whether exposed and seen from a distance, or placed in a secluded part of the garden, will determine what species of Alpines, &c., are planted on it. If in the former position, and space is ample for planting, groups of plants, say from one to three hundred, in eight or ten distinct colours all flowering at or about the same time. The following varieties may be planted, viz., Aubrietias (single and double-flowered), Arabis, Alyssum saxatile, and A. compactum, Polyanthus, species of Cerastium, Myosotis, and Saxifraga; Pansies, Lunaria biennis, Doronicums in variety, Heuchera sanguinea, with a few "dot" plants such as Helleborus orientalis, &c.

Plants growing on walls.—Although the pruning and thinning will in many instances have been carried out in the autumn, frequent attention may still be necessary in regulating and cleaning some plants, and in reducing the too great accumulation of growth. Take, for example, the beautiful Jasminum nudiflorum, now in fine bloom. It is spoiled by autumn pruning, and sometimes by not being pruned at all, thus allowing of accumulations of annual shoots that assume, as time goes on, a faggot-like form. The proper time to prune this plant is just immediately the flowering season is over. This may consist, in old plants, in the cutting away of much of the older wood, so that the new shoots may develop flowering twigs for the following season. Many varieties of Ivy, more especially the silver and the golden, when planted against walls, are more interesting, and afford a finer effect when the main shoots are laid-in 4 or 5 inches apart, and the leaves considerably reduced in number.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Parsnips.—These require a long season of growth, and seeds should be sown as early as the land is in a suitable condition. Assuming that it has been trenched but not manured during the past six months, the surface soil should be forked over and broken up finely. Land which was occupied with Celery last season is very suitable. Sow the seeds in drills drawn at distances of 18 inches apart. The seed should be placed at regular intervals about as thick again as it is intended for the plants to remain; after this, neatly rake down the ground with a wooden rake. If extra fine specimens are required for exhibition purposes, it will be necessary on many kinds of soil to bore deep holes and fill in with finely-sifted, suitable soil, such as old potting soil that has been stored. Make the holes 20 inches apart, and allow 2 feet between the rows. Press the compost in moderately firm, and place three seeds in each, and afterwards thin the plants to one to each station.

Spinach.—Make a good sowing on a south border in drills 14 inches apart, on ground which has been deeply tilled and well manured. So important is this crop in most households that a small sowing should be made about once a fortnight in various parts of the garden. Splendid early crops may be obtained by sowing now on a very mild hotbed in frames. The Carter and Victoria Round are both splendid varieties for affording early crops.

Autumn-sown Spinach has succeeded remarkably well this year in many places. Take advantage of fine weather and ply the Dutch hoe frequently between the rows, and give a good dusting of soot once a week.

Spring Cabbage.—The earliest plantations of this ought now to be looked over if the weather is favourable. Make good any vacancies and stir the soil with the draw hoe, taking care to pull the finest well up round the stems of the plants. Make a small sowing in a gentle heat of some of the improved quickly-maturing varieties, of which there are many well adapted for spring sowing; also Winningstadt and Blood Red for autumn use.

Celery.—Any time after the first week in the present month the first sowing of Celery seed should be made. Sow the seeds thinly in pots or pans, and raise the plants in a heat of from 55° to 60°. An important point in Celery culture is that any check the plants may receive, especially in their infancy, such as getting very dry or overcrowded, will almost sure to end in a large percentage of them prematurely running to seed. Three of the best varieties that I know for general and exhibition purposes are Invincible White, Aldenham Pink (new), and Standard Bearer, the last-named variety being specially hardy and well adapted for winter and spring use.

Capsicums and Chilies.—Seed of these should be sown at once in a brisk heat. Many of the newer varieties when well grown are not only much appreciated for culinary purposes, but are extremely decorative during the autumn and winter months. Seed should be sown early and the plants grown along without any check. Little Gem, Prince of Wales, Long Red, Long Yellow, and Mammoth are all desirable varieties.

Lettuce, Radishes, Cauliflowers, and Carrots.—Make further sowings of these crops on mild hotbeds.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Strawberries.—The plantations that were planted late last autumn should now be inspected when the ground is not in a sticky condition and the plants made firm in cases where the recent frosts may have lifted any of them out of the soil. It will sometimes happen that autumn planting cannot be carried out, and the work must be done in the spring, and in this event the ground to be planted should have been deeply trenched and afforded a liberal dressing of manure, and early in the winter. Unless forced plants, carefully hardened off, are to be set out in the spring, planting should be deferred till July or August, and the earliest runners secured for the purpose. Potatos or other early crops may in that case be taken. Plants thus set out early will afford a full crop of fine fruits the next year, whereas those planted at this season will not do so, and the chances are that they will be impoverished for the second season.

Plants that have been forced should be set out at a distance of 2 feet and young plants at 1 foot apart in the row, and 2 feet between the rows, every alternate one being chopped out as soon as it is cleared of fruits the first season. After the planting is completed, the ground should be mulched with short stable litter or spent Mushroom-bed materials. After the late heavy downfall of rain and the absence of snow in some parts of the country, old plants will have been injured by recent frosts. It is a general practice with gardeners to examine old plants in the month of October, removing any visible runners and applying a heavy dressing of manure, of which the winter rains carry the manurial properties to the roots of the plants. On heavy soils it is better to apply a lighter mulch or top-dressing such as mulchings from Vine and Peach borders, laying this to the depth of 2 to 3 inches, and leaving it loose and rough on the surface, and in the spring apply a dressing of soot and wood-ashes, raking them in.

Nuts.—These useful additions to the dessert are seldom given the position best adapted for their well-being, and the bushes are pruned very severely or not at all. In gardens they are usually planted in an out-of-the-way place, to hide some unsightly object or as a protection to some tender plants. The chief object in pruning Nut bushes should be to keep the centre of the bush open, thus admitting sunshine, and to cut shoots to the required length. Suckers should be removed with the suckering tool. The condition of the catkins will decide the time when and how the bushes should be pruned. The tiny red female flowers make their appearance in February, and the beginning of March is quite soon enough to prune. If this operation is carried out at an earlier date a good quantity of catkin-bearing twigs should be retained on the main branches. The Kentish Cob and Pearson's Prolific, a round Nut, are two good and reliable varieties to plant. Allow about 12 feet apart between the plants. Rake off as much loose and inert soil from under the old bushes, and replace it with potting-bench soil, or farmyard manure.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

The treatment of playgrounds.—The difficulties attendant on the acquisition of sites having been overcome, the authorities often find some trouble in dealing with what at first sight appears a very trivial matter, namely, how the plot or plots should be laid out. There may be some local feeling on the question, or even divergence of views in the departmental committee. One section may maintain that all that children require, or desire, is a free space whereon they may disport themselves as they please, without any restriction whatever. Another may contend that no playground is complete without some installation of gymnastic appliances, while yet another may want none of these, and, being more sentimental than practical, may ask for flowers and pretty things. As it is the gardening part with which we are mostly concerned, let us look first to the conditions presented in the case of the smaller type of playgrounds, taking for example a situation which is frequently met with in large cities. There happens to be in a crowded area an old building which has been condemned by the health authorities as unfit for human habitation on account of its insanitary condition and, as a hotbed of disease, constituting a menace to the health of the community. Should the area not admit of the erection of modern dwellings with sufficient air space to meet the requirements of the sanitary regulations, then comes the opportunity of the local authorities to secure an open space which, though of limited area, may be very valuable in the locality. These, and occasionally one of the odd spots left when a railway is built through a town, while not by any means ideal, are probably the only places available. It further must be observed that these small places possess relatively more hygienic value in the densely crowded and older parts of our great cities, where the poorest of the industrial classes usually live, than larger areas would have in the more modern quarters. Small plots such as I have described usually have somewhat grimy and squalid surroundings. To attempt gardening in these would, in nine cases out of ten, be courting failure, and defeating a very laudable object, which, however desirable, ought never to be countenanced in obviously impossible situations. The situation and requirements of the district must in all cases govern the plan, and in dealing with playgrounds simplicity of design is the most essential characteristic. The average youngster is a very practical animal, who possesses but little sentiment, and has no sympathy with gardening or any art when it restricts or interferes with his freedom of action.

Question of paving.—Frequently, when dealing with a small area, it will be found wise to pave the entire surface with some smooth impervious material such as cement concrete, tar macadam, or one of the many excellent bituminous asphaltes. This admits of easy cleaning, an important point in dealing with playgrounds in certain areas. Should the space be too small for a set of gymnastic appliances, nothing may be required beyond a few seats fixed firmly into the ground, and a drinking fountain. The quantity of water which youngsters consume is greater than most people imagine, and proper provision for their needs cannot be too strongly insisted upon.

THE APIARY.

By CHLORIS.

Examination of the stocks.—It is not advisable to examine the brood chamber so long as cold weather prevails, and if one is certain that the bees have sufficient stores, it will be prudent to leave them alone at present.

General notes. There may yet be many sharp frosts, and for this reason it is not wise to give any food of a stimulative nature, that is, liquid food (syrup of honey and water), which would break up the cluster of bees, causing them to scatter over the combs, since if a frost came they would be more liable to be chilled, and might probably die. Stimulative feeding causes the queen to commence ovipositing; possibly this has already commenced, but the feeding would cause more brood to be reared than the bees could comfortably cover, and when the cluster of bees contracted in a cold spell all uncovered brood would perish.

Dead bees.—During the present season many bees die naturally and from chill; these should be cleared from the floor-board by raking them through the entrances on fine days, when the operation should be performed as quickly as possible.

Feeding. Generally speaking, when the Crocuses are in bloom we may venture to give the bees Pea Flour as artificial pollen. To induce the bees to store this flour it must be sprinkled on straw or shavings, in a sheltered but sunny place. The bees will continue to carry this to the hives, until the catkins of the Hazel and Palm willow shed their stores. If other food be required, it is best to give a frame of sealed honey, or, if no comb honey be procurable, heat (not boil) some extracted honey, taking care not to burn it, and work into it some granulated or caster sugar, until it reaches the consistency of dough. Then place it in a section over the feed-hole. Should there be no honey, then the candy must be made of sugar and water. Take some granulated sugar and put it into a saucepan with very little water. Let it boil, but stir it well to prevent burning; when it grains (to test this, drop a little into a saucer containing cold water), then take it quickly from the fire, stir until the candy becomes quite white, and ladle out into pieces of paper. By stirring we retain more moisture in the food, and this is required, provided it is not too sticky to handle. Should you burn the food in cooking, no amount of boiling will cause it to candy, and also the food will cause death during the winter weather.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, FEBRUARY 11

Roy. Hort. Soc. Comms. meet. and Annual Meet. of Fellows.
Annual Dinner of Hort. Club.
British Gardeners' Assoc. Ex. Council meet.

FRIDAY, FEBRUARY 14

Roy. Gardeners' Orphan Fund Annual Meet. and Elect. of Candidates.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—39°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, February 5* (6 P.M.): Max. 44°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, February 6* (10 A.M.): Bar. 30·6; Temp. 46°; *Weather*—Fair.

PROVINCES.—*Wednesday, February 5* (6 P.M.): Max. 49° North-east coast of Scotland; Min. 42° Peterborough.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND THURSDAY—

Hardy Plants and Bulbs, Lilies, Azaleas, &c., at 12. 1,000 Roses, at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—

Clearance Sale of the Stock of Seeds, Utensils, and Sundries, *re* A. Legerton, deceased; at 5, Aldgate, London, E.C., by Protheroe & Morris, at 12.

Herbaceous and Border Plants, Hardy Bulbs, Lilies, &c., at 12. 3,600 Roses and Fruit Trees at 1.30. Palms, Azaleas, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—

Imported and Established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Calceolaria.

A correspondent having recently enquired what are the distinctive characteristics of the herbaceous, shrubby and bedding kinds of Calceolarias, Mr. James Douglas has contributed the following information, which will be read with interest:

In a certain garden in Surrey there occurred a curious circumstance two years ago. A patch of seedlings developed on one of the borders, some of them even appeared on the garden path, and, when they flowered, the plant proved to be Calceolaria pinnata, a Peruvian species figured in the second volume of the *Botanical Magazine*. How the plant came there no one knew. Curtis adds: "It is as easily raised from seeds as any plant whatever." Also, "that they will flower, ripen, and scatter their seeds if grown in the open border."

There are over two hundred species of Calceolarias named in the *Index Kewensis*, and many coloured plates scattered over the pages of various periodicals since the *Botanical Magazine* was founded. There are thirty-seven different species figured in the *Botanical Magazine*, and many coloured figures of garden varieties in the *Florist*, *Floricultural Cabinet*, &c. From these much knowledge may be gained of the various types of garden varieties now in cultivation.

As a garden plant, the Calceolaria has been greatly esteemed, and it is valued at the present time. Many of us can remember the time when bedding out tender plants, such as the Pelargoniums, Verbenas, Calceolarias, and other species, were an essential feature of every garden, no garden being complete without its beds and borders of these flowers. The Calceolaria was one of the most important, as no other plant could furnish the same rich golden colour. The species and varieties cultivated for bedding purposes were quite different from those grown for greenhouse decoration. The bedding varieties were usually termed the shrubby section, and those grown specially for the greenhouse and the conservatory the herbaceous. C. rugosa or C. integrifolia, figured in the *Botanical Magazine*, t. 2523, was certainly one of the types grown for bedding out purposes, and doubtless varieties raised from it. It is also figured in the *Botanical Register*, t. 744, and was stated by the editor to have been introduced by the Horticultural Society from Chili or Peru, which is the native habitat of nearly all of the species. The figure was drawn "at the Chiswick establishment belonging to that useful and thriving association," thus wrote Dr. Lindley in 1823. Varieties of C. rugosa, of which integrifolia is merely a synonym, are angustifolia and viscosissima. Most of the garden varieties so largely used for bedding purposes were probably obtained from C. rugosa. Another very distinct species much used for bedding-out purposes was C. amplexicaulis. Mr. William Lobb detected it when collecting for Messrs. Veitch in South America, near Mina, from whence he sent seeds. It was figured in the *Botanical Magazine* in 1847, t. 4300. The flowers were larger than those of C. rugosa and of a softer yellow.

There was a deep crimson-purple variety also grown for bedding some 50 years ago, named Sultan. This could not have developed from any yellow species or varieties; there are, however, two species with purple flowers which may have given rise to this variety. Cultivators found it rather difficult to propagate it in large quantities, nor did it grow with such vigour as the yellow varieties. C. purpurea seems nearest to it as a species, and is figured in *Botanical Magazine*, t. 2775. It flowered first in the Edinburgh Botanical Garden in August, 1827. C. arachnoidea was introduced about the same time and was figured in *Botanical Magazine*, 1828, t. 2874. This species had herbaceous stems, as the variety Sultan also had. The flowers are described as of a dull purple colour.

C. corymbosa is well figured in the *Botanical Register* for the year 1823. This species is often supposed to be the origin of some of the garden varieties. It is described as an annual, and the flowers are of a rich yellow colour. The *Botanical Magazine*, fig. 2418, seems to be quite distinct in colour, brownish instead of bright yellow.

The nearest to the greenhouse herbaceous varieties, so much esteemed for their lasting qualities and rich effect in the greenhouse and conservatory, is C. crenatiflora of the *Botanical Magazine*, t. 3255, or C. pendula of Sweet's *British Flower Garden*, t. 155. It grows a foot and a half high, and was stated in 1833 to be a striking object in the greenhouse. The corolla is yellow, sprinkled with red spots on the lower lip. In this same year—1833—the *Floricultural Cabinet* was founded by Mr. Joseph Harrison, and it is interesting to trace the development of the greenhouse or herbaceous Calceolaria for the next quarter of a century in the coloured plates of that periodical. As far as one may judge from the evidence before us in these illustrated periodicals, I have no hesitation in placing C. crenatiflora as the original type of the spotted greenhouse Calceolarias. I have noted its development for more than 50 years. In the early 'fifties the plants were taller than they are now, and all of them were yellow with the spotting of C. crenatiflora. None of them had taken on the rich blotches we see in the present-day varieties, but one can easily imagine that, in the course of more than half a century, many changes would develop both in the spotting and ground colour. Crossing with such a variety as Sultan, to which I have already referred, would give the rich crimson-tinted varieties. The crenated, elongated pouch was not quite in the style desired by the florists; they worked for a more rounded form, free from crenations, and in the process of selection colour was also developed; therefore arose the beautiful varieties now grown so freely in most gardens. The culture of these varieties is now very simple. There is no need to propagate them by layering or cuttings, as used to be the practice. Splendid varieties can be raised from seed. The seed may be sown as early as April or as late as July. It is very small, and those who have not opened a packet might be surprised at the small pinch contained therein. It is best to have the flower-pot or seed-pan ready to sow the seed before the packet is opened. An inch in depth of fine soil should be made quite level on the top of the ordinary potting compost. Sow the seeds carefully all over the surface, and very lightly cover them with fine soil. A square of glass laid over the top of the seed-pan will cause the moisture to be retained. As soon as the young plants are large enough to be handled, they must be pricked out carefully, and it is in the early stages of the growing plants that care is required to nurse them up to a flowering size. When they are large enough to be potted off singly, they speedily develop into a flowering size. Care is needed to see that they are always moved into larger pots before they become root-bound. Green fly is a terrible pest on these plants, and must be kept off by periodical fumigations. Well-managed plants would become large enough during the season to require pots having a diameter of eight or nine inches.

The bedding or sub-shrubby species are occasionally grown for greenhouse decoration, and there are yet gardens where "bedding out" has not been discontinued; these Calceolarias are invaluable in such schemes, as they afford a rich yellow tint in masses. The path to success is by taking good succulent cuttings as late as the first week in October. They will make roots freely in an ordinary garden frame. The plants must not be coddled in winter, and a few degrees of frost will not injure them. The young plants may be potted off early in the year, or planted out in a pit, to be transferred to the open garden in May.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue represents the form of Moræa iridioides growing in the Botanical Gardens, Durban, Natal. This form was referred to by the Director, Mr. J. MEDLEY WOOD, in the *Gardeners' Chronicle* for July 6, 1907, in a letter sent us in consequence of an article communicated by Mrs. I. L. RICHMOND, May 11, 1907, p. 296, as to the variability of the species, and its remarkable development under cultivation in Ceylon, two forms being illustrated in the issue of the date last mentioned. With reference to the variety now illustrated, Mr. J. MEDLEY WOOD gave the following particulars:—"In 1881, I was living in Inanda, 20 miles from Durban, and about 2,000 feet above sea level. I knew Moræa iridioides quite well, and in that year, or in the previous one, I found what I took to be a new species, the leaves and flower-stems being much longer, the habit different, and the flowers larger and more brightly-coloured. I sent a dried specimen to Kew, and it appears in the *Flora Capensis* as my No. 1,099. In February, 1882, I left Inanda to take charge of these gardens, bringing a plant of the Moræa with me. This plant and seedlings from it have been growing here for more than 25 years; they have had no special attention, and have scarcely been manured. The oldest, if not the original clump, is now 3 to 4 feet in diameter, the leaves and flowering stems are more than 3 feet long and quite erect. During most of the season flowers are borne in abundance, and a dried flower which I have just measured is 4 inches in diameter." The flower is white with yellow markings on the bases of the outer segments, and blue markings in the centre.

ROYAL HORTICULTURAL SOCIETY.—The usual fortnightly meeting on Tuesday next is expected to be a large one on account of the annual meeting of Fellows, which will take place in the afternoon in the lecture room. The Committees have been re-elected or re-constituted since the last meeting, and on Tuesday the new members will be expected to join the respective committees to which they have been appointed. We are informed that Messrs. SUTTON & SONS will exhibit on this occasion the most extensive collection of cultivated Potatos and wild species of Solanum they have ever staged.

GEO. MONRO, LTD., CONCERT COMMITTEE.—We have received a statement of the receipts and expenditure in connection with the eleventh annual concert held on February 21, 1907. The receipts, as distinct from the amount of cash in hand, were £222 10s. 9d. Charitable gifts have been made as follow: To the Gardeners' Royal Benevolent Institution, £12 12s.; Wholesale Fruit and Potato Trades' Benevolent Society, £8 8s.; Surgical Aid Society, £6 6s.; Charing Cross Hospital, £5 5s.; Royal Ophthalmic Hospital, £3 3s.; Covent Garden Lifeboat, £3 3s.; GEO. MONRO, LTD. (Pension Fund), £3 3s., (Outing Fund), £3 3s.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The members and friends of the Worcester auxiliary held their first annual dinner and musical evening on Saturday last at the Bell Hotel, Worcester. Captain CHECKETTS, a vice-president, presided. Mr. YOUNG, Witley Court Gardens, proposed the toast of "The Institution and its Continued Prosperity," and Mr. W. CRUMP, of Madresfield Court Gardens, responded. Both speakers set forth the claims of the institution, and stated some interesting facts and figures concerning the institution itself and the auxiliary. They pointed out that it is the duty of every gardener, both to himself and to those dependent upon him, to commence early in life as a subscriber of one guinea per annum to the institution. It was suggested that each member should do his best to secure an additional member during the coming year, and one or two names were given in at the meeting. It was highly gratifying to the management to see such vigour and earnestness of purpose as were evident. The honorary secretary gave a short résumé of what took place at the recent election of pensioners in London, which he did in the most lucid and interesting manner. The remainder of the evening was given up to a programme of music.

THE SURVEYORS' INSTITUTION.—At a meeting held on January 21 a paper, entitled "Some Urban Land Problems," was read by Mr. A. W. CRAMPTON. The next ordinary general meeting will be held on Monday, February 10, at 8 p.m., when a paper by Mr. H. COLLEY BRIERLEY and Mr. W. H. CHRISTY CLAY on "The Railway Fires Act, 1905," will be read.

THE LATE SIR THOMAS HANBURY. We are informed that the presentation album prepared by Mr. ALWIN BERGER (Curator of the gardens at La Mortola) for Sir THOMAS HANBURY'S acceptance on his 75th birthday was given to Lady HANBURY at Christmas. The album contains about 160 photographs of the most distinguished botanists and several prominent amateur gardeners, who knew either the late Sir THOMAS HANBURY personally, who had visited La Mortola, or were in communication with his garden. It is a melancholy fact that several contributors, namely, Dr. MASTERS, Sir DIETRICH BRANDIS, Sir MICHAEL FORSTER, Professor MARSHALL WARD, Dr. KUNTZE, and C. B. CLARKE, have died since the album was begun, and that Sir THOMAS HANBURY himself never lived to receive this token of esteem from all over the world. The album contains an illuminated address, the work of Mr. HORNE, Edinburgh, and the binding was executed by Signor GIANINI, of Florence. The cost of the album was raised by subscriptions; it amounted to 1,100 francs. The album will be kept by the HANBURY family as a valued souvenir.

PROTECTING CROPS FROM FROST.—At the Athletic Institute, Birmingham, recently, Mr. WALTER E. COLLINGE, as President of the Birmingham and Midland Counties Gardeners' Association, delivered his address on "The Action of Frost on Plant Life." Mr. COLLINGE stated that we were now rapidly approaching the season of the year when fruit-growers and others stood in great dread of the early spring frosts. Almost every year thousands of pounds worth of fruit and vegetables were ruined owing to the lack of protective measures. As is well known, the atmosphere contains moisture; at a considerable elevation it becomes condensed and forms clouds. If condensation takes place actively and the temperature is above freezing, rain is produced, or snow if the temperature is below freezing. When the moisture close to the earth is condensed at temperatures above freezing, dew is formed; if below freezing, frost is deposited. We may, therefore, define frost as the moisture of the air close to the earth's surface condensed at freezing temperatures upon plants and other bodies. Wherever frost is deposited the plant or other body must possess a freezing temperature. In the case of plants the temperature is reduced by radiation and the evaporation of moisture. Mr. COLLINGE next indicated the conditions under which frost was less likely to do serious damage to plant life. The action and effect of clouds was described at some length, and likened to a blanket over the stratum of lower air. The action of frost on plants is to cause an expulsion of moisture from the cells which form the plant tissues, thus causing drooping of the leaves, as the moisture is not replaced, because the root is chilled. Apart from the advantages to be derived from geographical situation, the grower must depend upon artificial appliances, and very many and varied are these. Screens formed of cloth, laths or glass, covering the plants with straw, smudge fires, and many other devices have been suggested. After examining these different appliances, Mr. COLLINGE stated that, acting on his advice, an Evesham fruit-grower had recently patented a special stove and fuel, which, in his opinion, was far superior to anything yet put forward. It had been tried in Worcestershire, and it was found that 21 stoves per acre were sufficient to fight 9° of frost. One man was sufficient to ignite and look after such fires on 20 acres of orchard. The cost of fuel was about 15s. per acre, and the fires burnt six hours. The inventor claims for these stoves that they not only warm the atmosphere, but that they also give off a good smoke, which acts as a screen, and so protects the fruit from the sun's rays. In the lecturer's opinion, there remained little doubt that ere long British fruit-growers would be as successful as those in the United States in protecting their crops and trees from the late spring frosts, which would mean much to the fruit-growing industry of this country.

PANSY "REV. D. R. WILLIAMSON."—A new Pansy, raised by Messrs. DOBBIE & Co., Rothesay, and named after the Rev. DAVID R. WILLIAMSON, has been awarded five First Class Certificates by the leading Scottish Pansy and Viola societies and the Scottish Horticultural Association. Its colour is deep yellow, heavily blotched with velvety maroon.

ROSES AND THEIR CULTURE.—Under the auspices of the St. Martin's Branch of the Church of England Men's Society, Mr. T. P. ELKINS, Head Gardener at St. Agnes, Knowle, Bristol, recently delivered a lecture on "Roses and their Culture." Dealing first with the historical side of the national emblem, Mr. ELKINS led his audience by easy stages through the different phases of successful Rose culture. He dealt successively with the preparation of the ground, planting, and pruning, illustrating his remarks on the last operation by practical demonstrations on the different varieties which he had specially selected and potted for the purpose. The exhibition of some choice blooms added to the interest of the lecture.

ROSE GARDEN AT BERLIN.—A new public Rose garden is to be created at Britz, a few miles from Berlin, and it will be the largest garden of its kind in the world. It will not only prove attractive during the flowering season, but it will also serve as a means of instruction both for the amateur and the professional Rose-grower.

A NEW CHRYSANTHEMUM JOURNAL.—We have just received the first number of a new monthly publication devoted solely to the Chrysanthemum. It is entitled *La Revue Chrysanthémiste*. Like the one that has already been in existence for the past 12 years (*La Chrysanthème*), it is the official organ of a special society whose headquarters are at 28, Rue Baudin, Paris. The newcomer is very similar in form and style. Its contents include a biographical sketch of M. GOMOT, the honorary president of the Association Française des Amateurs et Jardiniers Chrysanthémistes; and articles on "Our Programme," "The Chrysanthemum in Japan," "Chrysanthemums for Amateurs," "Culture of the Large-flowered Chrysanthemum," rules of the society, and other matter. It is printed in French. Full particulars can be obtained of M. JEAN BIETTON at the address above given.

THE FORMOSA PLUM.—This Plum is one of Mr. BURBANK'S innovations, and is said by Mr. G. C. ROEDING, writing in *The Rural Californian* for January last, to be the best Plum in existence at the present time. The trees are wonderful growers, very free bearers, and are unequalled for quality, except perhaps by the Santa Rosa, which was introduced last year. It thrives over wide geographical areas, and as the habit is rather sprawling, it may require rather severe pruning when young.

POMOLOGICAL INSTITUTE AT PROSKUROFF.—During the current year various courses of lectures and practical instruction are to be given in forestry, horticulture, and fruit tree management at the Royal Pomological Institute at Proskuroff. The Minister of Agriculture, by an ordinance of December 7, 1907, has opened the courses to women, who are also to be admitted to the regular two-years' course of the institute.

AMERICAN NOTES.

THE ROSE SOCIETY.

EVERYTHING points to a very successful meeting of the American Rose Society in Chicago in March. Raisers and growers are stimulated by the excellent prizes offered by Mr. Philip Breitmeyer, of Detroit, and Mr. A. T. Boddington, of New York, $200 first, and $100 second, for not fewer than 50 varieties or 150 plants of Roses suitable for outdoor culture, to be shown in pots or tubs. The fight for the honour of holding the "Dorrance" shield for a year will also be keen; this is a handsome trophy, and the names of succeeding winners are to be engraved upon it. Other prizes of value for artistic grouping of Roses and for American-raised varieties will ensure a large attendance of growers.

CARNATION BEACON.

Some of the largest growers are discarding other scarlet varieties for Beacon, and the popular Robert Craig and Victory are in many cases being thrown out this season to make room for it. Beacon is probably the largest producer of fine flowers, and the quality and colour of the blooms are excellent. It flowers early in September, and continues late. The worst fault urged against it is its somewhat free production of growth shoots, rendering wide planting necessary. But when such large quantities of fine flowers are produced this ceases to be a fault, such growth ensuring a correspondingly free root action that makes comparatively heavy feeding possible.

CARNATION WINSOR.

Growers who may feel inclined to throw out this fine variety through want of success should first be sure they are treating it correctly. Outdoor culture in summer is not suitable, and the best plants are they that have been grown entirely under glass. Its lively colouring and erect stems, combined with a perfect habit and the quality of free flowering, bring it into the front rank of pink varieties, even though its flowers are not of the largest size. Benches here with 3,500 plants on each, and every one carrying from two to three flowers, with many buds to follow, are certainly a fine sight. It is one of the most refined flowers in the whole range of market Carnations. *Correspondent.*

BRITISH GARDENERS' ASSOCIATION CERTIFICATE.

At fig. 40 we have reproduced the design which has been selected by the Executive Council of the British Gardeners' Association for presentation to its members as a Certificate of membership. The design has been chosen from a large number of various kinds, and appears very suitable for the purpose for which it is intended.

SPIRÆA CANESCENS.

FOR giving a pleasing display of flowers during early June, this species is one of the most desirable of the shrubby Spiræas, but at present is not met with to any extent in gardens. It forms a neat, compact, twiggy shrub, 3 to 6 feet high, with arching branches covered in the upper parts and on the under sides of the leaves with softly tomentose or pubescent hairs. It is a native of the temperate Himalaya from Kashmir to Kumaon, and in Sikkim at altitudes of from 6,000 to 12,000 feet. The flowers are ¼ inch in diameter, pure white in the forms which are at present in cultivation, but pink varieties are recorded from its native habitat. They are clustered together in short, lateral, compound corymbs on the ripened shoots of the previous year, the inflorescences all turning upwards in the form of a long spray. The leaves are simple, shortly petiolate, and vary considerably, both in size and shape, on a single shoot, being mostly obovate, ovate, or elliptic-ovate in shape, entire or toothed, and from ½

FIG. 39.—PENDULOUS SPRAY OF SPIRÆA CANESCENS.

to 1 inch in length, and ¼ to ¾ inch in diameter. It is a near ally of both S. hypericifolia and S. arcuata, and has been known under the name of S. canescens. *C. P. Raffill.*

HOME CORRESPONDENCE.

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

WHAT IS AN HERBACEOUS PLANT? The correspondence now going on in your columns reminds me of a difficulty experienced at a horticultural exhibiton in this county last year. The schedule offered a prize for 12 hardy perennials. The exhibit we judges decided to be the best had one bunch of Gladiolus Rosy Gem. With the consent of some of the committee, we decided to put on the exhibit, "Not according to Schedule," all parties agreeing to a referee whose decision was to be final. The decision was against us. My colleague was Mr. Leadbetter, Tranby Croft Gardens, Hull. Will you kindly give your opinion? *Yorkshire Gardener.* [The Gladiolus was clearly according to the Schedule, as it certainly falls within the definition of a hardy perennial.—ED.]

———Being responsible for the opening of the discussion on this subject, I am naturally interested in the several views advanced by correspondents. The result proves a great want of unanimity in ideas, hardly any two agreeing upon any portion of the argument. How difficult, then, must the framing of classes be for committees, and how peculiar is the situation of judges where the conditions lack plainness. I have known several societies dispense with the word herbaceous entirely, owing to a want of agreement in committee, and so frame their class that it should read thus: "Twelve varieties of hardy flowers." Such conditions are, however, not at all satisfactory, as so much variety can be introduced, such as Roses, shrubs, &c. Just to illustrate how difficult committees of even important societies find the wording of the class, I will quote from a few of what are termed leading prizes schedules:—*Shrewsbury.*—"Collection of hardy perennials (Roses excluded); first prize, £10." *Cardiff.*—"Collection of hardy flowers, distinct varieties, excluding annuals, biennials, shrubby plants, and trees." *Royal Caledonian Society.*—"Twelve bunches hardy herbaceous perennials." *Brighton.*—"Collection of hardy perennial and bulbous flowers." *Grand Yorkshire Gala.*—"Collection of hardy cut flowers"; another class—"Twenty-four bunches hardy border flowers." Thus it will be seen how difficult it is for a new society to follow what are termed leading societies, as all appear to frame their classes to suit their own taste, convenience, and locality. I have come to the conclusion that those who wish to encourage strictly herbaceous perennials would do well to insert a footnote as to their ideas. Personally, I consider a true herbaceous perennial is one which dies down annually, making its growth, flowering, and passing away, like a Lychnis, Phlox, Lilium, Montbretia, &c. *E. Molyneux.*

———If no reasonably good general term can be found to meet the case, the only alternative is to educate those whom the matter concerns up to the true meaning of that old, long-standing term "Hardy herbaceous." This phrase of two words is from the technical standpoint ample enough, broad, full of meaning, and allows great latitude for the rapidly-increasing number of hardy plants. The chief stumbling block appears when we endeavour to restrict the full and true meaning of the phrase itself, and by our own misconceptions of its exceeding comprehensiveness, to endeavour to read into it a meaning which it does not contain, and probably could not, in the presence of any authoritative body, be upheld as correct. The chief weakness in this direction is the somewhat general desire on the part of a large number to argue that a plant with an above-ground growth of a more or less perennial evergreen character is not "herbaceous." Nothing, however, could be more opposed to the actual facts of the case. May I repeat the full meaning of the word "herbaceous"? It is this: "A plant producing annual flowering stems from a perennial root-stock." Here there are two conditions of qualification—the "annual flowering stems," the "perennial root." In these primary conditions nothing is said—and was probably never intended to be said—about either the "evergreen" above ground character of the plants, or their "deciduous" character. The wording does, however, say something about the "flowering stems," and these must be of "annual" duration only. No one, I take it, acting as a judge would attempt to disqualify Campanula pyramidalis—the Chimney Campanula—if shown as one among a number of herbaceous plants in any competitive group of these plants, but the same judge may, and probably would, take exception to an Aubrietia, for example, and consider himself justified in so doing. But such action would be wrong, and both of these subjects are "herbaceous" in the truest and broadest meaning of the word. Is not the 2-inch high peduncle of the Aubrietia

as much the "annual flowering stem" of that tribe as the 6-feet high stem of the Chimney Campanula is of that particular species? Quite so! Both of the subjects named are possessed of an evergreen leaf-tuft above ground, differing in general character and appearance, and, of course, widely so in stature. But the fact that in both instances the flowering stems are annual and perish as the result of flowering each year, coupled with the "perennial root-stock," brings them unmistakably within the folds of "hardy herbaceous plants." It is quite possible that usage and a freer use of those taller subjects suited to exhibition work has been in some degree responsible for a general misconception of the term, those dwarfer subjects which, like the Aubrietia, are not so serviceable in the cut state, being disregarded. To show how widespread is the misconception of the term without meeting with objection. The Royal Botanic Society regularly requested a given number of "stove herbaceous" and "hardy herbaceous," and no other two words of my acquaintance can so adequately contain all that is necessary or desirable. The words "hardy herbaceous" may therefore control the case, and used alone may be taken to imply that the smallest Alpine, bulbous, or other plant could be shown, provided it conformed to those two words in their fullest and broadest sense. Beyond such a limit, it is for schedule-makers and flower show committees to state clearly their requirements, qualifying, if need be, their words by such remarks as "bulbous and tuberous-rooted plants excluded," or the like. Plants such as Romneya, Lupinus arboreus—a specific name of doubtful veracity in this case—and Phygelius, may possibly always be productive of

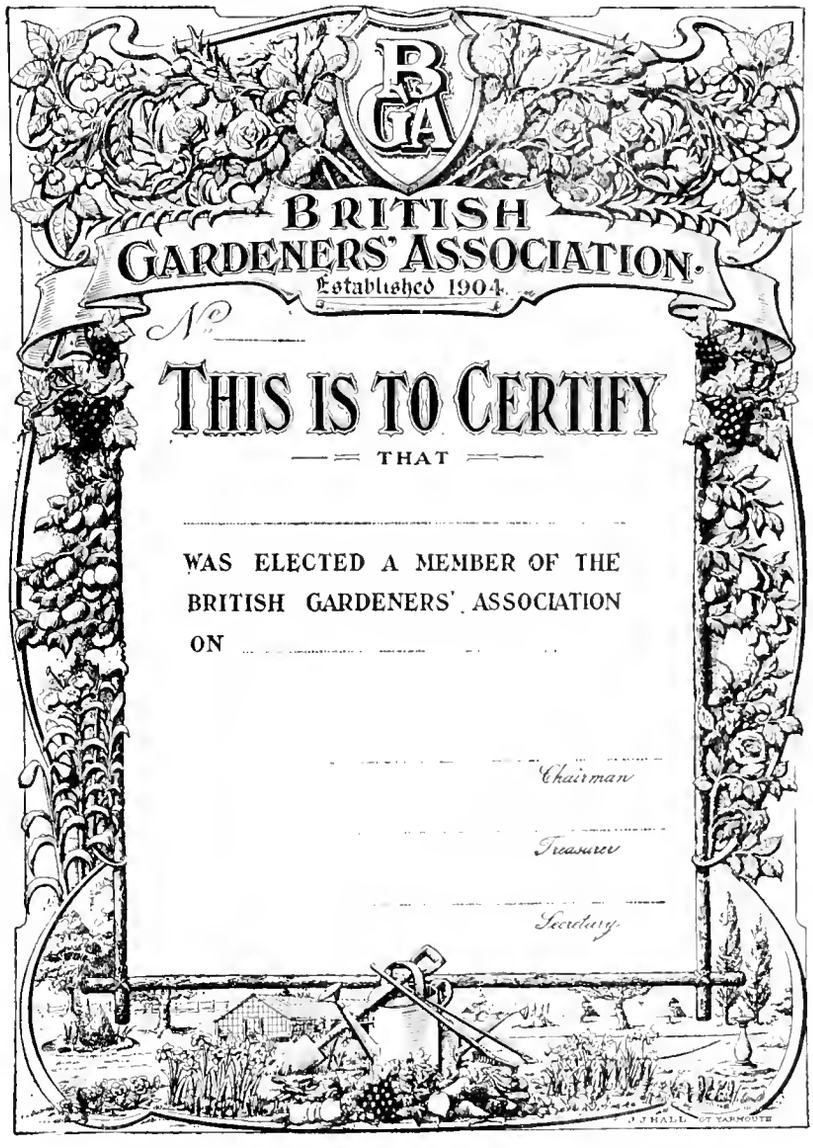


FIG. 40.—A CERTIFICATE OF MEMBERSHIP.

"herbaceous," I may remark that a year or more ago I was approached by a gentleman who prepares students for the Royal Horticultural Society's examinations with the enquiry whether the Megasea—a sectional group of Saxifraga—was "herbaceous." I replied, "Most certainly it was!" The name had been included by a class of students, I believe, but was disallowed by the examiners. Now, if such a thing be possible in high places, it is small wonder that confusion is rife in other directions; indeed, it is a wonder it is not more rampant. No plant could possibly better comply with the "annual flowering stems," &c., than the Megasea, and for years one or more species of these plants were regularly included by the late Mr. Robert Parker, of Tooting, in that gentleman's exhibits of herbaceous plants in open competition debate. These and like subjects appear to provide the links in the chain between true herbaceous plants and true shrubs. The Pentstemon, like Phlox suffruticosa and its forms, are of a different type and must be placed with the herbaceous plants. Naturally, environment has much to do with certain plants, and in particular the shortness or longevity of their existence. Thus, for example, the Wallflower or the Snapdragon may be a perfectly enduring perennial on a wall-top, lasting many years, and at 6 feet or 8 feet lower down—in the same garden, that is—nothing more than a hardy annual, or even a half-hardy one. To many of us, too, our knowledge of the plants we cultivate is limited to our experiences of them in this country, and it is here, of course, that they appeal to us most strongly. In their native habitats they may be different, also by environment. To the closing editorial enquiry at page 40: "But surely the Canterbury Bell is to be regarded as an herbaceous subject?" I can only say, "No, most certainly not!" Inasmuch as its admitted "biennial" character at once excludes it from the rank of "herbaceous" plants, the great essential of which is that they *must* possess a "perennial" root-stock. Thus it is that the brief phrase "hardy herbaceous" contains all that is requisite, if it be but rightly applied. *E. H. Jenkins, Hampton Hill.*

———Is there any better way of wording a class in a competition purposed to include all those plants commonly described as "hardy herbaceous" than is adopted by the Shrewsbury schedule, in which there are two classes, one for 18 bunches and one for 12 bunches of hardy flowers, annuals and shrubs excluded? Certainly such wording opens the door wide enough to admit not only perennials and biennials, but also those perennials which are evergreen and those which are deciduous. Still further, bulbous-rooted plants are not excluded, and what as hardy border flowers are more beautiful than Lilies? In a preceding class the word "herbaceous" occurs, and is there used in the common or stereotyped sense, as it is specifically applied to that section by perennial Phlox, commonly termed "herbaceous." There is still further another class for hardy perennials, from which Roses are excluded. Here, excluding also annuals and biennials, with the Roses, practically everything else hardy and producing flower is admissible. How much better are classes of wide inclusion than those of severe limitation? *D.*

POINTING EXHIBITION VEGETABLES.—Reverting to this subject, point judging can be applied only to collections in which the numbers of dishes range from six upwards, and the rule to point may be enforced, first to compel judges to compare each kind in the collections in a competition, and thus arrive at just conclusions; and secondly, to furnish to losing or purposing competitors, or to visitors, lessons as to which exhibits judges hold to be the most perfect. That is a matter on which the judges who award the points, and the losing competitors, seldom agree; but visitors, being impartial, prefer to regard the judges' decisions as correct, because made by experienced and impartial men. Now, whether the schedule requires an exhibit in any class for a collection of vegetables to consist of six kinds or more, it is obvious that to the judges each dish, being one item in a collection, is as important as another; and moreover, provided that the required number is presented, this makes the collection in accordance with the schedule. But to the exhibitor, that general equality in kinds may not so present itself. He has had to grow his material, and knows which are easy to produce and which are difficult, hence he says that the equality referred to does not really exist. He would therefore urge that vegetables difficult to grow should be given higher appreciation in points than those that are easy to produce. But there are still others who estimate the value of vegetables on the exhibition table by their edible value in the kitchen, and these prefer to give the highest number of points to the kinds they consider to be most valuable. This former appreciation practically forms the basis of the point awards found in the Royal Horticultural Society's code of judging rules; a code which, so far as vegetables are concerned, was arranged with the sanction and approval of a large assemblage of vegetable exhibitors. However, it does not by any means follow that this code is incapable of revision, especially in the light of wider knowledge thrown upon it by some 10 years or more of subsequent experience. The scale of vegetable pointing to which I have referred has been adopted at some provincial exhibitions. At Shrewsbury last year, in connection with that society's splendid challenge or champion class, and where at present the finest vegetable competitions are seen, pointing of the exhibits in that class was enforced. The committee took what I have described as the

judges' view of the equality of kinds, and made all dishes dependent on a maximum of seven points. Hence Potatos and Tomatos, possibly two of the most easily grown dishes, were put on an equality with Leeks and Celery—both very difficult to grow well, especially in August; and Runner Beans and Peas on the same footing as Carrots and Onions, both the latter again being very difficult to obtain in first-class condition. Were this view of the exhibition value of vegetables adopted, taking a collection of, say, 12 kinds, the maximum seven points would be Celery, Leeks, Carrots and Onions; Peas, Runner Beans, Potatos, Tomatos, Cauliflowers and Cucumbers six, and Beets and Marrows five each. It may be pleaded for Cucumbers that as they can be produced only in heat, good, clean, handsome fruits merit the higher number of marks. I think, however, on account of the much smaller edible value of the fruits as compared with others named, few competitors will ask a higher position for them. I should like to elicit kindly criticisms of what I have here written by experienced exhibitors, that something definite and satisfactory to all may result. *A. D.*

NURSERY EMPLOYÉS UNION.—About six months ago a number of nursery hands out Enfield way decided to form a union of "bona fide nursery employes." Their declared policy was to work, if possible, in friendly co-operation with employers, and their stated objects were to raise and regulate wages; to obtain time and a quarter pay for all overtime; the cessation of work at 1 o'clock on Saturdays; to obtain redress for harsh or unfair treatment; to assist out-of-work members, and to co-operate with other bodies of workmen with similar aims. Generally, the union is to be run on the recognised trade-union lines. This obtains for them the support of local trade-union societies and the sympathy of the Labour Party in the House of Commons. They have now four branches. Before the union was formed only one employer in the district allowed Saturday afternoons, whereas now there are 22. The rates of pay for ordinary hands in the market gardens and nurseries in the Enfield district are from 16s. to 19s. per week; the union prescribes 27s. per week of 59 hours for men with two years' experience, that is, competent nursery hands, and a minimum of 20s. for improvers and women. These are rates which, when compared with the trade-union rates of pay for labourers in the district, are not unreasonable. At the last general meeting of the Nursery Employes Union it was decided to extend the scope of the movement so as to admit gardeners and horticultural workers of all descriptions, the title was, therefore, altered to that of "The Nursery and Horticultural Workers' Union." This ought to satisfy those ardent members of the British Gardeners' Association who have advocated a more progressive attitude on the part of that body than it has hitherto shown. The movement for the amelioration of the lot of the gardener, more especially the young or journeyman gardener, will henceforth obtain through this Union the powerful aid of the great trade-unions and the representatives of workers in the House of Commons, as well as that of such enlightened employers as the noble president of the British Gardeners' Association and of head gardeners generally. *W. W.*

BRASSICA CROSSES.—The experiments with Brassicas made by Mr. Arthur Sutton, and recounted in your issue of January 25, are of much interest. I have worked a good deal along similar lines. In 1901 I crossed a number of the derivatives of Brassica oleracea together in various ways. The only hybrid perpetuated was one which seemed likely to be of economic value, viz., Brussels Sprout × Savoy, the plants being short-stemmed Brussels Sprouts with good Savoy heads (see fig. 41). The plants of the second generation consisted of types reminiscent of almost all varieties of the Cabbage tribe, from plants which the casual beholder would call a common Cabbage, through nondescripts of all sorts, sizes and tints, to what could well be described as Curled Kale. Some were obviously similar to Mr. Sutton's curled Thousand-headed Kale. I failed to find Mendelian segregation at work in the series. Plants which repeated the original hybrid form were chosen for seeding. Their progeny varied greatly, but less so than the foregoing. Many plants were identical with Mr. Sutton's Cabbage with sprouts. The photograph of one of them (enclosed) shows, however, that the "Cabbage" contains sprouts squeezed and hidden in its mass. I am not very sanguine of the early fixation of this type as a commercial vegetable. Deliberate crosses attempted in 1901 between Swede and Turnips and members of the Cabbage tribe resulted in failure. I have had no opportunity of noting whether Cabbages can be fertilised naturally by pollen from Turnips, but I have ample evidence that the inverse process may take place, one of my sets of hybrid Turnips having produced plants which are clearly the outcome of an accidental cross with Curled Kale. Reference may be made in this connection to the cross I effected between Curled Kale and Charlock (see report of conference on genetics, p. 202). My reciprocal crosses between yellow-fleshed Swedes and ordinary Rape were fertile. The progeny showed no conformity to Mendelian ratios. The Swede and the Rape may safely be held to be derived from the same parent species. I have not found it difficult to cross yellow-fleshed Swedes with yellow-fleshed and white-fleshed Turnips. The results, however, show that the Swedes and Turnips in ordinary cultivation are certainly of quite distinct origin. The progeny of the crosses between them are for the most part a graded series of rather unhealthy mongrels, oblivious to simple statistical methods of variation. Nevertheless I have just planted many good bulbs of the second generation, representing several

FIG. 41.—CROSS BETWEEN A BRUSSELS SPROUT AND SAVOY OBTAINED BY DR. WILSON.

crosses between Swedes and Turnips, in the full expectation of evolving some useful varieties. The problems to be solved in crossing the derivatives of such a plant as Brassica oleracea are extremely intricate. A good deal of history has been made since the wild Cabbage was first taken from its lonely sea cliff and planted in a garden. Are all the members of its brood the outcome of artificial selection, or has sporting (to use the word most familiar to gardeners) occurred? If mutation has not taken place, can that be shown to be the reason why such a cross as that between the Brussels Sprout and the Savoy leads to the reappearance of a multitude of forms, some of which were perhaps last seen in cultivation centuries ago? Is not the consideration of the habit of self-pollination seen in Peas and our cereals, contrasted with that of cross-pollination seen in Cabbages and Turnips, a profitable line of enquiry to follow with the object of reaching an explanation of the hereditary peculiarities of the plants in question? In course of time tabulation of plants found to exhibit clearly Mendelian segregation may reveal some trait in common explanatory of the processes involved. Neither Cabbages nor Turnips lend themselves to simple demonstration of Mendelian principles. *John H. Wilson, D.Sc., Agricultural Department, St. Andrew's University.*

LUCULIAS.—Having cultivated L. gratissima for the past 10 years, I find that the best place for a young plant is a greenhouse or conservatory border, where the roots will have plenty of room, or if pots are used, they should be several sizes larger than those the plants have previously occupied. It has this peculiarity: unlike the majority of other pot plants, one may over-pot the Luculia with advantage, but to confine it to a small pot and allow it to become potbound is to court failure. The situation of the border should be light and open, and the soil must be well drained, for, although this species is evergreen, it passes through a period of rest, when an excess of water would be very harmful; the soil may be made up of equal parts fibrous peat and turfy loam, with plenty of coarse silver sand, and the soil pressed firmly about the roots. I have both L. gratissima and L. pinceana in the border of a conservatory having a three-quarter span roof. The plants are trained on wires 6 inches from the wall. L. pinceana bears white flowers, and is not such a robust grower as L. gratissima, but for all that it makes a good companion to this species. A winter temperature of from 45° to 55° suits them well. My method of propagating these is to take cuttings in the usual way from well-ripened shoots in June. They are then inserted round the sides of 60 size pots, in a compost of sandy peat. The pots are placed in a cold frame, and covered with a bell-glass, keeping the same closed and shaded from the sun for a time. The cuttings are sprayed occasionally, and they do not require any water until rooted. When they show signs of rooting, air may be gradually admitted, and later the plants may be potted into single pots, using the same compost as for an established plant. The two points to remember are ample drainage and ample pot room. I lost many a young plant before I discovered this. *Thos. Francis, 31, Turton Road, Bromley Cross, near Bolton, Lancs.*

THE NATURE OF SPORTS.—Undoubtedly one of the most baffling branches of biological research is that relating to those sudden departures from the beaten track which result in the production of sports, whether animal or vegetable. Although many theories have been put forward to account for them, so far not the slightest real light has been thrown upon the subject, nor has the least clue been obtained as to the laws which determine their appearance. All that is known is that from time to time a recognised specific form, or it may be a varietal form due already to a sudden sport or by cultural selection of small gradations, assumes, through bud or seed or spore, a fresh and hitherto unknown type. As a rule, too, it is found that the influence, whatever it may be, which has determined the change, is so pervasive in the organisation of the novelty, that its offspring inherits the peculiarity and transmits it to the subsequent generations. In this respect the altered race assumes all the function and qualifications of a new species, though retaining the generic characters as regards floral type or mode of reproduction. Thus, to take the case of the Cabbage family, the versatility of which was recently so ably demonstrated by Mr. A. W. Sutton before the Linnean Society (see *Gardeners' Chronicle*, January 25, pp. 58-59), by means of lantern slides. Despite the marvellous forms which the Brassicas have assumed by sporting and selection, varying from the hard, compressed, ball-like masses of foliage of the Savoy and Drumhead Cabbages, to the feathery, fern-like foliage of some of the Kales, while the normally simple lax inflorescence has been transformed into similar ball-like masses in Cauliflower and Broccoli; and in still another direction, the simple stem has swollen, also ball-like, into the Turnip shape of Kohl Rabi—yet, despite all these metamorphoses, the individual cross-shaped flower of the Cruciferæ always remains true to the generic type with comparatively small variations in size and tint. The Kohl Rabi, too, despite its Turnip-like bulb, distinguishes itself markedly from the Turnip or Swede by bearing on its sides the large scars left by detached leaves, showing that after all it is only a modified swollen stem and not a corm proper, from the summit of which alone the foliage springs. Sports originate in various ways. Seeds or spores may be sown from an apparently quite normal plant or a well-established variety, and among the offspring

there may be one or several, or even many, of a new type possessing the constant reproductive faculty already mentioned. But on the other hand, the sport may make its appearance as a local differentiation on the parent, either as an abnormal, i.e., sportive bud, or, as a slight modification of the reproductive organs, such as a petaloid stamen, which the keen-sighted, selective cultivator notes and profits by as an indication of the "break," which is often the starting point of a new breed. The Fern Gymnogramme Lanchiana grandiceps was raised as a large batch from a heap of spores on a dilated pinnule of the normal uncrested form, and it is conceivable that many other sports originated in a similar way, i.e., by a subtle local modification of reproductive cells. What it is that induces such modification is the biologist's puzzle. Far too many "sports" have originated under wild and uncultivated conditions to admit of the idea that cultivation and high-feeding are the inducing factors. Even if it were proved, which is by no means the case, that more sports were produced under culture than under wild conditions, this argument would be invalidated by the facts that sports in plants under culture are little likely to escape notice, while wild sports are only found by diligent search under quite other conditions. As wild plants they are mingled with many other kinds of plants, while under cultivated conditions the same sorts are grown together and detection of a difference is consequently an easy matter. Cultivation may indeed enhance size and volume, but unless a definite sport occurs the normal habit remains innate, and cultivation being withdrawn, reversion to the wild type inevitably follows. Not so with the sport, and that is the essential difference. As against cultivation inducing a sportive tendency, it is a recognised fact among Fern hunters that "sports" are less likely to be found among Ferns of luxuriant growth than under conditions where growth is somewhat checked. It must, however, be borne in mind in this connection that "sports" vary in all directions, so that many are unfitted to hold their own if handicapped by more robust neighbours, and such have consequently a better chance of survival, as well as of discovery, if they originate outside the crowd, so to speak. *Chas. T. Druery, V.M.H., F.L.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

THE "Book of Arrangements" for the year 1908 has been issued to the Fellows. It contains particulars of the fortnightly meetings, lectures, and shows, lists of the members of the various committees, particulars of the R.H.S. Hall, the garden at Wisley, the *Journal*, the Society's examinations in horticulture, the Lindley Library, and other matters.

As a separate publication is issued the "Report of the Council for the year 1907," with statement of accounts, and lists of the Council and officers, honorary and corresponding members, Victoria Medal of Honour, Fellows, Associates, and affiliated societies for 1908. We make the following extracts from the report, which will be submitted at the 104th annual general meeting of the Society to be held at 3 p.m. on Tuesday next, February 11:—

Quiet, steady progress has again marked the past year.

RESEARCH STATION AND LABORATORY AT WISLEY.

The most important feature of the year's work, and one which, it is hoped, will be productive of far-reaching results, is the completion of the Laboratory and Scientific Research Station at Wisley. The opening ceremony was kindly performed by the Rt. Hon. Lord Avebury, P.C., F.R.S., on July 19, when several representatives of Government departments, prominent men of science and horticulture, and members of the Surrey County Council, were present. The occasion was one of great gratification, for it brought the realisation of a long-cherished, but long-deferred desire for a scientific station under the direct control of the Society, for research into the problems affecting plant life and plant disease at present confronting and baffling the gardener. Several very interesting speeches were delivered on the occasion which will be reported in the *Journal*.

Among the first subjects to be investigated are soil-sterilisation by steam as a means of destroying those pests of plants which live in the soil; the influence of sterilisation on the plants subsequently cultivated in the soil; the bacteria of the soil; etherisation of plants; and certain definite plant diseases. Each of these subjects will entail a large amount of laboratory work, as well as of experiment in the garden.

Mr. Frederick Chittenden, from the Chelmsford Laboratories of the Essex C.C., and for some years secretary of our Society's scientific committee, has been appointed director, having under his care both the research work, and the students' laboratory, the latter at present accommodating 24 young men. The students' training has thus been extended and improved, with a definite syllabus, and a time table apportioning their work between the gardens for practical work, and the laboratory for scientific study. The curriculum has received the approval of the Board of Agriculture, of the Science and Art Department [Board of Education], South Kensington, and of the Surrey County Council, who have asked the Society to co-operate with their efforts to afford horticultural education in the county, they themselves offering a certain number of scholarships in the Society's gardens to lads from the elementary and secondary schools of the county. The laboratory is recognised by the Board of Education as a technical school for grant, in conformity with whose regulations Messrs. W. A. Bilney, J.P., E. A. Bowles, M.A., W. Marshall, V.M.H., Harry J. Veitch, V.M.H., and the Rev. W. Wilks, M.A., have been appointed managers.

The question of the association of the Society in its education and research work at Wisley with the University of London has, at the request of the Council, been brought before the authorities of the University by Sir Albert Rollit, who is a member both of the Council of our Society and also of the Senate of the University, and, at the suggestion of the latter, the consideration of the subject has been adjourned.

DONATIONS, PRIZES AND SCHOLARSHIPS.

The Council acknowledge with heartiest thanks the receipt of £100 offered by Mr. Arthur W. Sutton, J.P., V.M.H., to inaugurate a prize scheme for the students at the gardens; and also the gift of an excellent photographic outfit for use at Wisley from Mrs. Hornby Lewis.

With reference to the prize scheme, which has not yet been definitely formulated, it is hoped that further donations will be forthcoming to secure an annual income of £15 to £20, so that the books or apparatus, given as prizes, may be worth working for, and serve as a real stimulus to the young men. The Council would also welcome the foundation of scholarships.

Whilst on the subject of donations, it should be mentioned that the Royal Dutch Bulb Growers' Society at Haarlem have kindly placed at the disposal of the Council a series of prizes, ranging from £2 2s. to £8 8s., for forced Hyacinths, to be competed for at the Society's Exhibition on March 31, 1908. There are to be six classes, three for amateurs and gentlemen's gardeners, and three for nurserymen. Full particulars will be found in the Book of Arrangements for 1908.

WISLEY GARDENS.

The new garden which was so generously purchased for the Society's use by Sir Thomas Hanbury, V.M.H., K.C.V.O., is gradually being brought into thorough working order. Much, however, still remains to be done. Various trials of flowers and vegetables have been carried out, and Mr George Massee, V.M.H., has conducted some original research work.

The number of visitors to the gardens admitted by Fellows' tickets during the year 1907 amounted to 8,818, as compared with 8,147 in 1906. This is exclusive of horticultural parties which were admitted by special arrangement, and would increase the total to over 10,000. The number would, no doubt, have been even larger but for the very unsettled weather of the summer of 1907.

WISLEY LAND TAX.

The Council were advised to redeem the land tax on the Wisley Gardens in anticipation of a greatly increased assessment of the property. This therefore was done, at a cost of £42 5s.

THE UNION OF HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.

The union of mutual improvement societies is another development of the past year. The Council hope, by thus drawing the many isolated, but exceedingly useful, horticultural mutual improvement societies into federation with our Society, and with each other, to strengthen and encourage them, and generally to promote their welfare. It is intended under this scheme to gather from existing societies the most suitable rules and regulations and general constitution for the information of newly starting societies, to keep a list of lecturers willing to assist them, and to furnish them with printed lectures, when a lecturer cannot be secured, or unavoidably fails to fulfil his engagement. All affiliated societies are included in the union.

THE REPORT OF THE GENETICS CONFERENCE

The report of the International Conference on Genetics held in the summer of 1906 and edited by our secretary was published in the spring, and presented to all who were present at, or took any part in, the conference, and to all Fellows who had made application for it. The Council have received many congratulations upon the excellence of this report, which forms the most complete collection of information on this interesting subject yet published.

OBITUARIES.

The death roll among prominent Fellows of the Society is, unhappily, unusually heavy. First to be mentioned must be Sir Thomas Hanbury, K.C.V.O., the generous donor of the Wisley Garden. Then follow Sir Frederick Wigan, Bart., who for several years was a vice-president of the Society, and one of our most prominent growers of Orchids; and Doctor Masters, F.R.S., vice-chairman of the scientific committee for many years, and always a prominent figure at all the Society's meetings and conferences. The Society has lost another constant friend in Sir Michael Foster, F.R.S., whose horticultural work, especially amongst Irises, is well known to all. Mention must also be made of the Rt. Hon. Lord Battersea, Sir Alexander Arbuthnot, K.C.S.I., C.I.E., Major Bythway, Mr. Frederick Q. Lane, Mr R. I. Measures, the Hon. Mark Rolle, Lady Louisa Egerton, Mr. John Assbee, and Mr James Herbert Veitch.

MASTERS' MEMORIAL FUND.

The Council wish to commend the "Masters' Memorial Fund" to the support of the Fellows of the Society. In the latter part of the year a meeting was held to consider in what way the late Dr. Masters' memory, and his work for scientific horticulture, could be most suitably perpetuated, and it was at once felt by all that the most fitting memorial would be to establish foundation lectures on the application of science to horticulture, to be called "The Masters' Memorial Lectures," similar to existing foundation lectures in law, medicine, and other sciences. The Council gladly accepted the suggestion, and a circular letter was sent out to the Fellows, in response to which about £320 has thus far been received. It is greatly hoped that further donations may yet be made to the fund, in order that three lectures at least may be adequately endowed and so carry on Dr. Masters' memory to succeeding generations of gardeners.

RETIRING MEMBERS OF THE COUNCIL.

Under bye-law 60, the Hon. John Boscawen, Mr. J. Gurney Fowler, and Mr. William Marshall, V.M.H., the three members of the Council who have been longest in office, retire, but are proposed for re-election. The Earl of Tankerville, finding that distance from London prevents his regular attendance at the meetings of the Council, has asked to be allowed to resign, and the Council hope that Mr. E. A. Bowles, M.A., of Myddleton House, Waltham Cross, vice-chairman of the scientific committee, may be elected to fill the vacancy thus caused.

VICTORIA MEDAL OF HONOUR.

During the past year three vacancies in the roll of the Victoria Medal of Honour have occurred (Sir Thomas Hanbury, Sir Michael Foster, and Mr. Harry Turner), and Sir John Dillwyn Llewelyn, Bart., Mr. Henry Ballantine (the veteran head gardener to Baron Schroder), and Mr. George Dickson, the Rosarian, of Newtownards, Ireland, have been elected by the Council.

ANNUAL PROGRESS.

The following table will show the Society's progress in regard to numerical strength during the past year:—

LOSS BY DEATH IN 1907.

		£ s. d.
Life Fellows ... ... 23 ...		0 0 0
4 Guineas ... ... 4 ...		10 10 0
2 ,, ... 64 ...		128 2 0
1 ,, ... 78 ...		71 8 0
159		£216 6 0

LOSS BY RESIGNATION, &c.

		£ s. d.
4 Guineas ... ... 2 ...		8 8 0
2 ,, ... 105 ...		220 10 0
1 ,, ... 383 ...		402 3 0
Associates ... ... 16 ...		8 8 0
Affiliated Societies ... ... 14 ...		14 14 0
520		£654 3 0
Total Loss 676		£870 9 0

FELLOWS ELECTED IN 1907.

		£ s. d.
Hon. Members ... ... 4 ...		0 0 0
4 Guineas ... ... 4 ...		16 16 0
2 ,, ... 510 ...		1,071 0 0
1 ,, ... 690 ...		690 0 0
Associates ... ... 34 ...		17 17 0
Affiliated Societies ... ... 67 ...		38 17 0
Commutations 20		
= £443 3s. 0d		
1,209		£1,774 10 0
Deduct Loss		870 9 0
Net Increase in Income		£904 1 0

New Fellows, &c.	1,209
Resignations and Deaths	676
Numerical Increase	533
Total on December 31, 1906	9,467
Total on December 31, 1907	10,000

The Council are pleased to record that the total number of Fellows, honorary or corresponding members, associates and affiliated societies is now 10,000, which is believed to be the highest number belonging to any British Royal Society.

"JOURNAL."

Vol. xxxii. of the *Journal*, which deals with the work and lectures of the Society during the whole of 1906 was sent out in June last, and a further issue, Vol. xxxiii., containing the records of January to June, 1907, is about to be issued.

EXAMINATIONS.

The Society again held its three examinations: one in general horticultural knowledge; one, for school teachers, in cottage and allotment gardening; and one for men employed in public parks and gardens. These will be continued in 1908 with an addition to the "School Teachers' Examination" of elementary chemistry and biology, which subjects will be optional in 1908, but obligatory in future years. A fourth examination is also to be established—viz., for juniors under 19 years of age, in elementary gardening.

SHOWS IN 1907.

During the year 29 exhibitions, covering 35 days, have been held by the Society.

THE TEMPLE SHOW.

By the renewed kindness of the Treasurer and Benchers, the Society held its great show for the 20th year in succession on May 28, 29, and 30, in the gardens of the Inner Temple. The attendance was again a record one.

In 1908 a similar show has been arranged for May 26, 27, and 28, when there will be a private view open to Fellows' tickets only, on Wednesday, May 27, between the hours of 7 a.m. and noon. Fellows are particularly requested to notice that there will be no admission by payment to this private view; it will be reserved only for the annual tickets, transferable and non-transferable alike. This arrangement has been made to meet the wishes of many Fellows, and to obviate as far as possible the unpleasantness of overcrowding.

THE SUMMER SHOW.

On July 9 and 10 the Society's annual summer show was held in the park of Holland House, by the kind permission of Mary, Countess of Ilchester, who has most generously consented to the summer show of 1908 being again held there.

COLONIAL FRUIT SHOWS.

The two Colonial fruit shows, held in June and November, were most satisfactory, and the Council have, from time to time, received many expressions of thanks and of the debt of gratitude which the Colonies owe to the Society for them. They have also received many assurances of the encouraging stimulus these shows, and the Society's awards, have given to fruit-growers in the Colonies. This year the number and size of the exhibits has increased, and the judges, at the November show in particular, pronounced the fruit to be the best hitherto imported to England for excellence in quality, colour, and packing. Similar shows are to be held on March 5 and 6, June 11 and 12, and November 26 and 27, in the coming year. The Council hope that the Fellows will take a more active interest in these exhibitions, as they are organised at considerable trouble, and, as a matter of experience, visitors never fail to be interested and pleased with the immense variety of fruits, illustrative of the resources of Britain-over-the-Seas.

BURNHAM BEECHES.

At the request of the Right Hon. the Lord Mayor and the Corporation of the City of London, the Council, on August 20, appointed a small committee, consisting of Mr. F. J. Chittenden, Mr. Harry J. Veitch, V.M.H., Mr. A. D. Webster, and the Rev. W. Wilks, M.A., to examine and report upon the condition of the trees at Burnham Beeches. The committee devoted considerable attention to the matter, and towards the end of September issued their report to the Corporation, which will also be published in the Society's *Journal*. A letter of thanks has since been received from the Right Hon. Sir James Bell, the Lord Mayor.

DEPUTATIONS.

The Council have with much pleasure received and accepted invitations to send deputations to the Cornwall Spring Flower Society on April 7th, 1908; to the jubilee meeting of the Yorkshire Floral Society on June 16, 1908; and to the Durham, Northumberland and Newcastle-upon-Tyne Society's Show on July 1, 1908.

KINDRED SOCIETY SHOWS.

Many Fellows having expressed their disappointment at being excluded (except on payment) from the flower shows held in the hall by special societies, the Council have this year made it a stipulation that all special flower societies taking advantage as such, of the specially reduced terms for the use of the hall, shall admit all our Society's Fellows tickets free.

The following regulations have been issued, and Fellows will see from the announcement on their tickets which special societies have accepted the very liberal terms thus offered by the Society.

1. If a kindred society can, by arrangement, fix their show on a Wednesday or a Thursday following one of the R.H.S. fortnightly shows, then the kindred society shall have the gate money and the use of the hall free of all charge; attendants being provided by the kindred society, and free admission given to all holders of R.H.S. tickets.

2. A kindred society unable to adopt such Wednesday or Thursday shall have the use of the hall for £5 for the day, 6 a.m. to 6 p.m., the gate money being taken by the kindred society, who must provide all attendants; the tables will be set up by the R.H.S., and all R.H.S. tickets must be admitted free.

3. A kindred society unable to admit R.H.S. tickets must negotiate for the use of the hall on the ordinary scale of charges for letting.

REDUCED RAILWAY FARES.

At the request of a large number of Fellows, the Council prepared a petition to the railway companies of Great Britain, asking for similar privileges of reduced railway fares to those granted to some other societies. The petition was signed by nearly 3,000 Fellows, and met with a courteous but decided refusal.

Scientific Committee.

JANUARY 28.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair), Professors Percival and Boulger, Rev. W. Wilks, Messrs. W. Cuthbertson, H. T. Güssow, C. T. Druery, G. Massee, W. C. Worsdell, G. Gordon, E. M. Holmes, A. W. Sutton, J. Odell, A. Rolfe, J. T. Bennett-Poë, J. Douglas, F. J. Chittenden (hon. sec.), and numerous visitors.

Inheritance of pigment in Pisum sativum.—Mr. C. C. HURST, F.L.S., communicated the following note from Mr. E. A. BUNYARD, of Maidstone, on "The Inheritance of Pigment in Pisum sativum":—"The green and yellow colours of the cotyledons of Pisum sativum were selected by Mendel as one pair of constant differentiating characters, and from their apparent alternative inheritance the theory of gametic purity was deduced to explain results obtained in this species. The lack of any definite examination of the two colours in question led me to make some chemical and photo-chemical experiments as below, the pigments of the cotyledons alone being considered. The green pigment is, of course, chlorophyll, and thin sections mounted in glycerine show the chloroplasts well, and give the well-known 'hypochlorin reaction' when treated under the cover glass with glacial acetic acid. An alcoholic extract also gives the well-known bands in the red when spectroscopically examined, and the fainter bands in the blue and violet. The yellow colour is due to a pigment of the xanthophyll series, pigments which are always found in association with chlorophyll in the green parts of plants. The point, however, which is of importance is the gradual fading of the green (Sachs' 'Degradation of chlorophyll'), and the presence of the xanthophyll. The green chloroplasts, as the seeds attain maturity, gradually lose their green pigment, and when it has entirely vanished they are left in the cell as pale yellow globules. The yellow xanthophyll has, however, been present from the beginning, and the disappearance of the chlorophyll green has merely rendered it visible. The simultaneous presence of the two colouring matters can be demonstrated in this way. When a number of green cotyledons are steeped in alcohol a green extract, as referred to above, is obtained, and this fluid retains its green colour only so long as it is kept from light. When it is exposed to daylight, or even gaslight, it rapidly loses the green colour and fades to a yellowish tint. Upon examining this spectroscopically, it is found to have absorption bands in the blue and violet identical with that of an alcoholic extract made from yellow cotyledons. This fading of the green is seen in the autumnal colouring of leaves, and in an inverse order the slow development of cholophyll when etiolated plants are exposed to light. These facts, I venture to think, render it necessary to modify Mendel's original conception in this special case, as it is evident that the conception of a factor for green and one for yellow, and the alternative inheritance of each is hardly in harmony with the facts. As all cotyledons pass through the green stage, and certain only pass through to the yellow, I would suggest that the factor may be not a factor of '*quality*,' but a factor which extends or limits development." Commenting upon the foregoing, Mr HURST wrote:—"The above note by Mr. E. A. Bunyard is a valuable contribution to our knowledge of the nature of Mendelian characters in Peas. According to Mr. Bunyard's results, green Peas contain invisible yellows at all stages of their development, while yellow Peas contain green in the early stages only. A yellow Pea may, therefore, be regarded as due to the presence of a factor which causes the green to fade at an early stage of development, while in the green Pea this factor is absent. The Mendelian units concerned are therefore not simply yellow and green, as Mendel supposed, for all green Peas contain the yellow element as well as the green, but would appear to be rather the presence and absence of a factor which causes the green to fade."

Hybrid Brassicas.—Mr. A. W. SUTTON read a paper, which he illustrated by means of lantern slides, upon "Hybrid Brassicas," similar to that delivered before the Linnean Society recently and reported and illustrated in these columns

NATIONAL CHRYSANTHEMUM.

(ANNUAL MEETING.)

FEBRUARY 3.—The annual meeting of the above society was held on this date at the Essex Hall, Strand, Mr. Thomas Bevan presiding.

A letter was read from Chas. E. Shea, Esq., the president, regretting his inability, through illness, to be present. Sir Albert Rollit also wrote explaining the cause of his absence. On the motion of Mr. C. H. Curtis, the annual report and balance sheet were received.

EXTRACTS FROM THE REPORT OF THE EXECUTIVE COMMITTEE.

During the 12 months 77 new members (12 Fellows and 65 ordinary members) were added to the roll as compared with 60 in the previous year. Whilst it is satisfactory to note that there was an increase in the additions, your committee would point out that there is still room for a very great improvement in this direction.

The list of affiliated societies is in itself a tower of strength, and in this matter the National Chrysanthemum Society occupies a unique position amongst societies which are devoted to the culture of one particular flower. On December 31 there were 110 suburban, provincial and Colonial societies on our register of affiliated societies. During the course of the year, several protests raised by exhibitors in connection with the shows of affiliated societies were submitted to your committee, and in each case the most careful consideration was given to the facts, and the committee's decisions were loyally accepted by the interested parties.

Exhibitions were held in October, November, and December at the Crystal Palace as in former years. Your committee are pleased to report that the number of entries in the various classes showed an increase of about 33⅓ per cent. over the previous year. This is all the most satisfactory when it is remembered that many of the new exhibitors, although enthusiastic Chrysanthemum growers, were in reality maiden exhibitors so far as this society's shows were concerned, and it may therefore be reasonably hoped that the majority, if not all of them, will be competing again in 1908 with increased zest. The quality of the exhibits was exceptionally high, both as regards the individual blooms and the general effect, and this in spite of a rather unfavourable season. The trade exhibits also showed an increase in number over the previous year, and were quite up to the usual high standard.

The exhibition of Chrysanthemums as grown for market was held at the Foreign Flower Market, Covent Garden, on Wednesday, December 11, by kind permission of His Grace the Duke of Bedford, K.G. The entries at this show were not quite so numerous as on previous occasions, but the exhibits were of a very high quality. In connection with this show, it may be mentioned that your committee heard with extreme regret of the death of Mr. J. Assbee, the Superintendent of Covent Garden Market, which occurred in November last, and a letter expressing the sincere condolence and sympathy of the members of the society was forwarded to the late Mr. Assbee's widow.

The shows for 1908, which will be held at the Crystal Palace, have been fixed for Wednesday and Thursday, October 7 and 8; Wednesday, Thursday and Friday, November 4, 5, and 6; and Wednesday and Thursday, December 2 and 3.

The best thanks of the society are again due to the stewards and other gentlemen who assisted at the shows, and also to Mr. G. L. Caselton, Superintendent of the Gardens, at the Crystal Palace, who spares no pains to make the shows successful from every point of view.

Twenty-six meetings of the Executive Committee and sub-committees were held in 1907. Members were also in attendance at the society's shows at the Crystal Palace and Covent Garden, and the Hon. Foreign Corresponding Secretary also attended the French Society's shows in November at Paris and Orleans.

Seven meetings of the Floral Committee were held during the season, four at Essex Hall and three at the Crystal Palace. Mr. D. B. Crane was unanimously re-elected chairman at the first meeting and presided over all the deliberations of the committee. During the season, 215 entries were recorded, and the following awards were made, viz.:—Thirty-two First Class Certificates and 11 Commendations, whilst in several cases the exhibitors were asked to submit the blooms to the consideration of the committee on a future occasion. Silver Medals were also awarded to Mr. W. J. Godfrey, Exmouth, and Mr. H. W. Thorp, Worthing, for interesting collections of new varieties submitted at the meeting held on October 28.

As foreshadowed in the last report, the society's "Year Book" was issued early in 1907, and was well received by the members. All members received free copies, but the sales to the general public were very small, and the income from advertisements was not as large as had been hoped. For this reason your committee decided with regret that it was inadvisable to incur this expense again in 1908. They still adhere, however, to the opinion expressed in the last report with regard to the importance of issuing publications dealing with the various aspects of the Chrysanthemum.

The annual dinner was held at the Holborn Restaurant on November 26. The chair was occupied by the president of the society, Charles E. Shea, Esq., who was supported by Sir Albert Rollit, D.C.L., LL.D., and about 100 other guests and members.

The committee again desire to tender their best thanks to the donors of special prizes, viz.: The President (Chas. E. Shea, Esq.), the Ichthemic Guano Company, Mr. R. Sydenham, Mr. J. Williams, Mr. J. J. Simpson, Mr. W. Wells, Mr. F. G. Oliver, and Messrs. Cragg, Harrison & Cragg.

The ordinary income of the society showed an increase over the previous year, but having regard to the special expenditure the committee deemed it advisable to transfer £70 from deposit account to general account. They have, however, resolved to so transfer not less than £25 to deposit account from the current year's income and to continue the same policy until that account is restored to at least its original figure. The prize money in respect of all the shows has been paid.

Your committee received with the deepest regret the announcement of the President that in consequence of continued ill-health he would be unable to continue to fill that office after the close of 1907. Mr. Shea has been president of the society for the past five years and your committee wish to place on record their sense of indebtedness to him for the many valuable services he has rendered to our society.

Under these circumstances your committee have much pleasure in announcing that Sir Albert Rollit, D.C.L., LL.D., has consented to be nominated for the office of president during the coming year, and his name will be submitted to the members at the annual meeting.

Arising out of the report, Mr. Simpson enquired what the loss to the society had been in connection with the publication of the *Year Book*, and Mr. Green, the treasurer, replied that it was about £50. It is, however, only fair to explain that this book was prepared for gratuitous distribution among the members, and, under such circumstances, could not be expected to return a profit. On account of shortness of funds, the committee felt that for the present they could not recommend a continuation of its issue.

Another enquiry arising out of the subject was the probability of an audit of the November show. The chairman stated that one would not be published this year, as the matter had been overlooked.

The election of officers was then proceeded with, the following being the results:—President, Sir Albert Rollit, D.C.L., LL.D.; treasurer, Mr. John Green; chairman of Executive Committee, Mr. T. Bevan; vice-chairman, Mr. E. F. Hawes; foreign secretary, Mr. Harman Payne; general secretary, Mr. R. A. Witty; auditors, Messrs. Lake and Scammell. One-third of the Executive Committee retiring, according to rule, the following were elected for three years, viz., Messrs. Ballantine, Cassidy, Cragg, Crane, Curtis, Cull, Emberson, Felton, Foster, McKerchar, Newton, Prickett, Seabrook, Springthorpe, and Tyler. Mr. C. E. Shea's name was added to the list of vice-presidents, and, on the motion of Mr. Harman Payne, a vote of thanks was passed to him for the services he has rendered to the Society during the term of his office as president.

An alteration in the rules, after a little discussion, was adopted, relating to the appointment of judges. In future the society will not be compelled to go outside of its own committee for judges at the shows, and the post of judge will be an honorary one.

A delegate from the Eastbourne society drew attention to the subject of juvenile exhibitions as a means of increasing the interest in Chrysanthemum culture. The election of new members brought the meeting, which was rather thinly attended, to a close.

DEBATING SOCIETIES.

PANGBOURNE GARDENERS' MUTUAL IMPROVEMENT.—The third annual dinner in connection with this association was held in the George Hall, Pangbourne, on January 22, when over 70 members and friends were present. The president, A. Petrocokino, Esq., occupied the chair, and was supported by several of the vice-presidents. Messrs. H. G. Cox and G. Hinton were present as representatives of the Reading Association, and Messrs. Young and Forrester, of the Theale Gardeners' Association. An enjoyable programme of vocal and instrumental music was gone through. *E. H. D.*

DEVON AND EXETER GARDENERS'.—At the last meeting of the association an animated discussion on Summer-pruning took place. It was introduced by Mr. Slade, of Poltimore Park, and joined in by several of the members. Although various opinions were expressed as to the best time for carrying out the operation, the advantages of Summer-pruning, when judiciously done, were generally admitted.

——— On February 1, at the Turk's Head Hotel, the members sat down to supper under the chairmanship of Mr. W. Mackay, the treasurer of the association, when a very pleasant evening was spent. A special invitation was made to the younger members to come forward with essays and help in the discussions. The claims of the Gardeners' Royal Benevolent Institution were urged on behalf of the local auxiliary which is doing excellent work in the County of Devon. *J. H.*

SALISBURY AND DISTRICT GARDENERS'.—There was a large attendance at the last meeting of this society to hear Mr. Parrott, representative of the Bath Gardeners' Association, lecture on "Fuchsias." The lecturer dealt chiefly with the subject of specimen plants for exhibition purposes. The month of March was stated as being the best time to insert cuttings. The cuttings as soon as rooted should be given every encouragement and during their growth should never be permitted to become pot-bound. If kept growing for eighteen months splendid specimens, well balanced from top to bottom, should be obtained. *W. Y.*

WARGRAVE AND DISTRICT GARDENERS'.—The annual meeting was held on January 8, when the report and balance sheet were adopted. From the report it appears that 23 new members joined during 1907, and allowing for removals and one death among the members, at the end of the year the roll stood at 59 ordinary and 21 honorary members. The balance sheet showed that £15 was carried to a reserve fund and after all expenses had been met there was still a balance in hand of over £6. A sum of five guineas was voted as an honorarium to the hon. sec.

——— On January 15 the sixth annual social gathering of the members took place in the Woodclyffe Hall. There was a large company to tea and it was further augmented afterwards.

——— On January 22 Mr. J. T. Blencowe, gardener at Wilminster Park, gave a lecture on "Microscopic Plants" illustrated with a large number of lantern views.

BRISTOL AND DISTRICT GARDENERS'.—The best attended meeting of the present session was held on Thursday, January 30, at St. John's parish room, Mr. I. C. House in the chair. "Begonia Gloire de Lorraine" was the subject for discussion, and it was introduced by Mr. T. Parriott, representative of the Bath Debating Society. In his opening remarks the lecturer briefly referred to the origin of this Begonia, stating that B. socotrana and B. Dregii were its parents. The best mode of propagation, Mr. Parrott said, is by leaf cuttings, which are preferable to stem cuttings, making better plants, because plants grown from leaves do not produce flowers in their growing period as is the case with plants raised from ordinary cuttings. The cultivator should obtain well-matured leaves in December and January, insert them in boxes of sand or Cocoanut fibre, and place them over a bottom heat of from 75° to 80°. On the appearance of growths the cuttings should be potted into 3-inch pots, and finally into 6-inch pots, using a compost consisting of two parts Cocoanut fibre, one part leaf-soil, and one part fibrous loam, adding sand and charcoal. The soil should not be made firm. The plants need to be kept in a cool house in summer and should flower in an atmospheric temperature of about 60°. For three plants in flower Mr. Curtis won the 1st prize and Mr. Wakefield the 2nd prize. Mr. Curtis also won the 1st prize for two Orchids. *H. W.*

LIVERPOOL HORTICULTURAL.—A meeting of this association was held on February 1, Mr. Forster in the chair. The lecturer for the evening was Mr. H. Curtis, superintendent of the parks and gardens at Widnes. The subject was "Some Hardy Garden Flowers," more especially those suitable for towns and smoky districts.

REDHILL, REIGATE AND DISTRICT GARDENERS'. This society held its fortnightly meeting at St. Mathew's parish rooms, Redhill, on January 21. A paper was read by Mr. W. Turnham (representative of the Reading Gardeners' Association), on "Trenching and its Advantages." *G. P. S.*

CHELMSFORD & DISTRICT GARDENERS'. At the weekly meeting held in the County Laboratories on January 24, Mr. H. Stiles, of Writtle Wick, gave an interesting lecture on "Mushrooms and their Cultivation." The lecture was followed by questions which were answered impromptu by members as they were called upon.

——— On the 31st ult., Mr. Orpen, of West Bergholt, read a paper on "Rose Culture." R. Miller, Esq., St. Leonards, Ingatestone, president of the association, was in the chair, and about 90 members were present. The association is to be congratulated on its flourishing condition, and the very useful work it is doing.

DORCHESTER GARDENERS' & AMATEURS'.—The annual meeting of this society was held recently at Ermington House, the residence of Mr. C. S. Prideaux, the hon. sec. of the society. Mr. H. J. Hellier presided. The report showed that the interest of the members had been well sustained. The series of lectures had proved of an instructive character, and the outdoor meetings held in the summer were greatly appreciated. Prizes had, as usual, been offered for exhibits of fruit, flowers, and vegetables, and had been productive of keen competition. General satisfaction was expressed with the financial statement. The chairman announced that a letter had been received from Mr. Nelson M. Richardson (president of the Dorset Natural History and Antiquarian Field Club), who had kindly consented to judge the members' essays on "Six Insect Pests," and for which two prizes of £1 and 10s. were offered by Captain R. Dymond (president of the society). Mr. Richardson awarded the premier prize to Mr. Spiller, and the second to Mr. Stone. The assistant hon. sec. informed the members that at the next meeting, to be held on Monday, February 24, Mr. P. W. Lasham (from Messrs. Sutton & Sons, Reading) would lecture on "Early Potato Cultivation."

CROYDON & DISTRICT HORTICULTURAL.—This society made a capital opening of their new session on January 29, when Mr. R. Edwards, Beechy Leys Gardens, Sevenoaks, read a paper on "Hardy Fruits," or perhaps what may be described as part of that extensive subject, for he confined his remarks to Apples and Pears. Mr. Edwards is a successful grower, as is evidenced by his exhibits at the Crystal Palace and other big shows. To show the character of the various Apples, he staged 72 varieties, all of which were excellent types, and acted as a medium to illustrate his remarks. Besides Mr. Edwards' exhibit there was a fine seedling Amaryllis, staged by Mr. H. Peckham. Mr. M. E. Mills put up a vase of White Chrysanthemums, "Nellie," and a fine pot of Cypripedium insigne; and Dr. Jackson sent three dishes of Pears.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending February 5.

The warmest week at yet this winter.—The first day of the week was cold, but since then the day temperatures have been about seasonable. The nights were, however, nearly all cold, and on the coldest night the exposed thermometer registered 13° of frost. The ground temperatures are at the present time rather low, the reading at two feet deep being about 4° colder, and at one foot deep about 2° colder, than is seasonable. Slight rain fell on three days, and on one of them there was a light fall of snow. It is now nearly four weeks since there was any fall of rain or snow worth mentioning, and for over a fortnight there has been no measurable percolation through either of the soil gauges. There has been a good record of sunshine which amounted on an average to three and a half hours a day, or nearly double the mean duration for the time of year. The wind has been, as a rule, high, and in the windiest hour on one day the average velocity reached 23 miles—direction west. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as nine per cent.

JANUARY.

Frequent changes in temperature.—This was the coldest January for 11 years. The most noteworthy feature, however, as regards temperature was the frequent changes. In fact, there occurred three distinct cold periods, and three distinct warm periods, during the month. On the warmest day the temperature in the thermometer screen rose to 53°, and on the coldest night the exposed thermometer indicated 25° of frost the lowest reading in January for 13 years. Rain, hail, or snow fell on 13 days, to the aggregate depth of 1¼ inch, or ¾ inch below the January average. Virtually the whole of the total rainfall was deposited on two consecutive days in the early part of the month, for at no other time did the fall for any one day reach even a tenth of an inch. On as many as 21 days there was no measurable percolation through either of the soil gauges. The sun shone on an average for 1½ hours a day, which is about a seasonable duration. On 15 days no sunshine at all was recorded, and on five other days the record of bright sunshine amounted to less than an hour. This was, on the whole, rather a calm month. On two days, however, the mean velocity for the windiest hour reached 23 miles direction west. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 1 per cent.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the drainage year began in October last the total rainfall has exceeded the average for those four months by 2 inches, which is equivalent to an excess of 46,370 gallons per acre in this district. At the same time last year there was an excess of 58,820 gallons per acre. *L. M., Berkhamsted, February 5, 1908.*

ENQUIRIES AND REPLIES.

BISULPHIDE OF CARBON FOR VINE BORDERS (see p. 80).—Bisulphide of carbon is a highly volatile fluid of a most disagreeable smell, and is never likely to be used largely for the purpose mentioned. In the first place, the necessary amount of labour and expense are deterrent, and, secondly, the poisonous nature of the vapour renders great care necessary. Its application to the borders either whilst the Vines are active or dormant is fraught with danger, as too much would immediately injure them. When used, however, it should be during the latter period, as the circumstances are then more favourable. The quantity which may be regarded as safe per cubic yard would be half an ounce or less. Holes are made 18 inches or more in depth, and the liquid poured therein; these are then instantly filled, and covered with a stone. Another method is to place a stone at the bottom of the hole, the requisite quantity of the liquid placed in a small bottle is then laid thereon, a stake of some sort sufficiently long to rest on the bottle and extend a little above the surface is placed in position, and the holes filled in. A tap on the head of the stake later with a mallet or hammer will smash the bottle and liberate the fluid. The vapour spreads its way through the interstices or air-chambers of the soil, destroying all insects, &c., within its reach. If *W. H. P.* is without experience, it would be advisable for him to experiment very carefully at first, or seek the aid of some experienced person. Or, perhaps, better still, have recourse to the insecticide "Vaporite," which is both safe and effective, answering the same purpose but unaccompanied with the risk that attends the use of Bisulphide of Carbon. *G. D. R.*

MOLES.—Can any reader tell me how to exterminate moles from a lawn? They seem to be too artful to go into traps set in the usual manner. Can the moles be poisoned in any way? *F. B.*

ANSWERS TO CORRESPONDENTS.

AERIAL ROOTS ON VINES: *A. H. A.* The canes are induced to make adventitious roots owing to one or several causes. The atmosphere of the house may be kept too hot and too moist, without sufficient ventilation, or the roots may be growing in a cold, badly-drained border. Such roots are the natural result of growing vines in forcing houses, but if they are produced in excessive quantities, it is an indication that the roots below the ground level are less active than is desirable, and this condition is one which should be remedied.

BOOKS: *J. M. Ferns for Amateurs*, by George Schneider, new edition, obtainable from our publishing department, price 3s. 10d., post free.

COAL ASHES: *Inquirer.* Finely-sifted coal ashes have little or no manurial value. They are sometimes placed upon garden paths in out-of-the-way places, and they might be of some use if mixed with heavy clay soil in modifying the physical properties. We should not use coal ashes upon lawns. Wood ashes are quite different in nature; they form an excellent dressing for lawns, and may be used with good effect in every part of the garden.

CREEPERS FOR THE BACK WALL IN AN EARLY VINERY: *A. B.* Bougainvillea glabra, Cissus discolor, for leaf effect, and Passiflora princeps. Some amount of direct sunshine should be afforded the flowering plants to enable them to produce good floral effects. There is always the danger of introducing mealy bug or other insect pests with plants cultivated in vineries, and it will be necessary for you to keep a very strict watch on such plants.

CUCUMBER AND TOMATO PLANTS: *J. I.* The unsatisfactory condition of your young Cucumber and Tomato plants is probably due to unsuitability of the soil, and the conditions under which they were potted, or it may be the result of your having been working in your propagating house in the evenings by the light of a naked acetylene lamp. We presume the lamp was placed pretty close to, if not actually on, your potting-bench when potting your young plants, and owing to the seedling plants being at the time subjected to a slight check in the process of being potted into 3-inch pots they would be the more easily affected by injurious fumes. The fact that your plants were strong up to the time of potting-off, and that they made but little growth since they were potted, and that this growth is much weaker above the seed-leaves than it is at their bases, seems to indicate that the use of the naked acetylene lamp in the manner described may possibly have had something to do with the trouble. You may rest satisfied that the coating of the gutter-boards with Stockholm tar before Christmas, and which you say was thoroughly dry before the plants were up, had nothing to do with the trouble, as the tar-gas, if any, arising from the tarred gutter-boards would be lost in the external atmosphere. Your soil being rather heavy for Cucumbers, you should have added to it rather more than two-parts of well-rotted stable manure or good leaf-mould, mixing this well together after placing it in the propagating house to become warmed before being used. If you have not already transferred your plants to pots 5 inches or 6 inches in diameter, you will do well to employ a similar compost to that we have described. Having sown your Cucumber seed on December 19 and maintained an atmospheric temperature of from 70° to 75°, your plants, had they gone on all right, should long ere this have been placed in either 5-inch or 6-inch pots. They should have attained a height of 18 inches, and developed six proper (rough) leaves by this date, and be ready for planting on the ridges at 2 feet apart next week. We presume that you have sown a fresh batch of seed, so as to be prepared for the worst. It is always advisable to do this when the plants resulting from the first or previous sowing are not so promising as could be desired. With regard to the condition of your Tomato plants, the symptoms may be accounted for in the same way as the affection of the Cucumber plants, but it may also be that sufficient care has not been exercised in the application of water at the roots. The stems being thin would convey the idea that the plants were not placed sufficiently near to the roof glass.

CURRANT-BUD MITE: *S. E. N.* Your bushes are doubtless affected with the Currant-bud mite, which has caused the swollen buds you have described. You will find particulars and illustrations in *The Calendar of Garden Operations*, price 7½d.; or *The Book of Garden Pests and Plant Diseases*, by R. Hooper Pearson, price 2s. 10d., post free, from our publishing department.

DYEING MAHONIA LEAVES: *W. H.* There is no preparation that will remain permanent after exposure to the atmosphere, as they are all made from aniline dyes.

EUPATORIUM ODORATUM: *A. E.* This is an extremely easy plant to cultivate. Cuttings may be inserted in the spring, and when they have made roots should be potted on in the usual way until the summer, when they may be either placed directly in their flowering pots or planted out in a border. If the latter plan is adopted, lift the plants at the end of September, pot them up and leave them out of doors for a day or two, afterwards syringing them occasionally if the weather is dry. The plants may then be removed to a light position in the greenhouse, and under good treatment they will flower well.

FRANCO-BRITISH EXHIBITION: *C. B. G.* If you wish to become a member of the Garden Club you should write to the Secretary of the Franco-British Exhibition, 56, Victoria Street, Westminster.

LILY OF THE VALLEY: *Lily Failure.* Your crowns of Lily of the Valley have undoubtedly been killed by frost. The mould on the roots is the common blue mould which may be found on all kinds of dead vegetable matter. It is suspected that under favourable circumstances it may become parasitic, but it is hardly likely in this case.

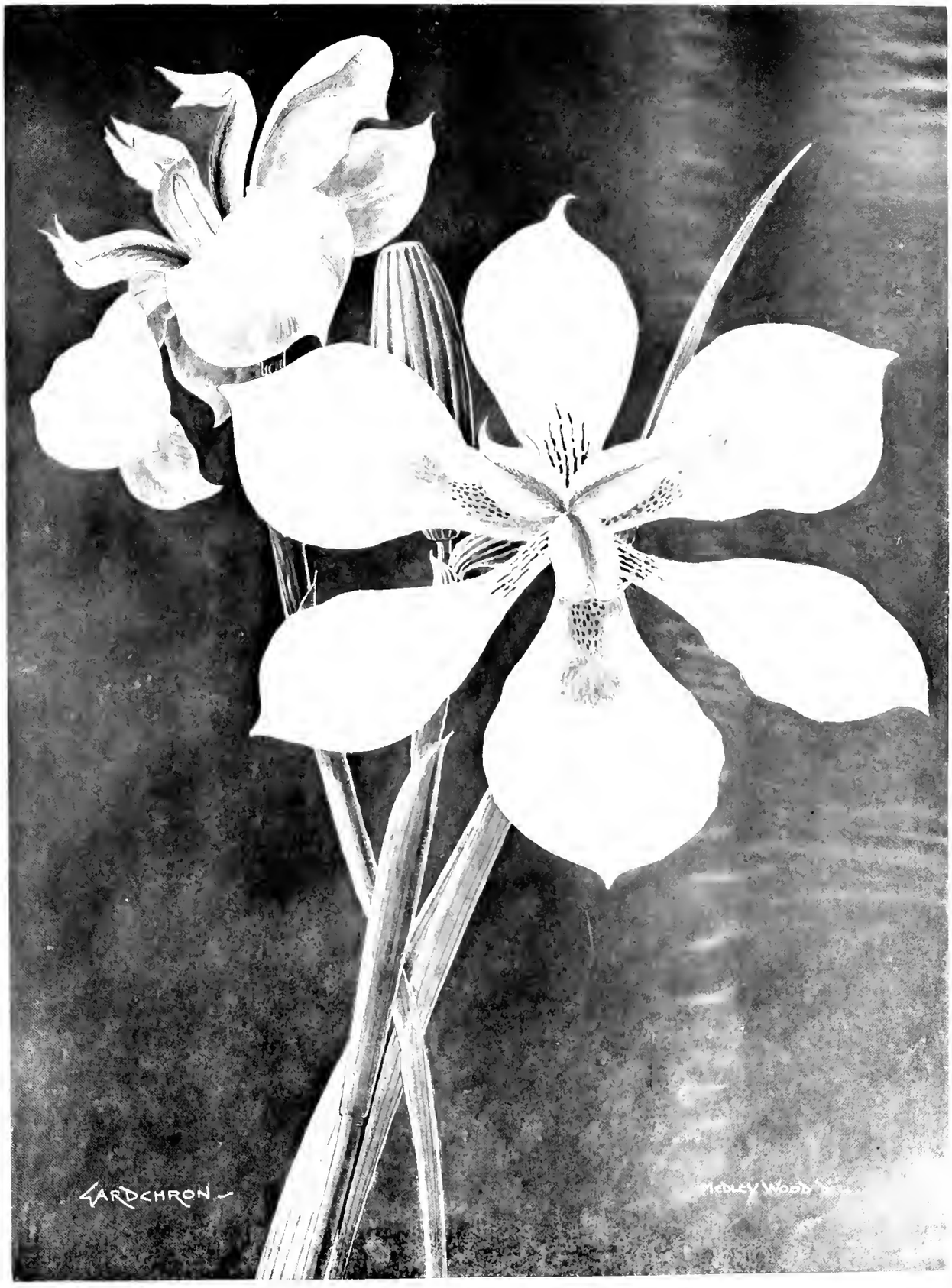
NAMES OF FRUITS: *E. R., Gloucestershire.* The Pears are 1, Bergamotte Esperen; 2, Knight's Monarch; the Apple is French Crab.—*J. S.* 1, Winter Bon Chrétien; 2, Catillac; 3, Too small to be identified; 4, Withington Fillbasket.—*Baker.* 1, Uvedale's St. Germains; 2, Specimen decayed; 3, Vicar of Winkfield; 4, Knight's Monarch; 5, Van Mons. Leon Leclerc; 6, Too small to be identified.—*Wheeler & Son.* Franklin's Golden Pippin.—*F. T.* 1, Leon Leclerc de Laval; 2, Nec Plus Meuris; 3, Specimen insufficiently good.—*J. Ackers.* Can you send us a fruit in a state of better preservation?

NAMES OF PLANTS: *H. R.* 1, Pteris serrulata; 2, Pteris tremula; 3, Adiantum cuneatum.—*F. T.* 1, Epidendrum ochraceum; 2, Epidendrum virens; 3, Oncidium cucullatum, 4, Aerides japonicum.

POTATO SIR JOHN LLEWELYN: *M. L.* It is probable that the disease destroyed the haulm before the tubers were sufficiently ripened to possess good edible qualities. This variety needs a long season of growth, and the tubers are not of the best unless this is provided. Get your seed tubers nicely sprouted before planting them, and plant them out early in the season. Being a very heavy cropping variety, it seldom succeeds well in heavy soil, therefore plant the tubers in light, sandy loam if this is possible.

SPRAYER: *J. M.* There are many forms on the market of different delivering capacity. It is essential that the liquid should be delivered in the form of a very fine spray such as is obtained from a "Vermorel" or "Riley" nozzle. Your best plan would be to visit a dealer in these appliances, and after seeing them in operation select the one that commends itself for the particular purposes you require it.

COMMUNICATIONS RECEIVED.—F. G. Brewer (next week)—C. P. L.—R. K., Ireland (we do not perfectly understand your question)—Agent General for British Columbia—R. N.—W. Allan (with thanks)—H. E. S.—J. C. T.—W. W.—C. V.—J. S. J. S. D.—G. F. T.—Chester Paxton Society—C. H. P.—F. H.—Rev. C. B.—G. W.—R. S. & J.—C. S. & Co.—H. G. A.—C. P. R.—E. H. J.—R. L. C.—F. M—T. L.—A Reader—T. W.—J. H.—E. W. B.—W. A. C.—W. H. M.—H. S.—W. B. L.—W. J. B.—J. J. W.—H. W.—A. S. & S.—Prof. S.—W. G. S.—T. L.—J. W.—J. T.—F. A. E.—E. E. W.—Subscriber—E. H. S.—Puzzled—T.S.



MORÆA IRIDIOIDES AS FOUND IN S. AFRICA, BEING A REPRODUCTION FROM A SKETCH RECEIVED FROM MR. J. MEDLEY WOOD, DIRECTOR OF THE NATAL BOTANICAL GARDENS; FLOWERS NATURAL SIZE.

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THE

Gardeners' Chronicle

No. 1,103.—SATURDAY, February 15, 1908.

CONTENTS.

ILLUSTRATIONS.

TOMATO FORCING.

THE cultivation of Tomatos in the greenhouse has assumed such extensive proportions, both in this country and in the United States, that the following information from the Ohio Agricultural Station may be of value to English growers. The results extend over 12 years, and for spring and early summer market the Tomato crop has proved uniformly profitable. At the season when Tomatos can be grown in the greenhouse to the best advantage, they are more remunerative than either Lettuce or Cucumbers during the same period. The crop, therefore, is one well deserving the attention of those engaged in vegetable forcing.

All the Tomatos have been grown on raised benches with about 6 inches of soil. For this crop, benches have the advantage over ground beds in earlier maturity of fruit, and as the price of Tomatos is always much higher during the first part of the season, early maturity is a great advantage. The average yield has been 2 lbs. 4 ozs. per square foot, or 9 lbs. per plant, the plants having been grown 2 feet apart each way. Thus the yield of one house with 960 square feet of bench space available for Tomatos was 2,160 lbs. The prices ranged from 20 to 5 cents per pound, but averaged 12 cents (6d.). Figuring on a basis of 12 cents per pound, one house gave a return of 259.20 dollars, equal to about £94 for one crop of Tomatos, while the average return would be about £54 per house. In 1904 picking began June 10, a little later than usual. From June 10 to July 8, 2,000 lbs. of No. 1 grade fruit were gathered and sold at 15 cents per pound. From July 8 to July 22, 1,000 lbs. were picked and sold at 12 cents per pound. From July 22 to August 1, the product was 600 lbs. and sold at 10 cents per pound. Thus up to August 1, 2,400 feet of bench space had given an actual yield of 3,600 lbs. of Tomatos, which sold for 480 dollars, equal to £100, representing an income of 20 cents, or 10d., per square foot.

Sub-Irrigation versus Surface Watering.

The Tomato requires an abundance of water in the soil for its best development, especially in greenhouse culture when grown as a spring and summer crop. In these experiments it was found that by repeated watering on the surface, the soil, unless more porous than the average greenhouse compost, becomes consolidated unless considerable care is exercised in watering; the lower portion of the bed will often become quite dry, even though the upper portion may be thoroughly soaked. This not only results in a check to the growth of the plants, but if it occurs after the fruit has become well developed it will often cause a considerable loss from dry rot. On the other hand, when the water is allowed to rise by capillary attraction, as is the case when sub-irrigation is practised, the soil is kept open and porous and in good condition for the free access of air, and it acts as a sponge in taking up and holding a large amount of water. Sub-irrigation not only gives the best growth of plants and highest yield, but it also serves as a check to the disease known as dry- or tip-rot.

The practice of mulching with strawy manure accomplished much the same results as sub-irrigation. It has been found, however, more beneficial with surface watering than with sub-irrigation. The best results were obtained by mulching as soon as the Tomatos were planted in the bed, and allowing the surface of the mulch to become dry and remain in that condition for some time. If the mulch is kept wet on the surface from the start, the presence of the moisture seems to bring about conditions which promote disease. Towards the close of the season the mulch may be surface watered, and thus wash some of the fertility out of the manure into the soil; it will thus be available for the crop when it is most needed. Where the water supply is scanty, a mulch should be used whatever method of watering is employed, and it will be found beneficial in all cases.

The usual custom at the Ohio Station is to set Tomato plants 2 feet apart each way. For two years experiments have been made with plants set 12 inches, 18 inches, and 24 inches apart each way. Those planted 12 inches apart were trained to one stem only. The final results showed that the plants set 1 foot apart each way gave the highest yield per square foot of bench surface, with a loss of nearly one ounce in average size of fruit. The plants set 18 inches apart and trained to two stems were second in yield, and the average size of fruit was not affected. These facts indicate that in planting 2 feet apart each way, the plants have not been crowded as closely as they might have been, in order to secure the highest yield per square foot. Different varieties, however, will not always behave quite alike in the respect of yield.

For the spring crop of Tomatos, it is usual to sow the seed in flats the beginning of December. When the plants are of sufficient size for handling, they are transplanted, or "pricked off," into flats, setting them about 3 inches apart each way. As soon as there are any signs of crowding they are again transplanted, but this time into pots. Where time is limited, as is usually the case with greenhouse work, the plants can be transplanted from the flats into 2½-inch pots, and later into 4-inch, where they can remain until ready to be planted in the beds. The aim should be to secure a good, strong, stalky plant, 10 to 15 inches in height. At the same time Tomato plants are set in the bed, Lettuce plants are set between the Tomato rows, and as this happens at the time of year when the days are lengthening, the crop of Lettuce grows quickly, and is out of the way before the Tomato plants are of sufficient size to do any harm to the Lettuce plants. But when the Tomato plants are as close as 1 foot each way, it will not pay to grow a crop of Lettuce along with them. *J. J. Willis, Harpenden.*

GUNNERA SCABRA MAJOR.

Gunneras in their larger forms are among the boldest of garden plants, and some, even of those who do not cultivate these species, may carry with them the recollections of many glorious plants of the great Gunnera manicata, which forms almost a thicket of its great leaves, each of them sometimes 9 feet and more across. Such plants are to be seen, and in the sister isle this glorious Gunnera seems to attain to even finer dimensions than in Great Britain itself. The magnificent examples at Narrowwater Castle, St. Anne's, Clontarf, and other fine Irish gardens, ever recur as one thinks of this great plant.

Gunnera scabra, if less imposing in size, has a greater ruggedness of character and a distinctive appearance which renders the two in no sense rivals, but rather companions. The former is now pretty generally known, but there are as yet but few who are acquainted with its variety, called G. scabra major, a still bolder and more massive plant, which originated in the wonderful nursery of Mr. Thomas Smith, at Newry, where I first saw the original plant a few years ago. It is a variety which at once appeals to us as an improvement upon the ordinary form, and as one which has a future before it in gardens where this Gunnera is quite hardy, or in those where it can be accommodated with some slight covering about its crowns in winter. It is all but hardy, even in comparatively cold parts of the United Kingdom, but there is a chance that some hard winter or some unusually cold snap will prove fatal to it unless some protection is afforded. A little will suffice, either in the form of straw or other loose litter, or even ashes heaped over the crowns, until danger from frost is past. One cannot too strongly recommend this giant form of G. scabra to admirers of such plants as the bolder Gunneras, which, after all, are much superior to the smaller and dwarfer species such as G. magellanica, a plant more adapted to the rock garden. *S. Arnott.*

NOTICES OF BOOKS.

*"WOBURN EXPERIMENTAL FRUIT FARM."

THE eighth report of this institution has just been issued, and contains a considerable amount of valuable information on insecticides and fungicides. The introduction to the report ought to be read by everyone who is interested in these questions—and what gardener is not?—for it may serve to correct many erroneous notions about the use and abuse of these substances. The various methods of emulsifying the mixtures are treated both from a practical and a theoretical standpoint; and the utility, from a financial point of view, of really scientific investigations in these matters is proved by the discovery that the cost of Bordeaux Mixture may be reduced by three-fifths without in any way diminishing its effectiveness. The Report forms one of the most important of recent contributions to the literature of scientific and practical horticulture.

The price of the volume is half-a-crown, and a summary of the results therein described and discussed may be obtained for threepence by those who do not desire to enter into the details of the work.

†"FLOWER GROUPING.

BOOKS embellished with coloured pictures of gardens increase in number unceasingly. The present work, with 56 coloured sketches by Miss Margaret Waterfield, is the most recent of this attractive class of garden books. Miss Waterfield handles her brush and pencil in a way that has caused her, since her book on *Garden Colour* was published two years ago, to be recognised as at once a dainty and a bold executant. For the purposes of this book she has been to Scotland and to Ireland in search of subject-matter for her brush, and to the pictures painted in these countries others from the South of England are added, together forming a sumptuous collection. It would only lay one open to criticism to attempt to decide which of these should be regarded as the best, but one may at least confess, without fear of reproach, which is the most attractive to one as an individual. Such is "Campion and Pheasant's Eye," Saltwood; "Tiger Lilies," Camp Cottage, Comrie; "Crocuses," Woodlands, Cobham; "Chionodoxa," Kew Gardens; "Onopordon tauricum," Nackington, Canterbury; "Gunnera, &c.," Ashford, Co. Wicklow; and "Tritomas," Dalhousie, Midlothian.

The accompanying letterpress is varied and interesting. Miss Waterfield herself contributes many pages, and besides the more technical matter, such as articles on Crocuses, Tulips and wild gardening, she has written appreciative essays on Scottish and Irish gardens. Her helpers are numerous, of whom the best known is E. V. B., whose recollections of Scottish gardens has led her to mildly curse the bedding-out system of flower gardening in the belief it still flourishes in her native land! Miss P. Graham Stirling, who writes of Scottish gardens, merely mentions the ribbon border as a cast-off fashion, and it is obvious, from the remarks of others, that Pelargoniums and such-like plants are not now so intrusively apparent in Scotland as they used to be.

The Hon. Emily Lawless, to whom Irish gardens are entrusted for review, is not a whit behind in garden patriotism. She, like Miss Graham Stirling, recognises the drawbacks of the climate of her country, but she does not grumble on that account, rather she seems to want her readers to believe that the climate and the gardens are in loving agreement.

The other contributors include Miss Rose G. Kingsley, who writes of climbers, and makes the strange pronouncement that Polygonum Baldschuanicum does not flower till autumn! Mr. S. W. Fitzherbert tells of the many uncommon plants which, growing in the open in Cornwall, make its gardens different from those in other parts of the country. Mr. S. Arnott treats of Lilies. Roses and water gardens employ the pen of Mr. Frank Galsworthy. Rhododendrons and Azaleas that of Mr. W. P. Wright. Miss Curry contributes notes on her favourite Daffodils, Mr. W. W. Richmond Powell on Eremuri, and Mr. R. P. Brotherston on annuals for Scotland.

The work is marred to a considerable extent by the incorrect spelling of plant names. These inaccuracies are unusually numerous, and some of the instances are of a glaring character.

*"SWEET PEAS AND THEIR CULTIVATION FOR HOME AND EXHIBITION."

A LADY who wrote pleasantly of flowers 80 years ago was bold enough to confess her preference for Sweet Peas over all other flowers, not excepting the Rose. Many things have happened since then, and had she known the Rose as it is represented in gardens to-day, one might venture to harbour a doubt whether she would have made so sweeping a statement. Still, it cannot be gainsaid that, popular as is the Rose, its popularity is not greater than that of the Sweet Pea, and it is just as well that we can admire both without examining too closely the place either holds in our affections. The author, in the present small volume, recognises the importance of the personal equation and of local circumstances, and so lays down no hard-and-fast lines, though he keeps to those principles which lead to success. The chapters on soil-preparation, seed-sowing, and staking, are all dependable, and there are also valuable instructive notes on growing Sweet Peas for conservatory decoration, and in tubs for lawns and terraces. There is a chapter on the raising of new sorts, and another on exhibiting. Diseases, which in general are not troublesome, are passed in review, and it is pointed out how the creatures which in a garden are continually on the watch for something to eat may be diminished in numbers. There is a useful chapter on varieties of Sweet Peas; and here one could have wished that the author, instead of merely naming and giving the colour of new varieties, had also given an opinion regarding the merits, individual and comparative, of each. The history of the Sweet Pea is told in two chapters, one of which concerns itself with the Cupids, while the other traces its progress from the time the first English seedling flowered at Enfield in 1701 till the present day. In the second edition, which we hope Mr. Curtis will have to prepare, one or two inaccuracies will call for correction. Blue Sweet Peas were in existence in 1838, and much earlier, though Mrs. Loudon notes them in that year. Can the author be unaware that Mr. Eckford was engaged fixing a spot identical to Countess Spencer at the time the latter was exhibited, and that the stock he distributed was absolutely true? We imagine, too, that the author is mistaken in assuming that Mr. Malcolm uses wire-netting on which to train his Peas. Certainly in 1906 he used stout Pea-trainers. *B.*

* *Eighth Report of the Woburn Experimental Fruit Farm*, by the Duke of Bedford, K.G., and Spencer V. Pickering, F.R.S. 1908. The Amalgamated Press, Ltd. Price 2s. 6d., postage 3d.; Summary only 3d., post free.

† *Flower Grouping*, by Miss Margaret Waterfield: Messrs. Dent & Co., London, and Messrs. Dutton & Co., New York. price 21s.

*By Charles H. Curtis. London: W. H. & L. Collingridge. Price, 1s.

NEW OR NOTEWORTHY PLANTS.

THE JULIANIACEÆ: A NEW FAMILY OF PLANTS.

IN a recent number of the *Philosophical Transactions of the Royal Society of London*, this proposed new order, or family, is very fully described and illustrated, and perhaps an exposition of its general and distinctive characters may interest some of the readers of the *Gardeners' Chronicle*.

Although it was only last year that the Julianiaceæ were defined, a member of the family was described, so far as imperfect material permitted, as long ago as 1843, and the author suggested that it might be the type of a new family.

So far as at present known, the genus Juliania consists of four species, all Mexican. They are tortuously branched, dicœcious, resinous shrubs or small trees, having alternate, unequally-pinnate leaves of three to eleven leaflets, and very similar to those of certain species of Rhus. The flowers are small, green, and the females are easily overlooked in the pollination stage. Both male inflorescence and individual male flowers are very much like those of the common Oak; but the inflorescence is usually more branched, and longer. A single, hairy, thin perianth, divided nearly to the base into five to seven acute segments, with as many stamens alternating with the segments, sufficiently describes the male flowers (fig. 3). But the female inflorescence and flower require a much fuller explanation. For purposes of comparison, the Sweet Chestnut and Beech may be brought in. In Juliania, as in the Chestnut and Beech, there are from two to four flowers enclosed in an involucre, the whole having the appearance of a single flower. Fig. 4 of our illustration represents two such inflorescences, about four times natural size. In each involucre of Juliania there are, at least in the early stage, four flowers seated side by side, not around a central axis. Usually the two central ones are perfectly developed—sometimes only one—and the two lateral are imperfectly formed and abortive. One of the inflorescences in fig. 4 has a single protruding, trifid style, denoting that only one flower had developed, though the cross section of the same shows four bodies. The other inflorescence in fig. 4 shows two perfect styles, and the longitudinal section an ovule in position. Fig. 5 is a longitudinal section, through a young involucre, much more enlarged, showing four flowers in section, with one ovule in each ovary. The styles of the two central flowers are cut off, whilst the two lateral ones are undeveloped. The length of one of these inflorescences at the stage represented is about half an inch, and as they are clustered in the axils of the closely-crowded leaves at the tips of the branches, they are easily overlooked. But these bodies do not consist entirely of involucre and flowers; only about one-fifth is involucre. This may be understood from figs. 4 and 5, and more easily perhaps from the ripe fruit of fig. 7. The flattened part below is the peduncle, not pedicel, as it was inadvertently termed in the *Philosophical Transactions*. Unlike the female flowers of the Cupuliferæ, with which Juliania has been compared, the female flowers have no floral envelope whatever, the flower being reduced to the pistil or ovule-bearing organ.

The ovule of Juliania is very different from any previously described, the funicle or stalk being the largest and most prominent part in the flowering stage, when the ovule is about one-twelfth of an inch in its greatest diameter. Fig. 6 represents one about six times natural size. The embryo or plantlet is formed in the upper lobe, beyond the slight constriction, and the rest of the body is an appendaged funicle, which nearly all disappears during the matura-

tion of the ovule into seed. Fig. 8 represents a seed, natural size, and 9 an enlarged embryo, very much like that of a bean. In both, too, the seed is exalbuminous.

The composite fruit is dry, and the tissues of the involucre exceedingly hard. Unlike the composite fruit of the Beech and Chestnut, it does not split to allow the seeds to escape, germination taking place through its open apex.

Of the three other species of Juliania two are very distinct and one very near J. adstringens, here illustrated. A Peruvian member of this family formerly referred to Juliania has been described as a separate genus under the name of Orthopterygium. *W. Botting Hemsley.*

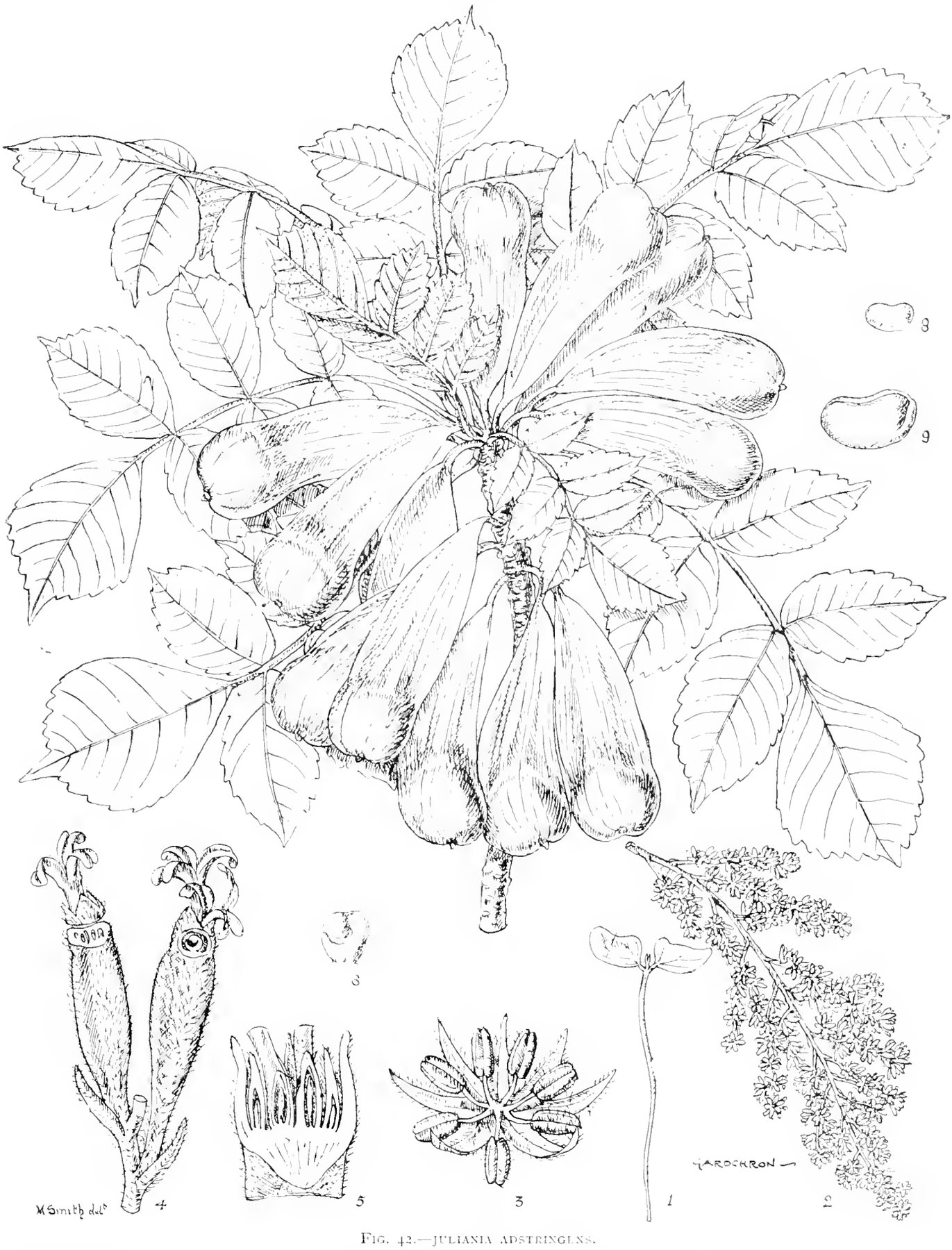

FIG. 42.—JULIANIA ADSTRINGENS.

1, a seedling, natural size; 2, a male inflorescence, × 2; 3, a male flower, about × 10; 4, two female inflorescences, consisting of two involucres each containing four more or less perfect flowers, one sectioned to show an ovule and the other the number of cavities, about × 4; 5, a longitudinal section through the flowers, showing portions of two perfect and two imperfect ones with one ovule in each ovary, much more enlarged; 6, a young ovule, about × 6; 7, a branch bearing ripe fruit, natural size; 8, a seed, natural size; 9, an embryo, about × 1½. (The dissections partly from the *Philosophical Transactions.*)

USES OF THE MOTOR IN HORTICULTURE.

(Continued from page 85.)

THE next matter for consideration is that where accelerated delivery is necessary, or where greater distances have to be covered.

If higher speeds are to be attained, in order to conform with the Government regulations concerning heavy motorcars, it is necessary that rubber tyres should be fitted; for although a 3-ton vehicle fitted with steel tyres is allowed to travel at eight miles per hour, as compared to 12 miles per hour with rubber tyres, it is generally allowed that the saving in the cost of tyre upkeep is more than lost in general damage consequent upon vibration set up by steel tyres.

There are many makes of the faster vehicle, and, with one or two exceptions, they are all fitted with internal-combustion engines to provide the motive power. The internal-combustion engine necessitates a great deal of complicated mechanism, through which the power is transmitted to the driving wheels; and as so many varieties of transmission gears are employed, it is impossible for anyone but the most experienced to form an opinion as to which vehicle is likely to give the best results, and even he must be well informed on the past performances of the particular make he has chosen. Therefore, it is of the utmost importance that great care should be taken in the choice of a vehicle. There are some makers willing to contract for the running costs and upkeep, and even if this is a little more expensive to the purchaser than doing it at his own risk, it is advisable to give these firms the preference, for it not only is an excellent testimonial for the reliability of their vehicles, but it will give the inexperienced time to master the detail of management, knowledge which otherwise, in all probability, would have to be expensively purchased.

A motor to carry from 3 to 4 tons, complete with body, cannot be bought under £700, and there is very little likelihood of this price being lowered in the immediate future.

The great advantages are in the speed and distance which these vehicles will travel without inconvenience. One hundred to 120 miles per day is not too much to expect from them, that is if straight running, such as depôt to depôt work, is all that they are required to do.

The following running costs are compiled from actual results —

TABLE No. I.

Annual running costs, for 3 to 4-ton petrol van, based on average journeys of 70 miles per day for 261 working days.

Depreciation, 20 per cent. on £700	£140	0	0
Petrol, at 2d. per mile for 18,270 miles	152	0	0
Tyres at 2d. per mile for 18,270 miles	152	0	0
Repairs, cleaning, &c., 10 per cent. on £700	70	0	0
Driver, 52 weeks at 35s.	91	0	0
Oil, waste, light, &c.	7	10	0
Sundries, insurance, &c.	25	0	0
	£637	10	0

This is equivalent to 8½d. per road mile, or 2d. per ton mile if loaded both ways, or 4d. per ton mile loaded only one way.

It will be noticed that only five days per week are allowed for running, and this leaves one day per week for cleaning and overhauling. Although there may be very little to do on some occasions, there will always be something that will be better for attention.

For 100 miles per day the cost would work out at something less than 8½d. per road mile, that is if the roads were good, because the only charges which would increase appreciably would be those for tyres and petrol, which increase in direct proportion to the mileage. The cost of tyres may not amount to as much as 2d. per mile, but as the tyre manufacturers will guarantee them at this figure, it is as well to be on the right side and adopt this as the correct amount.

The London motor omnibuses, which are of the same design in mechanism as the one now being dealt with, cost to run between 10d. and 11d. per road mile, and this includes the wages and salaries, change drivers, conductors, big rents for premises, and many other establishment charges which would not apply to a country service and for goods traffic; these facts should be borne in mind by anyone offering criticism. Another point is, the continual stopping and starting of the motorbus throws abnormal wear on to the tyres, wheels, and every part of the machinery, and this necessitates a night staff, who are continually overhauling the vehicles, in addition to the weekly or fortnightly thorough overhaul which they should have, even though many do not get it.

Now, granted that this vehicle will travel 100 to 120 miles in 9 to 10 hours, since its normal speed is 12 miles per hour, and it may be assumed that the owner will have a return load of at least 3 tons, then the following results are obtainable – A grower in the Midlands wishing to despatch his more valuable fruit or vegetables to the London market, from which he is 120 miles distant, may do this at a cost of exactly £1 per ton. If the motor left the Birmingham district at 5 p.m., it would arrive at Covent Garden by 3 a.m. the next morning in time for the earliest sales. The fruit would be fresher, and, having had fewer handlings, would be less liable to be bruised than by rail. The idea that a motor has excessive vibration is entirely wrong, more especially when the vehicle is loaded. The most delicate articles may be carried with perfect safety.

On such a lengthy journey as this it would be imperative to obtain return loads, and if the market gardener has nothing among his own requirements that would pay him to bring by road, by advertising, the necessary return load would soon be found. There is a great deal of traffic between London and Birmingham at rates between 25s. and 30s. per ton. Of course, this journey would occupy two days out and home.

For a single journey of 50 miles out loaded with 4 tons, and home with 2 tons, the cost would be 11s. 1d. per ton or 16's. 8s. if returning empty.

Every endeavour must be made to keep the mileage up to 350 per week, that is if the best results are to be obtained, but should the conditions warrant it, on a mileage of 180 per week the cost per road mile will only be 6d., for in this case the depreciation may be put down at 10 per cent. instead of 20 per cent., and the repair bill would be hardly worth taking into consideration, and certainly not more than a good driver could easily manage. The tyre and petrol account would also be correspondingly reduced, and the £25 allowed for sundries, such as extra assistance, might be saved.

The following table should make it clear what the running expenses should be to suit any conditions:—

Journey.	Cost per ton per mile.		Total cost per ton for whole journey.	
	d.		s.	d.
1. 120 miles' run, fully loaded	2	or	20	0
2. 50 miles loaded out, 50 miles empty return journey	4	,,	16	8
3 50 miles loaded out, 50 miles 2 tons' return load	2½	,,	11	1
4 35 miles loaded out, 35 miles empty return journey	4	,,	11	7
5 35 miles loaded out, 35 miles 2 tons' return load	2½	,,	7	7
6 15 miles loaded out, 15 miles empty return journey	3	,,	3	9
7 15 miles loaded out, 15 miles 2 tons' return load	2	,,	2	6

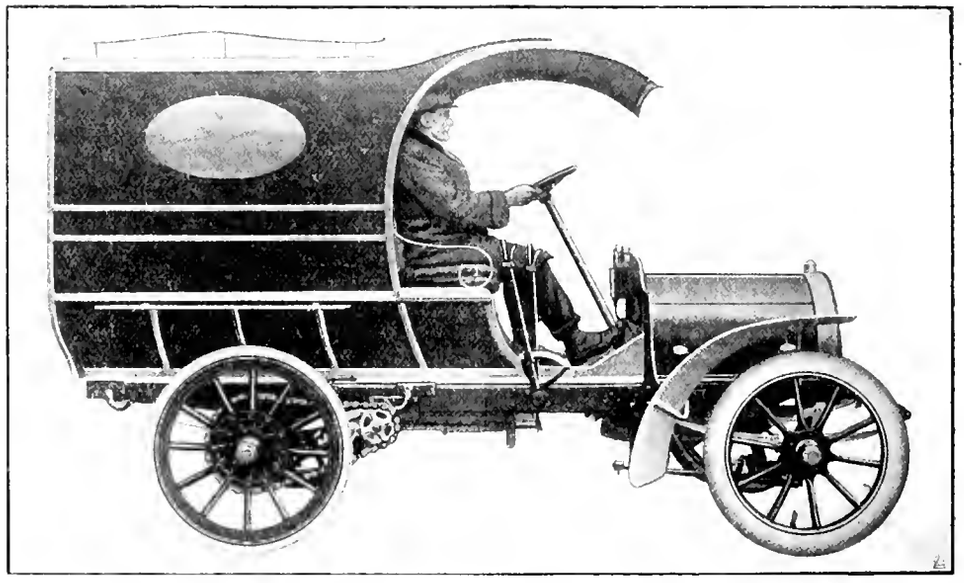

FIG. 43.—LIGHT DELIVERY-VAN, BUILT BY T. BLANCH, CHELSEA, TO CARRY 15 CWT.

It should be a simple matter from the above statistics to arrive at the cost per ton for any load for any distance, and this is the most important point to the owner.

Manufacturers invariably give the cost per ton mile, assuming the vehicle is loaded throughout the entire journey—this is very misleading, and might lead to serious miscalculation, especially to those who, having delivered their load, have nothing to bring back. *Hugh Miller, C.E., M.E.*

(To be continued.)

THE LEAF CURL OF THE PEACH AND NECTARINE.

THE supposed origin of this malady and the numerous remedies for the same have often been related, but the cure, apart from cultivation under glass, has not, in my experience, yet been discovered. In attempting to explain the cause of this annual visitant, I make no pretence of knowing its name or origin; or whether it exists summer and winter, as is sometimes stated, at the expense of the trees; or if, like the cuckoo, it is only a summer visitor. My experience during the past 15 years alone has given me some little

knowledge of the injury it causes to the trees, for during that period it has been an annual malady of the Peach and Nectarine at Lockinge. What with the making and planting of new borders, the application of supposed preventives and cures to the roots, branches, and foliage, everything has been tried, but with little or no effects. When looking at the small, sickly green leaves, one is inclined to believe that the seat of mischief is to be found at the roots; but having on many occasions examined the roots of the trees worst affected and found them in good condition, I have dismissed that belief from my mind. During the spring of 1906, when I expected to find "curl" as usual, there were slight frosts at Lockinge; lamps were kept burning by night and sometimes by day under a two-fold covering of warm netting, raising the temperature by 6° to 10°, and in spite of this precaution leaf curl was as bad as in any year in my experience, the puckering and crumpling of the thickened leaves being excessive. As in previous attacks, every affected leaf was removed and burned, which almost meant the stripping of the trees. My object was the destruction of what is described as the spore-bearing parts of the malady, and the trees were encouraged to make a second growth. This was very feeble, and for the rest of the year they appeared to be in a very poor plight, as was indicated by the small number of fruits on a wall 200 feet long and 10 to 15 feet high, namely, two dozen, and these inferior—an exceedingly poor return for the labour and other expenditure. The cultivation of Peach and Nectarine trees growing in this district on open walls is a hazardous undertaking. In the late part of the summer of 1906 it was determined to cover this wall with a glasshouse, and the planting of young and vigorous trees had to be considered. I was urged to replant the entire extent of the wall, but knowing the good conditions of the roots of the trees, I determined to afford them a chance. With the exception of two trees it was necessary to replace, a glass structure 7 feet wide was placed over all just as they stood. The trees were well cleaned, as usual, and as the flowering time approached, everyone was anxious as to what would happen. The leaves as fast as they developed were individually examined day by day, but the dreaded curl which for 15 years had made such havoc with the trees failed to appear—not one being affected; the growth and colour of the young wood and the foliage were very satisfactory, and the crops of Peaches and Nectarines equal to the best I had ever observed. The structure is unheated, and the fruits commence to ripen about the middle of the month of July, finishing the first week in November. The varieties are Hale's Early, Dymond, Crimson Galande, Condor, Bellegarde, Princess of Wales, Sea Eagle, Walburton's Admirable, and Late Admirable Peaches, and Cardinal, Early Rivers, and Lord Napier Nectarines. This scourge of the Peach when cultivated in the open, causes me no anxiety now, and the trees present a healthy appearance. The conclusion to be drawn from this satisfactory state of things—seeing that Peaches of fine quality are not inferior to any other kind of fruit and are in use for at least six months of the year—is that, in this part of Berkshire, the cheapest, most simple, and perfect cure for Peach blister and leaf curl is to plant the trees under glass.

"Medela," a recently-discovered preventive recommended by Mr. George Bunyard, I have not as yet tried, but I trust it will prove an efficient remedy for this destructive malady. *Wm. Fyfe, Lockinge Gardens, Wantage.*

FRUIT REGISTER.

LOCAL PLUMS: THE SYSTON AND PERSHORE.

Considerable interest attaches to these two Plums, as both are well known in their respective districts. They are readily increased from suckers, and they are especially prolific. Some time ago when the late Mr. Angus (formerly fruit foreman at Chiswick under Mr. Barron) was a resident in Leicester, I devoted several visits to an investigation of the fruits grown in the district around that town, including Syston; and the Plum, which is a favourite there, came in for examination. The result was that we decided it was quite distinct from its nearest relative, the Gisborne's, or Mrs. Gisborne. The subject was brought to my notice again recently, and as I could not place my hand on my original notes, I have endeavoured to obtain some local reliable evidence concerning the Syston Plum. Mr. John Harrison, of Messrs. Harrison & Sons, writes as follows: "The Syston Plum we have known for many years. It is commonly called, in this locality, the 'Syston native.' In many orchards in that village, which is five miles from Leicester, thousands of suckers can be dug out of the plantations and reared into trees which fruit the same as the parents. It has, therefore, been on its own roots for many years. The tree is rather a strong grower, with dark green leaves; the fruit is egg-shaped, with a thin skin of a deep rich yellow colour slightly spotted with crimson. The quality of the flesh is excellent, sweet, and juicy. We believe it has also been grown in some parts of the country as Mrs. Gisborne, and in such cases it is propagated in the usual way, being budded on Plum stocks. It is a rather uncertain bearer; in some seasons the trees break down with the crop, and several years may pass without any fruits. We consider it is tender in the bloom, though it blossoms freely. The Pershore Egg Plum is quite distinct, not so dark in colour, nor has it the same habit of growth; it is also very inferior in quality and slightly different in shape, being rather more pointed oval."

Mr. J. Lansdell, now of Worcester, but formerly a resident in Syston and a very keen observer, also obliges me with the following remarks: "The Syston Plum is distinct from the Pershore, but it is very like Gisborne's, though the fruit is much larger and better flavoured. It is a good grower and bears freely; it is also readily increased by suckers, which come into bearing nearly as early as the Pershore. The blossoms are not protected by the young foliage as those of the latter are, so they do not escape the spring frosts so well; and that, as far as I can see, is the only cause of the trees not bearing so regularly. The fruit is rather larger than Gisborne's, greenish-yellow when ripe, with a goodly number of crimson spots; it is very juicy, fairly rich in flavour, and a free-stone. It can be used for cooking when green, but is not so early as the Pershore. There are some varieties larger in size and of better flavour than others."

It may be added that the late Dr. Hogg's description of Gisborne's included the following remark: "Flesh yellow, firm, coarse-grained and not very juicy, briskly acid with a slight sweetness, and separating from the stone." The two letters here given and the above note confirm my former opinion that the Syston is really a distinct Plum and well worthy of being tried in other districts, but at present it appears in few trade lists.

The Pershore is widely known, and though an inferior Plum for ordinary purposes, is valued by jam makers, and owing to its wonderful cropping it has long proved of substantial value to Worcestershire growers. Whether it originated in Pershore or not the most careful enquiries have failed to ascertain, though it probably was a chance seedling which, being found to be easy of increase, rapidly spread over the whole county and gained the name of the "Worcestershire Weed." The Greengage Plum, which is extensively grown in some districts of Cambridgeshire, is quite distinct from the true Greengage, and affords another example of a local variety increased by suckers, and largely employed for commercial purposes. *R. Travis, Cambs.*

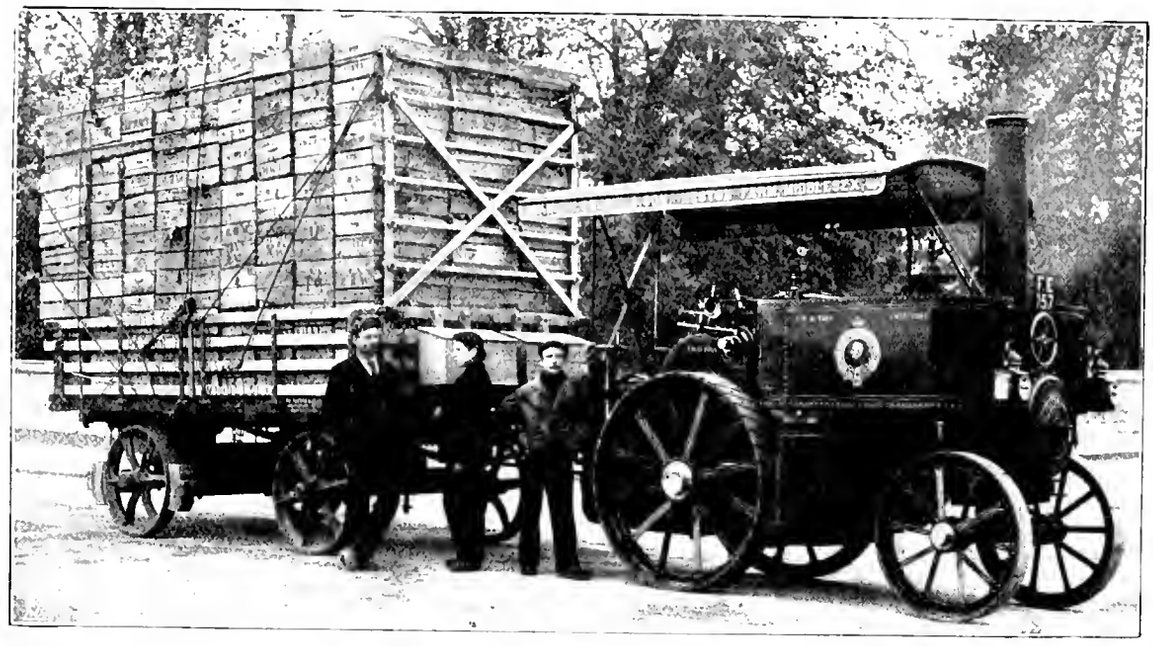

Fig. 44.—Messrs. W. J. Lobjoit and Son's "Wellington" steam tractor, with loaded trailer, bound for Covent Garden Market.

AMERICAN NOTES.

LARGE ROSE HOUSES.

THOUGH it sounds like treason to say anything against large glasshouses, practical growers are not all in accord with the builders of this class of structure. A span-roofed house 50 feet wide and some hundreds of feet long must of necessity be high at the ridge, and when to this are added low, solid beds instead of the old-time benches, 3 feet or more in height, the young Roses, when planted, are a long way from the glass, and do not start as freely as under the older system. Whether this late start is made up for by the use of grafted stock and ease of working wide houses remains to be seen, but more than one large grower, once partly converted to the large house theory, will, in the proposed additions this year, return to the more moderate size. Leaving the question of height, extreme length has its disadvantages independently of the difficulty of handling stock. In a Rose-house known to the writer, 800 feet long, there is one part where, directly air is put on, a kind of independent circuit is set up, and it is easy to see by the behaviour of the plants there that they do not relish the conditions. Green fly and mildew always attack at this point, and it is thus a kind of safety valve for the section men. In a house of moderate length these independent currents are broken up by partitions or otherwise, and, though this idea may seem far-fetched, there is more in it than at first appears.

FLOWERS AT FUNERALS.

MANY of the wreaths and floral designs used at funerals are very striking and original, our best florists having very bold and effective methods. We recently noted a fine piece of work at one of the cemeteries. It was a wreath about 4 feet across, the groundwork composed of Leucothoë sprays, and at the top a high purple bow of ribbon, flanked with immense bunches of double Violets and five plants of Cocos Weddelliana. Palls or blankets of Violets or mauve Orchids are also in favour; one sent out this week consisted of 40,000 Marie Louisa Violets closely wired on Asparagus plumosus. Much of the set design work is remarkable for the number and cost of flowers used rather than for beauty or grace, but there are notable exceptions even here.

AMERICAN CARNATION SOCIETY.

IN his address to the members of the American Carnation Society at Washington, on January 28-30, Mr. Fred H. Lemon, the society's President, proposed giving substantial prizes at the next meeting for Carnations in pots. Although so popular for cut flowers, these plants are very little grown in pots in America, and the proposal is a good one. President Lemon's ideas as to the exchange of new or improved varieties between English and American raisers, with a view of trying them out under the conditions existing in both countries, are also excellent. He warned commercial growers that the awards of the society are not to be considered evidence of reliability for commercial culture, but only reflect the judges' opinions of the flowers as shown; to know the capabilities of a variety as a commercial Carnation one must grow it or see it growing. There are other points in a good market variety besides colour, size, and stem, as many growers who have purchased novelties on the strength of the showing they make at exhibitions have found to their cost.

"Croppers."—In reading of American varieties as "croppers," English growers may be led to think the term eulogistic, but it is the reverse. In the quaint phraseology of the market growers, "cropper" is used to designate a variety that produces a crop of flowers and then "lets up" does not flower continuously, and is therefore not to be depended on. *H. R. K.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Masdevallias.—The species M. Veitchiana, M. ignea, M. Lindeni, M. Harryana, and their varieties are amongst the showiest of this genus which flower during the spring months. Since these plants completed their last season's growth they have been kept moderately dry at the roots, but now that renewed activity is apparent they will require more moisture, both at the roots and in the atmosphere. At this stage any plants that require re-potting or top-dressing may be given attention. If large specimens are desired, root-bound plants should be shifted into larger pots, with as little root disturbance as possible, while healthy plants that only require new surface material should have the old surface compost carefully picked out and replaced with new. When large specimens become bare in the centre they should be shaken out and broken up, and after cutting away all old growth and dead roots the pieces should be placed in pots just sufficiently large to accommodate them for one season. Pots or pans should be used as receptables for this section, and they should be filled two-thirds of their depth with rough drainage material. It is essential that the rooting medium be rough and open in character, as these plants dislike a close or water-logged compost. A mixture of good fibrous peat, or Osmunda fibre, two-thirds, and clean chopped sphagnum-moss one-third, with a liberal addition of crushed crocks and coarse silver sand, is the best potting compost. The compost should be made moderately firm, and the base of the plants kept a little below the rim of the pot. For some time after root disturbance, water must be afforded with extra care. An occasional sprinkling with a fine-rose can will suffice to keep the compost moist, and if on fine days the foliage is lightly sprayed over, and the plants kept shaded from bright sunshine, roots will soon be seen to extend freely into the new material. It is not often that a compartment is given up entirely to these plants, and the best has to be done with them in company with the Odontoglossums and the usual occupants of the cool house, but when a special structure is devoted to them they are, as a rule, much more satisfactory, as the requisite shade and moisture, so necessary for them, may be the more easily afforded.

The Chimæra section of Masdevallias.—Members of this interesting group may also be overhauled, affording new rooting material to such plants as require it. Teak-wood baskets are the best receptacles for this section, and they should be suspended from the roof rafters. Whilst a similar rooting medium to that advised above may be employed for these plants, no drainage must be used, owing to the flower-spikes being produced in a downward direction through the sides and bottom of the baskets. Plants of this section are much more satisfactory if accommodated with a little higher atmospheric temperature than the other species, and especially during the winter months. They are liable to attacks of red spider, therefore syringe the undersides of the foliage whenever the weather is favourable. Other insect pests that attack all Masdevallias are scale and thrips. The former may be got rid of by sponging, but the latter often prove more troublesome, especially the little yellow variety that attacks the flowers, quite ruining their appearance, and rendering a whole season's work futile if not kept in check.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Position for trees.—Continuing our consideration of playgrounds, if the space is of the type commonly met with, that is with a frontage to the street and the only one open, it may be possible to plant a few trees near the front line. Special care must be made to provide these with the most suitable soil, and only those species of tree should be selected that are most likely to thrive and grow to a sufficient size to create a sense of interest. Each tree must be provided with a strong and simple iron guard for protection against the small boy, whose hereditary instinct for climbing is sufficiently well known.

Gymnastics.—When the area is sufficient to admit of the erection of a set of gymnastic appliances the case requires greater consideration. Assuming that the site is similar in circumstances to the small one to which reference has been made, an arrangement which has been found satisfactory is to have one side for girls and the other for boys, so that the appliances best suited for each sex can be better arranged in regard to space. As there must be a caretaker in charge of such a place, his box or shelter should be placed at the back of the dividing line, so that he may have full observation of what is going on, although when the yard is fully utilised by the children he will require to move about amongst them to prevent the stronger monopolising the swings, &c., to the detriment of the younger and weaker children. There ought in these places to be a double shelter with sanitary conveniences. A good plan is to build one block, with the caretaker's room in the centre. Great care should be exercised in selecting the gymnastic appliances. When they were first started in Glasgow nearly every form in use was erected, but a series of accidents soon showed us which forms to avoid. The first to be discarded was the "see-saw." These—though fitted with recoil springs and india-rubber pads which mischievous boys cut or stole—were more productive of accident than any of the other appliances. The higher parallel bars and ladders followed next. So now the general equipment consists of swings in three sizes set in pairs, and the "giant's stride" or roundabout swings. For boys the "vaulting horse" and lower parallel bars and ladders are added. Under an attentive caretaker, accidents rarely occur now.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Potato sets for planting.—Very much depends on the manner these are treated preparatory to planting; they need every care that can be given them. If the tubers are placed together in heaps and are allowed to grow and produce sprouts that eventually get broken or rubbed off, much of their vitality and staying powers are thereby wasted. Sets of a medium size should be selected and arranged on trays or shelves, in the lightest position available, in a well-ventilated but frost-proof structure. Everything should be done to encourage a slow development of sturdy sprouts. The necessity for obtaining a change of "seed" cannot be too strongly recommended, as the results will unquestionably repay either the large or small grower. My experience has long since taught me that Irish or Scotch-grown tubers are to be preferred to any others. Continue to plant early varieties in pits and frames, and attend to those already in an advanced condition of growth by adding sufficient fresh compost to provide the new tubers with an ample covering, carrying out the work during the warmest part of the day.

Peas.—In warm localities, and on light soils, seeds of early varieties may be sown on south borders. Do not drop the seeds in the drill in a haphazard fashion, but place each seed at regular distances from each other and about as thick again as it is intended for the plants to be cultivated, thinning them to the required distance when the young plants have become about 2 inches in height. A common mistake with many gardeners is that of growing Peas too thickly, both between the rows and the plants. In cold districts, or in gardens where the soil is wet and retentive, it is much the better practice to sow the seed in boxes of medium depth, and to raise the plants under glass in an atmospheric temperature similar to that of a greenhouse, hardening them off for planting out when the weather is favourable. I have proved over and over again that by this system the results are far more satisfactory, and much annoyance is saved by having the plants under close control when quite young. Very early-sown Peas now growing in pots will need to have all the air possible. These should be grown quite cool and in a position exposed fully to the sunlight.

Broad Beans may now be sown in the open in double lines drawn at 4 feet apart, or plants may be raised under glass in boxes in the same way as Peas. The latter plan I strongly recommend,

as the plants when transplanted come into bearing much earlier than those sown in their permanent quarters. Plants growing in large pots should be placed on shelves near the glass, and be given a top-dressing when they are 3 inches in height.

Vegetable Marrows.—If these are produced under glass quite early in the season they are much appreciated, being grown quickly in a moderate degree of heat, the Marrows are of far better quality than those produced in the open during the summer. Seeds may be sown at the present time singly in small 60-pots, and raised in a heat of 55° to 60°. Pot them on when required, and either plant them out on mild hotbeds under portable frames or in large pots or boxes, and train the growths up the roof of an intermediate house. Good fruits may then be expected early in May. Moore's Cream, Pen-y-byd, Sutton's Perfection, and Prince Albert are all suitable varieties for this kind of treatment.

PLANTS UNDER GLASS.

By THOMAS LUSI, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Codiæums (Crotons).—Cuttings of good clean growths should now be taken and inserted in a mixture of peat, loam, and sand in equal parts, each cutting being, together with its leaves, fastened to a small stake at the same time. The soil should be pressed firmly round the cutting; the pots placed in a brisk bottom heat, daily attention being given to make sure that the cuttings do not suffer from lack of moisture. Such of the plants as have been cut up to provide an increase of stock, if required for further use, should not be repotted along with the general stock of stove plants, but be kept in a sunny position until growth has freely started. They should then be shaken out of the soil to a considerable extent, and the roots reduced in quantity before repotting the plants. Treated in this manner they make splendid specimens, well furnished with foliage down to the rim of the pot. Care should be taken not to afford too much water at the root after repotting, but to syringe them overhead daily in bright weather and to keep up a temperature of 70° at night.

Dipladenias, now starting to grow, should be repotted in a mixture consisting of peat three-quarters, and light loam one-quarter, with a few small pieces of charcoal and silver sand in sufficient quantity to make the soil porous. Let the soil be made firm and compact, and do not use too large a pot, but one that is an inch larger all round than the old ball. Care should be taken not in any way to damage the tubers, and to apply water very sparingly for several weeks after the repotting. There is no difficulty in growing these plants if care is taken to keep them free from mealy bug. The best mode of training a plant of Dipladenia is to fix single strings at 6 inches apart under the roof of the stove and fasten one shoot to a string. Then if required for exhibition, place a balloon trellis in the pot and cut each string with its shoot attached and twine round the balloon. Dipladenias should be grown in full exposure to sunshine, and afforded a night temperature of not less than 70°.

Gloxinias.—As soon as any of the tubers show signs of a renewal of growth they should be shaken clean out of the spent soil and be repotted in a mixture of loam, leaf-soil, peat, and sand, taking care to provide good drainage in the pots, because Gloxinias require much water while in active growth. Water should, however, be very sparingly applied at first, a syringing of the plants overhead sufficing till leaf and root growth becomes active. Place the pots where they will obtain plenty of sunlight, with a night temperature about 65°.

Allamandas.—These plants should be cut back so as to make room for the season's fresh growth and be repotted. The plants will be benefited by being shaken out of the spent soil, and the ball of roots reduced in size. Allamandas being gross feeding plants, a few crushed bones, together with small lumps of charcoal, may be mixed in the compost of loam, leaf-soil, and sand. If an Allamanda plant is of large size, the root mass should be soaked in tepid water for an hour after repotting, and water be withheld until growth has made some progress.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Pineapples.—The plants raised from Queen suckers potted up at the end of the last summer being now well rooted, may be put into their fruiting pots 1 foot in diameter. Important details to be observed in potting are to drain the pots thoroughly, and to see that the balls of soil and root masses are moist; to pull away the small leaves at the bottom, so as to free the dormant roots of the plants before they are turned out of their pots; to make the compost firm by the aid of a rammer, and to place the plants deep enough in their pots to admit of the surface being covered with the new soil 2 inches deep. I make use of turfy loam that has been stacked for some months. It is by no means first rate, but poor and light, and after pulling it in pieces of a suitable size and shaking the fine particles out of it, I add dry soot and an artificial vine manure at the rate of a 7-inch pot full of each to a wheel-barrow load of the loam. As soon as the plants are potted, they are plunged at 2 feet apart in a bed having a heat of about 85°. The beds here are formed of leaf-soil that has not been changed—though added to—for many years, the heat being derived from hot-water pipes beneath. Until the days lengthen considerably, the temperature of the house at night ranges from 60° to 65°, with the usual increase by day.

Pineapple suckers.—As the suckers upon winter-fruiting plants of Smooth Cayenne, Charlotte Rothschild, and Black Jamaica, become sufficiently strong for removal, they should be potted in 7-inch pots and watered to settle the soil, air being admitted sparingly until the plants are well rooted; in other matters directions given for successional plants should be followed.

Figs in pots.—Trees that were started for providing an early crop of fruit should have the shoots stopped when the foliage is fully developed. This will confine the trees to suitable limits, and cause their fruits to swell freely. The shoots should be stopped at the fifth or sixth leaf. If the crop on a tree is heavier than it can properly mature, thin off some of the fruit while it is at an early stage, otherwise more fruit may fall subsequently than is desirable. A night temperature of 60° to 65° should be maintained when once the flowering stage is reached, and it may be increased by solar warmth to 85° by day if accompanied with careful ventilation. The pots are plunged in a warm bed at 70° to 75°, which temperature must be steadily maintained, otherwise a harmful check may result. Let the trees be syringed in the morning, and again early in the afternoon on fine days, in order to check the spread of red spider, and to provide the required atmospheric moisture, more or less in amount according to the prevailing state of the weather. Owing to the trees having a limited root run, the application of water, which should be tepid, likewise that of liquid manure, demands close attention. Top-dressings of turfy loam, mixed with bone meal and horse droppings, should be applied, and kept in position by a band of zinc or tin.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Peaches and Nectarines.—These trees having been detached from the walls, in order to retard the blooming period to as late a date as possible, must now be pruned and trained, as a very little mild weather will cause the buds to swell fast, and will render the work hazardous to the buds. In regard to the pruning, if the trees received suitable attention in the summer and autumn months, very little will now remain to be done, with the exception of the removal of any branch or shoot that can be spared, in order to avoid overcrowding them. One of the chief conditions of success in Peach and Nectarine culture on outside walls, is to have the wood thoroughly ripened, and this can only be brought about by allowing plenty of space between the shoots for the leaves to develop to their full size, so that the sun may reach the young wood. Careful attention to root-pruning when necessary also assists in retarding the trees. When the wood of the Peach and Nectarine is thoroughly ripened, the flowers become much stronger and hardier than those of overcrowded trees. If the trees were last year infested by red spider or scale, all ties and shreds should be removed and burnt forthwith, and the trees should be dressed with XL-All or some other kind of insecticide before the training is begun. Employ a fairly stiff painter's brush, in an upward direction only when dressing the shoots, or the buds are sure to be injured. Where the trees are clean, simply syringe them with quassia extract to which a handful of flowers of sulphur to each three gallons is added. If this be done after the training is finished, or just before the flowers open, it will generally carry them over the blooming period with safety. For training purposes, bast ties are better and cleaner than shreds, as they harbour no insects. Soft tarred twine or thin Willow twigs are best for fastening the main branches. Lay these in at equal distances apart, and the young shoots between them in such a manner as to give the trees a well-balanced appearance. The young shoots should generally be left their full length, care always being taken not to tie too tightly, as this is often a cause of canker. The shoots may be laid in at about 6 inches apart, or a little more in districts unfavourable to the Peach.

Protecting the trees.—When the training of the trees is completed, the means employed against frost should be got in readiness for use. Various materials are used for this purpose, and those who make use of temporary coverings should have the poles, &c., fixed in position, so that when protection is needed no time will be lost beyond fixing up the materials. The old stock of Frigo Domo, if that be used, should be examined and repaired, also the fixed wooden copings, so that everything may be in readiness. The stem and main branches at the base should also be protected with loosely made hay-bands or bracken, &c. When sharp frosts follow bright days, the latter causing the sap to rise quickly, the wood is liable to be frozen, and the consequent splitting of the bark and wood later results in disease.

THE FLOWER GARDEN.

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

In the wild garden.—The first things required are to choose the plants, and the next the most natural manner of planting them. It hardly matters where, or what, the ground is, as something can always be found that will afford pleasing effects at given seasons. At the present time there are in bloom the Christmas Rose and other Hellebores, Winter Aconite, Snowdrops, and the yellow-flowered Jasmine, all of which appear more or less in perfection regardless of soil, position, or weather, and may be observed to advantage upon banks beneath trees, and in other positions. The picture is often less complete than it might be, because the number of each species planted is too limited. The Crocus, the Daffodil, Primrose, Anemone, Day Lily, Hemerocallis flava, H. fulva, H. aurantiaca, and H. Dumortieri, are now peeping through the soil; the Day Lilies to be bedecked in June and July with flowers of varied tints of orange yellow and tawny yellow. The wild garden should now have a general tidying up. The Bamboos will succeed in the wild garden, planted either on high or low ground, if provided with a little shelter from cold March winds. Many of the Spiræas are well suited for this garden when rocks and water are included. When placed behind a big piece of rock, near the water, the old Dundee Rambler Rose, with its annual growths of from 10 to 12 feet in length, forms a splendid object. Lenchtstern is another Rose that lasts long in flower, and has a good constitution. A good flowering shrub for spring, summer, and autumn is Prunus Pissardii, which has also striking crimson-coloured leaves. A fine companion shrub or half-tree is Acer Negundo foliis variegatis. Forget-me-nots, Honesty (Lunaria biennis), Canterbury Bells, and Anemones, may all be planted at this date, and when the plants are allowed to seed, the effect produced is natural and pleasing. Periwinkles (Vinca major and V. minor), St. John's Worts, Brooms, Gorse, Brambles (Rubus species), and Honeysuckles will all prove showy if the right positions be found for them.

EDITORIAL NOTICE.

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Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, FEBRUARY 20—Linnean Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—39°.

ACTUAL TEMPERATURES:

LONDON: *Wednesday, February 12* (6 P.M.): Max. 52°; Min. 44°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: *Thursday, February 13* (10 A.M.): Bar. 30·1; Temp. 41°; *Weather* Fair.

PROVINCES: *Wednesday, February 12* (6 P.M.): Max. 45° Guildford; Min 42° Hull.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Hardy Border Plants and Bulbs, Lilies, Begonias, &c., at 12; 1,000 Roses at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

WEDNESDAY—
Perennials, Begonias, Gladiolus, Lilies, &c., at 12; 532 cases Japanese Lilliums, Herbaceous Plants, &c., at 1; 3,600 Roses and Fruit Trees at 1.30; Azaleas, Rhododendrons, &c., at 5, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Choice Cypripediums, Imported Orchids, 2,000 Odontoglossum crispum, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

"Quiet, Steady Progress."

The report of the Council of the Royal Horticultural Society for 1907, from which we published extracts in our last issue, commenced with the short, but significant, sentence: "Quiet, steady progress has again marked the past year." We are accustomed to read similar reassuring statements in most of the annual reports from various societies, and they are based on facts which are more or less convincing. But in the present instance the details of the report bear out the opening statement in a most satisfactory way. The total increase in the Fellowship during the year, allowing for the losses through death and resignation, amounted to 533, and the net increase in income to £904. The number of Fellows now amounts to 10,000, which is believed to be the largest membership of any British Royal Society.

In our issue for January 4, we referred to some of the principal items that now figure in the Society's report, and it is unnecessary to refer to them in any but the briefest terms on the present occasion. Amongst them are the completion of the Research Station at Wisley, the appointment of Mr. Chittenden as Director, the establishment of a school of horticulture, the publication of the report on the Genetics Conference, the Union of Horticultural Mutual Improvement Societies under the auspices of this Society, and other matters.

During the year 1907 the Society held 29 exhibitions, which were open on 35 days, and the arrangements for the present year appear to provide for at least an equal number. It is regrettable that the Council has again fixed meetings for days immediately following upon Bank Holidays, but at the annual general meeting on Tuesday last the Chairman promised that the subject should be given further consideration.

It is a satisfactory circumstance that the special societies are more and more attracted to the Royal Horticultural Hall for the purposes of their exhibitions, and the terms imposed upon such societies by the Council are certainly more liberal than formerly, although these terms are conditional upon the special societies undertaking to admit Fellows of the Royal Horticultural Society free of charge.

The Temple Show has increased in popularity to such an extent that its value to Fellows has suffered from this very cause, and complaints have been frequent that, owing to the excessive crush in the tents, it has become almost a matter of impossibility to make a critical inspection of the exhibits. Fellows should, therefore, feel specially grateful to the Council for giving to them a useful privilege on the second day of the show, as the hours between 7 A.M. and 12 A.M. are now set apart for Fellows only, the general or paying public not being admitted until after noon. This opportunity should be specially acceptable to business men on the one hand or to those serious horticulturists who may wish to look up specialities and note them with some degree of ease and comfort. How far Fellows may avail themselves of this special privilege remains to be seen. Possibly, for every one who goes to see, ten may go to be seen, and if that be so, the anticipated relief from the first day's customary pressure will be small. No similar condition as to admission will prevail at the Holland Park Show, where, thanks to the greater area at disposal, excessive crowding of Fellows and visitors has not existed.

The *personnel* of the respective committees of the Society remains almost the same as hitherto. It is a tribute to the excellent attendance of members generally and their faithful discharge of their duties that so few changes are now made. In the Fruit and Vegetable Committee one vacancy caused by death and one by resignation have been filled by gentlemen who are almost veteran horticulturists. On the Floral Committee the addition of a vice-chairman forms the sole alteration. In the Orchid Committee the changes affect but two or three persons.

The trials at Wisley this year will include, for the Floral Committee, herbaceous Phloxes, Cannas; outdoor, early-flowering and single Chrysanthemums, together with Cactus Dahlias, in order to test their garden decorative value, but varieties must have been put into commerce during the past three years and be of the true Cactus type. It is suggested that plants of these should be sent in by April to afford time to repot and grow them on, previously to planting out, and it is hoped that, in consequence, the results of this year's trials will be more conclusive than those of last year. The trials will be under the joint control of the Floral Committee and the National Dahlia Society.

The trials under the Fruit and Vegetable Committee will include Asparagus, Parsleys, Beets, Brussels Sprouts, Cabbages for spring sowings, and Potatos of new or established varieties. Also a trial of seed tubers grown in various localities, which means that English-grown tubers from diverse localities will be tested against Scotch-grown and Irish-grown tubers of similar varieties. The results of such a trial may be anticipated to point to the greater value of seed tubers obtained from localities where over ripening has not taken place. Some experiments in relation to fruit culture are also to be conducted, but these will require testing over a series of years. It is proposed to test the effect of various methods of planting trees, the results of pruning in the spring after planting, and of non-pruning; also of summer pruning, planting trees at different depths, and the effect on trees with their roots under growing grass as compared with others having their roots in cultivated soil. Such experiments, few as they are, should possess great interest for the garden students. For the present, these experiments will be limited to Apples, although other kinds of fruit will follow.

In addition to the examinations that are already conducted under the auspices of the Society, a new one is projected, suitable for youths under 19 years of age. It will follow the lines of the general examination, but will, we presume, be more elementary in character. It is both interesting and gratifying to note that the Society's examinations have resulted in raising the standard of knowledge, both scientific and practical, each successive year.

Such an increased measure of confidence as the Society has obtained from horticulturists and from the general public in recent years, necessarily imposes upon the Council a proportionate amount of responsibility. Mr. J. Gurney Fowler, who occupied the chair in the unavoidable and regretted absence of the President, Sir Trevor Lawrence, was able to remind the Fellows who attended the annual meeting on Tuesday last of the large amount of useful work performed in 1907, and, as Treasurer, he delivered his usual explicit statement of accounts, showing that, like prudent men, the Council is making provision for the future. Such a statement is eminently calculated to inspire the confidence of the Fellows.

Of the three retiring members of Council, all were re-elected, with the exception of the Earl of Tankerville, who was obliged to resign his position owing to distance from London. The vacancy thus caused was filled by the election of Mr. E. A. Bowles, M.A., who is already known to the Fellows in his capacity as a vice-chairman of the Scientific Committee.

The Chairman referred in sympathetic and appreciative terms to the great losses the Society has sustained during the year by the death of some of its principal supporters, among whom may be mentioned Sir Thomas Hanbury, K.C.V.O., Sir Frederick Wigan, Bart., Sir Michael Foster, F.R.S., and Dr. Masters, F.R.S.

We need not refer in greater detail to the proceedings on Tuesday last, a report of which appears on another page, but we merely voice the feelings of all our readers in expressing the hope that the indisposition which prevented Sir Trevor Lawrence from attending that meeting may be of a temporary character. We believe that Sir Trevor Lawrence has attended every annual meeting the Society has held during the past twenty-six years.

OUR SUPPLEMENTARY ILLUSTRATION to the present issue depicts the south side of the well-known church of St. Mary the Virgin, which forms so prominent a feature in the famous High Street, in Oxford. The old walls are draped with festoons of Virginian Creeper, which, like the Ivy, flourishes in the damp climate of Oxford, and lends a characteristic charm to many of its buildings. The church has always been closely associated with the University, and many of the colleges, as well as the Bodleian Library, are grouped around it, whilst the botanic garden is scarcely a quarter of a mile distant. The remarkable porch, with its twisted columns and symbolic ornament, is especially interesting, as its design formed one of the grounds of the impeachment of Archbishop Laud, in the reign of Charles the First. The tower and spire date from about 1400 A.D., the nave being built about 100 years afterwards. The spire was heavily decorated until about twenty years ago, when alarm was felt on account of its condition. It was restored by the well-known architect, Mr. T. G. JACKSON, R.A.

THE BOTANICAL MAGAZINE for February contains illustrations and descriptions of the following fine plants

REHMANNIA ANGULATA, *Hemsl.*, tab. 8177. The plant was introduced by Messrs. JAMES VEITCH & SONS, through their collector, Mr. E. H. WILSON. It is free-growing, and exhibits considerable variation in colour. Mr. WATSON, who adds a cultural note, suggests that it may be best treated as a tender biennial, or as a greenhouse subject. If planted out in the open in May, they reach 4 to 6 feet in height in July, when they are in bloom.

CODONOPSIS CONVOLVULACEA, *Kurz*, tab. 8178.—This plant belongs to the Campanulaceæ, and is a native of Eastern Asia. There seems some probability, however, that the source from which this particular batch of plants was derived lay further west, in the Himalayas.

PYRUS TSCHOWSKII, *Maxim*, tab. 8179.—This is a rare plant from Japan. The tree has grown well at Kew and flowered last spring better than it had done in previous years, probably owing to the hot summer of the preceding year. The plant was presented to Kew from the Arnold Arboretum by Professor SARGENT.

POTENTILLA CONCOLOR, *Rolfe*, tab. 8180.—This is a native of Yunnan in S.W. China, where it was discovered by the Abbé DELAVAY about twenty years ago, growing in calcareous soil at about 10,500 feet elevation. It resembles P. Griffithii, but differs from it in the larger leaflets and flowers. P. concolor is perhaps the finest yellow-flowered species known, and it is evidently quite hardy.

LARIX GRIFFITHII, *Hook fil*, tab. 8181.—This Larch was discovered in 1838 by GRIFFITH in Bhutan, and has been found in Nepal and Sikkim at elevations of from 6,000 to 10,000 feet. It does not appear to thrive well in the climate of Britain, and is especially apt to suffer from the attacks of the Larch blight.

THE NEW GAVIOTA PLUM.—Mr LUTHER BURBANK gives a brief description and a figure of this new Plum, raised by himself, in *The Rural Californian*. It is a cross between Americana and Japan, with probably half-a-dozen other varieties combined in it. The fruit is recommended as one of the best shipping varieties, and the tree is stated to be very resistant to disease of all kinds. The habit is less rampant but more productive than Formosa. Its season at Sebastopol (one of BURBANK's nurseries) is from July 15 to August 5. The fruit is deep reddish-purple, and the flesh is firm, pale yellow, fragrant, and sweet.

LINNEAN SOCIETY.—A meeting will be held on Thursday, February 20, at 8 p.m., when the following papers will be read:—"Experiments with wild species of tuber-bearing Solanums," by Mr. ARTHUR W. SUTTON, F.L.S.; "The life-history and larval habit of tiger beetles" (Cicindelæ), by Dr. V. E. SHELFORD; "On a possible case of mimicry in the common sole," by Dr. A. F. MASTERMAN, F.L.S. Exhibition: Mr. T. ERNEST WALTHAM, stereoscopic photographs of Alpine plants in natural colours

ROYAL BOTANIC SOCIETY.—Mr Geo. GORDON will deliver a lecture in the Royal Botanic Society's Gardens, Regent's Park, on the afternoon of February 20, the subject being "Gardens of Roses," which will be illustrated with lantern slides

APPOINTMENT. At a meeting of the directors of the Crystal Palace and District Cemetery Company, at Elmer's End Road, Beckenham, on the 7th inst., Mr F. COWELL was appointed to the post of Superintendent at a salary of £120 per annum. Mr. F. COWELL is 28 years of age, and during the past 11 years has been Gardener at the Lambeth Borough Council's Cemetery at Tooting

THE PALERMO BOTANIC GARDEN.—Owing to the splendid climate enjoyed by Sicily, the University Botanic Gardens are amongst the most beautiful in the world. Frost is almost unknown, and even the hot, dry, African wind gains enough moisture, during its passage across the Mediterranean, to render it harmless to vegetation. The garden is about 16 acres in extent, and it contains a very fine collection of plants growing in the open air. The Date Palm, Sabal princeps, Cocos plumosa, and Kentia Forsteriana, represent a few of the Palms to be found there, whilst Cycas revoluta attains to a height of 10 feet. The genus Ficus is represented by many species, some of which, e.g., Ficus magnoliodes, F. elastica, and F. rubiginosa, reach a large size. Strelitzia regiæ flourishes, and here and there are to be seen plants of that remarkable scrambler, Quisqualis indica, which climbs by means of the lower part of its leaf-stalks which are converted into woody hooks after the rest of the leaf has fallen away. Many plants familiar to those acquainted with the Canary Isles and the Cape also flourish here. There is also a fine collection of plants under glass, and recently buildings have been erected for purposes of photography, drawing, &c., and it is understood that the Director, M. BORZI, is about to build laboratories, which will render the gardens of great service to botanists desirous of working in a region so full of promise for investigations.

CULTIVATION OF FIGS IN CALIFORNIA.—The Smyrna Figs are known to require the aid of a gall insect for their successful pollination. The insect has passed its larval stage in another Fig, and as it is emerging from its chrysalis the stamens are just ripe, and the fly escapes into the air well dusted with pollen. When it enters the generation of Figs just opening, it does so in order to lay its eggs. It effects the pollination of the flowers inside the hollow receptacle, but ordinarily fails to lay its eggs successfully in this particular generation of Figs. The absence of the insect from California has, until recent years, made the cultivation of the Smyrna fruit impossible, but it appears now to have been successfully introduced into the country. It is expected that the Adriatic Figs, which do not require the services of the insect, and are those chiefly cultivated at the present time, will have to give place in the future to the finer Smyrna varieties

BIRMINGHAM PUBLIC PARKS.—The annual meeting of the Birmingham Park Workmen's Sick Society was held recently. The president and other officers were re-elected and the report, which recommended a dividend at the rate of 18s. per member, was adopted. During the evening Councillor DAVIS referred to the success of the society, and alluded to the services rendered by the hon. treasurer (Mr. W. H. MORTER). The CHAIRMAN then said he had been asked to make a presentation to Mr. W. H. MORTER, which had been subscribed by the whole of the parks employees. The presentation took the form of an electro tea service. Mr. W. H. MORTER, superintendent of the City Parks, acknowledged the gift.

PROPOSED CHAIR OF ENTOMOLOGY AT LIVERPOOL. The president and committee of the Liverpool School of Tropical Medicine are appealing for funds to found a Chair of tropical entomology and arachnology in the University in memory of the late Dr DUTTON, who lost his life in the course of his investigations on tropical disease. The movement has met with much local support, particularly by the Mayor of Chester, in his official capacity. It is understood that if the Dutton Memorial Chair is founded the first occupant will be Mr. A. NEWSTEAD, at present lecturer in entomology in the university. Mr. NEWSTEAD has often contributed to the columns of the *Gardeners' Chronicle*, and we are glad to think his work is likely to find appropriate recognition in Liverpool. As to the inherent importance of the subject of the proposed Chair, no one who is at all acquainted with the important part played by insects in spreading disease, as well as in directly producing it, can entertain any doubt; and it is greatly hoped that the appeal for funds for so important an object will meet with adequate support.

STATE FORESTS. Afforestation by the State is a subject which has occupied the attention of foresters in this country more and more in recent years. Messrs. CLIBRAN & SON, Altrincham, have published a pamphlet containing an article by Mr. FRASER STORY, which appeared in the *Manchester Guardian*, together with several letters which followed the publication of the article. The pamphlet contains many interesting particulars, and we believe that copies may be obtained gratis on application to Messrs. CLIBRAN.

TOBACCO IN THE PHILIPPINES.—Our American cousins are promoting the cultivation of tobacco in the Philippines, although as a staple crop it is said to be of less importance than when the islands were ruled by Spain. A bulletin on the cultivation of the plant by Mr. G. E. NESOM deals with the best methods of cultivation, and also with the pests that trouble its growth. The most important of these is perhaps the tobacco worm, which damages the leaves used for wrapping cigars. This is especially important in the Philippines, as practically all the best tobacco is grown with a view to using as wrappers, and any hole in the leaf, of course, spoils it for the purpose. An ingenious method of prevention is recommended. The Datura species, known in America as "Jimson" weeds, are common in the islands, and they are planted about amongst the tobacco, and poisoned honey or syrup is put in the tubular corolla. This attracts and kills the tobacco-worm moths, preventing them laying eggs on the crop. But good as the prevention doubtless is, hand picking is also necessary to destroy all the worms.

THE FRANCO-BRITISH EXHIBITION, 1908.—The following are the dates fixed for the temporary horticultural shows in the Exhibition grounds at Shepherd's Bush: June 2 and 3, July 16 and 17, and September 23 and 24. The Forestry Sub-committee solicit exhibits in the following classes:—Class 49. Appliances and processes used in arboriculture. Special instruments for gathering, preparing, testing and preserving seeds; tools and appliances used in tree culture and in the forest industries, tree-measuring instruments; preserving timber by creosote and other substances (examples and processes); prunings, good and bad, and their effects; malformation, curious growths of branch and root; damage by fungoid pests, insects, animals, storms, frost. Class 50. Products of the forest and of forest industries.—Collections of fruits, seeds, cones; specimens of indigenous forest products, home-grown timber cut into boards and transverse sections, giving age and conditions of growth; comparative exhibits of timber grown under various conditions; woods for cabinet work, building, staves, cricket bats; wooden gates and fencing (not painted or varnished); basket work, wattling; tan-bark, resinous substances. Class 51. Photographs, pictures, models.—Photographs of specimen trees and groups of trees, new or rare trees suitable for cultivation in the British Isles; also photographs showing operations in transplanting large trees, and various operations in forestry, such as thinning (before and after), coppicing, felling, removing timber and sawing; forest and nursery topography, maps, plans, books, charts showing imports of timber; of insects and fungi injurious to trees and their effects.

THE ELM BARK BEETLE AT LETCHWORTH.—A severe attack of the Elm bark beetle (Scolytus destructor) has occurred on the estate of the First Garden City, at Letchworth, Herts. About 50 Elms have been attacked on various parts of the estate, the species in each case being Ulmus campestris. The beetle was first noticed at work about three years ago, and since that time it has spread considerably. Several trees, apparently in perfect health twelve months ago, are now practically dead. In such cases, the holes made by the beetles can be seen all over the bark. Trees which have been freshly attacked this year show the presence of the beetle, even at a distance, by the leaves on certain branches turning yellow. Some of the trees, which are on sandy soil, show the effect of the beetles by losing their bark, which falls from the base of the trunk, but those on clay show no sign of their bark peeling. *Journal of the Board of Agriculture.*

SCHOOL GARDENS.—The report on Elementary School Gardens under the Essex Education Committee for 1906-07, which has recently been issued, is of great interest in connection with rural education. Forty-two gardens were inspected last summer, and the results were very satisfactory. Experience shows that the efficient teaching of gardening causes no deterioration of the general school work. On the contrary, it is found to induce a more intelligent interest in the ordinary school subjects by showing their practical utility in the processes of everyday life. The subjects profitably correlated with gardening are composition, arithmetic and mensuration, nature study, and drawing. Probably few changes introduced by the Board of Education into the curricula of elementary schools may be expected to be productive of better results than that of gardening, when it is taught by properly-qualified persons. At some of the Essex schools an excellent practice is followed in combining joint work on larger plots, together with the cultivation of small separate plots, by boys working either alone or in pairs.

HOME CORRESPONDENCE.

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

WHAT IS AN HERBACEOUS PERENNIAL?—The distinction between herbs, on the one hand, and shrubs and trees, on the other, rests upon two characters appertaining to the stems above ground the non-woody (herbaceous) or woody nature, and the duration of these. Although the two characters tend to point in the same direction, since the woody stem is for the most part the longer-lived, yet neither alone affords a basis for the absolute diagnosis of herbaceous perennials. If, as is common, we define these as plants living for several years and having stems that die down to the ground before each winter, then in winter our pastures must be bare as ploughed fields, our lawns miniature deserts, and our flower-beds patches of brown earth. Incidentally this example brings out the point that a distinction must be drawn between evergreen and deciduous perennial herbs. But the longevity of a shoot in our climate is decided largely by two factors: one is the cold winter, and the other is the production or non-production of flowers on the stem in question. Some stems die down because of winter; others capable of surviving this ordeal succumb immediately after flowering and fruiting. Will, therefore, a wider definition of a herb suffice, namely, that of a plant showing above ground only herbaceous stems which do not live for more than a year at most? Even this is not adequate. For, on the one hand, there are perennial grasses whose herbaceous shoots above ground live regularly for more than two years, and, on the other, there are little plants with prostrate woody stems creeping over the ground and emitting shorter, erect, herbaceous foliaged and flowering shoots that die within the year. From these latter plants to similar ones whose creeping stems are underground is a narrow step which is bridged both by casual individuals and by intermediate species. This merging of undershrub and herbaceous perennial is accomplished also in another direction, when the base of the erect main stem becomes more or less woody, as in the garden Wallflower, though the plant is mainly herbaceous. Again, treatment and climate complicate the question from a practical standpoint by locally making annuals into perennials and the reverse; examples of this are provided by the common Daisy, Mignonette, annual meadow grass, and Castor-oil plant. In framing rules for competitions at horticultural shows, while it is evident that plants with undubitably woody stems rising above the ground are ineligible, there should be a clear statement made as to whether plants with either only a woody tendency expressed in the stem or with a prostrate woody stem above ground are or are not excluded. Moreover, the conventional definition should indicate which of the following herbaceous perennials are admitted to competition: Herbs, with rhizomes woody or herbaceous, with bulbs, tubers, or corms, with above-ground shoots that live for one year or more, with evergreen or deciduous leaves, with succulent stems or succulent leaves, and with a climbing habit. *Percy Groom.*

PROTECTING FRUIT CROPS FROM FROST.—Whilst such protection (see p. 89) furnished to orchards or to lesser areas of trees in gardens may at short but critical times in the spring months be of supreme importance, several questions need to be answered satisfactorily. What is the prime cost of supplying furnaces or stoves? What is the cost of fuel to each one per night, and that of incidental labour per acre? One other is, How far does such effort at protection prove efficacious? This latter question can only be satisfactorily answered when a given area is experimented upon during spring frosts, and an equal area close by is not so treated. Unless these conditions exist, no real test of the merits of any effort at protection is furnished. In connection with the experiments referred to by an Evesham fruit grower, as told by Mr. W. E. Collinge, who had 21 stoves or fires per acre of fruit plantation, it is evident that these, if evenly distributed over the acre, must have been fully 100 feet apart. It is not difficult to imagine that within a few feet of its circumference, a stove or furnace in the open air, on a cold frosty night, can only make its warmth felt, and that at 50 feet from any two such stoves no possible influence on temperature could be exercised. For that reason, whilst it is possible that 9° of frost may have been fought successfully near each stove, no one can believe that such stove exercised any such power at remote distances. Were there a stove to every two rods, for instance, some general warmth might be felt, but that would necessitate some 80 stoves per acre. Then it is said that the smoke generated forms a smoke screen over the trees. If much smoke were generated, it is obvious that combustion must be slow, and consequently the heat given off would be small. You cannot have volumes of smoke and great heat at the same time. But unless the atmosphere was heavy and misty, thus causing the smoke generated to drift or hang low, this smoke protection would not be furnished. But our late spring frosts too often occur on clear, bright nights, when smoke in ever so great volume would ascend high and drift rapidly away, thus failing to form the desired overhanging shelter. But not frosts alone injure fruit blooms. A long succession of cloudy, gloomy weather, with very low temperature, or a succession of east winds, destroy the vitality of the pollen grains. However, experiments in the direction named may well be carried out, but under impartial control. If it were thus found possible to make fruit crops secure from frost, immense benefit would result. *A. D.*

THE RAINFALL IN IRELAND.—I see that the heaviest rainfall for 1907 mentioned in the *Gardeners' Chronicle*, which appeared on p. 73, was 55.39½ inches. It might perhaps be of interest to state that here it was 57.83 inches, rain having fallen on 218 days. June and August were the two wettest months, registering 6.62 and 6.41 inches respectively; and January the driest with 2.46. The heaviest fall on any one day was when 2.38 inches fell between the hours of 4 and 8 p.m. on September 10. *J. Smith, Mulroy Gardens, Co. Donegal.*

FRANCO-BRITISH EXHIBITION.—As you are probably aware, a large section in the forthcoming Franco-British Exhibition, which is to be opened in London next May, will be devoted to food stuffs and beverages, together with the processes of preparation in all their varied stages from the raw material to the finished article of consumption. The intimate relation this subject bears to the problem of our daily food supply alone places it in the front rank of those included in the great exhibition we are about to hold of the products and industries of two commercially allied nations. As chairman of the Alimentation Committee, I have been asked to write to you with the object of enlisting your sympathy and support in our endeavour to render this all-important section worthy of the British people. I would, therefore, beg you to accord us your invaluable assistance in making known the prominent position it will occupy. The French authorities are resolved to give a magnificent display in the alimentation section of the natural resources of their country, and it is hoped that our efforts to demonstrate the self-supporting character of the Empire will be equally conclusive. *Bessborough, Chairman, Alimentation Committee, February 5, 1908.*

HÆMANTHUS KATHERINÆ.—The photograph of a remarkably fine specimen of this species, reproduced as a supplement to the *Gardeners' Chronicle* for February 1, should induce lovers of bulbous plants not only to grow it, but to endeavour to procure other species from Africa; there are numbers of interesting Hæmanthi that are either no longer in cultivation, or have never been introduced. With regard to H. Katherinæ, I should like to point out two forms of it in cultivation, so distinct one from the other that I have a difficulty in believing them to be the same species. In the supplement above referred to, Mr. Raffill's photograph clearly shows two features: a somewhat narrow, pointed leaf, and upright habit of growth; and a dense spotting on both leaf stem and flower stalk or peduncle. The spotting, of a dark crimson-brown colour, is mentioned in all the descriptions of the species I have read. In the other form of H. Katherinæ to which I would draw attention, the leaf is wider in proportion, the point more obtuse, and the blade of the leaf has a more horizontal habit, giving the plant a distinctly different

appearance. In addition to this, the plant is absolutely unspotted. The figure in *Bot. Mag.*, t. 6778, gives a fairly good idea of this form. A tendency to a deciduous habit in the spotted form, not so observable in the other, may point to a hybrid origin, possibly to H. multiflorus, a species having a lateral peduncle, not a central one, as stated in error on p. 73. The flowers in both forms show little or no difference, to the best of my recollection. M. E. de Wildeman, in his monograph, *Les espèces du genre Haemanthus L. (sous-genre* Nerissa, *Salisb.)*, Bruxelles, 1903, draws attention to the improvements effected in this species by cultivation, but that, I imagine, cannot account for such radical differences, and we also know that both forms have been imported from Natal. Will some expert on this genus enlighten us? H. Kathermæ is stated to be the only representative of the subgenus Nerissa in South Africa. This fact, I think, adds to the interest of the question. *Walter E. Ledger, Wimbledon.*

SOCIETIES.

ROYAL HORTICULTURAL.

February 11.—This meeting, coinciding with the annual general meeting, was exceedingly well attended, and as a result the hall in Vincent Square was quite filled with exhibits of many kinds. Among them was a very fine display of species of Solanum and cultivated Potatos from Messrs. Sutton & Sons, Reading, which was awarded a Gold Medal. The same firm showed extensively in the floral section. Ferns were less numerous than at the last meeting, but the examples shown were wholly of hardy species and varieties. Carnations were much in evidence, and Cyclamens were very finely shown.

Orchids from Messrs. Sander & Co. (St. Albans), Charlesworth (Bradford), Cypher (Cheltenham), and others brought much beauty and variety into the exhibition.

The awards made to novelties consisted of four Awards of Merit, recommended by the Orchid Committee, and one Award of Merit by the Floral Committee, in the latter case the award being for a variety of Cyclamen shown by Messrs. Hugh Low & Co.

It is generally recognised that the new practice of displaying the plants certificated by the Floral Committee upon a table by themselves will tend greatly to the convenience of visitors, who have often heretofore found much difficulty in finding the novelties selected for awards. The table is situated in the recess where the Fruit Committee assembles for its deliberations.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. C. T. Druery, H. B. May, Jno. Green, T. W. Turner, C. J. Salter, W. Howe, Jno. Jennings, E. A. Bowles, R. W. Wallace, W. T. Ware, W. Bain, Chas. Dixon, J. Douglas, Chas. E. Pearson, W. Cuthbertson, A. Turner, H. J. Cutbush, W. P. Thomson, E. H. Jenkins, W. J. James, Jas. Hudson, Jas. Walker, Geo. Gordon, C. R. Fielder, R. Hooper Pearson, J. F. McLeod, and R. C. Notcutt.

Messrs. J. Veitch & Sons, Ltd., made a most interesting display of a miscellaneous character with plenty of colour in it. There were observed the little Azalea amœna "Hexe," certificated in 1906, a variety with larger, if not more brightly-coloured flowers than the type; the white-flowered Kalanchoe Dveri, a Central African plant, having corymbs of white flowers borne on stalks 2ft. high; finely developed plants of Coleus thyrsoideus, with two and three fine spikes on a plant; Cheiranthus kewensis, Primula kewensis, Gerbera Jamesonii, Freesia refracta alba; small plants of Shaddock abundantly flowered, and other species of Citrus. Among some freely-bloomed plants of Azalea indica were choice examples of Deutsche Perle, President, Oswald de Kerchove, Simon Mardner (a beautiful double flower of rose-pink tint), Vervaeneana (an old favourite), Madame Vermeesh (like Deutsche Perle, but with prettily-crimped petals and semi-double in regard to form), and Apollo (a resplendent crimson flower). Other plants shown by the firm consisted of a number of their strains of Primula sinensis, and all of them good. We may name Chelsea Favourite (light pink), Brilliant King (deep crimson), The Czar (a so-called blue of good shape), Magnifica, blue (of a lighter shade), and The Duchess (white, with a purplish rose-coloured zone around the yellow eye). Messrs. Veitch also made a fine display with Perpetual-flowering Carnations, American and English varieties as cut blooms, together with a few plants growing in pots. (Silver-Gilt Flora Medal.)

Messrs. H. Cannell & Sons, Swanley, Kent, exhibited fine Chinese Primula plants. The blooms were notable for their large size in general, and the clearness of the tints. Striking varieties were Swanley Giant, Cannell's Red, The Duchess, Giant Salmon (a very large, perfect flower), Queen Alexandra (a large flower, of regular form—white), Giant Purple, an equally good bloom in Mrs. G. F. Raphael, of a lilac tint, and several others. (Silver-Gilt Banksian Medal.)

Messrs. W. Cutbush & Son, Nurseries, Highgate and Barnet, showed cut blooms and plants of Carnations. We remarked the new winter-flowering variety, Glendale, a white flower with scarlet edge, very attractive looking; Dazzle, a scarlet, of moderate size; Mikado, a pink bloom, with thin edge of white, and white base to the florets, very distinct; Mr. W. T. Onwake, of a cheerful-looking rose-pink tint; Mrs. Robert Norman, an immense but rather loose, white flower; Helen M. Gould, also big, double, and pink in colour, blotched or flaked with crimson; and St. Louis, a fine scarlet variety. There were many more that visitors to the Hall have observed on several previous occasions. This firm had set up the accustomed bank of cork-covered boxes, and filled them with Narcissus, Rhododendrons, Heaths, Pernettyas, Helleborus niger, and Alpines. The other exhibits consisted of forced plants of Prunus triloba, Wistaria sinensis, Amelanchier, Lilacs in variety, Azalea indica, and Daphne indica rubra. (Silver Flora Medal.)

Messrs. J. Carter, High Holborn, London, showed several varieties of Primula sinensis, such as Holborn Crested, Princess May (light pink), Coral (a salmon-pink), Aurora (a pink, semi-double), and a fine white variety named King Edward.

Messrs. J. Peed & Son, West Norwood, S.E., showed Lachenalia pendula, a quantity of plants of Primula obconica, a few of P. kewensis, some Cacti, Aloes, Sedums, Sempervivums, Saxifrages, &c.

Messrs. Sutton & Sons, Reading, exhibited a fine set of P. sinensis, showing the highest culture, the flowers, large and of much substance, circular in form, with overlapping segments. Very attractive were Sutton's Giant Crimson, Giant Salmon Pink, Giant White, the new dark blue, The Czar, a beautiful variety, and Improved Reading Blue. The Duchess is a pink-eyed, white variety, with yellow colour only found in the depth of the throat. It is an acquisition in Primulas, and the same may be said of some of the Duchess hybrids that formed part of the exhibit. Some of these are chance crosses, others purposely crossed. They are distinct in several points. (Silver-Gilt Banksian Medal.)

A nice group of hardy Ferns was shown by Messrs. H. B. May & Sons, The Nurseries, Upper Edmonton, for which a Silver Flora Medal was awarded. The group was rich in Polystichum species and varieties, in Polypodium and Scolopendrium, among which last were many plumose forms.

Mr. W. H. Page, Tangley Nurseries, Hampton, made a large and striking exhibit of Lilium longiflorum, with six or more blooms on each pair of bulbs in a pot. L. speciosum rubrum, with a dozen blooms, and L. s. album the same. The centre foreground of the group was occupied with cut blooms of Carnations of the finest varieties lavishly displayed. The blooms of the pink Lawson were extremely fine. (Silver-Gilt Flora Medal.)

From Mr. G. Reuthe, the Foxhill Hardy Plant Nursery, Keston, came hardy plants, viz., Galanthus Elwesianus, G. byzantinus, Iris alata, I. sophonensis, Sedum species, Crocus atticus, a charming light-purple flowered species, C. Imperati præcox, bright in colour, Rhododendron cinnamomeum, R. Falconeri, R. decorum, and others not in bloom; also Berberis Bealii, with spikes of blooms just opening, cut blossoms of Camellia and Lomatia pinnatifolia, a handsome foliaged plant, of erect habit of growth.

Mr. Seward, of the Nurseries, Hanwell, Middlesex, showed very finely-grown Cyclamen giganteum, for the most part bearing flowers in large numbers, and of the largest size, on stalks of great strength. (Silver-Gilt Banksian Medal.)

From the St. George's Nursery Company, Hanwell, was exhibited another collection of fine Cyclamen plants to which a Bronze Flora Medal was awarded.

Messrs. Hugh Low & Co., Bush Hill Park, Middlesex, were large exhibitors of Carnations, both cut blooms and plants. There were remarked besides the now more common varieties, several newer, including Mrs. Burnett, Jessica, Winsor, Maudina—a charming purple flower, Princess of Wales, of the "Malmaison" class, and Beacon. The plants shown included one of a most floriferous variety named Oriflamme, two years old, which has carried and will still carry flowers to the number of 51. (Silver-Gilt Banksian Medal.)

Mr. H. Burnett, Carnation grower, Guernsey, showed a small number of plants of remarkably fine quality. Besides varieties of Enchantress, we remarked the very distinctly-coloured Marmion, Mrs. M. A. Patten, white with narrow crimson flakes; Lady Fellowes, bright rose, &c.

The Guildford Hardy Plant Co. (A. R. Upton, manager) exhibited species of Veronica and Ericas, including hardy species, such as E. carnea.

An imposing corner group was arranged by Messrs. R. & G. Cuthbert, Nurseries, Southgate, Middlesex. The group consisted of Magnolia speciosa 5 to 6 feet in height, and among these Japanese Acers, Pteris and other species of Ferns were placed. At the back, so as to mask the wall, tall Palms were placed, and in the "low ground" hardy Azalea made grand patches of orange and yellow colours, and taller plants of Staphylea colchica in bloom, with Prunus also in flower, were the more conspicuous ones, and the group was edged by miscellaneous Ferns. (Silver-Gilt Banksian Medal.)

Mr. R. E. Gill, nurseryman, 14, Market Street, Falmouth, exhibited trusses of various species of Rhododendrons taken from bushes growing in the open air. There was great variety in the colours of the flowers, and the exhibit gave a good idea of the floral beauty afforded by these and other species of Rhododendrons in this wild part of the country. The exhibits as a whole were enhanced by an extensive array of water-colour drawings of these plants and other varieties. (Silver Flora Medal.)

Messrs. Thomas Ware, Ltd., Feltham, exhibited Corydalis thalictrifolia, to show its usefulness thus early in the year. Sedums, Saxifrages, Helianthemums, hardy Cyclamens in bloom, Aubrietia aurea foliis var., Teucrium aureum, &c. (Bronze Flora Medal.)

Primula obconica, and a double form of it, besides a large number of very well bloomed Cyclamens, in all colours, were shown by E. A. Hambro, Esq., Hayes Place, Hayes, Kent (gr. Mr. J. Grandfield). These were exceedingly creditable specimens of good cultivation. (Silver Flora Medal.)

Herbert Chapman, Esq., Rye, Sussex, showed Freesia Chapmanii, a yellow-flowered hybrid, with blotch of orange, and another seedling of light yellow tint, almost cream-coloured. There were many other seedlings showing variations from the type. Also several rare Irises that bloom early, and are very dwarf, such as I. Kielagei Improved, I. Aspasia, a flower of brilliant blue and purple tints.

Mr. W. Palmer, Andover Nurseries, exhibited uncommon forms of Primula sinensis, in which there is a kind of doubling in the flower which takes the form of a central funnel in place of the usual "eye." It is not unpleasing, but the yellow-coloured eye is a more effective feature.

The Misses Hopkins, of "Mere" Gardens, Shepperton, made a display with rockery plants on a scale much larger than usual.

P. A. Molleno, Esq., M.P., Cape Town and Guildford, Surrey, showed about a dozen flowering shoots of Ericas, much withered and dried after their long journey from the Cape to this country. Among other exhibits rarely seen here were blooms of Proteas, some expanded, others "closed for the present."

Messrs. BARR & SONS, King Street, Covent Garden, London, showed flowers of various Narcissus, of sundry rock plants in some quantity, Helleborus pulchellus, H. purpureus superbus, H. fœtidus, H. colchicus, and one called Rosie, also specimens of Crocus Korolkowii, Galanthus, Adonis, &c.

Mr. L. R. RUSSELL, Richmond Nursery, Richmond, Surrey, exhibited largely berried Aucuba japonica vera, varieties of Eleagnus, both variegated and green-leaved Ivies, &c. (Bronze Flora Medal.)

Messrs. JOHN WATERER & SON, the American Nurseries, Bagshot, showed a group of rare and choice species of Conifers, including Pinus monicola, P. flexilis, Abies pungens, A. ajanensis, A. concolor, A. pungens glauca, &c.

AWARDS OF MERIT.

Cyclamen "Salmon King."—Messrs. HUGH LOW & Co. exhibited plants of this Cyclamen with large well-developed flowers of bright salmon-red shade. An Award of Merit was recommended the strain.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, F. J. Hanbury, H. Little, W. Boxall, Stuart Low, A. A. McBean, J. Cypher, A. Dye, F. M. Ogilvie, F. Sander, J. Charlesworth, W. Cobb, W. P. Bound, H. G. Alexander, W. H. White, F. J. Thorne, H. Ballantine, W. Bolton, C. H. Curtis, A. J. Foster, C. J. Lucas, R. Brooman-White, N. C. Cookson, Gurney Wilson, and G. F. Moore.

J. BRADSHAW, Esq., The Grange, Southgate, was awarded a Silver-Gilt Flora Medal for a group the centre of which contained a fine selection of white forms of Cattleya Trianaea. One specimen of the pure white C. Trianaea alba had eight flowers. C. T. Esmeralda, a new pure-white variety with light-pink front to the lip, C. T. Diana of a delicate-blush tint, and other white varieties, which in the aggregate bore over forty flowers, were included. The coloured forms had for their best C. T. The Premier and C. T. Mrs. de B. Crawshay, both grand flowers. With the white Cattleyas were a strong specimen of the reddish scarlet Odontioda Bradshawiæ, a finely-flowered Cymbidium grandiflorum and other Cymbidiums; a selection of hybrid Odontoglossums, and a grand lot of varieties of Lycaste Skinneri, the white forms and white-lipped varieties being specially good.

Messrs. SANDER & SON, St. Albans, were awarded a Silver Flora Medal for a group in which their fine strain of Cattleya Trianaea was well represented, the flowers being all of the broad-petalled type, with finely-developed lips. C. Trianaea Rex was a very fine form with blush-white sepals and petals and large violet-crimson lip; another form was similar to the fine C. T. eboracensis, but larger and with a deep-orange tube to the lip, which was rose-purple in front. Of the varieties of Cypripedium insigne the variety Shorthorn was distinct in colour and with peculiar reflexed and decurved petals; and porphyreum and Thompsonianum were distinct. A batch of hybrids of Epidendrum Wallisii and E. Endresii were at one end, and at the other a pan of the singular terrestrial Orchid Barlia longibracteata, resembling a Satyrium, with dense heads of greenish flowers, the cleft labellums being tinged with rose. Among the other species noted were the white Vanda Watsonii, Saccolabium bellinum, Oncidium Warscewiczii, and others not frequently seen.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, secured a Silver Flora Medal for an excellent group, in which were many fine hybrids. Two varieties of Lælio-Cattleya luminosa bore very handsome and richly-coloured blooms: the favourite Cattleyas Empress Frederick and Octave Doin were well shown, and other showy forms well displayed. Of the new introductions Odontoglossum Lambeauianum var. Lyoth had finely-shaped flowers closely blotched with claret colour of a darker tint than in the fine variety Idol Lælio-Cattleya Sylvia (L.-C. Phœbe × L.-C. Ascania) of complex parentage, resulting in a yellow-tinted flower with pale-yellow lip, having a well-expanded rose front. Others noted as specially fine were Odontioda Bohnhoffiæ, with three spikes of reddish-crimson flowers; varieties of Odontoglossum Oi ol tum, Lycaste Balliæ, L. lasioglossa, some distinct forms of O. Pescatorei, good varieties of Cypripedium aureum, &c.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. Ballantine), was awarded a Silver Flora Medal for two magnificent specimens of the rare Odontoglossum coronarium brevifolium, the one with five and the other with four spikes of wax-like chestnut-brown and yellow flowers, the largest bearing twenty blooms. The plants have been many years at The Dell, and flower with increasing vigour.

Messrs. JAS. CYPHER & SONS, Cheltenham, obtained a Silver Flora Medal for an extensive and well-arranged group, the centre of which was of good white and coloured forms of Lælia anceps, with which were good Odontoglossum Hallii, O. crispum, O. Adrianæ, coloured Masdevallias, &c. Among the many fine Cypripediums were the very beautiful and equally rare C. Beekmannii in fine condition; the fine C. George Moore, varieties of C. Almos, C. aureum, C. Thompsonianum, and many others, including a selection of dark-tinted C. Fairrieanum. There were also a number of good Lycaste Skinneri, some excellent Cattleya Trianaea, Odontoglossum Vuylstekei of a very fine type, various Brasso-Cattleyas, including the bronzy-purple B.-C. Gipsy, and some interesting species.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed an interesting collection of hybrids raised at Gatton Park, two of the most remarkable securing Awards of Merit (see Awards). Among the others were a selection of Phaio-Calanthe Colmanii from white to pink in colour; the pretty little yellow Brasso-Lælia fladosa, a fine form of Odontoglossum Wilckeanum, and the superbly-coloured Spathoglottis Colmanii with a strong spike of large yellow flowers spotted and marked with ruby-red.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were voted a Silver Banksian Medal for an interesting group containing a great variety of their pretty Cypripedium Countess of Carnarvon (villosum × Euryades). The flowers showed great variation in form and colour, those with rose-purple and white dorsal sepals predominating. Some of the dark-purple spotted varieties resembled good C. Euryades closely. In the centre were three plants of the fragrant, white Platyclinis glumacea, the clear yellow Dendrobium Ophir, Lælio-Cattleya Nysa, varieties of Odontoglossum Pescatorei, Lycaste Skinneri, &c.

Messrs. MOORE, LTD., Rawdon, Leeds, were awarded a Silver Banksian Medal.

Messrs. STANLEY & Co., Southgate, secured a Silver Banksian Medal for a group of good Cattleya Trianaea, Cypripediums, &c. Among the Cypripediums, C. villosum Stanleyi was a large and good form, and another, named enecullatum virens, was a good yellow sh flower with a distinct green back to the dorsal sepal. Sophronitis grandiflora, Lælia flava and others were also shown.

Messrs. MOORE, LTD., Rawdon, Leeds, were awarded a Silver Banksian Medal for an interesting group in which were some very fine Cypripediums. C. Alcibiades superbum had a noble flower, with large, white dorsal sepal, spotted with purple, the rest of the flower somewhat resembling C. Beekmannii; C. Fairrieanum nigrum, a very pretty flower, with broad bands of blackish-purple on the dorsal sepal, the clear white-ground colour showing between; C. villosum, Moore's variety, had a very dark flower of fine size, the greater part of the dorsal sepal being dark chocolate-purple, suggesting an intermediate stage between C. villosum and C. Boxalli. Forms of C. Euryades aureum and others were also shown.

Messrs. HEATH & SONS, Cheltenham, were voted a Silver Banksian Medal for a group of Cypripediums, Cattleya Percivaliana, &c. Among the Cypripediums the showy C. Mrs. Wm. Mostyn, with its dark purple blotched dorsal sepal, C. Swinburnei magnificum, good forms of C. Mons de Curte, C. Mrs. Tautz, and some unnamed hybrids were noticed.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Banksian Medal for a very effective group, the centre of which was composed of very finely-coloured varieties of Cattleya Percivaliana, the centre specimen having 26 flowers. With them were many pretty forms of Cattleya Trianaea, two sturdy plants of the fine Cypripedium Minos, Young's variety, two forms of the large and well-formed Cypripedium J. Seymour (callosum × Prewettii), two good dark Cypripedium Fairrieanum, a plant of the singular Cirrhopetalum ornatissimum, Dendrobium nobile virginale, &c.

Monsieur le Marquis DE WAVRIN, Chateau de Rousele, Ghent (gr. Mr. de Geeste), sent two very beautiful and distinct varieties of Cattleya Trianaea, the flowers of which, however, had been damaged by fog. The variety Princess Elisabeth of Belgium was a noble flower, with broad white sepals and petals slightly tinged with lilac; lip large, white with rose-purple front. A very peculiar feature is that there is barely a trace of yellow in the tube of the lip. The other was silver-white with a slight mauve marking on the lip, which had a yellow disc.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cypripedium Gratrixiæ giganteum, a variety which does much to redeem Gratrixiæ from being too near C. exul. The flower is large, of fine substance, yellow with a white upper part to the dorsal sepal, which is spotted with purple. The flower has a polished surface, and it is very distinct. Mr. Wellesley also showed Cypripedium William Mostyn (villosum × Mons de Curte), with circular white dorsal sepal spotted with claret colour, the spots getting smaller as they approach the margin. Petals and lip yellow, tinged with red-brown, the petals having fine dark lines.

Monsieur MERTENS, Mont St. Amand, Ghent, showed hybrid Odontoglossums and Cypripediums.

R. BROOMAN-WHITE, Esq., Arddarroch, Dumbartonshire, showed a very fine lot of cut spikes of excellent varieties of Odontoglossum crispum, a grand form of O. loochristiense, some Lælia anceps, Cattleya Trianaea, &c.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, showed a pretty Lælio-Cattleya between C. Trianaea and L.-C. Phœbe, with orange-coloured flower tinged with rose, the front of the lip being claret colour.

AWARDS.

AWARD OF MERIT.

Cymbidium Lady Colman (eburneo-Lowianum × Tracyanum), from Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. W. P. Bound).—A very beautiful Cymbidium, with flowers as large as those of C. Tracyanum. Sepals and petals greenish sulphur yellow, with fine dotted lines of purple. Lip white with distinct red markings. A very attractive flower.

Diacro-Cattleya Colmanæ (Diacrium bicornutum × Cattleya intermedia alba).—A very remarkable bigeneric hybrid, and a very worthy addition to our gardens. In habit the plant resembles Diacrium (Epidendrum) bicornutum, and the inflorescence is produced in the same way. The scape bore one flower and three buds, the expanded bloom being white, 3 inches across, and distinctly intermediate between the parents. Also from Sir JEREMIAH COLMAN, Bart.

Lycaste Skinneri Orion.—A fine flower with broad blush-white sepals, and rose petals with narrow white lines and tips. Lip pure white. From J. BRADSHAW, Esq.

Sophro-Cattleya Antiochus rubra (S.-C. Cleopatra × C. Warscewiczii), from Messrs. CHARLESWORTH & Co., Heaton Bradford.—A very handsome and brightly-coloured flower of a rich rose-purple tint with darker veining on the petals. Lip deep rose-purple. The flower is novel in colour, and the plant a very compact grower.

Fruit and Vegetable Committee.

Present: Mr. A. H. Pearson (in the chair); and Messrs. W. Bates, J. Willard, A. Dean, H. Parr, A. R. Allan, Geo. Keif, W. Fyfe, E. Beckett, P. D. Tuckett, J. Gibson, J. Vert, J. Jaques, J. Harrison, J. McIndoe, C. Foster, O. Thomas, G. Wythes, H. S. Rivers, R. Lye, C. G. A. Nix, and W. Bates.

Messrs. RIVERS & SONS, Sawbridgeworth, staged a collection of Orange trees in pots on the front of the platform at one end of the hall, which comprised varieties previously exhibited. The collection seemed to have most decorative value. (Silver Knightian Medal.)

Mr. W. ROUPELL sent from his garden at Roupell Park, S.E., excellent samples of Apples Newton Wonder, Smart's Prince Arthur,

Chelmsford Wonder, and Sandringham, being grown within five miles of Charing Cross. (Bronze Banksian Medal and Cultural Commendation.)

Mr. H. WIGLEY, Hasbridge, Gravesend, sent for tasting, a bottle of Morello Cherry Wine. The committee were not favourably impressed with it.

A rather handsome-looking Apple resembling Blenheim Pippin, and thought to be a natural seedling from it, came from Mr. J. CARTER, of Budleigh Court, Glastonbury. It was agreed to send a deputation to see the tree when fruiting next year.

Messrs. BARR & SONS, King Street, Covent Garden, London, sent a small collection of curled and variegated Kales, receiving a vote of thanks.

The chief exhibit before the committee, and indeed without exception the finest of its kind ever seen anywhere was one of 268 named varieties of Potatos, most of them very perfect and beautiful samples set up by Messrs. SUTTON & SONS, Reading. The collection occupied staging 70 feet in length, and were three baskets deep on the table, with two other rows of baskets elevated at the back. In the centre, on the table, was a large glass case containing many small tubers of diverse shapes and colours raised from Solanum species, or from the Commersoni Violet or Blue Giant, and specially Solanum tuberosum, the species to which has been attributed the race of edible Potato of to-day. Also Solanum etuberosum, which has given progeny the first year closely allied to that of the garden Potato, and which the Messrs. SUTTON hold to be the true parent and progenitor of our existing Potatos. The seedings of S. tuberosum were small and worthless, those of S. etuberosum of good size generally, and promising next autumn to produce high-class tubers. Into the origins and merits of the various species represented we cannot enter here. With respect to the varieties staged, of white ones, very fine were British Queen, Dalmeny Beauty, Empress of India, Goldfinder, Duchess of Buccleuch, Centenary, Peckover, Crofter, Reading Giant, Northern Star, Conquering Hero, Superlative, Monarch, Windsor Castle, Satisfaction, Abundance, Culdees Castle, Highlander, New King, Eldorado, Sutton's Triumph, Duchess of Cornwall, Arbitration, White Blossom, Sharpe's Victor, Factor, Up-to-Date, Prizewinner, and Ninety Fold. Notable coloured Kidneys were Blue Giant, Professor, Border Queen, Beauty of Hebron and King Edward VIIth. Finely-coloured "rounds" were Vicar of Laleham, The Dean, Eighty Fold, Ruby Queen, Crimson King, and Purple Perfection (purples), Reading Russet, Epicure, Herd Laddie, Lord Rosebery, Adirondack, and the Sutton Flourball (reds), whilst Lord Beaconsfield and The Yeoman were purple-blotched. Of the fir-apple type there were white, pink and red tubers, and also of similar shape the black-fleshed Congo or Zulu. (Gold Medal.)

ANNUAL MEETING.

FEBRUARY 11.—The 104th annual general meeting of the Fellows of this Society was held on the afternoon of the above date, at the Royal Horticultural Hall, Vincent Square.

Mr. J. Gurney Fowler, treasurer, presided, in the absence of the president, Sir Trevor Lawrence, Bart., K.C.V.O., V.M.H.

NEW FELLOWS.

The minutes of the annual general meeting of February 12, 1907, were duly confirmed, and 96 new members elected.

REPORT OF COUNCIL.

The Chairman, in moving the adoption of the report, which was taken as read, said he occupied that post owing to the indisposition of Sir Trevor Lawrence, whose doctor had said that he must on no account face the present inclement weather. It was the first time for 26 years that Sir Trevor had not filled the chair. (Cheers.) Turning to the report, he said it dealt fully with what had taken place during the year. One of the most interesting items was the fact that the Fellows had increased to 10,000. That was the object they had always had in view. On December 31 the number was 10,000, but since then 142 more had been elected. That was believed to be the highest number belonging to any British Royal Society. The next matter was the Temple show. It had been arranged that there should be a private view for Fellows only and for friends of Fellows possessing transferable tickets. On Wednesday, May 27, from 7 a.m. to noon, only these would be admitted. That would afford a much-wanted opportunity to Fellows to see the exhibits more or less at their ease. (Cheers.) That was a matter that had always been before the council. Alluding next to the accounts, he said they were very satisfactory. The net income of the society was £6,477, an increase of £657. The subscriptions had increased by £953, the dividends and interest by £236; the lettings of the hall had increased by £826. The lettings now amounted to £2,052, and the expenses to £1,699, leaving a balance of £400. Therefore the hall practically stood them in nothing, and they held their fortnightly shows for nothing in the way of rent. (Cheers.) The results of the Temple show were very satisfactory, the profits showing an increase of £169 over last year. Holland House show was not so successful, owing to the wet second day, but there was an increase of £20. There had been a large increase in the cost of the *Journal*. That was owing to the publication during the year of the report of the Genetic Conference and two volumes of the *Journal*. In addition to that, it was thought that, inasmuch as the *Journal* which was now in the press ought to have been published in the current year, it was wise to make a reserve to meet the expenses of publication. The amount set aside for that purpose was £750. Had that not been done, the cost of the *Journal* would be much more next time, and there might be three or four volumes to be issued during the current year. As to the balance-sheet, the society had invested £3,045 in 2½ per cent. National War Loan, and nearly £5,000 in 4 per cent. Canadian Pacific Railway Consolidated Debenture Stock. They had spent £1,427 on completing the laboratory at Wisley, and that was an expenditure which would not occur again. The depreciation fund now amounted to £979, that had been set aside during the past two years. It was arrived at by setting aside 5 per cent. on the cost of furnishing, 7½ per cent. on the cost of the Wisley glass-houses, 7½ per cent. on the plant and materials, and £120 per annum was set aside for the renewal of the roof of the hall when the architect should think it necessary. The architect considered that sum sufficient.

Sir John Llewellyn, Bart., seconded. He said prosperity had arrived at last, and it should not be forgotten that with a society like theirs prosperity brought responsibility. During the past year the society had taken a most important step fraught with great possibilities in connection with the laboratory at Wisley.

Mr. H. J. Elwes said he could not too much congratulate the Society on its financial condition; seeing it was so flourishing, he felt surprised that only £16 11s. 6d. had been spent on the library. He did not think that the necessity for a really first-class library was fully realised. He knew there were also trust funds, but he thought that the society could spare more than £16 11s. 6d. At present the library was in the charge of Mr. H. R. Hutchinson, one of the clerks. That gentleman always rendered him the most valuable assistance, and seemed to be able to find the most obscure papers at once. Their library should be under a librarian, and Mr. Hutchinson should be raised to that status. As to the *Journal*, he suggested that its general and scientific contents should be separated and published so. He preferred quality to quantity. Many of the old quarto *Transactions* contained far more valuable papers than the modern reports, and were more valuable to the society than those printed to-day. ("No!") With regard to the Masters' Memorial Fund a meeting had been held at which it was decided to establish Foundation Lectures on the Science of Horticulture. He did not know whether that meeting was known by the members of the society generally. He himself received a circular, but he said he would not subscribe to lectures. He believed Dr. Masters would rather have had the money spent on the library. If the feeling of the society favoured lectures, care should be taken as to what lectures were given. Any man could lecture on any given subject. That was not enough. A great deal of money was wasted—or spent—on lectures which were attended by very few people, and were apparently given because money was left for the purpose. Many such lectures might well be left alone. He hoped the matter would be ventilated.

Rev. J. H. Pemberton also alluded to the *Journal*, and said he should like to see it issued monthly. Such bulky volumes as at present issued were hard to digest.

Rev. G. H. Engleheart suggested that the staff of the society should render more assistance at the shows to those who were not prepared with trade apparatus. This might be done now that the society was so much better off. He had lost some exceedingly valuable flowers which he wished to take back for breeding purposes. Another important matter had reference to the awards. These were too easily gained, and their value should be raised. When he was on the council it was almost the annual injunction of the president and council to the various committees that they should be more sparing in bestowing the awards. The First-Class Certificate had been raised, and perhaps the Award of Merit had been sensibly raised, but he alluded to the giving of medals to the groups in the show. There seemed to be a feeling that almost every exhibit should have something given to it. That was a little undignified for such a society as theirs. He once met a gardener who was growing some fine plants, and he suggested that they should be taken to the Horticultural Society's meetings. The grower turned upon him as he spoke of the society's "pearls," and asked what distinction would it be to him when the society gave medals to a man for putting up a bank 50 feet long of herbaceous stuff or anything else. He thought they had rather cheapened their highest award, the Gold Medal. The highest awards should not be reserved solely for flowers produced under glass at the expenditure of so many tons of coal, but should also be given for productions of open-air gardens. He did not wish to do away with those beautiful things, but were not their awards given too much in that direction?

Mr. Arthur A. Sutton said he could hardly follow the last speaker in every detail, but he was sure the majority present would agree with what Mr. Engleheart said about the medals. They should not be given so lavishly.

Mr. R. W. Wallace (Colchester) said the sub-committees were most painstaking, and were not appreciated as they deserved to be. Many groups nowadays got only votes of thanks. The groups as a whole had advanced in quality, and that accounted for more medals being given.

Mr. Alex. Dean said the Fruit Committee took the greatest care in awarding the medals.

Mr. Engleheart said he was speaking only of the general tendency. Whatever might be the excellence of the exhibits, they should be constantly pushing up the standard of their awards, which should be made really worth obtaining.

Mr. Cuthbertson suggested that shows should not be held on the day following Bank Holidays. It was not fair to their men to ask them to work on holidays.

The Chairman, in replying, said they had had a most interesting discussion. As to the library, Mr. Elwes admitted that there were other funds devoted to the library. Speaking offhand, he could not say how much it was, but the Fellows had never, to his knowledge, complained that they could not obtain any particular book. If Mr. Elwes would say what useful books were missing, the Council would be very glad to obtain them. With regard to the *Journal*, it certainly had cost a good deal. He had already explained that, but if it were issued separately as suggested, that would add very considerably to the expense of publication. To have the *Journal* published monthly would be very nice, but the cost of postage of 10,000 copies every month would hardly justify the step. The *Journal* volumes were rather larger than they might have been, because fewer had been issued. They would endeavour to keep them to a more reasonable size. As to the "Masters'" Fund, that hardly came within the Society's business, although it had been taken up by prominent members of the Society. He did not know who suggested the lectures——

The Secretary (Rev. Mr. Wilks): I did!

The Chairman: I do not think Mr. Elwes suggested any other proposal.

Mr. Elwes said he firmly believed, from his discussions with the late Dr. Masters, that that gentleman would have wished anything that might be subscribed to be given to the library

The Chairman: The library is a "Lindley" library, and there would be very little memorial to Dr. Masters in it.

Mr. Elwes: The matter has never been brought before the members.

The Chairman: The secretary will explain. As to Mr. Engleheart's suggestion that more assistance should be given in the hall during shows, the Council would see if something could be done. Mr. Engleheart had raised the burning question of the awards. On the present occasion in the Floral Committee there were nine votes of thanks, and in the Orchid Committee there was one. He believed the awards were only given where they were justified. At any rate, this was the intention. As to the Bank Holidays, he felt if they could do away with the hardship spoken of, it would be a great advantage: but if their shows were to be held fortnightly, it could not be helped. The Council would see if some change could be made.

The Secretary, referring to the "Masters' Fund," said they had suffered a great loss in the death of Dr. Masters. At a meeting of the Scientific Committee it was brought forward that some memorial should be instituted, and he proposed that it should take the form of lectures. That proposition was submitted to the Council, and approved by them. A circular embodying that fact was sent out. A number of subscriptions had been received. Two of them were given conditionally. Mr. Elwes, they had heard, would not subscribe to lectures, which was the object for which subscriptions were asked; and another, who, he supposed, had heard of Mr. Elwes' condition, said he would not subscribe unless the subscription was retained for the object for which it was invited. (Laughter.) It was the desire of the Council and the Society to perpetuate the memory of Dr. Masters to future generations. The library was meant to perpetuate the name of Dr. Lindley. Other suggestions had been made, but he ventured to say that as lectures were put forth in the circular as the object of the subscriptions, the money should be devoted to that purpose.

Mr. Elwes said no opportunity had been given the members to express their opinion on the subject.

The report was adopted.

The officers of the Society were re-elected, with the exception that Mr. E. A. Bowles, M.A., F.L.S., succeeds the Earl of Tankerville as a member of the Council.

COMMONS AND FOOTPATHS PRESERVATION.

LORD EVERSLEY presided over the monthly meeting of the Commons and Footpaths Preservation Society held recently at 25, Victoria Street. It was reported by the chairman that a large number of members of Parliament had balloted for the society's Public Rights of Way Bill, and that Mr. R. Winfrey, M.P., had secured the fifteenth position. The Bill was set down for second reading for May 29, and the society had received promises of support from leading representatives of all parties. The main object of the Bill was to enable the provisions of the Prescription Act to be used in connection with the proof of highways and to simplify and cheapen litigation in footpath cases. It was decided to prepare a Bill to facilitate the regulation of rural commons, and Sir John Brunner consented to introduce the Bill on the society's behalf. It was pointed out that in many neighbourhoods commons formed the camping grounds of vagrants, who could not be satisfactorily dealt with without bye-laws made under a regulation scheme, and it was felt by the society that the time had arrived when privileges of compulsory regulation, similar to those enjoyed by the metropolis since 1866, with proper safeguards of the rights of the lord of the manor and commoners, should be extended to the whole of the country.

The solicitor reported that 11 Railway and Water Bills now before Parliament affected common lands and open spaces, the total area proposed to be absorbed exceeding 1,614 acres. Twenty-one other Bills affected Commons and rights of way. It was decided to press for the insertion in the Burnley Corporation, Monmouthshire County Council, and Pontypridd Waterworks Bills, under which large areas of common lands have been scheduled, of clauses to provide for the public right of access to the commons. It was also decided to support the local opposition to the Fishguard and Rosslare Railways and Harbours Bill, which seeks to absorb the whole of Goodwick Moor, and to oppose, if necessary, the London and Windsor Motor Roads, Tramroads and Tramways Bill, which would involve serious injury to Ravenscourt Park, Stamford Brook, Back Common, Chiswick, and other open spaces. The secretary (Mr. Lawrence W. Chubb) reported that the society was dealing with 120 cases of encroachment on commons or obstruction of rights of way, and that since the last meeting several footpaths had been re-opened as a result of its efforts. The society was stated to be arbitrating at the request of landowners and local authorities in three cases, and it was decided to oppose a scheme for the enclosure of Coopers Hill Common, Glos., a beautiful open space, 136 acres in extent.

CHESTER PAXTON.

UNDER the auspices of this society, Mr Robt. Newstead, A.L.S., &c., of the Liverpool University, delivered by special request a lecture entitled, "The Life History of the House Fly."

The subject-matter of Mr. Newstead's paper was based, for the most part, on the investigations that he had recently conducted in the city of Liverpool, with the view of ascertaining the nature and extent of the breeding places, habits and life-cycle of the common house fly, so that some measures may be devised for the destruction of this ubiquitous pest. The nature of the investigation was not given in detail, but it comprised the examination of over 300 ash-pits, about 40 stable middens, poultry yards, piggeries, and faecal matter lying in the courts and passages of the slums. The survey was restricted to five areas embracing in all 68 streets, special attention being given to those areas where infantile diarrhœa was most prevalent. A brief resumé of the evidence which has been adduced, by various authorities, bearing testimony to the importance of this as actual or potential carriers of disease in man was given. Temperature, Mr. Newstead said, had a marked effect upon the developmental stages of the fly: a sudden check from heat to cold will materially prolong any one of the stages. Eggs hatched out eight to twelve hours in a temperature of from 70° to 80° F., at a temperature of 60° F. in twelve hours, but at 45° F. they did not hatch until the third day, and then only when placed in a warmer atmosphere. The larvæ or maggots mature in the shortest period in fermenting materials in a temperature between 90° and 98° F., the complete cycle under the most favourable conditions being from 10 to 15 days, but a colder temperature prolonged the cycle to several weeks.

The principal breeding places in towns are middens containing horse manure only, middens containing spent hops, and ashpits containing fermenting materials such as old bedding, paper, straw, &c. They were also found breeding in all kinds of fermenting vegetable refuse, bedding in poultry pens and piggeries, temporary collections of manure, and human excreta when mixed with fermenting refuse. As a means of destroying the breeding places he recommended that all stable middens should be thoroughly emptied during the months of May to October, at intervals of not more than seven days, and ashpits at intervals of ten days. The application of Paris Green (poison) at the rate of 2 ozs. to 1 gallon of water to either stable manure or ashpit refuse will destroy 99 per cent. of the larvæ: and a 1 per cent of crude atoxyl (poison) in water will kill 100 per cent. of fly larvæ. Other measures were also recommended, and it was stated that the methods of control were under investigation. It was interesting to note that where fowls were kept they destroyed 75 per cent. of the fly maggots, there being a marked diminution of maggots in all cases where poultry were kept in stable yards.

The set of lantern slides which Mr. Newstead exhibited gave added interest to the lecture.

DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS'.—One of the most interesting meetings in connection with this association was held recently, when Mr. T. J. Powell, of Park Place Gardens, Henley-on-Thames, gave a practical demonstration on the artistic arrangement of flowers. The first object lesson placed before the members was the decorating of a dinner table. The table had been laid to seat twelve persons complete with cutlery, glass, candelabras and silver vases. The central display consisted of an arch, around the pillars of which was trailed Asparagus Sprengeri, intermingled with sprays of Begonia Gloire de Lorraine. Under the arch was a splendid plant of Salmon Queen Cyclamen. At intervals were placed smaller arches decorated with similar foliage and flowers, the whole presenting a charming effect in pink. By request, Mr. Powell followed with the making of a lady's spray and gentleman's button-hole with Violets, also a small hand bouquet with the same flower. When these had been finished the time had arrived for closing the meeting, and it was decided that the meeting should be adjourned. Therefore the subject will be brought on again towards the latter part of this session, thus showing that practical demonstrations are exceedingly popular, and tend to make such societies a benefit to both old and young members of the gardening profession. Mr. H. Wilson, The Gardens, Lower Redlands, staged a collection of Apples, consisting of the following varieties: King of the Pippins, Golden Noble, Annie Elizabeth, Blenheim Pippin, Pott's Seedling, Warner's King, Bismarck, The Queen, &c. The association's Certificate of Cultural Merit was awarded to the exhibitor.

MANCHESTER HORTICULTURAL IMPROVEMENT SOCIETY.—At the fortnightly meeting, held on January 30, at the Memorial Hall, Albert Square, Mr. F. Robinson presided. Mr. H. J. Clayton, Wharfe Bank, Ilkeskelt, York, gave a lecture on "The Culture of Hardy Fruits." *A. M.*

HORSHAM HORTICULTURAL.—At the monthly meeting held on February 5, Mr. Edwin Neal, Gardener to J. Nix, Esq., Tilgate House, Crawley, gave a lecture on "Hints for Amateurs and Cottagers on Kitchen Gardening." The lecturer dealt lucidly with work to be done, and its performance during each month of the year; emphasising the need for deep cultivation, mulching, cleanliness, &c. Concluding his discourse, Mr. Neal gave a list of the best varieties of vegetables suitable to the soil of the district, and stated the best time for sowing. *G.*

CARDIFF GARDENERS'.—The fortnightly meeting of this society took place at the Philharmonic Restaurant on the 4th inst., Mr. H. R. Farmer presiding. The evening was devoted to "Questions" by the members. Many questions were put forward which created a good deal of interesting discussion. Amongst them were: "What are the reasons we do not get better results from the hardy fruit garden?" "Is there any remedy for suppressing the Cucumber spot?" "Summer or winter pruning of fruit trees?" "What is the cause of cracking in the berries of Foster's Seedling Grape?" "What is the best chemical to kill eel-worm?" These questions were discussed.

——— The annual dinner of the society took place in the same building on January 29. G. H. Batram, Esq., presided, and there were 50 members present. *R. T. W.*

STIRLING & DISTRICT HORTICULTURAL.—The usual monthly meeting of the association was held in Stirling on February 4. Mr. Geo. Petrie presided over a crowded attendance which had assembled to hear Mr. P. Murray Thomson, S.S.C., Edinburgh, deliver a lecture on "The Reproduction of Plants from Seed as explained by the Mendelian Theory." After giving some historical facts concerning Gregor Mendel's life and work, Mr. Thomson mentioned that the results of his experiments appeared in a paper published in 1865, which was afterwards lost to science till 1900. Its discovery led to a revival of interest in these matters; numerous experiments have been made with the object of testing what is now generally known as the Mendelian theory during the past six years. The lecturer showed, largely by means of diagrams, the results Mendel observed when experimenting with plants selected for that purpose. It was also pointed out that the old florists' theory, the mother or seed-bearing plant for habit, and the father or pollen-producing plant for colour, had been exploded. He urged all horticulturists to engage in a little experimental work, as thereby their labours would be made more interesting. Mr. Thomson will remove to England in March, and his departure will cause a great loss to Scottish horticulture.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending February 12.

A warm and dry week. All the days and nights during the past week have been warm for the time of year. On the warmest dry the temperature in the thermometer screen rose to 53°, and on the warmest night the exposed thermometer did not fall below 38°. Both of these readings were high for February. The ground is now warm, the temperature at 2 feet being 2° warmer, and at 1 foot deep 4° warmer, than is seasonable. There has been now no rain worth mentioning for five weeks, the total rainfall for that period amounting to only about a quarter of an inch. For three weeks there has been no measurable percolation through either of my soil gauges. The sun shone on an average for 1¼ hours a day, which is nearly half an hour a day short of the mean duration for this part of February. Light airs have alone prevailed during the week, the direction being throughout some westerly point of the compass. The mean amount of moisture in the air at 3 p.m. was six per cent. less than a seasonable quantity for that hour. *E. M., Berkhamsted, February 12, 1908.*

MARKETS.

COVENT GARDEN, *February 12.*

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia (Mimosa), dozen bunches	6 0- 9 0
Anemones (capillare), per dozen bunches	2 0- 5 0
— double pink ...	1 6- 2 0
— fulgens, per dozen bunches	2 0- 3 0
Azalea, white, per dozen bunches	4 0- 5 0
— mollis, per bch.	1 0- 1 6
Bouvardia, per dz. bunches ...	6 0- 8 0
Calla æthiopica, p. dozen	3 0- 5 0
— Guernsey ...	2 6- 4 0
Camellias, per dz.	1 6- 2 0
Carnations, per dozen blooms, best American various ...	2 0- 3 0
— second size ...	1 6- 2 0
— smaller, per doz. bunches	9 0-12 0
Cattleyas, per doz. blooms ...	10 0-12 0
Chrysanthemums, best specimen blooms, per dz.	3 0- 5 0
— selected blms., per dozen ...	2 0- 3 0
— medium, doz. bunches ...	12 0-18 0
Cœlogyne cristata, per dz. blooms	1 0- 1 6
Cyclamen, per doz. bunches ...	6 0- 8 0
Cypripediums, per dozen blooms..	2 0- 2 6
Daffodils, per doz. bunches ...	5 0- 6 0
— double, per dz.	5 0- 6 0
— Golden Spur per doz. ...	6 0- 8 0
— H. Irving ...	4 0- 6 0
— Princeps ...	3 6- 5 0
Eucharis grandiflora, per doz. blooms ...	3 0- 4 0
Freesias, per dozen bunches ...	2 0- 3 0
Gardenias, per doz. blooms... ...	3 0- 6 0
Helleborus, per dz. blooms ...	0 6- 1 0
Hyacinths, Roman, per dz. bunches of 12 blooms ...	5 0- 9 0
Lapagerias, per dozen	1 6- 2 6
Lilac (French), per bunch	3 0- 4 0
Lilium auratum ..	2 0- 3 0
— longiflorum ...	3 0- 5 0
— lancifolium, rubrum and album	2 0- 2 6
Lily of the Valley, p. dz. bunches	8 0-10 0
— extra quality	12 0 15 0
Marguerites, white, p. dz. bunches	4 0- 6 0
— yellow, per dz. bunches ...	3 0- 4 0
Narcissus, paper white, per doz. bunches ...	2 0- 3 0
— Double Roman	2 0- 3 0
— Gloriosa ...	1 6- 2 6
— poeticus ornatus	4 0- 6 0
— Soleil d'Or, per dozen bunches	2 6- 3 0
Odontoglossum crispum, per dozen blooms	2 6- 3 0
Pelargoniums, show, per doz. bunches ...	6 0- 8 0
— Zonal, double scarlet... ...	6 0- 9 0
Ranunculus, p. dz. bunches ...	9 0-12 0
Roses, 12 blooms, Niphetos ...	2 0- 4 0
— Bridesmaid ...	3 0- 6 0
— C. Testout ...	4 0 6 0
— Kaiserin A Victoria, per dozen blooms	3 0- 5 0
— Madame Hoste	2 0- 3 0
— C. Mermet ...	3 0- 6 0
— Liberty ...	2 0- 6 0
— Mad Chatenay	3 0- 6 0
Safrano (French), per dz. bunches	9 0-12 0
Snowdrops, per dozen bunches	1 6- 2 0
Spiræa, p. dz. bchs.	5 0- 8 0
Stocks, double white, per doz. bunches ...	3 0- 4 0
Tuberoses, per dz. blooms ...	0 4- 0 6
— on stems, per bunch	1 0- 2 0
Tulips, p. dz. bchs.	6 0-10 0
— best doubles ...	12 0-18 0
Violets, p. dz. bchs.	2 0- 3 0
— special quality	2 6- 3 0
— Parmas, per bunch	2 6- 4 0
Wallflowers, per dozen bunches	2 0- 3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum cuneatum, dz. bchs.	6 0- 9 0
Asparagus plumosus, long trails, per doz.	8 0-12 0
— — medium, bunch ...	1 0- 2 0
— Sprengeri ...	0 6- 1 0
Berberis, per doz. bunches ...	1 6- 2 0
Croton leaves, per bunch	1 0- 1 3
Cycas leaves, each	1 6- 2 0
Daffodil leaves, per doz. bunches...	3 0- 4 0
Fern, English, per dozen bunches	2 0- 3 0
— French, per dz. bunches ...	1 0- 3 0
Galax leaves, per doz. bunches...	2 0- 2 6
Hardy foliage (various), per dozen bunches	3 0- 9 0
Ivy-leaves, bronze	2 0- 2 6
— long trails per bundle... ...	0 9- 1 6
— short green, per dz. bunches	1 6- 2 6
Moss, per gross ...	4 0- 5 0
Myrtle (English), small-leaved, doz bunches...	4 0- 6 0
— French, per dz. bunches ...	1 0- 1 6
Pernettya, p. bunch	0 6- 0 9
Smilax, per dozen trails	2 0 3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0- 8 0
Aralia Sieboldi, p. dozen	4 0- 6 0
— larger	9 0-12 0
— Moseri, per doz.	6 0-12 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	15 0-24 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, dz.	8 0-10 0
— tenuissimus per dozen ...	9 0-12 0
Azalea indica ...	24 0-36 0
Begonia Gloire de Lorraine, p. dz.	9 0-12 0
Callas, per dozen .	10 0-12 0
Cinerarias, per dozen	8 0-10 0
Clematis, per doz.	8 0- 9 0
Cocos Weddelliana, per dozen	18 0-30 0
Crotons, per dozen	18 0-30 0
Cyclamen, per dozen	9 0-12 0
Cyperus alternifolius, dozen ...	4 0- 5 0
— laxus, per doz.	4 0- 5 0
Daffodils, per doz. pots	6 0- 9 0
Dracænas, per doz	9 0-24 0
Erica gracilis, doz.	10 0-15 0
— hyemalis, per dozen	9 0-15 0
— melanthera ...	12 0-18 0
— Wilmoreana ...	12 0 18 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*

	s.d. s.d.
Euonymus, per dz.	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in small and large 60's ...	12 0-20 0
— in 48's, per dz.	4 0-10 0
— in 32's, per dz.	10 0-18 0
Ficus elastica, dz.	8 0-10 0
— repens, per dz.	6 0- 8 0
Genistas, per doz.	10 0-12 0
Hyacinths (Roman), per dozen pots	10 0-12 0
— Dutch	8 0-10 0
Kentia Belmoreana, per dozen	18 0-30 0
— Forsteriana, per dozen ...	18 0-30 0
Latania borbonica, per dozen ...	12 0-18 0
Lilium longiflorum, per dozen	21 0 25 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0 30 0
Marguerites, white, per dozen ...	6 0- 8 0
Selaginella, per dozen	4 0- 6 0
Solanums, per dozen	6 0- 9 0
Spiræa japonica, p. dozen	9 0-15 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples (**English**), per bushel:	
— Wellington ...	5 0- 9 0
— Newton Wonder	5 0- 7 0
Bramley's Seedling	5 0- 8 0
— Blenheim Pippin	4 6- 7 0
Nova Scotian, per barrel:	
— Baldwins	15 0-17 0
— Ribston Pippin	11 0-16 0
— Gloria Mundi	15 0-16 0
— Russets ...	18 6-20 0
— Greenings .	15 0-17 0
Canadian, per barrel:	
— Northern Spy..	18 0-21 0
— Baldwin ...	17 0 20 0
— N. Greening	19 0 21 0
— Russets	19 0-21 0
Californian:	
— Newtowns, per box	8 0-10 0
— "**Oregon**" Newtowns, per box	14 0-15 0
Apricots (Cape), p. box ...	3 0- 6 0
Bananas, bunch.	
— No. 2 Canary .	7 0 —
— No. 1 ,, .	8 0 —
— Extra ,,	10 0 —
— Giants ,,	11 0-15 0
— Jamaica	5 0- 5 6
— Loose, per dz	0 9- 1 3
Cranberries, p. case	8 0- 9 0
"Custard" Apple (Annon) per doz.	4 0- 9 0
Dates (Tunis), doz. boxes	1 0- 1 3
Grape Fruit, case	10 0 16 0
Grapes (English):	
— Alicante, per lb.	1 3- 2 6
— Gros Colmar, per lb	1 0 2 6
— Belgian Gros Colmar, per lb.	0 8- 1 3
Grapes (English):	
— Almeria, barrel	10 0-16 0
Lemons:	
— Messina, case	8 0-11 0
Lychees, per box...	0 10- 1 0
Mandarines, (French) p. box	1 6- 1 9
— (Palermo) 100's box	3 6- 4 0
Mangos, per doz.	4 0-12 0
Nectarines (Cape), per box ...	7 0-10 0
Nuts, Cobs (English), per lb. ...	0 4 —
— Almonds, bag	42 6 —
— Brazils, new, per cwt. ...	60 0-65 0
— Barcelona, per bag	30 0-32 6
— Cocoa nuts, 100	11 0-16 0
Chestnuts:	
— Italian, per bag	16 0 17 0
Oranges (Jamaican), per case ..	7 6- 9 0
— Almeria, case..	9 0-10 6
— Valencia, case	11 0-27 0
— Denia, p. case	11 0-30 0
— Jaffas, per box	8 6- 9 0
— Californian Navels, p. case	13 0-11 0
— Seville Bitters, per box ...	6 0 7 0
Peaches (Cape), per box ...	5 0 10 0
Pears (English), Catillac, per bushel... ...	4 6 5 0
— Cape, per box	4 0 6 0
— Catillac, Dutch, per basket ...	2 6 —
— per barrel ..	10 0 —
— French, p. crate	8 6- 9 0
— Winter Nelis, boxes	9 0 10 0
— cases	17 0 18 0
Pineapples, each .	3 0- 5 6
Plums (Cape), box	1 0- 6 0
Strawberries (English), per lb. ..	6 0-12 0

Vegetables : Average Wholesale Prices.

	s.d. s.d.
Artichokes (French), per dozen	2 0- 3 0
Asparagus, Paris Green, bundle	4 0- 4 3
— Sprue, bundle	0 7- 0 8
Beans, French, per packet ..	0 8- 0 9
— Broad (French), per pad ...	3 0- 3 3
— Guernsey, p. lb.	2 6 —
— Madeira, per basket	2 6- 3 6
Beetroot, per bushel	1 3- 1 6
Brussel Sprouts, per ½ sieve ...	1 3- 1 6
Cabbages, per doz.	0 6- 0 9
— Greens, p. bag	1 0- 1 3
— red, per dozen	2 0 —
— Savoys, per tally	3 0- 3 6
Carrots (English), — washed, p. bag	2 6 —
— French (new), per pad ...	2 6- 3 0
Cauliflowers, p. dz.	1 6 2 0
— per tally ..	6 0- 8 0
— Italian, basket	2 0- 2 6
Celeriac (French), per dozen ...	1 6- 2 0
Celery, washed, per dozen	0 8-0 10
Chicory, per lb. ...	0 3½ —
Chow Chow (Seechium edule), p. dozen	3 0 —
Cucumbers, per dz.	8 0 9 0
Endive, per dozen	1 6- 2 0
Horseradish, foreign, per doz. bundles ...	9 0-10 0
Leeks, 12 bundles	1 0- 1 6
Lettuce (French), per dozen .	1 0- 1 2
— Cos (French), per dozen ..	3 0- 4 0
Mint, doz. bunches	0 9- 1 0
Mushrooms (house) per lb.	0 8 —
— buttons, per lb.	0 9 0 10
— "Broilers" p. lb.	0 7- 0 8
Mustard and Cress, per dozen pun.	1 0- 1 6
Onions (Spanish), per case ...	5 0- 5 3
— Dutch, per bag	2 0- 2 3
— pickling, per bushel	2 0- 2 6
Parsley, 12 bunches	2 6- 3 0
— per ½ bushel. .	1 6- 2 0
Peas (French), per packet	0 5- 0 6
Potatos (French), new, per lb.	0 2-0 2½
— Teneriffe, cwt.	13 0-14 0
— Algerian, cwt.	20 0 —
Radishes (Guernsey), dozen .	0 8- 0 9
Rhubarb (English), dozen bundles	0 11- 1 0
Salsafy, per dz bds.	3 6 —
Seakale, per dozen punnets ...	9 0 10 0
Spinach, French, per crate ...	6 0- 6 6
Tomatos (Teneriffe), p. bdle. of four boxes...	10 6-14 0
Turnips (English), doz. bunches ..	2 0- 2 6
— per bag ...	2 6 —
Watercress, per doz. bunches ..	0 4- 0 6

Potatos.

Kents: Up-to-Dates, 100s. to 110s. per ton, British Queens, 95s. to 105s. per ton; Scottish Triumphs, 100s. ton. **Lincolns:** Up-to-Dates, 100s. to 110s. per ton; Up-to-Dates (Blackland), 90s. per ton; British Queens, 90s. to 105s. per ton; British Queens (Blackland), 80s. to 90s. per ton; Maincrops 100s. to 110s. per ton; Sir Jno. Llewelyn, 100s. per ton; Sir Jno. Llewelyn (Blackland), 82s. to 85s. per ton; Royal Kidneys, 90s. to 100s. per ton; Royal Kidneys (Blackland), 80s. to 85s. per ton; Evergoods, 90s. to 95s. per ton; Evergoods (Blackland), 80s. to 85s. per ton; **Dunbars:** Up-to-Dates (red soil), 100s. to 115s. per ton; Maincrops (red soil), 120s. to 125s. per ton. **Scotch:** Up-to-Dates (grey soil), 100s. per ton; Maincrops (grey soil), 100s. to 105s. per ton. **German:** Up-to-Dates 4s. 6d. per bag; Magnums, 4s. 3d. per bag; Imperators, 3s. 9d. to 4s. per bag. **Belgium:** Kidneys, 3s. 9d. to 4s. per bag. **Dutch:** Up-to-Dates 4s. 3d. per bag; Magnums, 3s. 9d. to 4s. per bag; Imperators, 3s. 6d. per bag. Trade still remains very quiet. Heavy supplies and slow demand. *E. J. Newbon, Covent Garden and St. Pancras, February 12, 1908.*

COVENT GARDEN FLOWER MARKET.

There is yet but little improvement in the trade for pot-plants. There is not much variety in the flowering plants; Azaleas are the most prominent, and well-flowered specimens sell fairly well. Cinerarias are very good. Chinese Primulas and Genistas are fairly well flowered. Begonia Gloire de Lorraine and the white variety have recovered from the effects of fog, and well-flowered plants are seen. The supply of Erica hyemalis is nearly over for the season. E. ovata, though not quite so bright as E. gracilis, is very pretty. E. melanthera is still very good. Marguerites are not quite so plentiful, and they are selling at better prices. Spiræa japonica is seen in well-flowered plants, also S. astilboides floribunda. A few good Liliums are seen, but they are now generally sold out early in the mornings. Solanums are still very good, but I find that supplies are nearly exhausted. Daffodils, Hyacinths, and Tulips in pots are good in quality, and over plentiful.

FOLIAGE PLANTS.

Kentias are still making higher prices, but there is not a large demand for them. Cocos Weddelliana, Geonoma gracilis, and Phœnix rupicola are very good in several sizes. Latanias and Asparagus tenuissimus and A. Sprengeri are good. Pandanus Veitchii was noted in various sized plants; those with the terminal leaves quite white sell well for use in ordinary decorations. There is but little trade for the coloured Dracænas at the present time, and Crotons (Codiæums) are not much in demand. Ficus elastica seems to have gone out of favour. Aralia Sieboldii and the variety Moseri do not make high prices, but there is a fair demand for them. Aspidistras are well supplied, and prices are lower than at the same period last year.

CUT FLOWERS.

Daffodils were not quite so plentiful at the end of last week, and blooms of best quality were cleared out at slightly advanced prices, but this week very large supplies have arrived. Those from English growers are certainly of the best quality, yet those from the Channel and the Scilly Islands arrive in very good condition. The varieties Horsfieldii, Sir Watkin, Golden Spur, and "Emperor," are of high quality. Narcissus Soleil d'Or, Paper White, and other varieties are abundant. Liliums were not quite so plentiful and prices advanced early in the week, but larger supplies were in again this morning. Eucharis and Gardenias are now scarce. White Azalea sells better now that good Chrysanthemums are scarce. Lily-of-the-Valley is over plentiful, and is being sold in the streets at very low prices. Good English Violets are seen, and large supplies arrive from France. Roses are uncertain. I find that best blooms of "Liberty," which were making 8s. per dozen, are now down to 6s. In Orchids I noted fine Cattleyas, Cœlogyne cristata, Odontoglossums, Dendrobium nobile and D. Wardianum and Cypripediums. Cut foliage is well supplied. Smilax and long trails of Asparagus are good. Croton leaves are the only really good bright-coloured foliage we have at the present time. Daffodil leaves make almost as much per bunch as is obtained for the blooms. *A. H., Covent Garden, February 12, 1908.*

SCHEDULES RECEIVED.

The National Sweet Pea Society will hold its eighth annual exhibition in the Royal Horticultural Hall, Vincent Square, Westminster, on Friday, July 24. The Society will also hold a Provincial Show in Dublin, on Wednesday, August 5.

Midland Counties Sweet Pea Society.—The schedule of this newly formed society is now to hand. We note that the Rt. Hon. The Earl of Plymouth is president of the Society, whilst among the vice-presidents and on the Floral Committee are many noted cultivators, including several names connected with the National Sweet Pea Society. The Society's first show is to be held in Wolverhampton on July 29, 1908, and the prizes offered amount to £70. In addition to this several medals will be awarded. The schedule contains the rules of the society and regulations for exhibition. Copies may be obtained on application to the hon. secretary, Mr. Owen F. Trott, 104, Waterloo Road, Wolverhampton.

TRADE NOTICE.

AMERICAN NURSERY COMPANY.

We are informed that the American Nursery Company has acquired all the real estate, property, business, and goodwill of F. & F. Nurseries, Springfield, N.J., The Bloodgood Nurseries, Flushing, L.I.—established 1790—Fredk. W. Kelsey, New York City, and the New Jersey and Long Island Nurseries. These concerns will hereafter be conducted as branches of the company under the same local management as heretofore. The officers of the company are: Fredk. W. Kelsey, president; William Flemer, vice-president and treasurer; Theodore Foulk, vice-president; and P. H. Goodsell, secretary.

REMARKS. Rhubarb from the Yorkshire district is now coming on the market in much better condition, and supplies are also being received from Essex. The sale for English Grapes remains good, but the supplies are shorter. Mandarine Oranges from Palermo are now of very fine quality, and are selling more freely. Teneriffe Tomatos are arriving in smaller quantities, and consequently prices have advanced. The last consignment of Winter Nelis Pears from the famous Rogue River Valley has arrived, and their condition suggests that they have been packed too long before being shipped. *P. L., Covent Garden, Wednesday, February 12, 1908.*

Obituary.

JOHN BOOTH.—We regret to announce the death of Hrn. John Booth, nurseryman, which occurred on Wednesday, February 5, at Berlin, in the 72nd year of his age. The deceased was well known in horticultural circles, and especially in connection with trees and shrubs, of which he had formerly a very extensive collection in his nursery near Hamburg. He was by birth an Englishman, but had for many years carried on the business of nurseryman in Germany.

Answers to Correspondents

AMERICAN GARDENING JOURNALS: *Hartop.* The *Garden Magazine*, published by Doubleday, Page & Co., 133-137, 16th Street, New York, at 15 cents per copy, per year $1; the *American Florist*, published at 1133 Broadway, New York, subscription, yearly, for Europe, $2 50. The chief office where subscriptions and correspondence must be addressed is at 324, Dearborn Street, Chicago; the *Weekly Florists' Review*, a journal for florists, seedsmen, and nurserymen, the Florists' Publishing Co., 530, Caxton Buildings, and 334, Dearborn Street, Chicago, subscription to England 2$ 50; *Horticulture*, published at 11, Hamilton Place, Boston, Mass., weekly, subscription to England, $2.

APPLE ORCHARD WASTE FRUITS: *E. W. B.* You could convert them into cider, which, when fermented, would afford alcohol by distillation. In Normandy a mild kind of spirit—popularly known as "brandy"—is extensively made from cider, selling at about 1 fr. per litre. The waste, if cleanly treated, would make jelly good enough for culinary uses. There are some books published on wine-making and on distillation that would afford the information you require. Enquire at the office of *Exchange and Mart.*

BOX HEDGE: *F. G. B.* The early part of April is the best time to cut a Box hedge. If drought or dry weather follows the operation, the plants should be moistened overhead daily by means of a syringe or garden hose. The soil should be loosened with a fork, and a top dressing of leaf-mould or old potting soil applied. About ten months ago the writer cut a Box hedge hard back, and it was treated as described above, with excellent results.

BRITISH GARDENERS' ASSOCIATION: *F. G.* We seem to gather from your letter that you are not a professional gardener, and if this is the case you will not be eligible for election to this society. But you can write to the secretary, Mr. J. Weathers, Talbot Villa, Talbot Road, Isleworth, Middlesex.

BRITISH GARDENERS IN THE UNITED STATES OF AMERICA: *W. W.* See a note on this subject in the issue of *Gardeners' Chronicle* for February 2, 1907, p. 80.

CARNATIONS: *E. H., S.* The plants are very badly infested with a fungous disease (Heterosporium). If the stock generally is in a condition similar to the specimens we have received, your best plan will be to destroy them by burning, and start afresh. If you obtain fresh plants it will be useful to spray them occasionally with sulphide of potassium as a preventive of disease.—*G. H.* The lower leaves are attacked by the Carnation black mould, Heterosporum echinulatum. Destroy diseased plants and syringe the rest with Bordeaux Mixture.

CARPET-BED DESIGNS: *A Reader.* A book of designs and how to plant them may be obtained of Messrs. H. Cannell & Sons, The Nursery, Swanley, Kent.

COCCUS ON FOREST TREES: *Subscriber.* The only thing to be done is to spray the trees with an insecticide. It will be an easy matter to cleanse the trunks in this manner, but if the trees are of large size it will be very difficult to get the spray on to the uppermost branches.

COOL GREENHOUSE: *M. E. C.* You neglect to inform us what species of plants are contained in the house. If the collection comprises miscellaneous species there will be some of more or less degree of tenderness. In any case, it is necessary to have means at your disposal to repel frost, and therefore it would be unsafe to entirely discontinue the use of fire-heat during this or next month.

CUPRESSUS AND PICEA: *W. B.* The trees are suffering from root-rot caused by a fungus. Remove the soil for some distance round the roots of the remaining trees, sprinkle the roots with quicklime, then fill up again. The surrounding soil should also have quicklime lightly pricked in to destroy the white spawn present.

GERANIUM: *G. H.* There is no organic disease, but plentiful traces of insects.

HORTICULTURAL COLLEGES: *Miss Young.* You might write to the principals at the Horticultural College, Swanley, Kent; "Lady Warwick" Hostel, Studley Royal, Warwick; Edinburgh School of Gardening for Women, Murrayfield, Midlothian; Royal Botanic Society's School of Gardening, Regent's Park, London; and the Reading College, Berkshire.

IMPORTATION OF ODONTOGLOSSUMS: *Odonto.* The fresh-collected plants are conveyed along the river Magdalena to Baranquilla and Savanilla, from whence they are shipped to Europe.

LAWS FOR MARKET GARDENERS: *C. B. L.* We believe there is at present no book which deals with this subject, but you may possibly get the information you require from our issues of November 3 and November 10, 1906.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *Glasgow.* Cœlogyne cristata.—*Rev. I.* Goldfussia (Strobilanthes) isophylla; 2, Peperomia Verschaffeltii; 3, Chlorophyton variegatum; 4, Stenotaphrum glabrum variegatum; 5, Abutilon Savitzii.—*T. T.* Oncidium pubes.—*Correspondent Garrya.* Garrya elliptica.

PEAT: *J. S. D.* Consult our advertisement columns, or insert a small advertisement yourself stating that you are prepared to buy large quantities.

PELARGONIUMS: *Correspondent.* We suspect that the failure has been caused by planting the cuttings too deeply, and the grub has entered the stem after the commencement of decay.

PLANTS FOR WALL-TOP: *R. R.* With so small a cavity for containing soil, you must give unremitting care to the plants during their growing season and in hot weather, otherwise failure will ensue. Six suitable plants would be as follows: Onosma taurica (yellow), Saxifraga, Cotyledon pyramidalis (white, pink-spotted flowers), Campanula muralis (pale blue), Achillea umbellata (white), Aubrietia "Dr. Mules" (deep violet), and Iberis sempervirens (white). Dianthus deltoides (rose), Corydalis lutea (yellow), and Zauschneria californica (scarlet) would also be suitable. We do not think Ferns would be of much service to you.

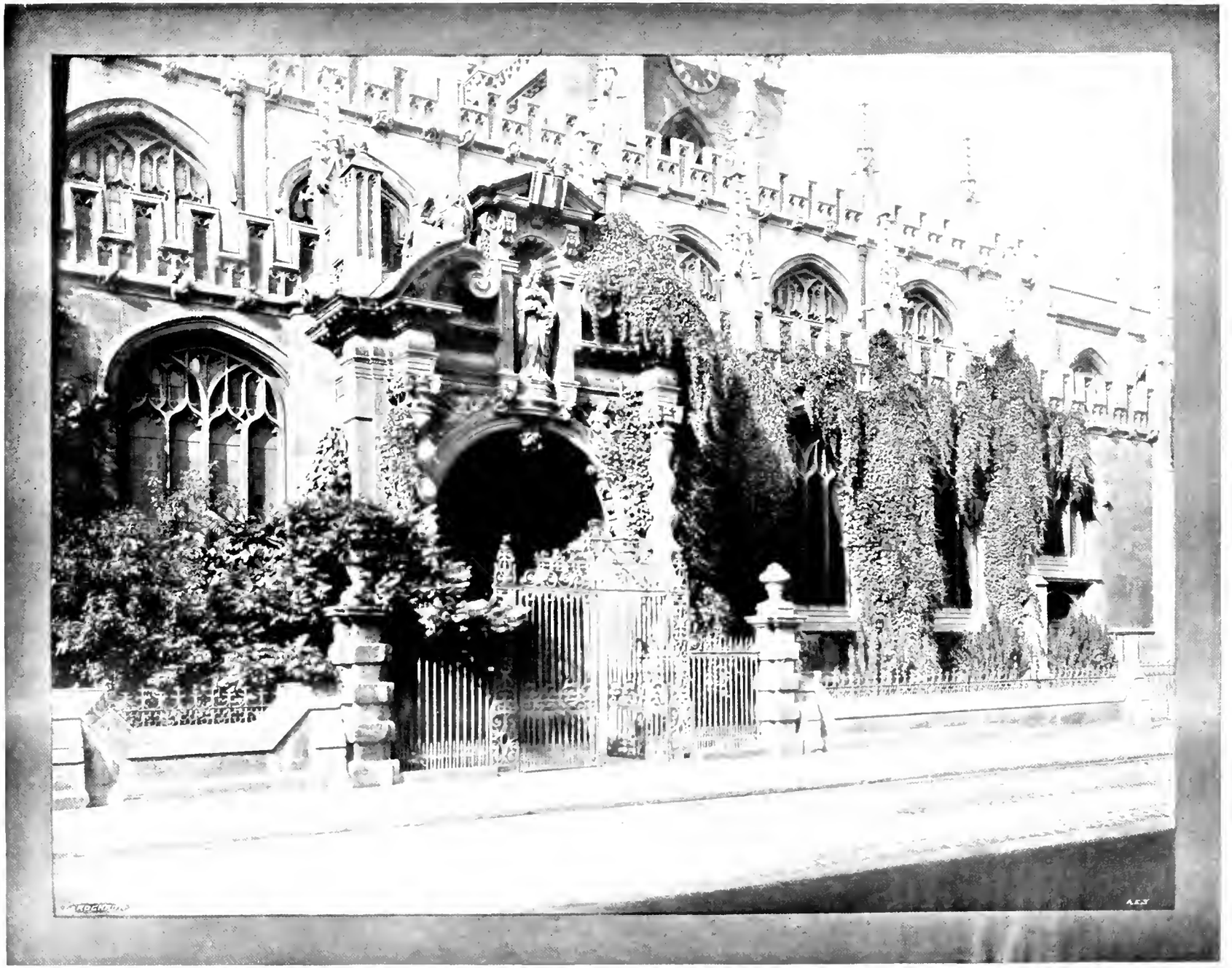
SPRAYING FOR PLUM APHIS: *L. F.* The earlier spraying is commenced the better is the chance of keeping the pest named in check, and the chief difficulty is to provide a mixture that is strong enough to destroy the insects, and at the same time one that will not injure the blossoms or tender young leaves as they expand from the buds. Well-diluted quassia and soft soap is usually safe, but it is not so effectual as petroleum or kerosene emulsions, though greater care is needed both in the preparation and application of the latter liquid. Half a pound of soft soap can be boiled in a gallon of water, and two gallons of petroleum added slowly and well stirred in while hot, using a strong syringe to assist in the mixing. This is important, and should be continued until it is seen that a thorough emulsion has been formed. Diluted with about 50 gallons of water, this is commonly safe enough for application to Plum foliage; but it is wise to err on the side of a little extra dilution and repeat the dressings several times at intervals of a day or two. Much depends upon the condition of the foliage; in mild, moist weather the young leaves are often extremely tender. Varieties differ also in their liability to injury from such mixtures, and it is always wise to test the effects on a small scale before proceeding to a general or extensive spraying. The *Book of Garden Pests*, reviewed on p. 83 in last week's issue, gives further information on this and kindred subjects.

SWEET POTATO (*Batatas edulis*): *An Old Reader.* This is propagated by tubers set out at distances of 1½ feet apart, and preferably on ridges, 1 to 2 feet above the general level, so as to afford greater depth of soil and warmth than could be obtained by surface planting. The thick end of the tuber should be planted downwards, and the top end, which is quite small, should be only an inch or two beneath the surface. Plant the tubers in a warm position. The stems and foliage are the better for being supported on tall Pea sticks. If much increase of stock is required, layer the stems.

THE SYSTON, PERSHORE, AND GISBORNE'S PLUMS: *L. F., Ashby-de-la-Zouch.* When these Plums are obtained true to name they will be found to be distinct, though there is a close resemblance between the first and the last (which is also sometimes seen under the name Mrs. Gisborne). There has been considerable confusion in the naming of Plums in some districts, and in this case we have seen all three under different names. It is easy to distinguish the Pershore by the shape of the fruit, which has gained it the local title of "Egg Plum." The Syston is superior to Gisborne's both in the size and flavour of the fruit, and is readily increased by suckers. See also note on p. 101.

TULIPS: *Jeannot.* Your Tulips are attacked by the "Tulip mould," Botrytis parasitica, Cav. This is one of the most serious pests amongst Tulips. The bulbs are covered inside the outer brown sheath with the spawn of a fungus, which forms small grain-like bodies (sclerotia), which produce as soon as brought into the houses for forcing a greyish mould, which rapidly destroys the bulb. Hitherto no remedy has proved efficient and the disease cannot be checked on account of its rapid and virulent mode of growth. When potting the bulbs the surface of the pots should be covered with a thin layer of sand mixed with powdered charcoal. This frequently prevents mouldiness. Also the frames, &c., should be perfectly dry, well ventilated, and the pots embedded in ashes. Thereafter they may be covered about 6 to 8 inches with ashes, soil, or any kind of porous material. A bulb once attacked must be destroyed. The ashes, soil, or covering used in keeping the bulbs back should on no account be used again for bulbs of any kind, when attacked bulbs have been contained therein, because the sclerotia live in the soil for a good many years, and they will re-infect Tulips, &c. We cannot undertake to state a probable cause of the Spiræas failing. Please forward one or two of the clumps, which show the abnormal growth.—*Puzzled.* There is no disease present to account for the failure, which is therefore due to some detail in the cultivation or to want of condition in the bulbs themselves.

COMMUNICATIONS RECEIVED.—W. H.—A. D. W.—W. R R.—C. T. D.—H. R.—W. W. P.—R. T. C.—H. W. W.—J. H.—E. McN.—W. Pasey—Market Gardeners, Nurserymen, and Farmers' Association—F. J. H.—Dr. M.C.C.—H. D. T.—W. B. & S.—E. M. W.—H. M.—Croydon Gardeners' Soc.—M. M. N.—Foosy—A. R. B.—E. W. D.—J. McI.—A. H.—J. B.—F. M., Falmouth—S. A.—T. F.—T. C.—C. J.—A. J. L.—W. A. C.—W. H.—Chloris—H. S.



Photograph by W. J. Fussell.

St. Mary's Church, Oxford; its beautiful walls adorned by Ampelopsis.

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THE
Gardeners' Chronicle
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CONTENTS.

ILLUSTRATIONS.

WALL GARDENING.

IT may be admitted at the outset that in many cases this aspect of gardening has been entered upon without a due regard for the proper positions for the walls which are to be employed as gardens, with results that have sometimes proved unsatisfactory.

I venture to submit that it ought to be laid down as an axiom that no wall garden should be formed in a position where the wall itself has not a distinct *raison d'être* apart from that of being the home of the plants which are planted in or upon it. There is no real need for erecting a wall in many places such as are at present being employed for the purpose of wall gardens, and some of these are obviously in improper positions. A wall should serve one of several purposes—a shelter, a division, a support for a bank, a boundary, or a screen. There are a few other objects for which a wall suitable for a garden is erected, but the most valuable of all for wall-gardening is one built for the purpose of a retaining support for a bank; in such a wall plants suitable for wall-gardening have a better chance of success than in any other, because they are not so much exposed to the risks of drought inseparable from those which have no great body of soil in or behind them. Many walls which have been, or are being, converted into wall-gardens would be much more satisfactory were they covered with suitable shrubs or climbers.

There are, however, many walls apart from those suitable for supporting a bank of soil, which can be usefully employed for the cultivation of plants, and of these the best are certainly those constructed for the special purpose. These should be constructed of fair-sized stones, built without mortar, and with plenty of crevices between them, while they should also be double, having a space filled with soil between the two faces of the wall, the latter being properly bonded together to prevent the wall from spreading and falling asunder, as would be the case were there no cross bands to hold the faces together. It is necessary, in building such a wall, to fill in the soil as the work proceeds, as otherwise it would settle down irregularly and leave open spaces, which would be detrimental to the welfare of the plants. It is advisable, also, where it can be done, to give the wall a slight "batter" so that the rainfall can run into the crevices, and this will also simplify the watering that will be required in continued dry weather, unless it is entirely planted with drought-resisting subjects. By giving the stones a slight tilt upwards at the front as far as is consistent with the stability of the wall the watering of the plants will be assisted in no slight degree. Such a wall should not be surmounted by the usual copestones, but should be open so as to admit of the rain finding its way down to the soil beneath. Bricks are used where stones are scarce, but the effect is not so good. Planting is best done when the wall is in process of being built, but this, of course, calls for the proper consolidation of the soil as the work proceeds. A good modification of this wall is one having one smooth face built with mortar and the other constructed with open joints for the plants. There are certain positions in which this kind of wall may be preferable, such as, for example, the screening of an ash-pit or rubbish heap, where a properly built wall is desirable for the interior, but which is required to be covered with plants on the side next the house or garden. Here, again, attention must be paid to the proper bonding of the two sides.

The retaining wall for a bank is a much simpler matter, and presents little difficulty. In all cases, however, there should be a "batter" and the slight tilt of the stones already mentioned. The degree of batter depends greatly upon the slope desired, and a little is all that is called for in this case, although when it is carried up at a fair angle it strengthens the wall immensely. I have found it desirable to place some soil between the joints of the stones as the work proceeds, making this as firm as possible to prevent any more subsidence than can be helped. It is scarcely necessary to add that the foundation stones must be "well and truly laid," and that they should be of sufficient size to prevent the wall from sinking in a soft soil, being carried down as far as necessary to a fairly firm foundation.

The task of converting an existing wall into a wall-garden is not so easy, and several methods have been adopted. An old wall, built with large joints and with loose and crumbling mortar, can be covered with plants by scraping out a sufficient quantity of the lime, and either planting young subjects or sowing seeds in good soil thrust firmly into the holes. I have found a compost of stiffish loam and cow dung answer well, especially if placed in the holes when it was in a damp state. Indeed, in some cases it is necessary to mix up clay and cow dung into a stiff, mortar-like paste with water and thrust it into small openings with a piece of wood, afterwards, when it had become a little drier, sowing a few seeds in a hole and covering again with a little soil. If a coping exists on the wall it can be utilised, if flat, by placing narrow stones or bricks on either side, so as to leave a space between the stones in the width of the cope; the vacancy is then filled up with good, rather stiff, soil, and the plants put in position.

Still another method is followed with success, and it is one which is very suitable for many walls where such a covering as that afforded by Pinks and other rather trailing plants is desired. This is by fixing pockets, formed of stones, on the face of the walls. This is effected by driving spike nails into the wall, but of sufficient length to allow of about 5 or 6 inches projecting.

On these are placed flat stones, fixed with cement to the spikes and the wall, and this has an edging of stones or cement arranged round it, and the space filled with good compost, such as that indicated for other subjects. If these pockets can be made about 6 inches deep and the wall-garden watered in dry weather, many plants will thrive admirably, and will soon leave few bare spaces between the pockets if these are placed closely enough. One of the best examples the writer has seen of this style of wall-gardening was an excellent one on a low wall beside the house of Mr. F. Bedford, the gardener at Straffan, Co. Kildare, Ireland.

As a rule, except in the case of a wall against a bank, it is desirable to select plants which can withstand a little drought at times. For the top of a wall-garden of the ordinary type of building there is nothing so good as the Flag Iris, and this is exquisite when in bloom, with the sun shining, maybe, through the translucent petals of the flowers. Carnations and Pinks are also good, and one of the features of his garden which most delighted the late Mr. F. W. Burbidge, of Trinity College Gardens, Dublin, was the original wild Carnation growing on the top of the walls. Mulleins also look well, and there are in such places admirable positions for Helianthemum, Cistus, and a number of plants which dislike too much wet at their roots and like a full exposure to the sun. For the other parts of the wall-garden the choice is embarrassingly great. Pinks, either the species of Dianthus, or the garden forms of Dianthus plumarius, are excellent, and nowhere do they look better than hanging over a wall. Such Androsaces as A. lanuginosa are exquisite on a low wall; and there are such beautiful Campanulas as C. isophylla, for warm gardens, or C. portenschlagiana, and C. garganica, with its variety hirsuta, besides a number of others, for the colder districts where C. isophylla cannot withstand the winters. In a wall-garden, however, it will be found that many plants which die out in the open garden will live and thrive. The lovely Gerbera

Jamesonii is known to the writer as thriving in a garden on a wall against a bank where it would be impossible to retain it on the level; Erinus alpinus will also establish itself on a wall where it would die in the open if on the flat, and I know one wall in particular which has thousands of plants on its surface and presenting a most delightful appearance in the time of bloom. In southern England and Ireland the Mesembryanthemums are glorious on a wall.

These notes must, however, be more suggestive than exhaustive; there are so many beautiful plants for a wall-garden that a lengthened catalogue would be needed for detail. I may, however, suggest Tunica saxifraga, Silene alpestis and S. Schafta, the silvery encrusted Saxifrages of the type of Aizoon and others, S. lantoscana, for example, being exquisite with its plumes of bloom bending gracefully from the wall. Lychnis Lagascæ will also thrive on a wall when it would die out in the ordinary rock-garden. There are also many Sempervivums and Sedums which are ideal plants for the dry and sunny wall; and flowers of quite opposite requirements, such as the Ramondias, or the shade-loving Ferns, can be accommodated on the shady sides of the walls or stone-supported banks. Some of the Lithospermums are excellent wall plants, and with sufficient soil the Gypsophilas will also succeed; Erysimum, Digitalis, and many more will give their full quota to the effect of the wall-garden; while some of the newer Wallflowers, besides the old forms of Cheiranthus Cheiri, will look well, and will thrive longer than in the other parts of the garden.

There is, indeed, practically no limit to the variety of flowering or ornamental plants which offer themselves to us for the wall-garden, when this is placed aright, properly constructed, well planted, and carefully tended; and they will assist in making our gardens more beautiful and more interesting. *S. Arnott.*

NEW OR NOTEWORTHY PLANTS.

DIACRO-CATTLEYA × COLMANIÆ

(DIACRIUM BICORNUTUM × CATTLEYA INTERMEDIA NIVEA).

THIS very interesting bigeneric hybrid (fig. 45) was exhibited by Sir Jeremiah Colman, Bart. (gr. Mr. W. P. Bound) at the meeting of the Royal Horticultural Society on February 11, when an Award of Merit was conferred upon it by the Orchid Committee.

In its habit of growth Diacro-Cattleya × Colmaniæ resembles a slender plant of Diacrium (Epidendrum) bicornutum, its fusiform pseudo-bulbs being furnished with thick, dark green leaves, and its inflorescence, 12 inches or so in height, being erect, and produced in the same manner as in Diacrium bicornutum. In Diacrium the pseudo-bulbs are hollow, but the stem of the new hybrid has the appearance of being solid, although this has not yet been definitely decided. Reference to our illustration shows that the influence of the white form of Cattleya intermedia has predominated in the size, texture, and form of the flowers, and it is interesting to note the effect of the Diacrium parentage in the retention of the peculiar form, and distinctly trilobed character of the labellum. The pure white of the sepals and petals of Diacrium bicornutum appears in the new hybrid, but the purple spotting on the lip of that species is entirely obliterated. The result is not only an interesting plant scientifically, but a very worthy new garden subject. Other crosses with Diacrium bicornutum have been raised by Mr. Bound at Gatton Park, and notably one between it and Epidendrum radicans, and in which the pseudo-bulbs are slender, like E. radicans, and furnished with aerial roots, the flowers being red.

VEGETABLES.

FORCING CAULIFLOWERS IN SPRING.

THE excellent Cauliflowers grown under glass seen at the Temple Show and earlier in the year, are examples of vegetables that are scarce and of much value at that season.

As the Cauliflower can be cultivated at a small cost in regard to space and labour, it should be more commonly grown. Gardeners who rely upon plants raised in the early autumn may experience serious losses by frost; and in order to make these good they should sow seeds of a variety that forces well and is of rapid growth. The seeds should be sown from the end of January and onwards. In some private gardens a warm-house is not always available, but a cold frame is usually to be found, or hand-glasses or "cloches," under which the seeds may be sown at an early date, and the resulting plants will provide heads some weeks in advance of those from the first sowing made in the open on a south border. As regards the varieties and the method of cultivation, much will depend upon the number required and the means available for forcing them. It is surprising how well certain sorts of Cauliflower can be grown in quite small pots from seed sown at this season. I have been enabled to cut nice serviceable heads three months after sowing the seed, grown in 6-inch pots, placed in cold frames. They also do well if planted out in rich soil in frames when just large enough to be handled; but in this case they require more care in affording air, being liable to attacks of mildew, which may likewise occur on plants in pots. Dusting with flowers of sulphur occasionally will sometimes destroy this pest.

I have alluded to pot and frame culture, but there is another system doubtless of more importance. For if the seed is grown under glass and the seedlings be afforded timely shelter for a few weeks, they may be planted out-of-doors, and give good returns some weeks before the plants grown entirely in the open come into use. I would advise that sowings be made in pans or boxes, but it is not well to crowd the plants, and the young plants must be pricked out in others to prevent spindling.

Cauliflower seeds germinate, and the plants grow, very quickly; the seedlings must at once be put into a light house near the roof glass or damping off will set in. For many years I used to raise Cauliflowers in pans placed over the hot-water pipes in a forcing house, and afterwards transfer them to cold frames; indeed, various shifts had to be made at times in order to make sure of a crop. The most critical time is at the start, since too much warmth weakens the plants, as also does thick sowing.

In a few weeks the plants that are pricked off into boxes will be large enough to plant out on a south or other warm sheltered border, or at the foot of a south wall. The soil should be well enriched. Even in such positions it is prudent to afford protection from cold winds, and it is advisable to draw rather deep drills in which to plant. At this part of the season, hand-glasses are valuable for a time. The small forcing varieties of Cauliflowers do not require much space, and about 15 to 18 inches between the rows will suffice; with this close planting protection is an easy matter. What must be avoided is the crowding of the plants.

Of varieties there are three or four good forcing ones, which are noted for their compact growth and earliness. Veitch's Extra Early Forcing is one of the best, and seed sown in February under glass and planted out late in March will be ready in May. It is a fine frame or pot variety, and the heads are close and white. The plant is unusually dwarf in growth, excellent for the earliest supplies, and of just the right size for table. Another variety is Sutton's First Crop, having small white heads of a delicious flavour; it is a rapid grower as a forcer or pot variety, and one of the earliest, not unlike the Early Snowball, but it has a closer curled head and is more compact in growth. Last year I had a new early Cauliflower of excellent quality, and quite as early as any of those named above; this was Carter's Forerunner. It is a very fine introduction, and one that will be much liked for the first crop in the open. It is remarkably vigorous, and has a larger head than the varieties already named; this will make it most valuable in large gardens. *G. Wythes.*

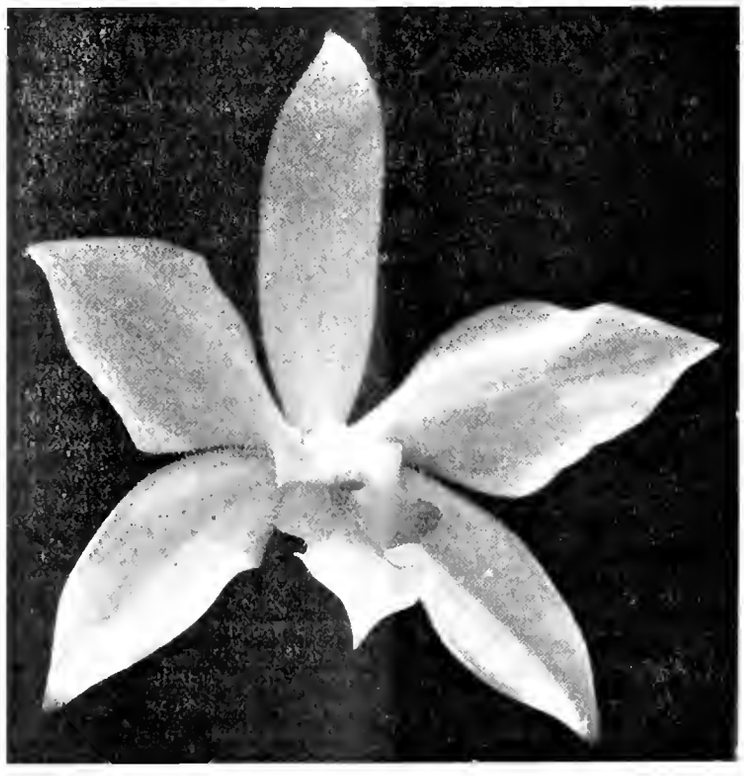


FIG. 45.—DIACRO-CATTLEYA × COLMANIÆ: FLOWERS WHITE.

RARE INDIAN LILIES.

FOR more than 30 years I have been especially interested in the different members of the genus Lilium, and in the course of that long period many changes connected therewith have come under my notice. Some species that were once popular are now comparatively rare, while others unknown, or nearly so, a quarter of a century ago, are now grown in considerable numbers.

Just now four species, natives of the temperate regions of India, viz., Lilium neilgherrense, L. nepalense, L. polyphyllum, and L. Lowii, are very rarely met with, though at one time they were by no means particularly scarce. Lilium neilgherrense, a native of the Neilgherry Hills, in India, bears, at least in some examples, the most massive flowers of all the Trumpet Lilies. In colour they vary from almost white to deep primrose, and some have the tube more attenuated than others. This extreme form represents the Lilium tubiflorum of Wight, which is now regarded as synonymous with L. neilgherrense, for intermediate shaped flowers may often be seen. Somewhere about 30 years ago, a splendid coloured plate of Lilies was presented with the *Gardeners' Chronicle*, the said plate being under my observation as I am writing. A magnificent and life-like flower of the Neilgherry Lily occupies the centre of the group, and stands out markedly from all its associates. At the time the plate was published, L. neilgherrense was very little known, but soon afterwards the late Mr. William Bull, of Chelsea, commenced importing it yearly in considerable numbers, so that throughout the greater part of the 80's it was no uncommon circumstance to find numerous flowering examples during the autumn months, for this is its usual season of blooming. Since about the year 1890 this Lily has been gradually becoming scarcer, and now in common with the three others above named, is omitted from most catalogues.

Though such a remarkably handsome Lily, and though imported bulbs never fail to flower, L. neilgherrense has never proved amenable to cultivation in this country. I tried many experiments in its culture, but all I could ensure was a crop of bloom the first season, comparatively few the next year, and perhaps two or three isolated flowers after that time. It is essentially a greenhouse species, and, as a rule, is happier when planted out in a prepared bed than in pots, since the flower stem will often, on leaving the bulb, proceed in a horizontal direction underground for some distance before making its appearance. On the other hand, the stem is sometimes pushed up directly from the bulb in the usual orthodox manner. Before the practice of retarding Lily bulbs became general, L. neilgherrense was greatly valued as the only Lily that could be had in bloom at the time of the Chrysanthemum shows, and even now, though others take its place, our gardens are the poorer for its practical disappearance.

Lilium nepalense.—It is perhaps doubtful whether any other Lily has attracted as much attention on its first appearance as did this species when shown by Messrs. Low on September 11, 1888, on which occasion a First-Class Certificate was awarded it by the Royal Horticultural Society. True, it is said to have been introduced some years before, and to have flowered in this country, but prior to 1888 many conflicting opinions prevailed as to what L. nepalense really was like; therefore when it proved to be such a distinct and beautiful plant everyone was delighted. The flowers, which are of a short, funnel shape, have the segments reflexed almost to the same extent as some members of the Martagon group. The centre of the flower—that is, the basal half of the segments—is of a rich chocolate-purple colour, while the reflexed portion is a kind of greenish-yellow. There is, however, a good deal of individual variation to be found in the colour of the blossoms, some having the purplish tint much more highly developed than others. Lilium nepalense reaches to a height of 4 to 6 feet, and flowers during the autumn months.

Lilium polyphyllum.—This Himalayan Lily is an exceedingly pretty member of the Turk's Cap section, with narrow, elongated bulbs suggesting in shape those of the Siberian L. tenuifolium. The bulbs of L. polyphyllum are, however, the larger of the two, and from them are pushed up stems that reach to a height of a couple of feet or thereabouts. The flowers, which have the marked reflex characteristic of the Martagon group, are in colour a kind of greenish-yellow marked with purple. Generally speaking, this Lily must be regarded as a greenhouse species, but the late Mr. G. F. Wilson used to succeed wonderfully with it out-of-doors at Oakwood. Now it seems to have almost dropped out of cultivation.

Lilium Lowii (also known as L. Bakerianum).—A native of Upper Burmah, and introduced in 1893, this Lily seems now to get scarcer year by year. It is of slender growth, with very narrow leaves, while the bell-shaped flowers are white, freely spotted in the interior with purple, though in this respect there is a considerable amount of variety.

Although the above Indian Lilies are all difficult to establish, and on this account are exceedingly rare, one species, also a native of Upper Burmah, viz., L. sulphureum, has proved hardy in the southern portion of this country, and become established in places. It is somewhat strange that this should be the case, for it is, I believe, often met in a state of nature associated with L. nepalense, which last is so difficult to grow. A curious feature of L. sulphureum—which, by the way, was first known as L. Wallichianum superbum—is the presence of a quantity of bulbils in the axils of the leaves, which causes it to stand out unique among the Enlirion or tube-flowered group of Lilies. Even where it is not hardy, L. sulphureum is a very handsome Lily for the greenhouse in late summer or early autumn. Good bulbs can now be obtained at five shillings each, certainly not an extravagant outlay for such a fine Lily.

Though it cannot be termed rare, the noble Himalayan Lilium giganteum merits at least a passing notice, for in its striking heart-shaped leaves, its towering flower shaft, and long, tubular blossoms, it is totally distinct from any other member of the genus. *W.*

PLANT NOTES.

CRAMBE CORDIFOLIA.

THIS Circassian species, belonging to the Cruciferæ, is not a common plant in gardens. The plant possesses large leaves and attains a height of 7 feet, and is quite hardy, growing in any good garden soil. It is readily increased by seed or division, and seedlings usually blossom the third year.

ITEA VIRGINICA.

THIS is an American shrub of much merit, growing about 8 feet high. The flowers are white, and appear in June in drooping racemes from 3 to 5 inches in length. Its other attraction is the deep red of the foliage in the autumn, making it one of the best at that season. The plant requires a moist soil, and is, therefore, a very suitable one for planting on the margins of lakes and streams, either singly or in groups, the latter being the best for effect. *F. M.*

IXORA MACROTHYRSA (SYN. DUFFII).

I HAVE seen this stove-flowering plant, grown as single stems about 4 feet high, with trusses of blooms fully 16 inches across, which have preserved their freshness and beauty for over five weeks. The flowers, which are borne in immense terminal corymbs, are of a rich deep vermilion colour, shaded with crimson, and are set off to great advantage by the deep green leaves which often attain a length of 9 and 10 inches. This Ixora being a native of the South Sea Islands requires abundant heat and moisture, and should be given a light position, free from draughts or checks of any kind. It is best grown as a single stem, and flowered in about a 7-inch pot. Propagation is effected by cuttings, taken preferably in the early summer or early autumn, in which case the plants would be at their best about the following October. When taking cuttings it is advisable to select short-jointed shoots, and when detached, the cuttings should be carefully split into (but not through) the node, which will greatly aid them in striking. The cuttings should be inserted singly in small pots, in sandy peat, and plunged in fibre with about 80° bottom heat. When well rooted, which often takes five or six weeks, they should be potted on into a compost of fibrous peat, with a little good loam and plenty of sand. Good drainage is essential, as the roots soon suffer if the soil becomes sour. While the plants are growing they must be well supplied with water and freely syringed to keep down mealy bug and red spider. The young plants require shading from the sun when it is very bright, though plenty of light and heat are at all times essential. Great care should be taken as regards ventilation, if any is necessary, when the plants are coming into bloom, as a cool, draughty, or foggy atmosphere will cause the flowers to drop in a most disastrous manner. *W. H. Middleton.*

NOTICES OF BOOKS.

"MISSOURI BOTANIC GARDEN, 18TH ANNUAL REPORT, ST. LOUIS, 1907."

THIS well-known American garden issues, as is well known, rather bulky annual reports. The current volume contains matter of considerable interest, apart from the details of the routine work of the institution. A lengthy illustrated article deals with the literature of Furcræa, with a synopsis of the known species. The author, Mr. J. R. Drummond, has dealt with many of the Kew types. An abnormal Odontoglossum Cervantesii, and a virescent form of Oxalis stricta are described by Henri Ilus. The latter plant seems generally to come true from seeds, and has been distinguished as var. viridiflora. T. W. Blankenship contributes the third part of the Plantæ Lindheimerianæ, containing an interesting biography of Lindheimer himself. The volume closes with articles by Dr. William Trelease on additions to the genus Yucca, and on Agave macroacantha and allied Agaves, both of which are illustrated.

"FERTILISERS AND FEEDING STUFFS."

THIS excellent little work has deservedly reached a fifth edition. It is written primarily for farmers who have had no scientific training, though references to standard works are given for the benefit of those who can profitably use them. Dr. Dyer is a leading authority on the subject with which he deals, and he understands how to convey a very large amount of invaluable information in the simplest language. The book ought to be widely known and read.

[1] By Bernard Dyer, D.Sc., with notes on the Fertilisers and Feeding Stuffs Act, 1906, by A. J. David, F.I.C. 5th edition revised. 1908: Crosby, Lockwood & Son; price 1s.

USES OF THE MOTOR IN HORTICULTURE.

(Continued from page 100.)

The next vehicle to consider is that designed to carry from 2 to 2½ tons.

A chassis of this description, without body, may be purchased for £500.

This vehicle will probably answer the purpose of most people interested in horticultural enterprise better than the 4-ton vehicle—that is, it will appeal to the majority.

Before going further with this article, it may be as well to point out that the main object is to show, as clearly as possible, what may be done with motor vehicles provided that they are given reasonable care and attention. The figures given for depreciation and repairs are particularly high, and considerable allowance is made for depreciation, not that at the end of five years the motor is of no further use to its owner; on the contrary, it should be just as useful and capable of doing its work as well as on the day it was purchased, and in the meantime it will have paid for itself. Depreciation really should not be put down at any fixed percentage. For instance, if this item be deducted from the running costs of the 4-ton vehicle given above, the road mileage will be 6d. instead of 8d., and the ton mileage from 2d. and 4d. to 1½d. and 3d. respectively. The prospective purchaser should compare these figures with what his present method of transport is costing him, allowing also for the probable saving which will be effected by less packing as required by rail transport, or if it is an outlying piece of land which is to be developed, then the saving in rent or purchase of land must be credited to the motor. It will also be found that the goods will be delivered in better condition than by rail every prospective purchaser is given a fair trial of the vehicle, when this will be demonstrated to him; this, too, should be taken into consideration. If all these items combined will not show a sufficient saving to pay for the vehicle within a period of four years, then the writer would advise that the purchase should not be made.

With reference to repairs, provided that the adjustments and lubrication are properly attended to by the driver, and that the vehicle is not over-loaded or over-driven, it will be found that no repairs are required until it has run between 18,000 and 20,000 miles, except to the brake blocks, which will have to be renewed periodically. Breakages, if any, due to faulty materials, will be made good by the manufacturer, i.e., if the purchase be made from a firm of repute, and the necessary guarantee obtained. There is at least one firm that makes excellent vehicles and is prepared to supply them on the hire purchase system. The extra cost amounts to 5 per cent. per annum on the first cost of the motor. In addition to this, the vehicle can be maintained in good working order at a fixed sum per annum, for a period of years. This should appeal to those who might not find it convenient to pay out such a large sum of money on delivery of the motor. The maintenance contract would also settle any doubts there might be as to the running costs.

To return to the 2-ton to 2½-ton vehicle, the annual cost of running is made up as follows:—

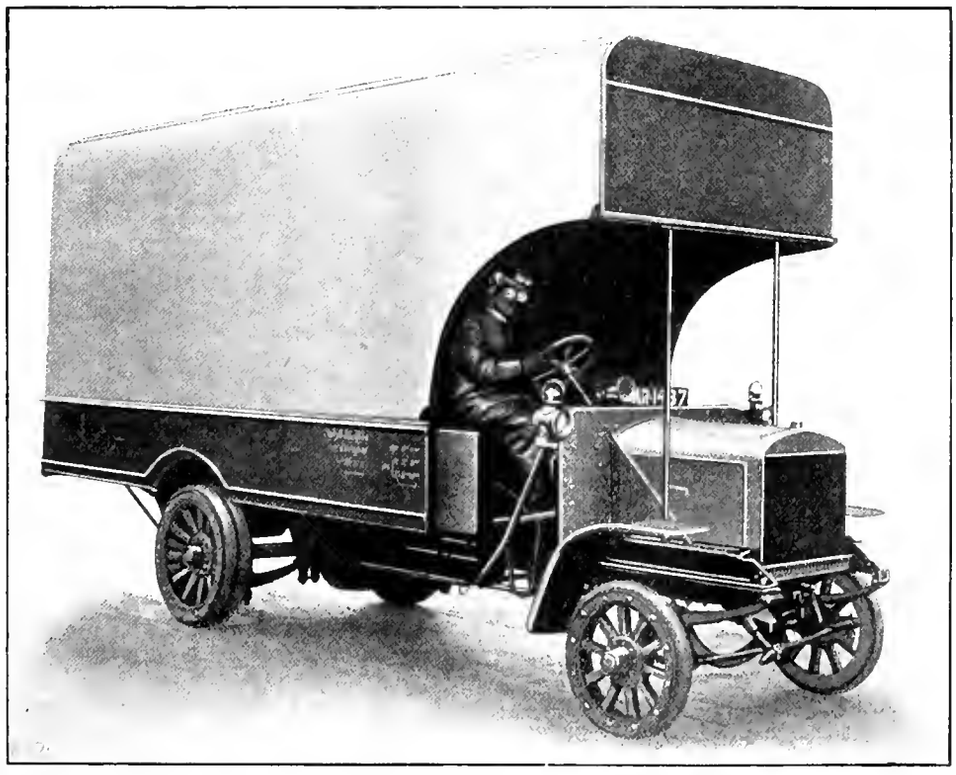


FIG. 46.—MOTOR VAN CONSTRUCTED FOR JOSEPH ROCHFORD, AND HOLDING 290 "FLATS" OF GRAPES.

TABLE No. 2.

Depreciation on £500 at 20 per cent.	£100	0	0
Petrol, 1½d. per mile for 26,000 miles	162	10	0
Tyres, 1¼d. per mile for 26,000 miles	135	8	0
Repairs, 10 per cent. on £500	50	0	0
Driver, 52 weeks at 35s.	91	0	0
Oil, waste, light	7	10	0
Sundries, insurance, &c.	25	0	0
	£571	8	0

The figures are based upon 500 miles per week, as the lighter weight permits of a higher speed.

The cost per road mile is approximately 7¼d., and per ton mile loaded one way 5½d., or loaded both ways 2 9-10d.

The 30-cwt. to 2-ton van will cost £385, and as in the difference between the 4-ton and the 2½-ton vehicles, the differences in the running costs only vary in the three items—depreciation, petrol consumption, and tyres. Compare Tables No. 1 and 2:—

Petrol, 2d. per mile.	Petrol, 1½d. per mile.
Tyres, 2d. per mile.	Tyres, 1¼d. per mile.
Depreciation on £700.	Depreciation on £500.

It is the opinion of the writer that the figure for repairs should not be put down at less than £50.

Then the running costs work out as under, and also based upon journeys amounting to 500 miles per week:—

Depreciation on £400 at 20 per cent.	£80	0	0
Petrol, 1d. per mile for 26,000 miles	108	6	6
Tyres, 1d. per mile for 26,000 miles	108	6	6
Repairs	50	0	0
Driver, 52 weeks at 35s.	91	0	0
Oil, waste, and light	7	10	0
Sundries, insurance, &c.	25	0	0
	£470	3	0

The cost per road mile is 4 3-10d., or 2⅘d. per ton mile fully loaded both ways, and 5¾d. loaded one way only.

On a similar mileage the cost of working a 20 to 25-cwt. van works out at £396, and for a light delivery van to carry from 5 to 8 cwt., £180 per annum. A tri-car suitable for a lad to drive and to carry 3 to 4 cwt. may be purchased for £80, and the upkeep will be about the same rate.

Compared to horse traction, the cost by motor shows a saving of at least 50 per cent., and in some cases much more than this; the matter depends largely on the conditions of delivery.

In the above figures it may be noticed that only £7 10s. per annum is allowed for lubricating oil, &c., this will probably be found to be not quite sufficient. It is necessary to draw special attention to this item, because although there should be no stint in the use of the oil, precaution should be taken to prevent the prodigal waste that takes place.

In all other cases the figures are rather above than below the amounts necessary.

Careful record should be kept of the petrol consumption, so that as soon as the number of miles per gallon show a falling off, the cause may be sought for and remedied. There is no surer method of checking the efficiency of the vehicle than this.

Before many months have passed, motor-carrying businesses will be established that will cater for the small growers who have not sufficient produce to fully employ a vehicle of their own. These, of course, cannot expect to get the work done so cheaply as those in a more fortunate position, but in a greater or lesser degree the benefit of motor transport will make itself felt throughout the market-gardening world. To thousands of growers the day they are rendered independent of the railway companies will be the dawn of future prosperity. *Hugh Miller, C.E., M.E.*

(To be continued.)

NURSERY NOTES.

PRIMULAS AT READING.

At the present time many of the glasshouses in the nursery of Messrs. Sutton & Sons are filled with the various kinds of Primula sinensis and its allies, in conjunction with the firm's well-known strain of the florists' Cyclamen. The display of Primulas is not of the nature of a comparative trial, but rather shows the cultivation of a series of types and varieties, some so fixed in character as to reproduce almost the whole of their progeny true from seed. The ungainly plant, big of leaf and of stem, is apparently unknown at Reading, but there are hundreds and thousands of plants that impress one irresistibly by their uniformity of habit and their large flower-trusses, which over-top the

leaves. In the "giant" or "magnifica" and other types the heads of flowers (in many shades of colour) are lifted well into view, although naturally the "pyramidalis" and "stellata" types have the most exalted inflorescences. The flower spikes of some of the "star" Primulas at Reading range from 12 inches to 20 inches in height, the plants being of quite an ordinary size and growing in pots not more than 5 inches in diameter. For some years past the varieties of the stellata group have been exceedingly popular, and so much in demand that in certain instances, despite the large number of plants grown, the firm have experienced some difficulty in securing sufficient seeds for their requirements. The plants when in flower are eminently suited for table decoration and for many other purposes, whilst they are useful for supplying cut flowers at a season when other flowers are scarce. Some of the more important varieties of this group are White Queen Star, Ruby Star, Ruby Star (double), Dark Blue Star (almost equal in colour to the famous "Czar" in the large-flowered type), Lord Roberts (a pleasing tone of salmon), and Mont Blanc. The last-named, while providing a Fern-leaf character, retains the chief characteristics of the true stellata type, with dark leafage coupled with large and pure white flowers. Mont Blanc and White Queen, the latter with opaque white flowers, represent the best of the white-flowered forms. There is, however, a move forward to varieties having very large flowers, and these are known as "Giant Star" in their several colours, White Carmine, &c. The beauty and the elegance of these stellata forms cannot well be over-estimated.

The pyramidal strain may best be described as being midway in habit between the old florists' and the stellata forms. There is also a type represented by the magnifica hybrids, with their large, handsomely fringed flowers in shades of rose-pink, crimson, &c., and with foliage decidedly ornamental in character. Perhaps the most remarkable section of all these Primulas is that known as "The Duchess," remarkable alike for its own intrinsic beauty and merit and for its almost unique progeny. The original of this group received an "Award of Merit" from the Royal Horticultural Society some six years ago, and at the present time its influence may be seen in one of the finest hybrid races among these plants. Such well-marked varieties as Crimson King, Brilliant King, Lord Roberts (salmon), The Czar (violet-blue), Brilliant Rose, &c., constitute the best selection of the self-coloured forms. Pearl, a variety of 30 years' standing, and Snowdrift, are instances of fixity of character and absolute trueness to type. Plants of these varieties seen at Reading and raised from seeds are of remarkable uniformity of habit, and afford evidence perhaps of the limit in their particular direction in plant evolution.

Of the "giant" strain it may be said to be unique, and any attempt to exalt or glorify the beauty of the flowers would be superfluous.

Many thousands of Cyclamens are also grown at Reading, and here again we meet with great size, brilliancy of colouring, and good form in the flowers that are set off by the handsome foliage. *E. H. J.*

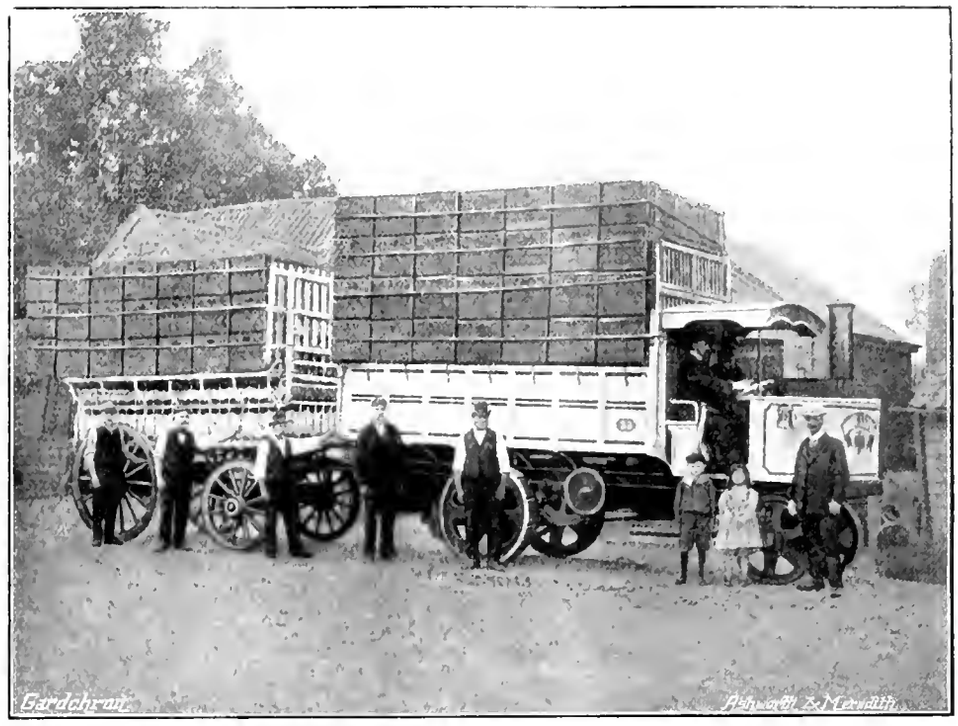


FIG. 47.—MESSRS. MANN AND SONS' STEAM TRACTOR LOADED FOR COVENT GARDEN MARKET.

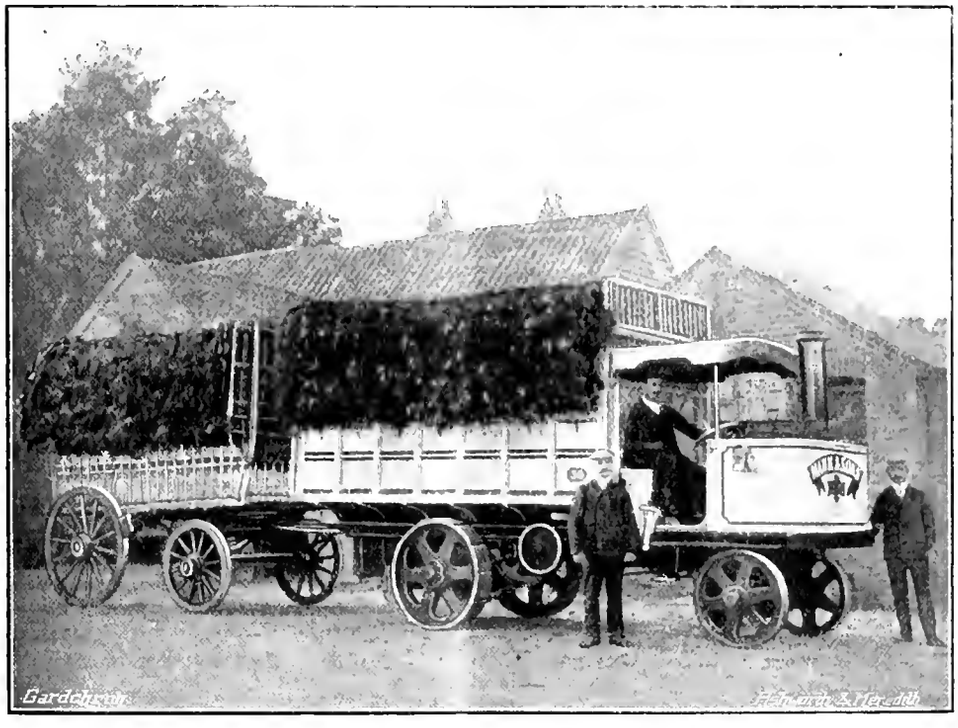


FIG. 48.—THE TRACTOR RETURNING LOADED WITH MANURE.

THE ROSARY.

ROSE MRS. JARDINE

AN American, writing in the *American Florist* for December 21 last, gives it as his opinion that this variety, raised by Messrs. Dickson & Son, Newtownards, Ireland, is "one of the most beautifully formed flowers of any Rose now in cultivation. The colour is between Bridesmaid and Killarney. It is also fragrant—a very good feature. The flowers are borne on good stout stems. The habit of growth is vigorous and strong, with buds forming on every new shoot. It is said to bloom continuously, being more prolific than Bride or Bridesmaid." I am curious to know if this eulogistic expression is borne out by growers in this country.

NEW VARIETIES OF ROSES IN THE U.S.A.

"A LEADING society lady in the U.S.A. gave utterance to the protest against being compelled to wear Bride, Bridesmaid, or American Beauty, for her frequent functions; this was only too true, and the lady in question simply gave utterance to the general complaint concerning the pre-eminent flower, the Rose. A change has taken place, and new varieties are accorded a very different position from that given a few years ago. It is well for the Rose that such is the case, else the Carnation would have continued its triumphant march to the point of disputing the leadership with the Rose. . . . So many qualities have to be present in a variety that lays claim to favour as a forcing Rose that the progress made will seem slow, but nevertheless it is within the range of possibility to gain entirely new and unique colours and forms." The foregoing is extracted from a paper read before the Chicago Florists' Club by Mr. E. G. Hill, of Richmond, Ind., on December 12 last. He further said that in his belief the forcing varieties of the Roses of the future will come largely from an admixture of Rosa rugosa with the present H.P.'s. Still, the strong old Bourbon varieties like Gloire de Rosomanes should be made to furnish their rich scarlet tones to the new varieties.

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Aerides, Vandas, &c.—Orchids now claiming attention include Vandas, Aerides, Angræcums, and Saccolabiums. The plants should be examined and be either repotted or afforded fresh material at the surface, according as each particular case demands. The larger species should be grown in pots on the stage, while the smaller kinds should be given a position near to the roof, from which they should be suspended in teakwood baskets or small pans from the rafters. All these plants when in a strong and healthy condition require plenty of pure air and sunlight. They should not be kept excessively dry at the roots at any season. With the lengthening days and increasing activity of growth the supply of moisture, both at the roots and in the atmosphere, should now be increased, and whenever the outside conditions will admit, overhead spraying should be practised. The majority of these species are best accommodated in the warmest division of the range, but very satisfactory results can be attained, and especially with Vanda and Aerides, when they are placed in the warmest end of an intermediate house.

Vanda cærulea.—Judging from the enormous quantities of this plant imported annually, it is more extensively grown than any of the other large growing members of the genus. It is a free-blooming, healthy-growing plant when properly treated. I find they thrive best in a temperature slightly higher than that generally afforded to Odontoglossums, and while these Vandas enjoy a cool treatment they are not adversely affected by solar heat, providing that abundant moisture and ventilation are afforded them. They, however, enjoy the cool night temperature, and at that time recoup their energies after the heat of the day. Thus treated, the growth of these plants is active, free, and of a harder and more vigorous nature than that produced under hot and close conditions. The plants, too, are more free in blooming, whilst the flowers produced are of a better colour and have increased substance. The pretty species V. Amesiana, V. Kimballiana, and V. Watsonii should also be grown in a cool, intermediate temperature, and being small in habit, are best suspended close to the roof ventilators. Aerides japonicum and A. vandarum should be given a similar treatment.

Repotting and compost.—Fresh rooting material should be afforded these plants annually. Equal parts of Osmunda fibre, well broken up, and clean fresh sphagnum-moss, with a liberal addition of coarse silver sand, broken crocks, and charcoal, the whole well mixed together, forms a good compost in which the fleshy roots of these plants will thrive. When potting, provide plenty of material for drainage and pot moderately firmly. Finish with a surfacing of fresh moss, trimmed neatly. Healthy plants that are furnished with leaves down to the surface of the compost need not be repotted, but they should have all the old rooting materials carefully picked from amongst their roots, and the drainage made perfect, after which some of the new compost should be worked in to within an inch of the rim of the pot. Specimens that have become "leggy" should have the leafless lower portions of their stems removed so that when the plants are repotted the lower leaves will be on a level with the rim of the receptacle. All aerial roots produced during the growing season should be induced to enter the rooting materials.

PLANTS UNDER GLASS.

By THOMAS LEGG, Gardener to A. SPELING, Esq., Kier, Perthshire, N.B.

Stove plants.—These plants should now be examined to see whether they need repotting, and any that do not require it should have the drainage placed in perfect order—a very important point. Care should be taken to place one large hollow piece of crock over the hole, with its hollow side downwards, with smaller pieces covering it, and over these should follow a sprinkling of finer crocks which have been passed through a ½-inch meshed sieve. It is not the quantity of crocks that makes good drainage, but the way they are placed, so as to take up as little space as possible. When repotting put in a small quantity of soil at a time, and press evenly down round the side of the plant with a flat smooth rammer to the required firm condition. The finer the roots of a plant, the more firmly it should be potted and *vice versâ*; this is a good rule to follow in repotting most plants.

Ferns.—Hothouse Ferns will now require repotting and examining. The soil most suitable for nearly all species of Ferns is a light, sandy, fibrous loam, peat, leaf-soil, sand, and finely broken lime rubble, together with some broken soft bricks. In repotting, the new soil should be very firmly rammed with the potting stick and be put into the pot in small quantities only, and a few bits of broken bricks put near the surface of the soil will also be beneficial to the plants. Although Ferns grow best in a firm soil, it should be of a very porous nature, so that the water applied may pass readily away. Shading should now be placed on the fernery, or the bursts of bright sunshine will scorch the new fronds. Blinds should be placed on all hothouses that require shading, and strict attention should be given not to allow the blinds to remain down whenever the sunshine is gone. Neglect to this point will cause plants to become drawn and weakly.

Amaryllis.—Bulbs which are starting into growth should now be removed to a light position in a warmer house, very little water being afforded at this stage, but they should be syringed twice a day until the flower spikes appear, when a small quantity of weak manure water should be applied regularly, increasing its strength later on. As soon as the flowers open, remove the plants to a cooler house. Amaryllids flower more freely if they are allowed to fill their pots with roots and are fed liberally with liquid manure. After flowering place them in a place suitable for ripening the bulbs and leaves, so as to secure good flowering the following year, water being gradually withheld until the leaves are decayed, or in the case of such as are evergreen, till the soil is dry.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Fig trees.—Where the trees are grown out-of-doors the materials used during the winter against injury by frost may now be gradually removed in the milder parts of the country, and the necessary pruning operations carried out. These will consist in removing as much of the older wood as can be spared and any shoots that have been damaged by frost, leaving a sufficient number of young shoots without shortening them, as it is at the extremities of these that the fruits are produced. Pruning should be very carefully done on trees that are growing in unconfined borders, or nothing but gross shoots will be produced by such trees, and these will never ripen nor bear fruit. It is better in the case of Figs to have the roots in borders restricted as to width and length, which may be done by digging a trench about 4 feet from the main stem, more or less according to the size of the tree, severing all the strong roots, and filling it with brickbats or similar rough materials. By this means and by careful disbudding, well-ripened and short-jointed shoots will be ensured and but little pruning with the knife required. Trees that are growing in restricted borders should be top-dressed with loam, wood ashes, and mortar rubble, reduced to a fine state, together with a sprinkling of bone-meal, mixing all well together before use. Liberal applications of liquid manure to these trees, as soon as the fruits attain to the size of Walnuts, will be beneficial. In planting the Fig afford ample drainage materials. Plant only against south or west walls in gardens north of the Humber river. Make the border thoroughly firm, so that the shoots will be short-jointed, and do not make use of a too rich mixture of soils. The chief ingredients should be good pasture loam one year in stack, mortar rubble, and wood ashes. It is better to apply manurial top-dressings afterwards than to make a border excessively rich.

Grafting.—If fruit tree grafting is contemplated, the present is the most suitable time for heading down the stocks before the sap begins to rise. In cutting off the crowns of large trees the limbs or branches should be left sufficiently long to allow of being shortened by about 1 foot at grafting time. If the shoots from which the scions will be cut have not as yet been taken, these should now be secured and laid-in in thin rows or very small bundles in the soil beneath a wall with a north aspect or under shady trees. Examine trees grafted last year, and if the grafts have made good growth cut back any of the stronger shoots if more branches are wanted to form the framework of the tree, and remove all weak and useless shoots unless the flow of the sap is likely to be excessive. In the case of trees that were grafted two years ago, and on which the scions have taken successfully and growth is likely to become too dense, those worst placed should be removed entirely so as to let in the sunlight, otherwise much mischief will result next year.

Labelling trees.—Take advantage of bad weather when outside work is impossible, to put lasting labels to all the newly-planted or other trees, a list of the names having been prepared some time ago. Fruits in the Apple and Pear rooms should be frequently examined, and every fruit that shows signs of decay removed, the sound fruits being handled as little as possible. Pears are mostly over for the season, but late varieties of Apples will remain good for some time longer.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Early Melons.—For Melon plants raised in the manner previously advised, make a firm ridge of loam inclined to be clayey, mixed with a small quantity of fresh soot and crushed mortar rubble or leaf-soil, on a firm hot-bed. Once the ridge, or hillock, of soil is warmed through, the plants, after being moistened at the roots, should be firmly planted upon it at 2 feet apart, and the stems trained on the cordon principle to a trellis fixed near to the roof glass; side growths, as they form at the base of the stems, should be rubbed off, and the principal leaves carefully preserved. With a view of securing very early fruits, some of the plants should be stopped when they reach to about 18 inches up the trellis. The superfluous male blossoms should be removed at short intervals, thus promoting the growth of fruitful lateral shoots; these should be secured to the trellis as they extend, and be stopped at one leaf beyond the first fruitful blossom. The rest of the plants may be allowed to extend their shoots and strengthen them before being stopped. These plants will subsequently yield fruits in succession to the former. Attention must be paid to the ordinary routine of Melon culture during the flowering period, and a buoyant, fairly dry atmosphere maintained. Plants that are to be fruited in pots should receive the same kind of treatment, and seeds sown as may be required for successional crops. In the above manner are Melon plants managed at the Hendre Gardens.

Early Peaches and Nectarines.—As soon as the blossoms fade, the morning syringing of the trees should recommence, and on fine days it should be done sufficiently early in the afternoon likewise, so that the trees may get dry before nightfall. Regulate the temperature of the house as soon as the fruits begin to swell freely, so that at night it may range from 55° to 60°, and about 5° higher than these figures during the day. Admit a little air early in the morning, increasing the volume gradually if the day is sunny, and gradually reducing it as sun heat declines, finally closing the ventilators so as to keep the house for a short time at 65° to 70°. Disbudding should begin at an early stage of growth, and be followed up gradually so as not to cause any sensible check to the flow of the sap. In the formation and maintenance of a perfect tree, disbudding plays an important part, and much foresight and discrimination are called for. A beginning may be made in thinning the fruits on trees that are carrying too many as soon as they have reached the size of Hazel-nuts. The final thinning should not be carried out until the fruits begin to form a hard stone. Let the borders be tested for moisture at intervals of two or three weeks, and afford water copiously when

it is seen to be required. Manure water should be supplied when extra assistance is needed, using mild applications of artificial manure or diluted liquid manure from the stable or cattle shed.

Early-fruiting permanent Vines.—A sufficient number of the best lateral shoots of the early vines having been retained to clothe the rods—these being stopped at the second or third leaf beyond the selected bunches of fruit a few days before the blossoms expand—they should be carefully secured to the wires, and the sub-laterals pinched back to a single leaf. Maintain a tolerably dry and freely circulating atmosphere, assist the fertilisation of the blossoms in the usual manner, and do not delay to remove the over numerous bunches or to thin the berries of those bunches that are to remain, which should not be so numerous as to over-tax the strength of the vines. Supply nutriment to the roots according to the strength of the vines, remembering that it exerts the greatest effect when applied with discretion in the earlier stages of the development of the fruit, the stored-up sap having then become exhausted and root growth more active.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

THE exceptional weather experienced in this locality during the past month (scarcely any rain having fallen during that period) has kept the land in good working condition for getting in early seeds and accomplishing various other seasonable work.

Autumn-sown Onions.—This is one of the earliest crops to need attention, and far better results are obtained by transplanting the plants to a well-enriched, deeply-trenched piece of ground than by allowing them to remain where the seed was sown. Take the earliest opportunity of carrying out this transplantation. Apply to the surface of the ground a thorough dressing of soot and wood ashes, and afterwards rake it down finely, leaving it as level as possible. Plant the Onions in rows drawn at distances of 1 foot to 15 inches apart, putting each plant 10 to 12 inches distant from each other. Make the soil very firm about the roots, and if dry give a thorough watering. Any spare plants should be pricked in thickly together on any odd piece of ground for early use. White Emperor and White Leviathan are distinct varieties and are among the best for furnishing early supplies, but as both are bad keepers they should not be planted too freely, the Rocca varieties being better for later use.

Shallots.—These should be planted immediately if this work has not already been done; they are perfectly hardy, and the earlier the growth is made in the year the better for the plants. Providing the ground is well enriched each season, Shallots may be allowed to occupy the same site for a number of years together. Soot and farmyard manure should be incorporated freely with the staple.

French Beans.—Little difficulty will now be found in getting a plentiful supply of this favourite vegetable. Plants which are fruiting should be given copious supplies of liquid manure and occasional applications of "Clay's Fertiliser." Maintain a moist atmosphere and thoroughly drench the foliage twice daily with tepid water, and from now onwards do not employ strong fire-heat; an atmospheric temperature ranging from 55° to 65° will be ample. To maintain a continuous supply of this vegetable, sow seeds at intervals of ten days or a fortnight. At this season I prefer to sow Canadian Wonder rather than any other variety. Its vigorous constitution ensures success under forcing conditions.

Turnips.—Seeds may be sown in fine soil on quite mild hot-beds in portable frames near the glass. They resent hard forcing, but excellent young roots may be obtained quite early in May if treated as I describe. Both Early Red and White Milan are excellent varieties; so also is Carter's Forcing, a long-rooted variety possessing much merit and one we have grown for some years past. Matured roots of Turnips in the open ground should be pulled and stored in the coolest place possible (one under the shade of a north wall for choice), or these will soon be growing apace and be of little value if left in the ground. Avoid placing too great a quantity together, or they will develop heat and become useless.

Mushrooms.—Beds which were made up in the open during last autumn should now be yielding good crops. The old material which has been used for covering should be entirely removed and replenished with new. Those beds in the Mushroom house which are in bearing should be damped twice daily, and those which have been in bearing some time may be given a good soaking of farmyard liquid in a warm state. Strictly avoid employing fire-heat after this date unless the weather be exceptionally cold. More Mushrooms are spoiled by excess of fire-heat than from any other cause. Make up other beds at regular intervals.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Larger areas.—As regards still larger areas, intended for the purpose of playing grounds, say, from 1 to 4 acres, there is room for greater variety, and opportunity may be presented for making the place a recreation ground in a wider sense. It must, however, always be borne in mind that the main object is the provision of a playing-space for children not over school age—that is, 14 years. Nowadays, to kick something seems to be the main desire of the majority of town boys, and to provide a space whereon they can exhaust this exuberant energy in the playing of football is to meet one of their chief requirements. Therefore, in planning these grounds, a pretty full share of the available space should be allotted for that game. As cricket is not so popular with boys in the North, we are not so often called upon to cater for that game; still, as a grass sward is more desirable than one devoid of a green blade, in some towns provision is now being made for the youthful cricketer. Space for games suitable for girls has also to be considered, for in such cases the requirements are in favour of conditions more pleasant to the eye. In most towns of any size, examples showing good and bad features are to be seen. A careful study of these will show what to avoid, and this is perhaps of more importance than the imitation of some merely striking feature.

An example.—Though it is not quite up to the highest ideal of what might be accomplished, I may describe one example which has met the requirements of a district more fully than was expected. The site formed part of an exhausted brickfield, is about 4 acres in extent, and was set off as a building plot. On its acquisition, certain restrictions were made as to its use, while the place had to be enclosed by an ornamental iron railing. As the term ornamental is one of those delightfully vague expressions, no difficulty was encountered when a simple but sensible vertical railing of the so-called unclimbable type was erected. Inside the boundary railing is a border of trees and shrubs which act like a frame to a picture, while a strip of grass with a series of simple flower-beds on a circular plot of grass at each corner completes the main border. Then follows a path 8 feet in width, which is bordered by a breadth of grass and a line of trees. The central area is thus nearly a parallelogram with the corners rounded off, and it is bisected by an ordinary field fence. One half is set down with ashes, and its area is surrounded by a fence covered with wire netting, so that the boys when playing football are kept within the area. Goal-posts are prohibited, but the smaller boy has other expedients to mark the goals. This arrangement has proved highly successful. In the case of the other half of the central area, which is laid down with grass, there is a double set of swings and giant strides erected in a square, which is floored with tar macadam. The caretaker's and the general shelter, with conveniences, is built as one block exactly in the centre of the ground, the shelter for boys facing the ashed area, and that for girls the grassy one. Here we have a type which has met with much approval from park and sanitary authorities when investigating municipal establishments. The place in question serves its primary purpose as a playground for children; it also serves as a visiting ground for invalids, and mothers with infants, so that the path round it is well supplied with seats. A source of interest is created by the trees and shrubs and the few simple flowers put in the beds in summer and spring. It adds considerably to the amenities of the locality, and the dwellings overlooking the playground command a higher rental than others in the vicinity.

In the laying out of such places, it is assumed that all the work will be carried out intelligently and on the most approved methods. The only point calling for special remark is the necessity of providing thorough drainage to the spaces allotted for games. In our wet locality, with a retentive clay soil, we have in some places put in 4-inch field drain tiles in lines 6 feet apart, and covered these with rough cinders and ashes; even this is not more than enough to serve the purpose.

THE FLOWER GARDEN.

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

Propagating Dahlias from cuttings.—The old tubers should now be placed in a temperature of 55° in a position near to the glass, and should be lightly covered with soil. An occasional syringing with clear water will induce the formation of sturdy shoots suitable for cuttings. These should be detached with a sharp knife, and be inserted singly in small pots filled with sandy soil. They will soon form roots, after which they should be gradually hardened. If the ground in which Dahlias are intended to be grown has not been already prepared, it should be well dug and freely manured, throwing the soil up roughly with the spade during the process.

Seeds of single Dahlias may now be sown, but their propagation from cuttings is to be preferred.

Abutilons raised from cuttings, inserted about September and that are now well established in 6-inch pots, will furnish fine specimens for planting out about June.

Fuchsias intended for summer-bedding purposes may be trained either as dwarf, bush, or standard plants. They should now be removed from their winter quarters into a warmer structure, and as soon as they break into leaf they should be cut back, have the old soil shaken from their roots, and be re-potted in a mixture of rich sandy loam and leaf-soil.

Seeds.—I am now sowing seeds of certain plants that have produced fine effects in beds and borders from June to November. The chief points to observe are to make the soil in pots, pans, or boxes moderately firm, to sow the seeds thinly, and from the start strive to secure the sturdiest possible growth. A moderately warm greenhouse is the best structure in which to place these seeds, and old soil obtained from the potting bench, sifted well, the most suitable soil. The dwarf, or so-called carpet, varieties should have their shoots pinched early in order to induce a dwarf, spreading habit of growth. Seeds of Antherieum, tall, medium, and dwarf; Browallia elata, Dianthus Heddewigii, and D. sinensis, Petunias, Lobelias, Pyrethrums, Verbenas, Nicotiana Sanderæ and N. sylvestris, and Marguerite Carnations may be sown thinly, each in quantity sufficient to make a feature when seen at a distance.

Carnations.—When these plants are employed in beds or borders in the grounds, the soil should be well prepared now, or, if this was done earlier, it should receive a dressing of wood-ashes, lime, rubble, and fresh soot, and be dug over with a fork before any planting is begun. Carnations Raby Castle and Duchess of Fife are free-flowering varieties of pleasing colour, strong in constitution and growth, and are excellent for beds or borders. Let the beds, &c., be formed well above the general ground level, when such varieties as the old Crimson Clove and Gloire de Nancy have to be wintered in the open air. Carnations that were planted out during the past autumn months in sheltered positions for early flowering should have the beds cleaned, the ground afforded a light dressing of fresh soot, and the surface pricked up; when dry, the soil should be made moderately firm about each plant.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as parcels of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY—
Compact Freehold Property, Highlands Nursery, Old Shoreham Road, Portslade, at The Mart, Tokenhouse Yard, E.C., by Protheroe & Morris, at 2.

MONDAY AND THURSDAY—
Herbaceous Plants and Bulbs, Lilinms, Azaleas, Ferns, &c., at 12; 1,000 Roses at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

WEDNESDAY—
Perennials, Hardy Bulbs, Lilies, Gladiolus, Begonias, &c., at 12; 3,600 Roses, also Fruit Trees, at 1.30; Azaleas, Palms, Plants, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY AND THURSDAY—
Unreserved sale of the whole collection of 9,000 Orchids, by order of Messrs. Hooley Bros., at Littleme Park, Southampton, by Protheroe & Morris, at 1.

FRIDAY—
Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12 45.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 40°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, February 19* (6 P.M.): Max. 53°; Min 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, February 20* (10 A.M.): Bar. 29·9; Temp. 51°; *Weather*—Overcast.
PROVINCES.—*Wednesday, February 19* (6 P.M.): Max. 51° Cornwall; Min. 43° Hull.

Larch Blister.

It is seldom an easy task to unravel the complex chain of causes that together are responsible for the existence of an epidemic disease, and the correspondence which has recently appeared in our columns clearly shows that the scourge of the Larch plantations in Britain is no exception to this rule. We have always to distinguish between the immediate and the contributory causes, and it is only when the nature of the latter comes to be understood that we can hope to grapple with the pest with much hope of ultimate success.

The organism that produces the Larch blister or canker was originally recognised by Willkomm, but the full history of Dasyscypha calycina, the fungus concerned, was first described by R. Hartig, who came to the following conclusions. The fungus can infect only through wounds. The infecting spores are produced in saucer-like fructifications which develop solely in damp air. The fungus attacks the living bark (including the bast) and cambium, and even penetrates the wood; but its advance is checked during summer when the intact bark-tissue is separated from the diseased cells by a specially manufactured layer of cork, while in autumn and winter the fungus evades the intervening cork and advances into healthy tissue. Hartig thus concluded that damp air and wounds are essential to the spread of the disease. As sources of injury he mentioned physical agencies and insects.

Mr. Massee suggested that species of Chermes were largely responsible for the wounds, and he succeeded in artificially infecting a Larch through such a wound. This mycologist's view was independently reached by Mr. Burdon, who worked as an entomologist. Mr. Carruthers was the only other British naturalist who communicated new ideas or facts, and he stated that infection could take place through unwounded organs.

We may take it as most probable that infection is accomplished mainly, if not exclusively, through wounds. But in discussing the evidence for and against Mr. Massee's view as to the part played by Chermes, it is necessary to take into consideration the conditions determining infection of a plant by a fungus.

In many, and probably in all, cases there is a struggle between a parasitic fungus and the host-plant that it attacks. On the one hand the fungus absorbs food from the host, pours forth ferments that dissolve the walls of the host's cells, and often, if not always, excretes poisons (toxins) that tend to paralyse the living protoplasm of the cells reached. On the other hand the host-cells often respond by efforts to shut off the fungus by ensheathing the fungal threads and its own walls with thicker cell-walls, or, as in the Larch, by producing obstructive layers of cork in the deeper intact cells; and the host-cell may employ chemical means of barring the progress of the parasite, by excreting various bodies noxious to the fungus and even paralysing its poisons.

It is therefore evident that the result of the struggle between the Larch and Dasyscypha will be decided by the relative strengths of the defence and attack. This in turn will be dependent upon the vigour of the individual Larch and the virulence of the individual Dasyscypha. Thus the constitution of the particular tree will partly decide the result, as is suggested by several of our correspondents. Furthermore, the prevailing external conditions may play a decisive part by favouring one combatant at the expense of the other. The high temperature during summer may give the tree the mastery and cause the quiescence of Dasyscypha, which wakes up when autumn and winter lull the Larch to rest; or it may be that these effects are due to other causes.

Now, in considering possible relations between the attacks by Chermes and Dasyscypha, it is necessary to distinguish three stages in the fungus attack: first, the arrival of the infecting spore; secondly, the initial infection; and, thirdly, the spread of the fungus within the Larch, all three of which may be determined by different sets of conditions. In general, attacks on trees committed by insects and fungi respectively are favoured by opposite conditions of humidity. Dry weather (and climate) favours the insect and is hostile to the parasitic fungus; dampness has the reverse effect. In this particular case dry weather, by preventing the manufacture or opening of the infectious fructifications, might give the Larch ample time to heal wounds made by Chermes. For this and other reasons, then, it would be quite possible for an abnormal attack by Chermes to take place in a dry season without any succeeding large attack by Dasyscypha, even if the fungus gained entrance only by wounds made by Chermes. This hypothetical case alone shows that arguments against Mr. Massee's view based upon lack of proportion between Chermes and Dasyscypha attacks lose much of their force. But, even supposing that after the heavy attack by Chermes the spores did gain entrance through some of the numerous wounds thus made, the vigour of the defence by the Larch might prevent proper infection, or might limit the growth of the fungus. Such cases of limited and localised infections are known to occur, for vigorous trees, though infected, may show no blister, and the emerging fructifications are the first obvious sign that the tree is diseased. Moreover, we have often seen Dasyscypha thriving on fallen twigs, so that it may at times be almost or entirely confined to the dead part or, at most, to the first infected living part of the bark of a living Larch. Such cases of incomplete attack might escape the eye of any but a specialist, and give rise to the possibly false impression that under circumstances apparently favourable to infection by the fungus, no such infection has followed a severe attack by Chermes.

On the other hand, as Sir Herbert Maxwell points out, even if there were a proportion between the attacks by Chermes and Dasyscypha, the two attacks may be the result of a common cause, namely, previous weakness of the Larch. Yet it may be replied that if in such paired attacks, the one by Chermes invariably preceded that by Dasyscypha, we should be justified in attributing the latter infestation, at least provisionally, to the former.

Though the evidence in favour of the view that Chermes is mainly responsible for the spread of Dasyscypha cannot perhaps be regarded as fully established, yet the view has considerable probability in its favour, and that probability has not been lessened by the discussion in our columns. The problem is one that deserves full investigation; indeed, the whole question of Larch blister requires investigation in this country, for the conditions under which it is rife or absent do not, in Great Britain, seem to accord with the conclusions reached by Hartig and the German foresters.

OUR SUPPLEMENTARY ILLUSTRATION.—Considering their somewhat stiff habit of growth it is surprising how effective, by careful arrangement, the various succulent plants may be made for summer bedding. As in Regent's Park (see Supplementary Illustration), a mound cut up by depressions for various depths will be found the most suitable place on which to display a collection of these plants. The larger-growing Agaves, Aloes, Echinocactus, and Yuccas occupy the higher and more prominent positions, the lower grounds being planted with Opuntias, Cereus, Echeveria, Crassula, and Cotyledon. A finishing touch is given by the judicious use of such carpeting plants as the Arenaria, Sedum, Herniaria, Sempervivum, and Antennaria. In arranging a bed of this kind the greatest care is necessary in order to avoid stiffness and formality; by adopting the mound system of planting and employing suitable carpeting plants a decidedly natural and pleasing effect may be brought about. It may be of interest to state that in the bed at Regent's Park of which an illustration is given, about 90 species and varieties of succulents are used, the total number of plants in all being 7,650. The other picture in the illustration affords a view of a large flat bed at Hampton Court, and planted with a miscellaneous collection of low-growing species, relieved with occasional "dot" plants.

ROYAL HORTICULTURAL SOCIETY.—The fortnightly exhibition of flowers and fruit will be held at Vincent Square, Westminster, on Tuesday, March 3. At the afternoon meeting of the Fellows a lecture on "Bulbous Plants in New Zealand" will be delivered by Mr. E. WHITE.

———An examination in elementary horticulture for lads and young men under 19 years of age will be held under the auspices of the Royal Horticultural Society on Wednesday, March 25, in as many different centres in Great Britain and Ireland as circumstances may demand. The general conduct of this examination will be on similar lines to that of the more general examination. Intending candidates may obtain a copy of the syllabus from the secretary, Royal Horticultural Society, Vincent Square, London, S.W.

SURVEYORS' INSTITUTION.—The next ordinary general meeting of this society will be held on Monday, February 24, 1908, when a paper on "The Small Holdings and Allotments Act, 1907," will be read by Mr. W. G. S. ROLLESTON. The chair will be taken at 8 o'clock. The annual dinner of the institution will take place on Wednesday, February 26, 1908, at 7 p.m., at the Whitehall Rooms, Hotel Metropole.

NATIONAL CHRYSANTHEMUM SOCIETY. The fourth annual dinner inaugurated by this society in conjunction with their exhibition of market varieties of Chrysanthemums will be held at Lyons' Café, 200, Piccadilly, W., on Monday, February 24, at 7 p.m. The chair will be occupied by Mr. R. BALLANTINE.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We warmly congratulate the authorities of this charitable institution, and gardeners generally, on the legacy of £3,000 bequeathed to the institution by the late Mrs. JOHN RYLANDS, who has left a sum of £473,000 to public institutions and charities. The interest on £3,000, even at 2¾ per cent., is sufficient to maintain four male pensioners in perpetuity.

THE GERMAN DAHLIA SOCIETY.—This society has celebrated its 10th anniversary by bringing together in a dainty *brochure* the principal events that have happened in connection with it since its foundation in 1897. Shows have been held every year, and it is pleasant to be able to congratulate the society on its success, for only in one year did the budget show a deficit. The membership has steadily increased from 80 in 1898 to 131 in 1907. A good feature of the report is the inclusion by name of all the varieties of Dahlia raised by German growers. We heartily wish the society continued prosperity.

LEGACY TO A GARDENER.—It is reported that Lord BATTERSEA, who died in November last, bequeathed £100 to his gardener, a similar sum to his butler, and a life annuity of £60 to his valet, and one year's wages to each servant in his employ.

EFFECTS OF FOG ABROAD.—We often hear complaints of the evil effects of urban fog on the vegetation that exists in and around our great centres of population; but we do not suffer alone. According to a writer in *La Tribune Horticole*, the dense fogs that have prevailed in Belgium have done an immense amount of damage to plants under glass. Brussels has suffered badly, and the buds of Cattleya, Lælia, Dendrobium, and other Orchids have shrivelled without opening; whilst the forced Lilacs shed their blossoms in showers while being cut for the market.

CHEMICAL FIXATION OF NITROGEN.—The question of the utilisation of the atmospheric nitrogen is one of overwhelming importance, not only to those engaged in horticulture and agriculture, but to the whole human race. It is known, of course, that certain lowly plants working under suitable conditions can perform this task, and there have been various other methods that have been invented by chemists for the same object. The best known of these is perhaps the electrical one, utilising the energy of waterfalls for the purpose. But the upkeep of the plant is apparently so heavy as to make the method anything but certain from a commercial point of view. It is with interest therefore that we learn of another way of oxidizing the nitrogen by means of steam and heated coke. The details of the process are not yet made public, but the results look hopeful, both on the score of cheapness and practicability.

THE LATE JOHN BOOTH.—We are informed that Herr JOHN BOOTH, whose death was recorded in our last issue at his country seat near Berlin, came of a Scotch family, his grandfather, JAMES BOOTH, having emigrated in 1798 from Scotland to a village near Hamburg, where he founded the well-known nurseries, which were kept up through three generations till 1884. JOHN BOOTH, after having given up his business, moved to Berlin and devoted himself entirely to a work already begun by his father, namely, the introduction of valuable exotic trees from North America into the German forests. Foremost among them was the Douglas Fir, on which he had published his first book in 1877. He gained powerful support from Prince BISMARCK, who raised large plantations of Douglas Fir in his forest at Friedrichsruhe. In 1896 JOHN BOOTH published his second book on the North American Trees and their Adversaries, and in 1903 a further work on the Introduction of Foreign Trees to the Prussian Forests under Bismarck. That the Douglas Fir now holds a prominent place among German forest trees is largely due in the first instance to the activity of JOHN BOOTH.

THE PARIS FLOWER TRADE.—The flower trade of Paris is one of the largest of its kind in the world, owing to the wealth of floral decoration employed by its citizens. According to a writer in our contemporary, *Le Jardin*, more than 200,000 flowering plants daily arrive at the City Market, and this is exclusive of the enormous supplies of cut flowers. The plants are grown partly on the outskirts of Paris itself, and partly in the surrounding country districts. Some 200 growers, who altogether occupy about 150 hectares (370 acres) of ground, of which one-third is under glass, send the whole of their produce, to the annual value of about 5,000,000 francs, into the city. This is exclusive of the forced Lilacs from Vitry, and the Roses from La Brie, which account for another million and a half francs. Other towns contribute cut flowers to about the same value. In addition, some 30,000,000 plants in pots are annually received from these sources, besides the large quantities of Camellias, Roses, Azaleas, &c., which arrive from more remote districts. An immense number of bulbs, Orchids, and other exotics are also imported from foreign countries, swelling the large amount already indicated to a truly huge total.

LETTERS FROM CHINA.—Professor SARGENT has again kindly favoured us with extracts from a letter received from Mr. E. H. WILSON. It is dated December 12, 1907. "Among the more interesting of the last seeds sent are those of two Catalpas (fruit 2½ feet long), a new Pterocarya in addition to P. hupehensis and P. Paliurus, a new Cedrela, two new Celtises, the hairy Davidia, the Tulip-tree, a Walnut with a spinescent endocarp, Cercis racemosa, a Beech, many Maples, Roses, Euonymus, Celastrus, Oak, Chestnut, &c. The Oaks and two-leaved Pines will yet turn me gray, and I'll leave them aside for the moment. The Chestnuts (sweet) are very interesting. I have all forms from the shrub 1½ to 3 feet, with its tiny nuts, to trees 50 feet high. One form which evidently produces a single acorn-like nut of excellent flavour is perhaps the finest of all. That all the Chestnuts hereabout are mere forms of one species is difficult to believe. Considering how largely I collected here in 1900-1901 for Messrs. VEITCH, I am astonished at the results to date. As illustrating this I may cite Vitis. I know not how many kinds I sent Messrs. VEITCH, yet this year I have eight to ten species I never met with before. As a set-off against this it must be mentioned that I have failed to rediscover many plants, but by a remarkable coincidence nearly all of these are already in cultivation with Messrs. VEITCH. Heretofore I have assumed the large Abies on the mountains north of Ichang to be the same as the one in the far west. In this I was wrong. The Hupeh species has light brown or gray-coloured cones, the western species dark violet-purple cones. I have only been able to secure about 50 good cones and a rather small quantity of seed. There are many thousands of trees, but cones are very scarce this year. However, in 1901 I failed to secure a single cone or seed. Dr. HENRY, too, failed in the same respect, though, I believe, Père FARGES succeeded. The herbarium collection is much finer than anything I have got together before, being replete with fruit, seeds and barks. The collection of barks I find of great interest, and I believe will prove of systematic value especially in variable and composite species. For example, many of the forms of Quercus variabilis are readily distinguishable by the bark alone. One of the finest forms of this species has a magnificent corky bark over 1 inch thick."

NITROGEN FOR PLANT GROWTH.

THE question of the plant's supply of nitrogen is one of the most interesting of the plant-food problems of the day, and is possibly the least understood. A large proportion of the fabric of all plants consists of nitrogenous material, and this portion of its structure is of fundamental importance to its well-being.

Further, it is upon the nitrogenous matter of plants that animals depend for the proteid material—blood, flesh, &c.—since animals can only utilise for this purpose nitrogenous material already elaborated in the tissues of plants or in the bodies of other animals.

SOURCES OF NITROGEN.

Plants may absorb their nitrogenous food in two ways, either by means of their leaves from the free nitrogen of the air, or from the ammonia gas or the nitric acid, by means of their roots, from the stores within the soil.

With regard to the first of these, the absorption of free nitrogen by means of the leaf, the question cannot, perhaps, be said to be definitely settled even yet, though the general trend of scientific opinion is to the effect that no such absorption and direct utilisation by the green plant takes place.

With regard to the second of these problems, the assimilation of plant-food from the soil, it is known that plants obtain their nitrogen almost entirely in the form of nitrates dissolved in the water of the soil. These nitrates, as they are formed by the soil-germs, combine either with lime to make nitrate of lime, or with potash to make nitrate of potash, when they become easily

available plant-foods, and can be taken up by plant-roots as required.

Soda, to some extent, may take the place of potash or lime. The Rothamsted experiments show that when nitrate of soda is used as the source of nitrogen supply, an application of potash is not always necessary, but when sulphate of ammonia is used as the source of nitrogen supply, then potash must also be applied, and at frequent intervals a dressing of lime also.

FORMATION OF NITRATES IN THE SOIL.

It has long been known that the addition to a sterile soil of a quantity of a more fertile one rendered the sterile soil fertile and productive; and the operation of top-dressing poor soils in this manner has been practised for ages.

Science reveals to us the fact that this increase in fertility is accompanied by an increase in the quantity of nitrates in the soil, and that this is brought about through the agency of the soil-germs or bacteria.

Professor E. Henry (see *Trans. Sac.*, 1898) found that decaying leaves of forest trees, such as Oak or Beech, possess the power of fixing the free nitrogen of the air in considerable quantities. The fallen foliage on the surface of the ground in an oak forest was found to have accumulated about 11½ lbs. of nitrogen per acre, and in the case of Beech tree leaves 19¾ lbs. of nitrogen per acre was annually accumulated.

This enriching of the soil in nitrogenous material or nitrates is due to the effect of the living organisms of the soil working upon the decaying leaves which supply the carbohydrates necessary to enable them to absorb and utilise the free-nitrogen of the air.

Manures such as dried blood, farmyard and stable manure, seaweed, &c., owe their great value as plant-food to the fact that their nitrogen is converted into soluble nitrates through the agency of the soil-germs.

These ceaseless workers attack the humus matter which is derived from the vegetable and animal remains left in the ground. They attack all manures applied to the soil, and their combined efforts result in the purification of soil and air, and in the manufacture of suitable plant-food

It is also bacterial germs, in all manner of shapes and groupings of individuals, that attach themselves to the roots of the leguminous family Clovers, Beans, Peas, Lucerne, &c.—and by their work at the roots take the free nitrogen of the air which exists in the interstices of the soil and convert it into nitric acid.

We know now with practical certainty that nitric acid, and, therefore, nitrates cannot be formed in the soil without the work of bacteria germs, and it may be—for our present knowledge and reasoning of the subject seems to point in that direction—that we shall find that every process in nature in the breaking down and in the building up of plant-food; in fact, that all the varied processes that are taking place in the soil for the growth of crops are brought about by the agency of these living organisms which are continually at work. The soil is both a store-house of plant-food and a laboratory in which that food is manufactured into such a form that crops can use it.

The soil may be ever so rich in the raw material necessary for conversion into plant food, but if the little chemical manufacturers be not present in sufficient numbers, or be weak in vigour, through lack of pure air, potash, or lime, there will not be a sufficient store of finished food products awaiting the searching root-fibrils of the growing crops.

THE NEED OF AIR AND MOISTURE.

A gardener cannot control the amount of sunlight and rain that falls on his land; but, by his horticultural methods, he can do a great deal to atone for the deficiencies of climate.

Thorough and skilful cultivation will, in a cold season, help to preserve the warmth in the soil, and in a hot season it will help to check the too rapid evaporation of the small amount of moisture that there may be in the soil during such periods.

Thorough cultivation will also enable the surface air and moisture, warmed by the heat of the sun, to penetrate around the soil particles, and it will enable the roots of the plants with greater ease to penetrate and take up the plant-food which has been made soluble by the soil-germs. *J. J. Willis, Harpenden.*

FIG. 49.—PEAR BLICKLING; A LATE VARIETY OF FIRST-CLASS QUALITY.

(For text see page 123)

PEAR BLICKLING.

THE varieties of late Pears of first-class quality are not numerous, and any addition that helps to prolong the season when these valuable fruits are available must be welcomed, and especially when, as in the case of the variety under notice, it combines the very highest excellence of flavour with late keeping. In January of last year Mr. Allan, of Gunton Park Gardens, submitted to the Fruit Committee of the Royal Horticultural Society a Pear which he had discovered growing in the gardens at Blickling Hall. This pear no one appeared to know by name. The Committee recognised in the fruits a new variety of high merit, and, after naming it Blickling, they unanimously conferred upon it an Award of Merit. We are indebted to Mr. Allan for the opportunity of figuring this new Pear, which has been aptly described as a late Doyenné du Comice, for it is of delicious flavour. Mr. Allan is of opinion that it is quite the best-flavoured Pear in season in January, and when at its best equals Doyenné du Comice in both flavour and other good qualities.

NOTES FROM A FRENCH GARDEN.

THE preparation of the hot-beds for frames and lights is nearly finished, and the first beds were started on January 15; breakfast Radishes and forcing Carrots were sown first, and Cabbage Lettuces (Little Black Gotte) were planted a few days later; all are now growing nicely. The Radishes already show the first leaf, and in many cases will be ready in the course of 10 or 12 days. The first Carrots (Little French) are just showing the seed leaves. The small Lettuces, which were sown on October 1, and pricked off a few days later under the bell glasses or cloches, when just big enough to be handled, have done well here this winter, as we have had no fog. Now in the damp hot-beds they have formed a little heart, and we are much pleased with them. This week we have had to look through the beds to remove the oldest leaves from the Lettuces, as the ground must always be kept very clean.

The weather has been so mild that the Radishes have become drawn, but we cannot admit air, as this would be prejudicial to the Lettuces.

We have sown our first batch of Melons, an improved strain of the Cantaloup Fond Blanc de Paris. The seeds were sown in small trays just as Cucumbers are sown, and they germinate in the Cucumber house as this saves making up a hot-bed. We shall pot them up into 60-size pots when big enough, using very good loam, and when they have become nicely rooted they will be put in a hot manure bed prepared a few days beforehand.

On February 12 we started the hot-beds for Cos Lettuce Green Paris; these were sown and grown like the Cabbage Lettuces until the middle of November, when they were given more room by transplanting.

We grow one Cos Lettuce under each cloche or bell glass, and three Cabbage Lettuces (Little Black Gotte) in the first batch only; they are set in a triangle round the Cos.

There are three rows of cloches per bed, 42 in each row, set alternately in the rows.

We plant nine rows of Cos Lettuces, the cloches covering the plants in the 2nd, the 5th, and the 8th row respectively. When this first batch is marketed at the beginning of April we shall plant Cauliflowers "Briancourt" in the place of the Cos Lettuces, and cover with the cloches the 1st, the 4th, and the 7th row of plants, which are by then half-grown. When they are ready to cut we shall shift the cloches on to the 3rd, the 6th, and the 9th row, and by the middle of May this third batch will be cleared, leaving the necessary space for the Cauliflowers. *P. A., Mayland, Essex, February 14.*

LAW NOTE.

RAILWAY RATES.

MR. JUSTICE A. T. LAWRENCE, the Hon. A. E. Gathorne-Hardy, and Sir James Woodhouse—the Railway and Canal Commission—on the 4th inst. heard an application by the Mutual Transport Co., of Guernsey, which was formed for the purpose of conveying fruit produce to the mainland, and by Mr. W. Entwisle, a Guernsey fruit grower, for a through rate between Newhaven and London, Birmingham, Manchester, and Leeds. They alleged that, by the present rates charged for the carriage of fruit, the French grower who sent his fruit to the same market via Dieppe and Newhaven was unduly preferred and the Guernsey grower unduly prejudiced. The defendant railway companies—the London, Brighton and South Coast, and the London and North-Western—denied that there was any undue preference or prejudice. The case was argued in November last, and then came up for judgment on the 4th inst.

Mr. Justice A. T. Lawrence, in delivering judgment, said there were two items complained by the applicants—first, the charge made for the conveyance of French Tomatos from Dieppe to Newhaven, and, secondly, the land carriage from Newhaven, it being alleged that the difference was 7s. 4d. per ton from Newhaven to Birmingham in favour of the foreign produce. As to the first point, it resolved itself into a complaint that the freight charged for French produce by steam vessels belonging to the Great Western Railway of France, but in which the London, Brighton and South Coast had some interest was too low, but the arrangement had been in existence for 40 years, and had been found to work satisfactorily, and he could not see that, in this matter, there was any undue preference of the foreign produce. As to the land carriage, the difference of charge was admitted by the defendants, but they said it was due to the difference in the system of packing adopted respectively by the French growers and the Guernsey growers. The French packed their fruit in cases, and the Guernsey growers packed theirs in baskets with cross handles, and larger at the top than the bottom, the result being that double the weight of French fruit could be got into a railway truck as compared with the Guernsey produce. If, said the defendants, the Guernsey growers would pack their fruit in cases, like the French, they would carry it at the same rate. Under all the circumstances, he found it impossible to hold that any undue preference of the French grower, or any undue prejudice to the Guernsey grower, had been proved. The other Commissioners concurred, and the application was accordingly dismissed.

HOME CORRESPONDENCE.

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

A SUSSEX WASTE.—I am surprised that anyone can be found in this democratic age to openly advocate the enclosure of common land. However badly the land is used or not used at the present time, to take it away from its present owners would be nothing short of robbery. I am glad to hear that the commoners are active in defending their rights, although their methods may be rough; possibly if they had the means they would be more polite and go to law, but, being poor men, they must be content with primitive methods. Acting on the principle, "Unto him that hath to him shall be given, and from him that hath not shall be taken away even that which he hath," the rulers of our country have sanctioned numerous Enclosure Acts, with the result that the land has gradually been filched from the commoners, whose living it was, to be added to large estates. It is true that compensation was given in most cases, but only the one generation of commoners got it; and their descendants, who had as much right to the land as their predecessors, found themselves bereft of their ground and left with nothing to show for it. Even when the commoner had a little piece of land given to him by way of compensation, it was soon sold and lost to posterity. Because the commoner is too poor to bring his land into cultivation is no reason why it should be taken away from him; rather he should be helped to make a start on it. If land is running to waste, and no one who has the right can or will cultivate it, then the only fair thing to do would be for it to fall to the State. The State, in such a case, could enclose it and do one of two things with it. If the land were only fit for afforestation, the State could plant it and divide it up, giving the commoners the first chance of taking over the improved portions at a low rental to recoup the State for its work. If the land were fit for agricultural operations, the State could put it into working order and proceed as with the afforested land. In this way the commoner would get the full benefit of his rights, and would be unable to sell his allotment. His descendants would again get first choice, and in the event of their not caring to take the land or there not being any legal descendants, the land would go to anyone who cared to become the State's tenant, on condition that the cultivation was carried on. This condition would be necessary to prevent the land being gradually allowed to run wild for sporting purposes. This may be a Utopian idea; but we can give a Land Purchase Bill to Ireland, why not assist our own people for a change? I think, if Mr. Simpson had a horse and cart given to him in order to assist him to live, and happened to become too poor to keep his cart well painted and cleaned and the horse well fed, he would think it very unjust if some rich neighbour stepped in and took it away from him, because he could keep it up better and prevent its becoming an eyesore to the public. Yet this is a parallel argument to his. Before people recommend the enclosure of common land, let them consider the significant fact that our Poor Laws date from the first Enclosure Act. *Wilfrid M. Bear.*

CALCEOLARIA PINNATA.—I was much interested to read, in the article on "Calceolarias," p. 88, by Mr. J. Douglas, of the appearance of C. pinnata in a Surrey garden. This species appeared in these gardens in a part of a rock-garden devoted to Orchis in the same year and in the same strange manner as Mr. Douglas describes. The bed had been made from loam cut on the estate and peat from moors situated a few miles away, so that the seed could not have been introduced in the new soil. No seeds of any kind were sown, nor were any new plants placed within several feet of the spot where they appeared. Calceolaria pinnata, as far as I can learn, has never been seen in this district before. *F. C. Puddle, Scampston Hall Gardens, Rillington, York.*

R.H.S. MEETINGS AND BANK HOLIDAYS.—The very reasonable request made by Mr. W. Cuthbertson at the recent annual meeting of the Royal Horticultural Society for greater consideration being shown to those trade and garden workers who, because meetings have followed close on Bank Holidays, were perforce kept at work on those days, instead of getting a holiday like the rest of their fellows, merits kindly consideration. The excuse made for holding meetings on the Tuesdays succeeding Bank Holidays was that, as the meetings had to be fortnightly, such an arrangement could not be avoided. But the fortnightly rule has exceptions, for instance, the present interval between the last and next meeting is three weeks. By that longer interval there will be no meeting on Easter Tuesday, but there will be meetings on Whit Tuesday and the day following August Bank Holiday. This last might easily have been avoided, and no one would have complained had there been an interval of three weeks between the shows at that season. It would also have avoided holding a meeting in the great Shrewsbury show week, another matter worthy of consideration. *F.R.H.S.*

WHAT IS AN HERBACEOUS PLANT?—The interesting discussion of this subject shows how difficult it will be for persons concerned with the management of exhibitions to come to a common agreement upon the question, and the need is pressing for some definite rule on the subject to be adopted by all societies and judges. The difficulty has often impressed itself upon me, not only when judging, but when visiting flower shows as a spectator. I can recall one instance in which a judge passed over a good stand in a class for "hardy herbaceous flowers" because it contained two Lilies. I do not think he was justified in doing this. In another case, where shrubs were excluded, a prize was given to a stand which included a shrubby Hypericum. The exhibitor, on being taxed with this privately, said: "Oh, it's only a sub-shrub!" So far as I have observed, the best solution of the wording suitable for a schedule has been "Hardy border flowers—shrubs and annuals excluded." This, however, as will be seen from the circumstance just noted, is far from being a perfect wording. I have seen a bunch of Dimorphanthus mandshuricus shown in such a class, and the stand received a second prize, the judge probably being unaware of the nature of the flower. A class for "Hardy border flowers—shrubs and annuals excluded" admits biennials, and some difficulties arise here. Is an Antirrhinum grown as a biennial to be admitted or excluded? At an autumn show is the same flower, treated as an annual, to be allowed? Strictly speaking, an Antirrhinum is a perennial, but it is not so everywhere. Many other instances of difficulties have been quoted, such as Phygelius capensis, which with me is a shrub, but in some other persons' gardens is an herbaceous plant. It is, of course, easy to offer destructive criticism of the present methods of judging and the present wording of schedules, but when constructive work in the way of offering suggestions for an improvement upon the present method or want of method is considered, many difficulties are met with. A possible basis of agreement might be arranged by requiring "Hardy border flowers—shrubs, trees, and annuals excluded,' leaving some responsible body like the Royal Horticultural Society to take up the interpretation of the latter proviso, and to issue a short list of the nature of an *index expurgatorius*, ruling out certain things occasionally shown as coming under the schedules, but which are, strictly speaking, either shrubs or not hardy. The difficulty of drawing up such a list is certainly great, but, after all, I do not think that it is much greater than the "too much alike" lists in, say, fruits, Sweet Peas, or other plants. It might be limited to the subjects which present much difficulty, such, for example, as the Phygelius. Such a list would probably be accepted by the leading provincial and other societies, and would serve a most useful purpose. The question of hardiness might be solved in a similar manner, taking as a basis the plants hardy under average conditions in the United Kingdom, and issuing a list of those which are on the border line only. *S. Arnott.*

PARSLEY IN WINTER.—This simple herb sometimes gives the gardener more trouble and anxiety than any other crop. It was my lot for over 20 years to provide a more or less supply daily without intermission. Like most gardeners, I planted some in frames annually, mainly in order that it might still be available in snowy weather. When the supply ran short in spring, we have tided matters over more than once by keeping the lights closed and applying a lining of fermenting materials. Having some spare lights 10 feet long, these were put over a breadth of Parsley on a south border. The lights were laid on pieces of quartering resting on bricks sufficiently high to clear the Parsley. The lights were put on early in the autumn to throw off the rain, for in this district Parsley and many other plants seem to suffer more from a heavy rainfall on retentive soil and from an excess of atmospheric moisture than from frost, which is often more severe in the Midlands and even further south. The Parsley will sometimes die off in frames at any rate, it has done so with me. This may be perhaps for want of sufficient ventilation, but I never lost any under such a covering as I have described. *W. P. R., Preston.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 11.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the Chair); Rev. W. Wilks, Dr. M. C. Cooke, Dr. A. B. Rendle, Prof. G. S. Boulger, F. D. Godman, W. B. Hemsley, H. T. Güssow, W. C. Worsdell, A. W. Sutton, W. Hales, L. H. de B. Crawshay, G. S. Saunders, H. J. Elwes, J. T. Bennett-Poë, C. T. Druery, G. Gordon, W. Cuthbertson, J. Douglas, and F. J. Chittenden (secretary).

Red Currant twigs twisted.—Mr. H. T. Güssow showed shoots of Red Currant twisted and curled at the tips, arising from the confinement of the young growths under nets.

Microloma linearе.—Mr. J. O'BRIEN sent specimens of this uncommon Asclepiad, showing how it climbs over bushes in its native home in South Africa. The plant was figured some time ago, but is very rare in cultivation.

Bigeneric Orchid hybrid.—Sir JEREMIAH COLMAN showed a hybrid raised between Diacrium bicornutum and Cattleya intermedia alba (see fig. 45, p. 114). The colour of the Diacrium had been almost entirely lost except for a tinge of sulphur in the labellum. The parent species are usually regarded as being widely separated in natural relationship, but a hybrid between D. bicornutum and Lælia cinnabarina was awarded a Botanical Certificate on March 14, 1905.

Nomenclature of hybrid Orchids, &c.—Some discussion took place with regard to the naming of hybrids between species assigned to two or more genera. The general opinion was that such hybrids should, when raised between plants belonging to two different genera, have the names of both genera indicated; but where the progeny was the result of crossing a bigeneric hybrid with a plant of another genus altogether, a purely conventional name should be assigned, preferably with a distinctive termination. The further discussion of the matter was adjourned to another meeting.

Diseased Sweet Williams.—Lady HOPKINS, of Romsey, sent Sweet Williams in a dying condition, with pale brown spots upon their leaves, which were due to the attacks of the fungus Puccinia dianthi. This fungus frequently proves fatal to the Sweet William, and the infection is said to be carried in the seed, so that whole batches are killed. The particular variety in the present case was "Pink Beauty," and the present is the second year in which the trouble has occurred, though in different spots in the same garden.

Insects on Oleander, &c.—Mr. G. S. SAUNDERS reported that he had examined the insects found upon various plants in a greenhouse, and sent by Mr. STANTON BROWN, A.R.H.S. They belonged to the family Psocideæ, and were specimens of the uncommon species Cæcilius Dali. This species is not known as plant pests, but are said to feed upon fungoid matter of various kinds, mould on palings, and rust fungi on leaves, &c. They are most frequent upon the bark of trees.

ROYAL GARDENERS' ORPHAN FUND.

ANNUAL MEETING AND ELECTION OF CANDIDATES.

FEBRUARY 14.—The 21st annual meeting was held at Simpson's, Strand, on the above date, Mr. Henry B. May, Chairman of the Committee, presiding. The attendance of subscribers was rather below the usual number, due doubtless to the fact that the Fund is so admirably controlled by the Committee, so that no loophole for adverse criticism seems open.

After the minutes of the previous annual meeting had been read, the Chairman suggested that the Report of the Executive Committee for 1907, with the balance-sheet, printed copies of which were in the hands of all present, should be taken as read.

REPORT OF THE EXECUTIVE COMMITTEE.

In presenting their Twentieth Annual Report, which practically brings the official record of the operations of the Fund since its establishment up to its twenty-first birthday, the Committee most heartily congratulates all past and present supporters on another year of steady progress and increasing prosperity and usefulness, and on a record of good work accomplished during the twenty years of the existence of the Fund, such as none could have anticipated, who, in the early months of 1887, took part in laying its foundation.

At the end of the first year a very modest start was made with the election of eight candidates at a cost of £139 15s. At the end of 1907, the number of children in receipt of the full allowance, granted after election, was 95, while nineteen others were receiving much-needed financial assistance while waiting for advancement to the full pay list, the total amount distributed during the year being £1,511 10s., or £100 more than the previous year's total. At the commencement of 1907, there were 95 children receiving the full allowance, and nineteen were added to the list at the Annual Meeting in February, bringing up the total number of orphans elected during the twenty years to two hundred and thirty-six, while the total sum expended in allowances and grants in aid during the same period amounted to no less a sum than £17,884 12s. 6d. The total amount of the receipts from all sources up to the end of 1907 is £20,884, to which, besides providing the large sum distributed in accordance with the objects for which the Fund was established, has enabled the Committee to provide a Reserve Fund of over £11,000, all well invested, and the dividends accruing from which more than provide for all necessary working expenses.

As regards the accounts of the past year, which show an increase in receipts over 1906 amounting to £69 18s. 10d., an increase of £100 in the children's allowances, an addition of £120 16s. 11d. to the amount invested in Consols, an addition of £50 to the Deposit Account, and a larger sum carried forward; the Committee have again to deplore the one weak spot, *i.e.*, the

CASH STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1907.

RECEIPTS.

	£ s. d.	£ s. d.
To Subscriptions General ...	309 17 2	
" " Local Secretaries	68 11 6	
		378 8 8
" Donations General	257 2 0	
" " Local Secretaries ...	17 10 2	
		274 12 2
" Subscription List at Annual Dinner	1,004 19 7	
Less Expenses	189 19 9	
		814 19 10
" Legacies Mr. Hugh Aton ...	10 0 0	
" " Mr. E. Poole ...	63 0 0	
		73 0 0
" Advertisements in List of Subscribers ...		28 18 6
" Dividends on Stock and Interest on Deposit		359 8 9
" Income Tax returned		5 7 3
" Miscellaneous Receipts		11 15 0
		1,046 10 2
" Balance from last Account		771 19 8
		£2,718 9 10

NOTE INVESTMENTS

3 per cent. London and County Consolidated Stock	£7,340 15 10
3 per cent. Canada Stock	2,000 0 0
L. & N.-W. Railway 4 per cent. Preference Stock	340 0 0
Great Indian Peninsula Railway Guarantee 3 per cent. Stock	514 0 0
2½ per cent. Consols	737 0 4
"Thomson Memorial Trust"—	
East Indian Railway B. Annuity of £14, cost	430 11 0
"Emma Sherwood Memorial"—	
Metropolitan Water (B) 3 per cent. Stock	516 15 11

EXPENDITURE.

	£ s. d.	£ s. d.
By Allowances to Orphans	1,411 0 0	
" Grants in Aid	87 10 0	
" "Emma Sherwood Memorial"	13 0 0	
		1,511 10 0
" Secretary's Salary and Clerical Assistance		130 0 0
" Printing and Posting List of Subscribers		38 10 2
" Rent and Insurance	26 3 6	
" Printing and Stationery ...	44 15 5	
" Advertising	7 15 6	
" Annual General and Committee Meetings, &c.	21 7 3	
" Postages	22 1 8	
" Bank Charges	2 15 1	
" Sundry Expenses (Petty Cash)	4 13 11	
		129 12 4
		1,869 12 6
" Purchase of £120 16s. 11d. 2½ per cent. Consols		100 0 0
		1,969 12 6
" Balances Cash at Bank ...	504 10 4	
Cash in hand ...	3 18 0	
Cash on Deposit ...	300 0 0	
		808 17 4
		£2,718 9 10

Having inspected the Securities and examined the Books and Vouchers supplied to us, we hereby certify the above Account to be correct.

P. RUDOLPH BARR,
M. ROWAN, } *Auditors.*

February 3, 1908.

comparatively small sum received in the form of annual subscriptions, and once more most earnestly appeals for a larger measure of support under this heading.

Under the genial, and so happily appropriate, presidency of "the children's Lord Mayor," Alderman Sir William P. Treloar, Bart., the annual Festival Dinner held at De Keyser's Royal Hotel, E.C., on May 23rd, was again both socially and financially an unqualified success, the Chairman's list for the second time in the history of the Fund exceeding £1,000, while the attendance of friends and visitors was also larger than heretofore. In commending the claims of the Fund to generous support, Sir William remarked that "the work done was beyond praise, and it was a terrible thing to be left destitute, so that it was the bounden duty of all to assist those children whose unhappy lot it was to be left without parents or money," and so satisfactory a response must have been as gratifying to Sir William Treloar as it was to your Committee, and they gratefully tender to him their hearty and most cordial thanks, at the same time inviting the subscribers at the Annual Meeting to join them in marking their sense of his kindness by electing him a Vice-President.

With the utmost possible satisfaction the Committee make the announcement that in order to fittingly celebrate the coming-of-age of the Fund, the noble President, the Duke of Bedford, K.G., has most kindly consented to preside at the forthcoming festival, which has been arranged to take place at the Hotel Cecil on Tuesday, May 12th, when it is earnestly hoped that all friends and supporters will unite with the Committee in their efforts to render the festival worthy of such an auspicious occasion.

The warmest thanks of the Committee are again most heartily accorded to all who have assisted in promoting the welfare of the Fund during the past year, and especially is grateful acknowledgment due to the Right Hon. Mary, Countess of Ilchester, Sir Frank Crisp, and Major John W. Dent, for so kindly opening their private gardens to the public in aid of the charity, to the Stewards at the annual dinner, the Honorary Local Secretaries, and the many good friends in such centres as Altrincham, Chesterfield, Bradford, Reigate, Chislehurst, &c., who have again sent up most acceptable contributions.

With very sincere regret the Committee records the fact that the Fund has suffered grievous losses during the year by the lamented deaths of so many constant and valued supporters. From the rôle of Vice Presidents the names of Lord Battersea and Dr. Maxwell T. Masters, F.R.S., will be greatly missed. Lord Battersea will be specially remembered for his graceful advocacy of the claims of the charity to the support of all lovers of Horticulture at the annual dinner in 1900, while Dr. Masters from the inception of the Fund had whole-heartedly supported it in every way, and specially rendered most valuable assistance in the drafting of the rules which, largely owing to his sagacious counsel, have since been found to work so smoothly. Very deeply indeed do his old colleagues deplore the loss of Mr. John Assbee, who for nineteen years was one of the most regular attendants at the meetings of the Committee, and an enthusiastic and sympathetic worker, and who, by his admirable organisation of the splendidly successful floral displays held in Covent Garden Flower Market in 1888 and 1889, so largely helped to increase the size of the "nest egg" of those early days. Very keenly felt also is the death of Mrs. Charlotte Head, widow of Mr. W. G. Head, a former active member of the Committee, and who, since her husband's death, had been an enthusiastic collector for the Fund, and in a few years raised a sum amounting to nearly £150. Other supporters whose contributions will be greatly missed were Miss Ann Hayes, Mr. J. F. Blackwell, J.P., Mr. Charles Kauffman, Mr. James H. Veitch, and Mr. George May.

During the year the Committee has again been much gratified by the generous assistance rendered to the Fund and the keen interest taken in its management by the Treasurer, Mr. Edward Sherwood, who is hereby most gratefully thanked, and very cordially nominated for re-election.

The members of the Committee who retire by rotation are Mr. W. R. Alderson, Mr. George H. Barr, Mr. George H. Cuthbert, Mr. William Howe, Mr. John Lyne, Mr. William Poupart, Mr. Thomas W. Sanders, and Mr. William P. Thomson, and, all being eligible, offer themselves for re-election. For the vacancy created by the death of Mr. Assbee, the Committee has great pleasure in recommending the election of Mr. Edward Parsons, of Messrs. Parsons and Co., Ltd., Fruit Market, Covent Garden, a gentleman who for some years past has been a generous supporter of the charity, and a regular attendant at the annual festivals.

The Auditors, Mr. M. Rowan and Mr. P. Rudolph Barr, are again most cordially thanked for the carefulness with which they have made the annual examination of the accounts, a duty most cheerfully rendered, though annually making a greater demand upon their time owing to the steady growth of the institution. Mr. Rowan, who has regularly examined the accounts for thirteen years, is the retiring Auditor, and his unique knowledge of the books and the general trend of the Fund's operations makes him a too valued colleague to part with. He is, therefore, with much pleasure recommended for re-election.

In moving the adoption of the Report and Balance-Sheet, Mr. May remarked that nothing unusually eventful had occurred during the year. The Fund had received generous support, and the Committee hoped that this support would be given in an increasing measure. Most pleasant was it to read letters from mothers of orphans, written in high appreciation of the Fund's kindly help to them through their children. The members of the Committee had worked hard, and merited all praise and thanks.

At the first election eight pensioners were put on to the Fund. Last year they finished up with 95 orphans, and they had in the 21 years given help to 236 orphans. The annual Festival had been a great success, and their warmest thanks were due to the ex-Lord Mayor, Sir W. Treloar, Bart., for his generous help. Mr. May then read a letter from a lady, giving an excellent account of the progress in life made by certain orphans who, having benefited by the Fund, had now gone out into the world, filling good situations. He also read an interesting letter from Mr. H. J. Clayton, formerly of Grunston Park Gardens, Tadcaster, in which he suggested that an effort should be made to raise a sum of 10,000 shillings as a birthday offering to the Fund.

Mr. W. Marshall briefly seconded the motion, and, no further remarks being offered, the report was adopted.

Mr. W. Poupart proposed, and Mr. Bull seconded a cordial vote of thanks to Sir W. Treloar for his generous assistance to the Fund in presiding at last year's annual dinner. Mr. W. Roupell proposed and Mr. Lyne seconded the re-election of Mr. E. Sherwood to the office of treasurer, with thanks for past services. Mr. Caselton moved, and Mr. Gordon seconded, the re-election of Mr. M. Rowan as auditor, and thanking him also for efficient services.

Mr. A. Dean moved, and Mr. McLeod seconded, the re-election on to the committee of Messrs. W. R. Alderson, G. H. Barr, G. H. Cuthbert, W. Howe, J. Lyne, W. Poupart, T. W. Sanders, and W. P. Thomson, also giving them cordial thanks for past labours. Mr. B. Mansells proposed, and Mr. G. H. Cuthbert seconded, the election of Mr. E. Parsons, of Covent Garden, on to the committee, to fill the vacancy created by Mr. Assbee's lamented death.

The Chairman proposed the re-election of the secretary, Mr. B. Wynne, to his office, and spoke in high terms of the efficient services he had rendered to the Fund. Mr. W. Bates seconded the motion, which was carried unanimously.

Result of the Election.

At 4.30 p.m. Mr. Poupart, on behalf of the scrutineers, announced the result of the election as follows:—

	Votes.
Percy E. S. Warwick	377
Lucy M. Claxton	367
Alice Arnold	361
Herbert E. Smithers	358
Jeanie M. Lamond	353
John H. McCullum	322
Edward John Ward	294
Hilda A. E. Tickner	257
Bessie Seaman	221
Thomas H. Thomas	182
Ethel M. Blackmore	133
Dorothy Wiggins	130
William H. N. Mullens	127

Non-Elected.

Violet G. Randall	102
Reginald G. Grist	84
Alice R. Gascoigne	71
Ellen Ashton	60

The Chairman declared the first 13 candidates to have been duly elected.

Mr. H. J. Veitch then made an earnest appeal to the Committee, if in their power, to put the remaining four unsuccessful candidates on to the Fund, especially as it would be a graceful way of celebrating the 21st year's work of the Fund. Mr. T. W. Sanders cordially supported the proposal. The Chairman said he would leave the matter in the hands of the subscribers present, but it would mean a close run on their funds.

The resolution was unanimously carried, and thus the Fund starts the year with a clean election sheet. A cordial vote of thanks to the Chairman closed the proceedings.

The Friendly Supper.

The Committee and a few friends assembled at 6.30 p.m. for the annual friendly supper, Mr. Henry B. May, Chairman of Committee, presiding. The attendance was less than usual, owing to several members of the Committee being confined to their homes with influenza.

THE HORTICULTURAL CLUB.

FEBRUARY 11.—At the annual general meeting of this club, held at the Hotel Windsor on the above date, a satisfactory report was laid before the members. It showed that the membership was well sustained and the financial position good, though the club had to deplore the deaths of several members, including Dr. Masters, Mr. James Veitch, and Mr. Assbee. During the season a number of interesting and instructive lectures had been given after the monthly dinners.

Among the new members were Dr. Farmer and Sir Frank Crisp, the latter of whom had accepted the vice-presidency of the club. It was decided to invite Dr. Farmer also to become a vice-president. Sir John T. D. Llewellyn, Bart., was unhappily prevented by indisposition from being present either at the meeting or the subsequent dinner, at which Mr. Harry J. Veitch presided. Some 80 members and guests attended this function, including a good number of ladies, and the toasts were alternated with instrumental, vocal, and humorous interludes of high merit, while the tables were beautifully decorated with flowers, thanks to the generosity of Messrs. Jas. Veitch and Sons.

After the usual loyal toasts, Mr. Harry J. Veitch proposed that of the Horticultural Club, alluding to its association with the Royal Horticultural Society and to the aid rendered to that society at a critical period of depression, now so happily replaced by success such as had that day been recorded in the neighbouring hall. Dr. J. B. Farmer responded, and especially emphasised the value of the club, not merely as a social centre of horticulture, but as constituting a material adjunct to the greater society by its lectures, papers, and discussions, which did so much to bring together for mutual and general benefit the scientist and the practical grower, the one seeking the causes of natural phenomena, the other by exhibiting the results. The toast of the Royal Horticultural Society was given by the Rev. J. H. Pemberton, and responded to in a very humorous and piquant speech by Sir Albert Rollit.

Sir Frank Crisp proposed the health of the Chairman, Mr. Harry J. Veitch, and, in replying, Mr. Veitch proposed that of the Honorary Secretary of the club, Mr. E. T. Cook, to whom its success was so largely due by his efforts to obtain interesting lectures.

Mr. W. A. Bilney proposed the toast of the Visitors, to which Mr. P. Anderson Graham responded, and also Colonel Lewis, a visitor from the Cape, who gave an insight into our relations with the Colonies generally, and with South Africa in particular.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 6.—*Committee present:* Messrs. E. Ashworth (chairman), R. Ashworth, Cypher, Ball, Sander, Upjohn, Shill, Ashton, Ward, Warburton, Cowan, P. Smith, and Weathers (hon. sec.).

There was a slight falling off in the number of groups shown at this meeting, and it was noticeable that the number of Cypripediums especially was smaller. The competition in Sander's Cup for Cypripediums was well maintained, and exhibitors are keen for the possession of this valuable prize.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), staged a group of Cypripediums, to which a Silver Medal was awarded. In the group were C. × Archimedes, var. nigrum, C. × Marguerite, and C. × Fowlerianum, Vine House var., to all of which Awards of Merit were granted. Other plants worthy of note were C. × Traceyanum, and C. × Exul-Sanderæ.

G. SHORLAND BALL, Esq., Burton, Westmorland (gr. Mr. Herd), received a Silver Medal in the Sander Cup competition for a group of Cypripediums. The group was not large, but there were several interesting plants, including Cypripedium × Spiceroni, a hybrid between C. Spicerianum and C. × Thompsoni, both of which received Awards of Merit. C. × Veronicus, C. × Miss Louise Fowler, Ball's var., C. × Alcibiades, Ball's var., and C. × Sallie (the latter a cross between C. × Sallieri and C. × Leeanum virginale) were also granted Awards of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), staged a small group, to which a Bronze Medal was awarded. Cypripedium × Brilliant, Oakdene var., received an Award of Merit. Other notable plants in this group were Cypripedium × aurem var. Surprise, C. × Zeus, Oakdene var., and C. villosum var. "Prince Noir."

Mr. A. J. KEELING received a vote of thanks for a small group, in which was shown Bulbophyllum comosum.

J. MACARTNEY, Esq., Bolton (gr. Mr. Holmes), staged a miscellaneous collection of plants in which was a small group of Cattleyas and Lælias, in addition to a collection of Cypripediums. (Silver Medal.)

DREWETT O. DREWETT, Esq., Riding, Mill-on-Tyne, exhibited an interesting display of Cypripediums, several good forms of C. insigne being prominent. C. insigne "Grand Monarch," C. i. Procysn, and C. × Leeanum var. Purity received Awards of Merit.

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), sent a magnificent display of Cypripediums, to which a Silver-Gilt Medal was awarded. In this group the following plants received Awards of Merit, viz., C. × Hera, Rann Lea var., C. × Greenbank, and C. × Greenbank var. rubens.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), received an Award of Merit for Cypripedium × Stepmanii.

Messrs. CYPHER & SONS, Cheltenham, had a good display of miscellaneous plants, Cypripediums, Cattleyas, &c., to which a Silver Medal was awarded.

Messrs. MOORE & Co., Rawdon, near Leeds, displayed a small group, in which was a plant of Dendrobium speciosum and a well-flowered plant of Lycaste plana var. Measuresiana, the latter receiving a Cultural Certificate.

Messrs. H. LOW & Co. were awarded a Bronze Medal for a small but very effective group of Cypripediums.

Messrs. SANDER & SONS, St. Albans, staged three good Odontoglossums, including one hybrid and two fine forms of O. crispum.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), received an Award of Merit for Cypripedium × Eury-nitens, the parentage being C. × Euryades and C. × nitens. *P. W.*

LINNEAN SOCIETY.

FEBRUARY 6.—At a meeting held on this date, Mr. Horace W. Monckton, Treasurer and Vice-President, exhibited specimens and lantern-slides of leaf-impressions from the Reading Beds, on behalf of himself and Mr. O. A. Shrubsole, F.G.S., who was prevented by illness from being present.

The first paper was by Mr. Clement Reid, F.R.S., F.L.S., on "Fruits and Seeds from the pre-Glacial Beds of Britain and the Netherlands," especially on the Pakefield specimens from the neighbourhood of Lowestoft (Cromer Forest-Bed), and from Tegelen, near Venloo, in the province of Limburg, Netherlands. The substance of his observations has been published in the *Verhandelingen* of the Amsterdam Academy and *Linnean Journal*, Botany, Vol. xxxviii. (1908), pp. 206-227. One special point was his discovery of a species of Euryale, which he had named E. europæa; in this name he had been forestalled by Dr. C. A. Weber, whose plant, though congeneric, was a different species, and came from the neighbourhood of Moscow. As therefore his own species had to receive another name, he proposed calling it after the locality in which it was found, E. burgensis.

A paper by Mr. S. T. Dunn, F.L.S., on "A Botanical Expedition to Central Fokien," was briefly laid before the meeting by the General Secretary. The author stated that in April, May, and June, 1905, a botanical expedition was undertaken, with three native collectors and one Chinese herbarium assistant, to the centre of the province of Fokien. The difficult journey from Foochow to Yenping was successfully accomplished, and enough stores deposited at that town to enable a large collection of plants to be made. The central portion of this province, which is as large as England and Wales combined, had never previously been visited by a botanist, and, as might be expected, a considerable number of novelties were discovered, and are here described, amounting to at least 40 new species.

BRITISH GARDENERS' ASSOCIATION.

FEBRUARY 11.—The last meeting of the Executive Council of this association was held at the Royal Horticultural Society's Hall, Westminster, on the above date, Mr. Chas. Foster in the chair. Twenty-four new members were elected, bringing the total up to 1,163. The Secretary submitted a detailed statement, estimating the receipts and expenses of a monthly *Journal*. The question was thoroughly discussed, and it was decided by eight votes to three that a monthly *Journal* should be established in April, after the next issue of the present quarterly one. A request to hold a meeting for the benefit of the gardeners employed in the London parks having been received, it was decided that one would be held at Carr's Restaurant on Saturday March 7, at 7 p.m., and the secretary was deputed to give an address on that occasion. It was also decided to send a delegate to address a meeting at the Wesleyan School, Evelyn Road, Richmond, Surrey, on Tuesday, February 25th, at 8 p.m., when Mr. Hawes will be in the chair. The secretary was instructed to procure a die for the new certificate. *J. W.*

NATIONAL CHRYSANTHEMUM.

FEBRUARY 17.—A meeting of the Executive Committee of this Society was held at Carr's Restaurant, Strand, on the above date, Mr. Thomas Bevan presiding. The chairman extended a cordial welcome to the newly-elected president, Sir Albert Rollit, who was present. Sir Albert, in reply, returned thanks for his election, and advanced several ideas for the increasing of the membership. A letter from Mr. C. E. Shea was read accepting his election as a vice-president, and also a letter from the Crystal Palace Co., confirming the dates of the shows and the conditions of the agreement between them and the Society. Two societies were admitted in affiliation.

One-third of the Floral Committee retiring by rotation, the following members were elected:—Messrs. Curtis, Higgs, Oliver, Prickett, Springthorpe, Felton, and Newton. The members of the Finance and other Committees were also elected. The prospective budget of the Society for the year was next submitted. The date of the annual outing was fixed for July 27.

The secretary stated that he had received a notification of flower shows to be held during the Franco-British Exhibition, at Shepherd's Bush. Mr. Harman Payne enquired if any provision had been made for a Chrysanthemum show towards the close of this exhibition, as there were sure to be enquiries from some of the foreign members of the N.C.S. The secretary promised to enquire and reply later.

DEBATING SOCIETIES.

BATH AND DISTRICT GARDENERS'.—The usual fortnightly meeting of this society was held on February 10, Mr. T. Parrott presiding. There were the customary exhibits of fruit, flowers, and vegetables. Three new members were elected. The subject of the annual outing was discussed. The hon. secretary (Mr. F. L. Ashman) stated that the committee hoped to arrange a visit to Cardiff Castle. On the proposition of Mr. F. W. Hooper it was unanimously agreed that, if it be possible, the outing should be held on the same day as the Cardiff flower show. The remainder of the evening was devoted to open discussion.

SALISBURY AND DISTRICT GARDENERS'.—At the meeting of this society held on the 12th inst., Mr. W. Palmer, Andover, read a paper on the "Primula." A large number of the members were present. The lecturer dealt especially with P. sinensis, giving full particulars of its cultural requirements. Many members were of the opinion that the "stellata" type was the most desirable and useful. Many questions were asked and satisfactorily answered. Besides a group of well-flowered plants of Primula sinensis staged by the lecturer, Messrs. Keynes, Williams and Co. had an attractive exhibit. Much interest was caused by some well-flowered plants of Primula × Kewensis staged by Mr. S. W. Tucker, Longford Castle Gardens.

GUILDFORD AND DISTRICT GARDENERS'.—The usual fortnightly meeting of this association was held on Tuesday, February 4, Mr. W. Hogsden presiding over an attendance of 50 members. Mr. W. F. Binfield delivered a lecture on the "Greenhouse Cyclamen," giving his method of seed sowing and the subsequent cultural treatment of the plants to the flowering stage. The most suitable compost in which to grow the plants, potting, watering, syringing, temperature, the use of chemical and organic manures, insect pests and their extermination, &c., were touched upon, and important details ably explained by the lecturer. The discussion which followed proved interesting and profitable. *J. G.*

BRISTOL AND DISTRICT GARDENERS'.—A meeting of this association was held on Thursday, February 13, at St. John's Parish Rooms. Mr. J. C. House presided over a good attendance of the members. Mr. Baily, a representative of the Reading society, read a paper on "Budding and Grafting." The lecturer afterwards gave a practical demonstration of his subject, interspersing brief explanatory remarks while he was operating. Mr. Baily was freely questioned, the answers to which were as instructive as the lecture. *H. W.*

WARGRAVE GARDENERS'.—At the last ordinary meeting of this association Mr. G. Stanton read a paper on "The Beauty of a Garden in Winter." Besides giving a description of the many trees, shrubs, and plants useful to furnish a cheering aspect at the dull period of the year many other points were considered, such as the shape, colour, and covering of leaf buds, the bark of trees, the effect of raindrops and frost on the leaves and branches, &c. A discussion followed the reading of the paper.

CHESTER PAXTON.—The third lecture for the winter session was delivered at the Grosvenor Museum, on Saturday, by Mr. Jos. Thompson, on the "Flora of India and Ceylon," his remarks being based upon personal recollections of his Indian travels. With the aid of a series of lantern slides the lecturer gave a clear description of the principal trees, plants, vegetation, and fruits of India. Some specimens were also exhibited by Mr. Thompson. The beautiful scenery of the Island of Ceylon was shown by a set of coloured slides, among which were some delineating the growth, gathering, and drying of the leaves of the Tea plant. The general Flora of this island was also well described.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending February 15, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* was again finer and drier in the eastern and southern districts than in the west and north-west, but nowhere was it very bright, and a considerable amount of fog or mist was experienced during the earlier half of the period over England. Thunder occurred in the Hebrides on Thursday.

The *temperature* was above the average, the excess amounting to more than 3° in most parts of England and Ireland, and to nearly 5° in Scotland. The highest of the maxima were registered on rather irregular dates, and ranged from 55° in Scotland E. and Ireland S., and 54° in some English localities, to 50° in Ireland N. The lowest of the minima, which were recorded during the latter half of the week, were below 32° in all the English and Scottish districts, and as low as 22° in England S. and 21° in the Midland Counties. In Ireland, however, the thermometer fell no lower than 36°. On the grass there were minima of 17° at Greenwich, 18° at Llangammarch Wells, 19° at Kew, Cambridge, and Tunbridge Wells, 20° at Crathes, and between 20° and 25° in many other localities.

The *mean temperature of the sea* was again higher than the corresponding week of last year, the greatest excess being 4° at Fennan Bay. The values ranged from about 47° at Newquay and Seafield to about 39° at Margate and the Shipwash Lightship.

The *rainfall* was considerably less than the normal in all districts excepting Scotland N., where the deficiency was slight, and in England N.W., where there was a trifling excess.

The *bright sunshine* just equalled the average in Scotland E. and England S. and slightly exceeded it in the English Channel; elsewhere it was deficient. The percentage of the possible duration ranged from 35 in the English Channel, 29 in Scotland E., and 27 in England S. to 17 in Ireland N. and England N.W., and to 14 in the Midland Counties.

THE WEATHER IN WEST HERTS.

Week ending February 19.

Another warm week. During the past fortnight there has not been a single unseasonably cold day, and only one cold night—when the exposed thermometer registered 15° of frost. On the warmest day of that period, the 17th, which was also the warmest day of the year as yet, the temperature in the thermometer screen rose to 54°, which is about 10° higher than the average maximum reading for the middle of February. The ground still remains warm, and is at the present time about 2° warmer at 2 feet deep, and about 3° warmer at 1 foot deep, than is seasonable. Rain fell on four days during the week, to the total depth of rather more than half an inch, but previous to the 15th no rain worth mentioning had fallen for over five weeks. My soil gauges, through which no measurable percolation had passed for nearly a month, were re-started by the recent falls of rain, since which nearly three gallons has come through the bare soil gauge, but less than one gallon through that on which short grass is growing. The sun shone on an average for 2¼ hours a day, or half an hour a day longer than is usual at this period of the year. The first two days of the week were calm, but since then the wind has remained high, and in the windiest hour the mean velocity reached 18 miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by two per cent. The Double Snowdrop came first into flower in my garden in the spot selected for its observation on the 18th, or 10 days later than its average date in the previous 21 years, and precisely the same date as last year. *J. M., Berkhamsted, February 19, 1908.*

SCHEDULE RECEIVED.

Abbey Park, Leicester.—The annual show in the Abbey Park, Leicester, will be held on August 4 and 5.

MARKETS.

COVENT GARDEN, February 19.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Acacia (Mimosa), dozen bunches	6 0	9 0
Anemones (capillare), per dozen bunches	2 0	5 0
— double pink	1 6	2 0
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, per bch.	1 0	1 6
Bouvardia, per dz. bunches	6 0	8 0
Calla æthiopica, p. dozen	3 0	4 0
— Guernsey	2 0	3 0
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American various	2 0	3 0
— second size	1 6	2 0
— smaller, per doz. bunches	9 0	12 0
Cattleyas, per doz. blooms	10 0	12 0
Chrysanthemums, selected blms., per dozen	2 0	3 0
— medium, doz. bunches	12 0	18 0
Cœlogyne cristata, per dz. blooms	1 0	1 6
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	4 0	5 0
— double, per dz.	4 0	5 0
— Golden Spur per doz.	5 0	6 0
— H. Irving	4 0	6 0
— Princeps	3 6	5 0
Eucharis grandiflora, per doz. blooms	3 0	4 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz. blooms	3 0	6 0
Helleborus, per dz. blooms	0 6	1 0
Hyacinths, Roman, per dz. bunches of 12 blooms	4 0	6 0
Lapagerias, per dozen	1 6	2 6
Lilac (French), per bunch	3 0	4 0
Lilium auratum	2 0	3 0
— longiflorum	2 6	4 0
Lilium lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	8 0	10 0
— extra quality	12 0	15 0
Marguerites, white, p. dz. bunches	4 0	6 0
— yellow, per dz. bunches	3 0	4 0
Myosotis, per doz. bunches	3 0	4 0
Narcissus, paper white, per doz. bunches	2 0	3 0
— Double Roman	2 0	3 0
— Gloriosa	1 6	2 6
— poeticus ornatus	3 6	5 0
— Soleil d'Or, per dozen bunches	2 6	3 0
Odontoglossum crispum, per dozen blooms	2 6	3 0
Pelargoniums, show, per dcz. bunches	6 0	8 0
— Zonal, double scarlet	6 0	9 0
Ranunculus, p. dz. bunches	9 0	12 0
Roses, 12 blooms, Niphetos	2 0	4 0
— Bridesmaid	3 0	6 0
— C. Testout	4 0	6 0
— Kaiserin A. Victoria, per dozen blooms	3 0	5 0
— Madame Hoste	2 0	3 0
— C. Mermet	3 0	6 0
— Liberty	2 0	6 0
— Mad. Chatenay	3 0	6 0
Safrano (French), per dz. bunches	9 0	12 0
Snowdrops, per dozen bunches	1 6	2 0
Spiræa, p. dz. bchs.	5 0	8 0
Stocks, double white, per doz. bunches	3 0	4 0
Tuberoses, per dz. blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, p. dz. bchs.	6 0	10 0
— best doubles	12 0	18 0
Violets, p. dz. bchs.	2 0	3 0
— special quality	2 6	3 0
— Parmas, per bunch	2 6	4 0
Wallflowers, per dozen bunches	2 0	3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 6	1 0
Berberis, per doz. bunches	1 6	2 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	3 0	4 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Hardy foliage (various), per dozen bunches	3 0	9 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle (English), small-leaved, per dozen bunches	4 0	6 0
— French, per dz. bunches	1 0	1 6
Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri, per dz.	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	15 0	24 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, dz.	8 0	10 0
— tenuissimus per dozen	9 0	12 0
Azalea indica	24 0	36 0
Begonia Gloire de Lorraine, p. dz.	9 0	12 0
Callas, per dozen	10 0	12 0
Cinerarias, per dozen	8 0	10 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	9 0	12 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	6 0
Daffodils, per doz. pots	5 0	6 0
Dracænas, per doz.	9 0	24 0
Erica hyemalis, per dozen	9 0	15 0
— melanthera	12 0	18 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*)

	s.d.	s.d.
Hardy flower roots, per dozen	0 9	2 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	8 0	12 0
— in small and large 60's	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Genistas, per doz.	10 0	12 0
Hyacinths (Roman), per dozen pots	10 0	12 0
— Dutch	8 0	10 0
Kentia Belmoreana, per dozen	18 0	30 0
Kentia Fosteriana, per dozen	18 0	30 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, p. doz.	21 0	25 0
— lancifolium, per dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	6 0	8 0
Selaginella, per dozen	4 0	6 0
Solanums, p. doz.	6 0	9 0
Spiræa japonica, p. dozen	9 0	15 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (**English**), per bushel:		
— Wellington	5 0	9 0
— Newton Wonder	5 0	7 0
Bramley's Seedling	5 0	7 0
— Blenheim Pippin	4 6	7 0
Nova Scotian, per barrel:		
— Baldwins	15 0	16 0
— Ribston Pippin	14 0	16 0
— Gloria Mundi	15 0	16 0
— Russets	18 0	19 0
— Greenings	15 0	17 0
Canadian, per barrel:		
— Northern Spy	18 0	19 0
— Baldwin	17 0	20 0
— N. Greening	19 0	21 0
— Russets	19 0	21 0
Californian:		
— Newtowns, per box	11 0	13 0
— "**Oregon**" Newtowns, per box	14 0	15 0
Bananas, bunch:		
— No. 2 Canary	7 0	—
— No. 1 ,,	8 0	—
— Extra ,,	10 0	—
— Giants ,,	11 0	15 0
— Jamaica	5 0	5 6
— Loose, per dz.	0 9	1 3
Cranberries, per case	9 0	10 0
"Custard" Apple (Anona) per doz.	4 0	9 0
Dates (Tunis), doz. boxes	4 0	4 3
Grape Fruit, case	10 0	20 0
Grapes (English):		
— Alicante, per lb.	1 3	2 6
— Gros Colmar, per lb.	1 0	2 6
— Belgian Gros Colmar, per lb.	0 10	1 9
Grapes (Cape), per box (small)	3 0	4 0
— (large)	7 0	9 0
— Almeria, barrel	10 0	16 0
Lemons:		
— Messina, case	8 0	14 0
— Murcia, p box	6 0	8 0
Lychees, per box	0 10	1 0
Mandarines, (French) p. box	1 6	1 9
— (French) 100's per box	3 3	3 9
— (Palermo) 100's box	3 6	4 0
Mangos, per doz.	4 0	12 0
Nectarines (Cape), per box	7 0	10 0
Nuts, Cobs (English), per lb.	0 4	—
— Almonds, bag	42 6	—
— Brazils, new, per cwt.	60 0	—
— Barcelona, per bag	30 0	32 6
— Cocoa nuts, 100	11 0	14 0
Chestnuts:		
— Italian, per bag	16 0	17 0
Oranges (Valencia), per case	11 0	24 0
— Denia, p. case	13 0	25 0
— Jaffas, per box	11 0	13 0
— Californian Navels, p. case	13 0	14 0
— Seville Bitters, per box	6 0	8 0
Peaches (Cape), per box	5 0	10 0
Pears, (Cape) p. box	3 0	6 0
— Catillac, Dutch, per basket	2 6	—
— per barrel	10 0	—
— Winter Nelis, boxes	8 0	9 0
— cases	12 0	14 0
Pineapples, each	3 0	5 6
Plums (Cape), box	3 0	6 0
Strawberries (English), per lb.	6 0	12 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	2 0	3 0
Asparagus, Paris Green, bundle	4 0	4 3
— Sprue, bundle	0 7	0 8
Beans, French, per packet	0 8	0 9
— Broad (French), per pad	3 0	3 3
— Guernsey, p. lb.	2 6	—
— English	1 6	1 9
— Madeira, per basket	2 0	3 0
Beetroot, per bushel	1 3	1 6
Brussel Sprouts, per ½ sieve	1 3	1 6
Cabbages, per doz.	0 6	0 9
— Greens, p. bag	1 0	1 3
— red, per dozen	2 0	—
— Savoys, per tally	3 0	3 6
Carrots (English),		
— washed, p. bag	2 0	2 6
— French (new), per pad	2 6	—
— French (new), per bunch	0 8	—
Cauliflowers, p. dz.	1 6	2 0
— per tally	6 0	8 0
— Italian, basket	2 0	2 6
Celeriac (French), per dozen	1 6	2 0
Celery, washed, per dozen	0 8	0 10
Chicory, per lb.	0 2	0 2½
Chow Chow (Sechium edule), p. dozen	3 0	—
Cucumbers, per dz.	8 0	9 0
Endive, per dozen	1 6	2 0
Horseradish, foreign, per doz. bundles	9 0	10 0
Leeks, 12 bundles	1 0	1 6
Lettuce (French), per dozen	1 0	1 8
Mint, doz. bunches	3 0	5 0
Mushrooms (house) per lb.	0 8	—
— buttons, per lb.	0 8	0 9
— "Broilers" p. lb.	0 6	0 7
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Spanish), per case	5 0	5 3
— Dutch, per bag	2 0	2 3
— pickling, per bushel	2 0	2 6
Parsley, 12 bunches	2 6	3 0
— per ½ bushel	1 6	2 0
Peas (French), per packet	0 5	0 6
Potatos (French), new, per lb.	0 2	0 2½
— Guernsey p. lb.	0 4	0 4½
— Teneriffe, cwt.	13 0	15 0
— Algerian, cwt.	20 0	—
Radishes (Guernsey), dozen	0 8	0 9
Rhubarb (English), dozen bundles	0 9	1 0
Salsafy, per dz. bds.	3 6	—
Seakale, per dozen punnets	9 0	10 0
Spinach, French, per crate	4 0	4 6
Tomatos (Teneriffe), p. bdle. of four boxes	11 0	16 0
Turnips (English), doz. bunches	2 0	2 6
— per bag	2 6	—
— French (new), per bunch	0 9	—
Watercress, per doz. bunches	0 4	0 6

REMARKS.—The supplies of English Grapes continue to be short, but bunches are arriving from the Cape. There is a good demand for Oregon and Californian Newtown Pippins, as the quality of these Apples is now very fine. Cape Fruit is arriving in increased quantities, but prices are practically the same as those of last week. Supplies of Apricots from Cape Colony are now finished. Teneriffe Tomatos are dearer. New Turnips and Carrots from France are now obtainable. Well-coloured Bananas are selling freely. English Mushrooms are cheaper. Trade generally shows a decided improvement. *P. L., Covent Garden, Wednesday, February 19, 1908.*

Potatos.

Kents: Up-to-Dates, 100s. to 105s. per ton; British Queens, 95s. to 100s. per ton; Scottish Triumphs, 95s. to 100s. per ton. **Lincolns:** Up-to-Dates, 100s. to 110s. per ton; Up-to-Dates (Blackland), 85s. to 90s. per ton; British Queens, 90s. to 105s. per ton; British Queens (Blackland), 80s. to 90s. per ton; Maincrops 100s. to 110s. per ton; Sir Jno. Llewelyn, 90s. to 100s. per ton; Sir Jno. Llewelyn (Blackland), 80s. to 85s. per ton; Royal Kidneys, 90s. to 95s. per ton; Royal Kidneys (Blackland), 80s. to 85s. per ton; Evergoods, 90s. to 95s. per ton; Evergoods (Blackland), 75s. to 85s. per ton; **Dunbars:** Up-to-Dates (red soil), 110s. to 115s. per ton; Maincrops (red soil), 120s. to 125s. per ton. **Scotch:** Up-to-Dates (grey soil), 90s. to 100s. per ton; Maincrops (grey soil), 100s. to 105s. per ton. **German:** Up-to-Dates, 4s. 3d. to 4s. 6d. per bag; Magnums, 4s. to 4s. 3d. per bag; Imperators, 3s. 9d. to 4s. per bag. **Belgium:** Kidneys, 3s. 9d. to 4s. per bag. **Dutch:** Up-to-Dates 4s. to 4s. 3d. per bag; Magnums, 3s. 9d. to 4s. per bag; Imperators, 3s. 3d. to 3s. 6d. per bag. Trade is very quiet, and there are heavy stocks in London; consequently prices are low. *E. J. Newborn, Covent Garden and St. Pancras, February 19, 1908.*

COVENT GARDEN FLOWER MARKET.

Although the weather has been more favourable during the past week, there does not appear to be much improvement in trade. This may be partly accounted for by much produce being supplied direct from the growers to the retailers, and this causes many complaints in the market. Many plant stands are empty, but cut flowers are most abundant.

POT-PLANTS.

There is not a great variety in really good flowering plants. Indian Azaleas are the most prominent. These plants are remarkably good, but the growers must be experiencing a considerable loss, for the demand is poor. One salesman informed me that he had never known such a bad season for trade as the present. Some well-flowered plants of Azalea mollis are now seen. Erica Wilmoreana is remarkably well flowered this season. I noticed good plants of this Heath on Mr. P. Ladd's and also on Mr. Sweet's stands. The latter grower has also E. persoluta alba in well-flowered plants: the variety ovata is of very good habit, but it is not of the best colour. Cyclamen seen are well-flowered, and there are some fairly good Chinese Primulas. Begonia Gloire de Lorraine is not over plentiful, and good Liliums in pots are rather scarce. Marguerites are now very good, and sell fairly readily. Genistas are now well-flowered. Daffodils are abundant, the varieties seen in pots being Golden Spur, Princeps, and the double Van Sion. Hyacinths and Tulips are also plentiful. Spiræas from forced clumps are obtainable, but at present they are not so good as those grown from retarded stock. There is little variation in foliage plants. Solanums are not yet quite finished.

HARDY FLOWER ROOTS, &c.

There is seen quite a variety of hardy herbaceous plants and biennials: these include Carnations, Pinks, Hollyhocks, Campanula persicifolia (blue and white), Coreopsis, Lychnis, Herbaceous Phloxes, Herbaceous Cornflowers, Galegias, Herbaceous Pyrethrums, Sunflowers, Canterbury Bells, Irises, Wallflowers, Delphiniums, Aquilegias, Violas, Lavender, Rosemary, hardy climbers, Roses, fruit trees, hardy shrubs, Conifers, &c. Also Strawberry plants, Cabbage plants, Rhubarb roots, a variety of Herbs, &c.

CUT FLOWERS.

Tulips are still a leading feature among cut flowers: samples vary considerably in quality, and some senders may be disappointed with the returns made. It is difficult to sell best samples, and any of second quality can only be sold to street hawkers at very low prices. Many of the costers are particular as to quality, and will pay good prices for best samples. Daffodils from English growers are very abundant. Victoria and Horsfieldii are the best "bicolors." Emperor, Sir Watkin, Golden Spur, and Henry Irving are other leading sorts. Narcissus poeticus and several varieties of the polyantha type are plentiful. Large supplies are now coming from the Channel and Scilly Islands. Roses vary considerably in quality. I noted some very bright blooms of the variety Richmond this morning. A few Mrs. J. Laing are also coming in the market, but they are rather small. Nipthetos is very good. There are very few good blooms of Catherine Mermet seen, most of them being of a very pale colour. Carnations are seen in large quantities at this season of the year. It is difficult to quote prices, for after the ordinary buyers are supplied the remainder is sold very cheaply. Gardenias and Eucharis are scarce. Lily-of-the-Valley, Tuberoses, Camellias, double white Primula, and Callas are all plentiful. Liliums vary but little. Imported flowers include Roses, Violets, Anemones, Ranunculus (double crimson and yellow), Yellow Marguerites, Mimosa (Acacia), Callas, &c. *A. H., Covent Garden, February 19, 1908.*

CATALOGUES RECEIVED.

SEEDS.

T. D. WEBB & SON, Wordsley, Stourbridge—Farm seeds.
GARTONS, LTD., Warrington—Farm seeds.
SUTTON & SONS, Reading—Farm seeds.
JACKSON & ROBINSON, Cathedral Street, Manchester—Farm seeds.
W. DRUMMOND & SONS, LTD., Stirling and Dublin—Farm seeds.
ASHBOURNE AGRICULTURAL CO., 15, Parliament Street, and 51, Essex Street, Dublin—Seed Potatos.
JOHN MCKERCHAR, 35, Giesbach Road, Upper Holloway, London, N.—Seeds

MISCELLANEOUS.

CHARLESWORTH & Co., Heaton, Bradford—Orchids.
BARR & SONS, King Street, Covent Garden, London, W.C.—Bulbs and tubers for winter and spring planting.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* ***write the names of persons and places as legibly as possible.*** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. J. C. LUNNON, for the past 2 years Gardener to Mr. A. P. HILLIER, Markyatebell, Dunstable, as Gardener to Mr. BECK, Harrold Hall, Bedford

Mr. JOHN MACGREGOR, lately Gardener to R. H. ELLIOT, Esq., Clifton Park, Kelso, N.B., as Gardener to WM. YOUNGER, Esq., Achen Court, Moffat, N.B.

Mr. GEO. KEW, late Gardener to Lord BRADFORD and for three months traveller to Messrs. RICHARD SMITH & Co., Worcester, as Gardener and Bailiff to EDWIN GREEY, Esq, Brookencote Hall, Chaddesley Corbett.

Mr. J. HAMMOND, late Gardener at Norton Curbeu, Warwick, and Ardencote Claverdon, as Gardener to G. P. FITZGERALD, Esq., The Island, Waterford, Ireland.

Mr. FRANK HURFORD, as Gardener to A. BOULDERSON, Esq., Beeston Hall, Neatishead, nr. Norwich.

Mr. WM. SIMPSON, late of Wemyss Castle Gardens, and previously at The Grange, Sutton, Surrey, has been appointed Steward and Gardener to R. C. FORSTER, Esq., at the latter place.

Mr FRED CLARK, previously Gardener to Lord BATEMAN, Shobdon Court, Shobdon, Herefordshire, as Gardener to A. E. WRIGLEY, Esq., Street Court, Kingsland, Herefordshire.

Mr. F. SOMERFORD, late Foreman at Gordhinog Gardens, Llanfairfechan, North Wales, and previously at Ingestre, Wentworth, &c., as Gardener to ALBERT WOOD, Esq., Bodlondeb, Conway.

Mr. J. T. HAYES, of Burbage, Hinckley, has been appointed, from amongst 217 applicants, to the post of Superintendent of Parks and Gardens to the Borough of Royal Leamington Spa.

ENQUIRY.

SEA SAND FOR BOWLING GREENS.—Can any reader give me his experience with sea sand for bowling greens or lawns? I have had this winter to strip a bowling green in order to level it, that has been treated for two years with tons of sea sand, and I have never seen such bad turf before. The colour of the grass is quite yellow. *W. Davis.*

Answers to Correspondents.

ADDRESS: *F. G. L.* The Prianlx Patent Trough Co., Ltd., St. Martin's, Guernsey.

BOOKS: *B. O. S. The English Flower Garden*, by W. Robinson, price 15s. 6d., or *The Flower Garden*, by T. W. Sanders, price 8s., would be suitable for your purpose. Both these works can be obtained from our publishing department. We believe Messrs. H Cannell and Sons, Nurserymen, Swanley, publish a work on designs for carpet bedding. *Mrs. B. British Fungi* or *British Edible Fungi*, both of which works are by Dr. M. C. Cooke, will be found suitable for your purpose. Thanks for your contribution to the R.G.O.F. box.

CALANTHE GROWTHS SPOTTED: *A. E. G.* The dark-brown spotting on the skin of the pseudo-bulb of Calanthe Veitchii is not an uncommon occurrence, and especially in the case of plants grown in the same garden and from the same stock for many years. The damage is often confined to the thin, silvery covering of the pseudo-bulb, and the new growths are quite healthy until the resting season arrives. In cases where the damage extends to the tissues of the pseudo-bulbs it is better to destroy all plants so affected, and to increase the stock from those only superficially harmed. It would be well to renew the stock by procuring perfectly healthy plants from some other garden.

DESTROYING MOLES: *F. B.* It is usually more difficult to trap moles at this season than at any other time of the year, and considering the creature's feeding habits it is almost impossible to administer poison. Fine meshed wire netting buried vertically to a depth of 18 inches or thereabouts would probably prevent them from burrowing, but the top of the netting must be above the surface of the ground, for moles often travel far distances above ground. To enclose a garden of considerable size with wire netting is a costly proceeding. Small lengths of barbed wire or pieces of bramble pushed into the burrows will often drive moles away from a locality. But, on the whole, when trapping fails, the most effective method is to soak small pieces of sponge or strips of any woollen material in petroleum and to push the soaked strips into the runs as near as possible where the moles first enter the garden. The cheaper and more noxious smelling the oil the better; that usually sold as paraffin oil is more effective than the refined brands. So long as the smell remains no mole will come near it. As long as the moles infest the neighbourhood fresh paraffin oil must be placed in the runs about every fortnight—oftener, should the weather be very wet Failure to trap moles is often due to carelessness in setting the traps. It is essential that every ray of light be excluded, or the mole will avoid the trap—usually by burrowing underneath it. Where the nature of the ground does not easily permit the trap to be darkened, an old wet sack should be laid over it. When setting traps care should be taken to disturb the runs as little as possible, and any soil which falls into the run should be carefully removed. These sagacious little creatures have a keen sense of smell, and are naturally suspicious of any unusual occurrence. Experienced trappers deliberately smother their hands with damp soil before placing the traps in position.

FEEDING BEES: *R. O. P.* If the bees have sufficient food they are best left alone, but if they are short then place the frame of honey under the quilts on a fine day. Replace the coverings as quickly as possible in order to prevent the heat from escaping, and afterwards fill up the corners with some soft material so that the heat may not escape through the gaping corners.

GRUBS ATTACKING CARROTS: *F. A. Edwards.* The grubs are those of a small fly, but they are, however, certainly not the grubs of the "Carrot fly" (Psila rosæ). Many of the grubs of flies feed on decaying vegetable matter or manure, so that if the soil has been recently dressed it is quite possible that they may have been imported in the dressing, and will not injure a future crop. If no dressing has been applied, they have probably been feeding on the roots of some other plant or plants. A little gas lime, or vaporite, applied to the land will no doubt kill them.

GRUBS IN SOIL: *A. L.* The pests attacking the roots of your Adiantum Ferns are weevils. Trap them with pieces of some vegetable such as Potato or Carrot, and hunt them at night, at which time they feed.

HARDY AZALEAS INFESTED WITH LICHEN: *R. H. E.* Spray the plants with the solution at half strength when the buds are quite dormant

INSECTS FROM A PIGEON LOFT: *T. S.* The insects which you send are meal worms, the grubs of a beetle belonging to the genus Tenebrio. They are not injurious to plants in any way, so you may safely use the manure as far as they are concerned. These grubs very much resemble wireworms, but they belong to a very different family. They are generally found in flour, meal, bran, or some other farinaceous matter.

INVENTION: *W. S.* Apply to the Registrar, Patent Office, 25, Southampton Buildings, London, W.C.

NAMES OF PLANTS: *D. P.* 1, Abies magnifica; 2, Cupressus Lawsoniana; 3, Thuya occidentalis; 4, Cupressus pisifera; 5, Cupressus Lawsoniana aureo-variegata; 6, Cupressus nootkatensis var. —*Veritas.* 1, Odontoglossum cordatum; 2, Oncidium crispum; 3, Aerides falcatum; 4, Brassia verrucosa —*W. B.* The Calanthe appears to be Calanthe Veitchii The labellum has withered, and the chief feature is thus destroyed. The Odontoglossum is O. Pescatorei. The species usually has some rose markings on the lip, but varieties such as you send are not uncommon.

NAMES OF FRUITS: *F. L.* 1, Harvey's Wiltshire Defiance; 2, Bergamot d'Esperen; 3, Dr. Harvey.—*J. Taylor.* Tyler's Kernel.

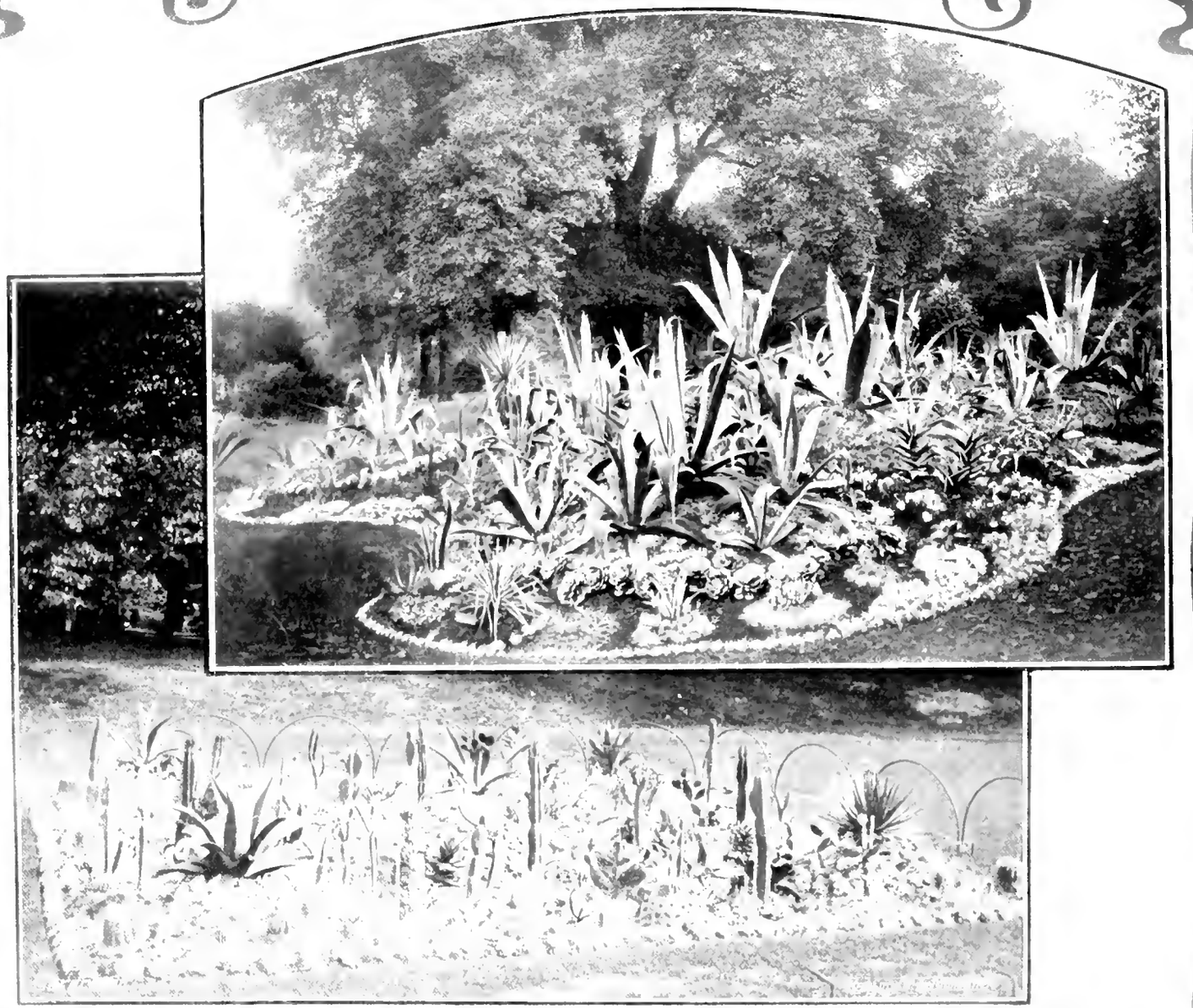
ODONTOGLOSSUMS: *W. B.* In reply to your questions:—(1) It would be better to establish the imported Odontoglossums before dividing the pseudo-bulbs. (2) The use of comparatively small pots is best in the case of imported plants, and relatively larger ones when the plants are rooting freely. (3) The growth of the pseudo-bulbs is arrested by the production of flower-spikes in the stage you describe. If flowering is likely to injure the plant, remove the flower-spike. (4) You should re-pot any plants which are in too small pots at once. (5) Pot the plants of O. Pescatorei, which are in crocks, and which are now sending out roots. (6) The question of "feeding" Orchids is a much-debated one. The best growers maintain that they give nothing but pure rain water. For some strong-growing species weak liquid manure made from dried cow-dung is advocated by many gardeners.

OVERHANGING TREES: *F. D.* You are entitled to remove any of the branches from your neighbour's trees that overhang your property, but you must be careful not to go beyond the limit of your fence.

PLANTAINS IN GRASS: *G. W. C.* As the area is too great for eradicating the weeds by hand, the grass should be given a dressing of some nitrogenous manure. This will encourage the growth of the grasses, and these will in time crowd out the weeds. A pinch of salt or of sulphate of ammonia dropped in the crown of each Plantain will kill these weeds, and piercing them with a skewer that has been dipped in some strong acid will also prove efficacious in their destruction.

PLUMS AND RASPBERRIES FOR MARKET: *Machany.* The variety of Raspberry most largely grown in the southern counties and the Midlands is Superlative, and it is also being planted extensively in the north. Superlative is an excellent variety, for it has a good constitution, is prolific, and produces fine fruits. Carter's Prolific is also extensively grown, together with Norwich Wonder and Baumforth's Seedling. Hornet is a favourite variety with some planters on a large scale, the fruits being excellent for preserving purposes. In the Scottish Raspberry fields in Blairgowrie are planted Clyde-Side, Red Antwerp, and Maclaren's Prolific in great quantities. The results there have been astonishing, as from 3 to 4 tons of fruit per acre is a common crop, while as much as 6 tons has been recorded in some seasons. The first-named of these varieties is now not much grown in the south, and the other is seldom seen. Of Plums, Rivers' Early Prolific, Czar, Victoria, and Monarch are useful if the position and soil are adapted to them, but you must be careful to ascertain these particulars first. A convenient method of planting these fruit trees is to place the Raspberries 3 feet apart in rows 6 feet asunder, and the Plums (standards) at 18 feet each way, in the lines. By this means 106 Plum trees and about 2,000 Raspberry stools will occupy each acre of ground. Healthy trees and strong sets of Raspberries sufficient for planting an acre would cost from £18 to £25. The expense of cultivation and planting will depend upon the condition and nature of the land, also whether horse labour can be employed in the former work or not. If ploughing, cultivating, and harrowing will suffice as a preparation, from £3 to £5 per acre will be needed as a total outlay on the whole work. If digging or forking by hand labour is requisite, or if the land is very foul, double these amounts will be necessary. Thorough cleaning of the ground is essential as a preparation for Raspberries, and liberal manuring also if the land is not naturally fertile. Artificial manures would cost from £2 to £3 per acre, but if stable or farmyard manure is used the expense would be much greater according to the distance from a source of supply.

COMMUNICATIONS RECEIVED.—J. H.—H. M.—H. H.—Miss P.—Puzzled—W. D.—P. G.—W. H. R.—F. H.—F. L. B.—St. J. A.—J. F.—W. P.—J. R. J.—J. C. & Co—J. W.—M. M. N.—A. S.—G. E. M. S. A R. B.—E. McN.—E. J. H.—H. T.—E. M.—H. P.—S. B. D.—T. J.—A. D.—H. R., Chicago—J. B & Sons—S. A.



Succulent Plants used for Summer Bedding.

1. A Collection of Agaves in the Regent's Park, London.
2. Cactaceous Plants in Hampton Court Gardens.

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CONTENTS.

ILLUSTRATIONS.

ORSETT HALL, GRAYS.

CHARMINGLY situated in a fertile and pretty part of Essex, within three miles of Stanford-le-Hope and four miles of Grays, on the London, Tilbury and Southend Railway, is Orsett Hall (fig. 50), the picturesque residence of Francis H. D. C. Whitmore, Esq., J.P. The Orsett estate is extensive and well maintained, as a three-mile drive through a portion of it shows readily.

The Hall is a very old, timber-built edifice, encased in brick, and has been altered from time to time by its owners, including the present one, who has made extensive additions and alterations since he succeeded to the property. It contains valuable ceilings and fireplaces of the Tudor period. D. W. Coller, in his book (1861), says: "The Hall, or the White House, as it is sometimes written in old documents, was formerly a huge, timber-built erection, much of which was pulled down in the last century, and the remainder has been so encroached upon and changed by the modern architect, that little of its ancient character can now be traced. It has lately been considerably enlarged, and the grounds have also been rearranged by Mr. Marnock, of London." These remarks apply to the Hall as it was 46 years ago. The walls of the south front are, with the exception of a few plants of choice climbing Roses planted on either side the entrance door, clothed nearly to the top with the rambling shoots and pretty foliage of the Virginian Creeper (Ampelopsis hederacea). The portion of the front of the building shown bare in the picture above the Ampelopsis line consists of slate secured to the external framework of the building, and, therefore, on account of its hard, smooth surface, offers no opportunity for the Ampelopsis to extend beyond the topmost course of bricks, the tendrils being unable to attach themselves to the slates. The walls at the west end of the mansion are well furnished with fine plants of Wistaria sinensis. In the summer season, beds in close proximity to the Hall are filled with a variety of flowering plants, which contrast effectively with the closely-cut green lawn and choice trees and shrubs. A border runs at the base of and parallel with the terrace wall (upon which are stood some vases well filled with flowering plants at short intervals), and this at the time of my visit last season contained at the back a row of grandly flowered plants of White Marguerites, next a row of well-flowered plants of Henri Jacoby Pelargonium, with its large trusses of dark crimson flowers, and an edging of dwarf-growing variegated-leaved Pelargoniums.

FIG. 50.—ORSETT HALL, GRAYS, THE RESIDENCE OF FRANCIS H. D. C. WHITMORE, ESQ.

In the grounds were observed many grand specimens of choice trees, some of them the finest the writer of this note had hitherto seen in this country. In the west garden stands a fine specimen of Sequoia gigantea, about 70 feet high, with a girth of trunk of about 4½ feet a couple of feet from the ground. This tree—one of several others of the same kind—is perfectly straight and vigorous in growth, the branches brushing the ground. A truly magnificent tree of Ginkgo biloba (Salisburia adiantifolia) measures about 50 feet in height, and has a circumference of trunk of 8 feet at 4 feet from the ground. A Cedar of Lebanon (Cedrus Libani) on the south lawn is a noble specimen; this tree has a girth of trunk of 23 feet at 4 feet from the ground, and an immense spread of healthy branches brushing the green sward, the tree being in a vigorous state of health, there being no evidence whatever of declining vitality, as is too often met with in trees of this kind of large dimensions. A healthy specimen of Araucaria imbricata (see fig. 51), about 50 feet in height, furnished with branches all around from the ground upwards, has a girth of trunk of 6 feet at 4 feet from its base. Grand specimens of Taxodium sempervirens, measuring about 70 feet in height and furnished from the base upwards with healthy, well-developed growth; equally large trees of Thuja gigantea and Cupressus nootkatensis were observed at the west front of the house. An example of the Mop-headed Acacia, with a clear stem for a height of 6 feet, had a spread of branches about 20 feet through, or 60 feet in circumference. This tree on the occasion of my visit afforded agreeable shade from the sun's rays. A pleasant part of the grounds is that in the south garden, known as the Dell, in which many choice tropical subjects luxuriate under the protecting shelter afforded by larger and commoner kinds of trees and shrubs. These include, among others, plants of Chamærops humilis, Aralias, Cordyline australis, Mimosa, Bignonias, Bambusa, Eucalyptus, and Camellias, which remain in robust health all the year round out of doors. Paulownia imperialis also succeeds well at Orsett. Looking east, on the right-hand side of "Church Walk," some new beds, rendered beautiful by a judicious arrangement of bedding plants, were observed, as also was a bed planted with Rhododendrons at the end of the terrace wall. A high Holly tree,

over which a plant of the Irish Ivy (Hedera hibernica) has gained the mastery, is not the least interesting feature in these very delightful and beautifully kept grounds, which, though not extensive, are by skilful arranging and planting made to appear of much larger area than they really are. There are no bare or unattractive spots to be seen in any part of the place. Variety and pleasant surprises in scenery meet one at almost every turning. It was noticed that a free and effective use had been made of Berberis aquifolium as a groundwork, not only alongside the principal avenue drive, but also in many places in the grounds, with pyramidally-trained specimens of Holly, Aucuba japonica in bush form, Cedrus Deodara, &c., showing well above the shiny foliage. Hedges of perennial Asters (Michaelmas Daisy) were observed in the vicinity of the kitchen gardens and alongside walks leading therefrom in other directions. Before taking leave of the grounds, mention may be made of several large bushes of Almond (Amygdalus communis) some 15 or more feet in diameter, and which, when in flower in spring time, must be beautiful objects.

In the kitchen garden good crops of vegetables were observed, as also were Pear and Apple trees bearing heavy crops of well-developed, clean fruits. The trees are planted in rows about 10 feet apart and at the same distance in the rows. A number of shoots have been allowed to grow upwards and outwards from each tree from the time they were planted nine or ten years ago, and these leading shoots or branches have been kept spurred close back each year at pruning time, thereby admitting plenty of light and air to the shoots. Amongst the varieties of Apples which attracted my attention were heavily cropped trees of Cox's Orange Pippin, Worcester Pearmain, Lady Sudeley, Annie Elizabeth, and Warner's King. The trees in the outside rows, both at the sides and ends, were more evenly and heavily cropped than were the inner trees. The soil at Orsett is a reddish loam.

A grand old Mulberry tree at the north front of, and close to, the Hall must not be overlooked in this notice. It has three or four main branches proceeding from the trunk at about 4 feet from the ground, these being supported by substantial props at 9 or 10 feet from their origin. The tree is in fine condition, notwithstanding its great age, and was at the time of my visit carrying the remaining part of a good crop of fruit. The tree is certainly the finest specimen of the kind with which I am acquainted.

In the fruit and plant houses were observed some well-formed bunches of Grapes. The Peach trees had just finished carrying fine crops of fruit. There was also observed a collection of stove and greenhouse plants of a decorative character. A promising lot of Chrysanthemums in pots, grown for the production of large blooms, were noticed. Mr. Neighbour, the head gardener, is to be congratulated upon the fine order in which the gardens and grounds are kept.

Mr. Whitmore, the owner, is a keen horticulturist, and is familiar with the names of all the trees, shrubs, and other plants growing on the place. He also possesses a good knowledge of their cultural requirements and of landscape gardening, as is proved by the many improvements that have been carried out in the grounds at Orsett under his personal supervision. *H. W. Ward, Rayleigh.*

THE FERNERY.

POLYPODIUM VULGARE VAR. CORNUBIENSE (SYN. ELEGANTISSIMUM).

As an example of polymorphic variation this Fern is probably unique. It was found growing wild in 1867 in Cornwall on a pollard Ash, and has maintained its peculiar characters ever since, whether propagated by division or by spores, although by persistent selection the tendency to reversion has been somewhat, though not entirely, suppressed in the case of P. v. C. trichomanoides. In this form of the Common Polypody three types of foliage appear, viz., the purely normal once divided or pinnate frond, a second in which the frond is divided and redivided into long, narrow lobes, consisting of little more than the midribs, and an intermediate, somewhat foliose form of the last-mentioned variety. The main peculiarity, however, of the variety under notice is the extremely erratic manner in which these three types assert themselves. Sometimes the plant consists of perfect fronds of the three types intermingled, or it may, as in trichomanoides, have its fronds as a rule of the finely-cut form, but occasionally a single frond or even a single pinna may present all three types. All these various fronds bear spores, but the most divided type has been observed, when grown under glass, to produce clusters of bulbils on the sites of the sori or spore heaps, and instances have been noted where, normal growth having been completed, the tips of the sub-divisions have lengthened considerably into linear extensions, indicating apparently apospory, although so far I have failed to induce this character by layering, and I have also failed to note any thinning of the cellular tissue, the usual preliminary to that phenomenon. The varietal instability which must underlie the polymorphic character is so truly transmitted when crosses are effected that the hybrid Polypodium Schneideri (P. vulgare cornubiense × aureum) is practically a gigantic P. v. elegantissimum, with all its faults; while a cross effected by Mr. Clapham with P. v. bifido multifidum eclipses even elegantissimum itself, since, besides the three types described, bearing crested or polydactylous tips, due to bifido-multifidum influence, the normal three types also persist in spots, so that no less than six variants occur on absolutely heterogenous lines. A complete frond of bifido multifidum, with its characteristic crest, may be next to a perfectly normal frond; while a finely-cut frond, with forked tips, having an insertion, so to speak, of a portion of bifido cristatum in one place, a patch of normal in another, and several divisions of the intermediate coarse type, may also be present on the same plant. There seems to be no rule in the matter of leaf division in this Fern; the young cells which start the formation of the divisions appear to be constantly changing, yielding first to one influence and again to another, but never producing foliage of any one constant type. Mr. H. B. May for several years had a plant of P. Schneideri, which bore large fronds of the P. vulgare form only, but of the size of P. aureum, and to which eventually a special name was given. Later on, however, this form proved inconstant, and again showed the variations of the older types. P. Schneideri being a hybrid between two quite distinct species, its spores are merely rudimentary; they appear plentifully, but are all imperfect. This is to be regretted, as otherwise it would afford a rare opportunity of studying a hybrid Fern on Mendelian lines. Incidentally in this connection I may mention that Bakerhead's Athyrium ff. Victoriæ × A. ff. setigerum, which unmistakably displays the two characters of tasselled cruciation and translucent bristly edges, yields exact replicas of the cross when its spores are sown, no segregation occurring at all. *Chas. T. Druery.*

FIG. 51.—ARAUCARIA IMBRICATA IN THE GROUNDS OF ORSETT HALL. (See p. 131).

PLANT BREEDING.

MANY growers do not pay sufficient attention to the proper selecting of their stock for seeding purposes. This is a matter that requires careful study. One of the most curious points that I have noted in cross breeding plants is, that while some hybrids will show little variation from their parents, seedlings raised from the seed of selected plants which have not been cross fertilised may occasionally vary considerably. Yet selection is, on the whole, more advantageous than indiscriminate crossing. I have examined whole beds of annuals, and marked one plant here and there from which the seed was specially saved for home sowing. The plants were grown extensively for sale, and only a few of the very best were selected and saved each year for producing seed. This is an advance on indiscriminate seed saving in the case of stocks grown entirely for seed, for all, except rogues or very poor examples, contribute to the seed-bag. Careful selection year by year, and the progeny of each individual plant kept separate, will prove which are the best for seeding purposes. This rigid selection will also keep up the strain to its highest standard, if it does not considerably improve it. If, however, seeds are not saved from carefully selected stock, the quality of the strain will deteriorate. Even in the case of many plants which are propagated annually from cuttings, it is an advantage to raise fresh seedlings at times and to select the best for stock. The yellow Carnations may be instanced in this connection; there are few varieties which last many years

when raised from cuttings, but carefully crossed seedlings will give new vigour and probably other improvements. The seed parent should be of vigorous habit, and that from which the pollen is taken should have flowers of the best shade of colour. This applies to all colours: the pollen parent will generally influence the colour. If intermediate colours are desired, two distinct shades may be inter-crossed, but, as a rule, it is better to select a good form of flower as the mother, and to use a similar or brighter shade for furnishing the pollen.

Pollen taken from another plant of the same variety is better than that taken from the same flower. Where it is desired to effect crosses, bees and other insects must be excluded. Another important matter is to remove all stamens from flowers before the anthers burst, and also all other flowers from the plants, except those that are intended to be fertilised. Another detail is to exercise care to take the pollen from flowers which have not been contaminated with that from others of inferior quality.

The best method of transmitting the pollen is by the aid of a small camel-hair brush, or in some instances the flowers themselves may be brought into juxtaposition. The proper time for pollinating is when the head of the pistil is moist. The stigmas of some flowers are receptive for days together, whilst other lose their potency quickly. A few seeds of carefully fertilised flowers may give better results than larger quantities which have been procured with less care. Indeed, one of the greatest mistakes is to harvest too much seed, for in that case some of the best seedlings may be thrown away through lack of room to accommodate the plants. *A. H.*

FIG. 52.—VANDA WATSONII AS CULTIVATED IN THE COLLECTION OF MAJOR HOLFORD.

VANDA WATSONII.

OUR illustration at figure 52 represents this pretty species as grown in the collection of Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). It was introduced by Messrs. Sander and Sons from Annam, where their collector, Mr. Schlitz, discovered it growing at an altitude of about 5,000 feet. The species was described by Mr. R. A. Rolfe in the *Gardeners' Chronicle*, February 11, 1905, p. 82, the name being given, at Messrs. Sanders' request, in compliment to Mr. W. Watson, curator of the Royal Botanic Gardens, Kew, who is not only a good orchidist, but enthusiastic in his appreciation for all well-cultivated plants. Vanda Watsonii resembles V. Kimballiana in habit, but its flowers are white and with fimbriated labellums. Both V. Kimballiana and V. Watsonii thrive admirably at Westonbirt, grown in shallow teak baskets, and suspended near the glass of the roof in an intermediate house. This section of the genus also includes V. Amesiana, which is of similar habit of growth, but with stouter stems and more fleshy leaves.

THE BULB GARDEN.

LEUCOJUM VERNUM VAR. VAGNERI.

THERE exists several well-marked varieties of the Spring Snowflake (Leucojum vernum), and references to these have appeared from time to time in the *Gardeners' Chronicle*. My attention was first drawn to them on reading, at the time of its appearance, a monograph of the Leucojums from the pen of the late Mr. William Brockbank, in the issue of March 15, 1884. The conclusions arrived at by Mr. Brockbank differ somewhat from those of Mr. J. G. Baker in his *Amaryllidae*, published four years later, and I have preferred to adopt the nomenclature of Mr. Baker. The name of Leucojum vernum var. Vagneri, however, does not appear in Mr. Brockbank's descriptions, and I cannot discover in his notes anything which would point to any knowledge of this variety, save, perhaps, a reference to a plant called L. v. carpathica by Mr. Niven.

This variety, however, is so valuable, either for planting in grassland or in the border, that it may well be brought to notice.

The variety which comes nearest to L. v. var. Vagneri in Mr. Brockbank's descriptions appears to be that called by him L. v. var. carpathicum, but this he describes as having yellow spots, whilst the one to which I refer as Vagneri has markings of a deep green colour, although the flowers are generally borne in pairs, like those of Mr. Brockbank's carpathicum. It is possible that the one spoken of by Mr. Niven, and simply referred to by Mr. Brockbank as "carpatica," may be the variety named Vagneri by Mr. Baker, and for which Mr. Stapf is the authority. In my opinion, it is the most valuable of all the Spring Snowflakes. It blooms about a month before the ordinary L. vernum or its yellow spotted variety, and it flowers quite as early as the common Snowdrop; indeed, in some seasons it appears before that early flower. It is occasionally catalogued under the name of carpathicum, and I have received both this and the yellow-spotted, one-flowered variety by that name from nurseries. It may be described as a tall, robust, early-flowering form of L. vernum with, as a rule, two flowers on a stem, though weak bulbs often produce but one, and as having larger bulbs and flowers, and with the green spots of a darker colour than the type.

GALANTHUS NIVALIS LUTESCENS.

The "yellow" Snowdrops form a small but beautiful class of these favourite early-blooming plants; the flowers, however, are not, as the name would suggest, entirely yellow, but the ovary and some inner markings, the leaves and flower stalks are also of a yellowish hue. So far as is known, they are varieties of the common Snowdrop (Galanthus nivalis), although

occasionally similarly coloured flowers appear among other species, but, so far as I have knowledge, these have not proved constant.

One of the prettiest of the small number in cultivation is the one named lutescens, which has the yellow colouring very marked, although not so bright as the larger flavescens, another of the same class.

G. n. lutescens is a small-growing and small-flowered variety, not considered robust or of good constitution in many places, but it has proved a good grower in my present garden. A few bulbs planted in a clump make a pretty feature in the rockery or in the grass, where the yellow colouring gives a touch of brightness not unwelcome in the early days of the year. This particular variety was found in an old garden in Northumberland, where it still exists in considerable quantity.

S. Arnott.

FIG. 53.—SPRAY OF FLOWERS OF VANDA WATSONII; FLOWERS WHITE.

THE PROPAGATOR.

FOR species of plants which need no special sorts of soil, it will be found that the refuse from the potting bench contains all the ingredients necessary for the germination of the seeds and the maintenance of healthy growth for a few weeks, that is, till such time as the seedlings are pricked out into pans, boxes, trays or pots. It is usually of a sandy nature, through which moisture percolates readily, and if it is not, it should be made porous by the addition of clean, sharp sand. This soil should be passed through a ½-inch sieve, and be put aside. The coarser particles can be used for filling the pots and seed-pans to half their depth, after sifting them through a ½-inch-meshed sieve to remove the too coarse lumps, and this, with one hollow crock over the hole at the bottom of the receptacle, will afford ample drainage, and yet not suffer the soil to become as quickly dry as would crocks or other hard materials that are non-absorbent. The fine soil can then be filled in to within ¼ inch of the rim, and pressed down evenly all over to that depth. When a number of the pots, &c., are thus treated, they should be set on a level floor and afforded as much water as will moisten the soil throughout, and be left till the next day.

Should potting-bench refuse be not available or be insufficient in quantity, good friable loam which has been stored for some months under cover may be used in place of it, taking the precaution to search for weevil grubs, crickets, and wireworms, all of which are voracious feeders on the tender roots of seedlings. With the loam, well-decayed leafmould may be mixed to the extent of a quarter of the whole, and in the case of strong growing plants a small quantity of thoroughly decayed stable manure may be used instead of, or in addition to, the leaf-mould. To this mass a goodly proportion of sand should be added, and the whole must be turned over twice or thrice, and passed through a ¼-inch meshed sieve, the coarser particles being used as above advised. Some species of plants thrive best in soil consisting wholly of soft peat, or of which the peat forms at the least one-half the bulk. Such plants are Gloxinias, Primula sinensis, Lisianthus Russellianus, Calceolaria herbacea, Rhodanthe Manglesii, &c. A dirty seed-pan or pot should never be used, nor are quite new ones desirable for seed-sowing purposes, unless they have been immersed in water for 24 hours. As seeds vary greatly in size, no strict rule can be laid down as to how deeply they should be buried under the surface; but it is safe to place the soil over them to the depth of their shorter diameter. Very small seeds should not be covered at all, but should be pressed into the soil with a smooth, circular bit of board, or the bottom of a flower-pot, and the soil may be moistened by immersing the seedpan nearly to the rim in a vessel of water. Seeds should never be sown so thickly as that when they germinate the plants crowd each other unduly and the roots become entangled.

One other matter to be thought of in time is the hot-bed or other pit, or garden frame, into which the seeds must be placed for germination. The most suitable is the pit filled with last autumn's tree leaves, or tree leaves and stable litter—not very much of the latter; and hot-water pipes or dung linings for affording top-heat. No seeds should be put into any such pit or frame till the bottom-heat has risen from 80° to 85°, and has begun to decline a degree or two. The heat will then, under a coating of half-decayed leaves, cocoanut fibre, or coal ashes, remain fairly steady at 75° to 80° for five or six weeks.

Seeds of the following species of plants may go into this pit or frame, wholly or half plunging the pots, or standing them on the bed, accordingly as they are natives of warm or temperate countries, viz., Calendulas, including the Marigold in variety, Balsams, Zea japonica (both green and variegated leaved), Amaranthus, Sweet Peas, Verbenas, Asters (annual species), Celosias, including plumosus and cristata, Grevillea robusta, Zinnias, Nicotiana Sanderi, Chinese Primulas, &c. Air must be afforded to strengthen the plants and get rid of the moisture arising from the bed, and on the least appearance of becoming drawn, the pot of seedlings should be placed into cooler quarters. The more hardy species should be allowed to germinate, and show their first pair of true leaves, and then without loss of time be placed in a house or pit close to the glass which is 10° cooler.

SEEDS OF STOVE PLANTS.

Seeds of Canna indica varieties, Thunbergia alata in its several varieties, Gloxinias, Gesneras, Streptocarpus hybrids, tuberous Begonias, and of many other inmates of the stove should be raised in a frame or pit having top-heat of 65° at night.

MISCELLANEOUS PLANTS.

Alternantheras in all varieties, Hoyas, Lasiandra macrantha, Hibiscus in variety, Iresine, Herbstii, I. Lindenii, I. Wallisii, Lantanas, Leucophyta Browni, Centropogon Lucianus, Eranthemums, Euphorbia jacquiniæflora, Francisceas and Tabernæmontana coronaria, may be raised from cuttings under similar conditions.

Under cooler conditions, Eupatorium odoratum, E. album, E. riparium, Tropæolum Lobbianum, and those with double flowers may be rooted from cuttings taken from plants that have begun to grow.

ROOT PROPAGATION.

This is an operation which can be carried out at this season with the following plants: Aralia japonica and A. spinosa, Gymnocladus canadensis, Ailanthus glandulosus, Sophora japonica, Weigela rosea, Morus, Rhus, Tecoma, and almost all plants with fleshy roots. The pieces of the root should measure from 2 to 3 inches in length, and be stuck upright in sandy soil in pots, so that the top just shows above the soil, and be sunk in a bed of a moderate degree of warmth, affording as much water as will maintain healthy conditions in the soil. Plumbago rosea, Clerodendron fragrans, Aralia papyrifera, and Macleaya cordata are amenable to this mode of propagation. These root-cuttings require to be covered with a bell glass. *F. M.*

NOTICES OF BOOKS.

* "LIST OF BRITISH PLANTS."

MR. DRUCE is well known for his many contributions to British botany, and he possesses a critical knowledge of the flora. The present little work may be regarded as an extension—a very great extension—of the London catalogue, and it will doubtless be welcome to those who want detailed lists of species and varieties of the higher plants and Characeæ that occur in these islands. That the list is fairly exhaustive will be seen by the 133 species of Rubus (for example), or the 10 varieties of Capsella Bursa-pastoris, which are here distinguished. We venture to think that in the admission into the *List* of the aliens that may have established themselves permanently or temporarily within the area the author has been somewhat liberal in his hospitality. The Orange, for example, and Iris susiana, not to mention many others, are unexpected guests, and really if we are to include such as these in our flora, it seems hardly worth while to exclude any of our cultivated plants.

We could have wished Mr. Druce had refrained from attempts to reform terminology. We think it useless to attempt to replace the Compositæ by Asteraceæ, or Labiatæ by Lamiaceæ. But if we are to do this, why do not the Cruciferæ appear as Brassicaceæ?

The Vienna rules as to nomenclature of species seem to have been rather spasmodically followed, but we note a rather large number of instances in which the rules are apparently disregarded.

† "THE A.B.C. AND X.Y.Z. OF BEE-CULTURE."

THE alpha and omega of bee-culture, so the name implies! But though the book treats most ably of all that is at present known of every phase of bee-keeping, we have not yet reached the omega of knowledge of one of the most interesting and wonderful of insects. As far back as 1771, Wm. White, of Oxfordshire, called bees, "that nation of chemists to whom nature has communicated the rare and valuable secret of enriching themselves without impoverishing others."

The first edition of the work under notice seemed a wonderful production, but the charm of the older volume fades in comparison with that of the present edition. This latest production is full of rich information, concisely and clearly stated, and at the same time it is illustrated with photographs that show nearly every process of the work in connection with bee-keeping. The matter is in every respect sound and practical. As it is written chiefly for Americans, many of the hints do not apply to bee-keeping in this country, but the main points of the art are the same all the world over, and consequently the book may be read with advantage by bee-masters at home.

The alphabetical form, rendering it, as the authors say, an encyclopædia of everything pertaining to the knowledge of bees, makes it a handy volume for the busy bee man. This does not in any way detract from its value to the beginner, for on page 1 the novice is directed to a course of reading which will be sufficient for one commencing bee-keeping, but no one who desires to make bee culture a success will be satisfied with reading that portion only. The interesting manner in which the book is compiled will of itself compel anyone who reads those few articles selected by the authors to read the volume from cover to cover.

Reviews and comments are printed at the end of the book. The opinions of such apiarists as Messrs. Doolittle and Miller deserve careful attention, for they are men of great practical experience. A study of the work will enable the expert to enrich his knowledge, whilst the beginner will gain an immense amount of knowledge by its perusal that cannot fail to be of great value.

SOME NEW DAHLIAS OF 1907.

OWING to the sunless summer of 1907, very few of the new Cactus Dahlias were seen at their best condition, and it was not till quite late in the autumn that representative blooms were produced, even of the best sorts. Some few varieties failed entirely. The reputed champion variety of the year, Rev. A. Hall, was very late indeed in flowering. The plants grew tall, without producing lateral growths, and before most growers were aware of it, the season was too far advanced for the new growths to flower in time for the Dahlia shows. When the flowers did appear they were exceedingly fine specimens, and gardeners who possess this variety should practise early planting and stopping. One of the most beautifully-coloured of the Cactus section is Lady Malmesbury, a variety having blush-pink flowers, and the additional advantage of holding the blooms quite erect on long stalks. It is also of the best form. Another good variety of the mauve and pink section is Daisy Staples: the flowers are of a medium size, and are composed of very narrow florets; this variety flowers freely. The unique novelty, Lady Fair, is quite a new break in Cactus Dahlias, and well worthy a trial. In addition to the usual florets, there are numbers of small feathery florets, which proceed from the base of the main ones, and they give a very irregular or even ragged appearance, which, if not exactly beautiful, is a novelty. A very useful and free-flowering Dahlia is Kathleen Bryant, which has the additional attraction of being a dark-coloured variety. This also belongs to the Cactus type, and promises to become a popular flower.

Ruby Grinsted is also a very fine addition, although the plant is a shy bloomer. The plants are dwarf and sturdy, and the flowers are held very upright. This is another somewhat late-flowering sort, and the plants should be encouraged to flower early, it is at its best season in early September. The colour is lovely. Amongst the new whites One Flag of Truce is of the purest white, as is also Mrs. H. Shesmith, a variety having very large flowers with long florets of much substance. Another of these light-coloured varieties is Mrs. W. H. Raby, the flower of which is excellent in form, but the colour is creamy. In Dreadnught is seen the largest Cactus Dahlia yet raised: it will not succeed as an exhibition flower in the south, but it is well suited as a garden variety, either when grown naturally or partially disbudded. Those growers who favour the Dahlia as a garden flower should secure plants of E. Cadman, a variety having blooms of an Indian red colour, and of star-like form. It is one of the best to show its flowers above the foliage. A purely exhibition sort is Hyacinth. The florets are a beautiful colour or combination of mauve and pink colours, and the form is excellent. The plants may be grown as robust as possible, as the blooms are never coarse. The rarity of really good dark flowers makes Recam doubly welcome: it has a fault, however, in not flowering with freedom. The blooms are very large and of globular form, the florets being of a first-class shape. As the growth is very robust, a number of main stems may be allowed to remain on each plant, as the flowers will thereby be reduced in size.

Amongst yellow varieties Primrose claims a leading place. In colour the flowers are of a light sulphur yellow. As a variety for all-round excellence it is difficult to surpass. Chaucher, apart from a very weak stem, which spoils it for cutting purposes, is also very fine. The flowers are very large and of lovely pink and white colours. The plants should be allowed to carry almost all the buds and blooms which develop on the main shoots. A welcome addition was seen in Mrs. Cozens, a variety having bi-coloured flowers. The base of the florets are maroon, and they are tipped with white. The plant is not exceptionally robust, and requires careful cultivation.

Two fancy Cactus Dahlias were fairly good: these were Meteor and Diavolo, the first being white speckled and striped crimson, the other yellow, shading to white at the tips, and very thickly speckled and blotched with maroon and chocolate. Both these sorts require a somewhat vigorous thinning of their shoots and flower-buds to obtain the best results. Eureka must also be included amongst the best and most distinct of the new Dahlias, the colour being a deep purple. The flowers are well formed, deep in the centres, and of a great size.

Another large-flowered variety, and one of first-rate habit, is T. A. Havemeyer, the blooms being formed of narrow, incurved florets on tall, stiff stems. The plant has a very erect habit of growth.

In the newer section of Cactus, the Pompon Cactus, several very useful new varieties have been added, one of the best being Gracie, a beautiful and novel little gem of perfect Cactus type. The colours are yellow, scarlet, and white. Of the true Pompon varieties, Rodney, an exquisitely formed flower of deep amber colour, shaded with fawn, and Portia, a beautiful flower of rosy mauve colour, are to be recommended.

Mignon is one of the finest garden varieties yet raised, and may be grown entirely natural, for it requires neither thinning nor disbudding. The colour is bright pink, and is most effective. Although classed as a Pompon Cactus, it is a trifle too large for use as an exhibition variety of that class. The variety Nana, however, is a true Pompon and of true Cactus floret: the colour is dark orange. Nana promises to rank as one of the best in its section. *T. W.*

* *List of British Plants*, containing the Spermophytes, Pteridophytes, and Charads found either as natives or growing in a wild state in Britain, Ireland, and the Channel Isles. By G. C. Druce, M.A., F.L.S.; Oxford, Clarendon Press. Price 2s. 6d.

† By A. I. and E. R. Root, published by the A. I. Root Co., Medina, Ohio, U.S.A. Price $1.50, post free.

FOREIGN CORRESPONDENCE.

CARNATIONS IN AMERICA.

REPRESENTATIVES of the trade from all over the United States and Canada attended the convention of the American Carnation Society, held at Washington on January 28 and 29. The society's Gold Medal for 100 blooms of any colour was won by Mr. C. W. Ward, of the Cottage Gardens Co., Queen's, New York, with his variety Alma Ward, thus adding another to his long list of successes. Mr. R. Witterstaether took the Silver Medal with Afterglow. Mr. Rudd, the raiser of Defiance and other fine kinds, had a few blooms of a new white, unnamed seedling. This was much admired by experienced growers present. The flowers of this variety are of a very large size, pure white, and are produced in the greatest freedom. President Seelye is another good white flower, and there was nothing shown in the red classes that surpassed Beacon, Victory being perhaps the nearest. Enchantress still holds its own as the best in its class, but the variety Mrs. T. W. Lawson appears to be rapidly deteriorating. The decision of the Executive Committee to hold its next convention at Indianapolis is a good one, many large growers being located in and around Indiana State. The society is fortunate in its choice of Mr. A. Patten, of Tewkesbury, Massachusetts, as President. *H. K. K.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Cattleyas.—C. Trianæ is now making a pretty show with its flowers. There are many beautiful forms of this species, and so distinct are some of them that it is difficult to recognise them as all belonging to the same type. The plants are easy of cultivation and never fail to produce flowers freely if they are afforded proper treatment. C. Trianæ, perhaps more than any other species of Cattleya, suffers from neglect during the winter months, and this neglect is afterwards apparent both in the quality of the flowers and in the shrivelling of the pseudo-bulbs. Growth begins with the swelling of the flower-spikes in the sheath, and by the time the flowers are fully expanded, the plants are actively growing, notwithstanding that no roots or young shoots may be visible. Especial care is therefore necessary from the commencement in affording moisture to the roots of these plants, for while they do not require an abundant supply of water, they should on no account be allowed to suffer from drought. These remarks also apply to the species C. Percivaliana, which flower a little in advance of C. Trianæ. The beautiful hybrids of the genus Cattleya and the bigeneric Lælio-Cattleyas, which are so numerous and extensively grown for a late winter and early spring display, should have their flowers removed after they have been expanded for a reasonable length of time. After this, any re-potting that is necessary should be done.

Re-potting.—In addition to the above-mentioned kinds that should be examined now are the autumn and early winter-flowering species of Cattleyas, including C. labiata and its varieties, and the hybrids C. Fabia, C. Clarkiæ, C. Iris, C. Statteriana, C. Cornelia, C. Mantinii, C. Ashtonii, C. Pittiana, and others that, having rested since flowering, are now pushing forth new roots. Healthy specimens that have overgrown their receptacles, with the rooting material still in a good condition, may be shifted on into larger pots or baskets. Plants with decaying material about their roots should have all the old compost shaken from them, and any roots that are dead cut away. The strong growing and rooting kinds should be afforded more root space than those that are small in habit and weak in growth, but all alike need ample and perfect drainage. After the root disturbance necessary in shifting and potting, watering must be performed carefully, and the plants will require shading during the hottest parts of bright, sunny days. Frequent damping between the pots, and spraying overhead on all suitable occasions, will greatly assist the plants to quickly recover.

Rooting material.—The overhauling of a batch of plants always gives the cultivator an opportunity of noting what progress the roots have made, and whether the compost provided for them is suitable or not. I do not recommend leaf-soil as a rooting medium, either alone or mixed with other ingredients. The plants grow freely in it, I admit, but the flowers when produced are seldom of good quality. I have for some years past discarded leafmould for the more substantial Osmunda and Polypodium fibre, material now well known and largely used by Orchid growers. Having abundant proof that these materials provide the best rooting medium for these and many other epiphytic Orchids, I do not hesitate in recommending its use. Osmunda may be employed alone for some of the strong rooting kinds of Lælias and Cattleyas, but a mixture of equal parts clean sphagnum-moss, Osmunda, and Polypodium fibre, broken up, and well mixed together, with a good sprinkling of crushed crocks and charcoal, is the best medium for general use. When potting, press these materials moderately firm about the roots, and keep the base of the plant on a level with the rim of the pot.

Back pseudo-bulbs.—During the process of re-potting, all useless pseudo-bulbs should be removed, for if these are allowed to remain they not only rob the other pseudo-bulbs of nourishment, but they also necessitate the use of larger pots than would otherwise be needed. Three or four growths behind each lead is quite sufficient. Should it be desired to increase any of the varieties, the portion thus removed may have a label attached, and be laid on the moisture-holding stage, where they will get frequent syringings. If they eventually start into growth, they should be placed into small pots.

THE KITCHEN GARDEN.

By I. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

The herb border.—Herbs are so essential that special efforts should be put forth to ensure a regular supply all through the season. A well-ordered herb border, with the plants neatly arranged and labelled, is not only useful, but is interesting and pleasing in appearance. The present is a capital time to divide and transplant any of the perennial kinds that may require it, and to clean and apply a good top-dressing of leafsoil and sand to the rest of the species. A plantation of Mint will remain profitable for a considerable number of years if an annual surface-dressing of well-decayed leafsoil is applied. Both the Lemon and Common Thyme delight in a porous soil, nothing being better than road grit for these plants. Endeavour to arrange all the perennial species at one end of the border and the annuals at the other. Most herbs will generally thrive well on an east or west aspect.

Box edging.—Where this is employed it is essential that it be kept within reasonable bounds, and it should always present a neat and tidy appearance. To ensure this condition it is necessary after the elapse of a few years to take up, divide, and replant the plants. This work may either be done during the spring or autumn, but I much prefer the present time. This requires to be carried out by a man with considerable intelligence, and it should be done expeditiously.

Broccoli.—Plants which were laid over during November should be examined for the purpose of removing decaying leaves and stirring the surface soil with the draw hoe. Several varieties will now be "turning in" apace. The heads should be kept covered to prevent them being damaged by frost, and if these should be found to be turning in faster than is required, lift some of them and suspend them in a cool shed. Make a small sowing of the variety Michaelmas White in boxes under glass, and raise the plants in an atmospheric temperature of about 50°.

Brussels Sprouts.—The earlier plantings of these will now have ceased to be profitable. Lose no time in lifting them and burning the stumps on the smother fire. Sow seeds of the variety Sutton's Dwarf Gem in a box, and treat them in the same way as Broccoli.

Leeks.—Plants raised from early-sown seeds will now be much benefited if they are potted on into 5- or 6-inch pots, using a good fibrous loam three parts, and sifted leafsoil or manure from a spent Mushroom bed one part, with sufficient coarse sand to keep the soil porous. Cultivate them near the glass in an atmospheric temperature of about 50°. Sow another box of seed and raise the seedlings in a gentle heat.

Onions.—The ground should be got in readiness for the main Onion bed which is sown in the open. The sooner this seed can be sown, provided the weather is suitable, the more likely will the crop be successful, the later sowings being much more subject to attacks of the Onion fly. The ground, which has been deeply trenched and heavily manured, should now be forked over and given a good dressing of wood ashes and soot. Rake the surface down very finely, and sow the seeds in shallow drills, drawn at 1 foot apart. The soil can hardly be made too firm, especially if it is of a light nature. Among the best varieties for this sowing are James's Long Keeping (still one of the best), Veitch's Main Crop, Improved Reading, and Webb's Masterpiece.

The frame ground.—All vegetable plants which have been wintered in cold frames should now receive abundance of air, removing the lights entirely whenever the weather is favourable, thus preparing the plants, as far as possible, for removal to their permanent quarters in the open garden.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Cyclamens.—The earliest plants of Cyclamen that are past flowering should not be thrown away, as is generally done, but kept in a partially resting state in a cold frame for the purpose of utilising them another season. If large plants are desired, the most successful method of cultivation is to plant them out in a cold frame at the end of March. The frame should be filled up with soil to the slope of the light with a compost of rich loam from an old pasture, leaf-soil, manure from an old Mushroom-bed, wood ashes and sand, well mixing these ingredients together. The old soil should be carefully shaken from the roots before planting them into the frame, care being taken to work the fresh soil well in amongst the roots, and to press its fairly firm round about the corms; but the top of the corm should be kept clear of soil. After the planting one good watering should suffice until growth is freely started. The plants should be syringed in the afternoon daily, and the frame closed at the same time to retain all the sunheat possible. Afford a little shade during the middle of the day if there is bright sunshine. Plants raised from seeds sown last autumn should now be ready for potting-on into 3-inch pots. A compost similar to that described above, but in a finer condition, will be suitable. Place the plants in an atmospheric temperature of 60° to 65° at night. Syringe them freely to keep thrips in check, as they are very troublesome whilst the plants are being grown in a warm atmosphere, and this is necessary until the roots have obtained a good hold of the soil. After that stage place them on a bed of ashes in a cold frame. In gathering flowers of Cyclamens, they should be pulled, never cut, as the small piece left on the plant generally damps back and rots, causing decay to the remaining young flowers.

Chrysanthemums for large blooms.—These plants should now be all potted into 3-inch pots and kept growing slowly. They require to be strong, yet without grossness. If they are cultivated in an exposed position to sun and air, as recommended in a previous article, it is advisable to look over them twice a day to ascertain which plants may require water. This should be done in the early morning, and again early in the afternoon; on each occasion syringing the plant gently overhead, and damp the surfaces in the house if the weather is bright. Front air may now be admitted a little at a time on all favourable occasions, but take care to prevent cold draughts. The plants should be turned round once a week to the sun, as this helps the wood to mature as it grows, which is essential. Strict attention must be given to keep green fly in check. Attention to all minor points in detail is necessary. Never use fireheat if an atmospheric temperature equal to 45° can be maintained at night.

THE FLOWER GARDEN.

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

Cannas.—Old roots should now be cleaned of dead foliage, &c., placed in shallow boxes, and covered with leafmould. A newly-started vinery is a very suitable place in which to start them into growth. No water will be necessary until some of the new shoots have appeared. Should it be necessary to increase the stock, it is best done when growth has started. Few plants are easier of propagation than the Canna, and few are more ornamental and useful in the flower garden. They are suitable for planting in the sub-tropical garden by the edges of lakes or streams, for massing groups and for ornamenting the flower border. Sparsely intermixed with Hyacinthus candicans, Gladiolus brenchleyensis, and Lobelia cardinalis, their large, beautifully-tinted foliage is very effective.

Single beds.—These are very effective when dotted about the pleasure grounds. In planting them endeavour to produce a variety of effect by the use of flowering and foliage plants indiscriminately. One may be occupied by Acer atropurpureum, with a groundwork of Heuchera sanguinea, and Anemone japonica; another with Spiræa Anthony Waterer, with Primroses, Daffodils, and Hyacinthus candicans. Japanese Irises with Aubrietia purpurea and Tulip Murillo, is a suitable mixture for another; whilst Genista Andreana, both standard and bush plants, with a groundwork of Centaurea candidissima, and Gladiolus brenchleyensis, or Hydrangea paniculata, with Lilium croceum, L. tigrinum, L. Fortuni, L. giganteum, together with a groundwork of Violas, form other suitable combinations.

Lawns.—In order to have a well-kept lawn it is necessary that the broom and the roller be frequently applied. At this season of the year the turf will be benefited by a dressing of finely-sifted soil, leafmould, wood ashes, and soot. This mixture should be scattered evenly over the surface sufficiently thick to be well seen, and when dry brushed into the turf with a birch broom. The making of new lawns, when good turf is procurable, can practicably be accomplished at once. The work of turf laying is best completed this month. Fine soil should be sprinkled over the newly-laid turves and be well brushed into any crevices before the roller or beater is applied. If it is intended to form the new lawn from seeds they may be sown early in March, if the weather is mild and showery, but the ground should be first properly levelled and allowed to settle. Procure the best possible grass seeds for the purpose. Lawns can be rid of worms by applying one of the many worm killers on the market.

Pæonies.—The mulch that was placed around these plants in the autumn should be lightly forked in when the young growths appear. Herbaceous Pæonies are not over particular in the matter of position or soil afforded them, but being gross feeders, a rather moist position is preferable, and, for the benefit of the flowers, one having a slight shade. Autumn is the best time for planting Pæonies, but if necessary they may be divided and planted in the spring as soon as the new growths can be seen, but it should be remembered that these plants succeed best when they are undisturbed for several years. In planting they should be placed not more than 1 or 2 inches below the surface of the soil, and from 2 to 3 feet apart. The Tree Pæony will succeed under similar conditions to the herbaceous varieties, with the exception of some of the more tender varieties. In their case a little protection should be afforded them in winter, and their propagation from cuttings or grafting is necessary.

The herbaceous border.—The practice of dividing plants with the spade, except in the case of such fast-growing subjects as Phloxes, Helianthus, Asters, Achilleas, &c., which require very frequently to be divided in order to confine them to their quarters, should never be adopted. The better plan is to drive two forks (back to back) into the plants, and to pull them into as many parts as is desirable. In order that the border may be well furnished during the flowering season, it is not desirable to disturb more plants than is absolutely necessary. Give a dressing of short manure to the border, and lightly fork it in.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

General work.—Work in the hardy fruit garden is still of a preparatory character, but, at the same time, most important, as the more effectively things can be pushed forward now the less there will be to do when the staff ought to be otherwise busy. Advantage should be taken of frosty mornings to have all trees that require it mulched and manure wheeled on to the borders. Mulchings for fruit trees should be composed of rich manures, but at this season it is better to apply it in two or three dressings, as the manure makes heavy soils cold and wet. Mulches applied to recently-planted trees should be for the purpose of retaining the moisture in the soil, and should preferably be of a light nature, as newly-planted trees should become fruitful before they are afforded rich manures of any kind. The nature of the soil and the condition of the roots should determine the kind of manure that is used, for it is of no use applying rich mulches if the roots are not in a condition to receive the manurial properties. A free dressing of lime and wood ashes applied to soils that are cold and of a retentive nature is preferable to mulching at this early season. Young trees that were planted against walls in the autumn should be pruned and tied without delay, as the soil about them will have settled down by this time. Opinions differ widely amongst gardeners as to the best system of pruning newly-planted Peaches and Nectarines. It is better to defer their pruning for as long a period as possible, and to merely shorten any misplaced shoots to well-ripened buds, or any that detract from an evenly-balanced tree. If any further pruning or spraying of fruit trees is necessary, this should be completed at the first opportunity, as the buds will be bursting soon, when it will be dangerous to carry out this work without injuring them. Examine recently-planted trees in the orchard, and make secure all ties and stakes, placing hay bands around the stems to prevent them being injured by the action of the wind. If hares or rabbits are troublesome, protect the stems with bunches of furze or pieces of wire netting. Small birds are often troublesome at this season, especially to Gooseberries, Currants, and Plums. Dust the bush fruits with lime and soot in the early morning, when the bushes are moist, or net them over, if this can be done. Plum trees should be syringed with quassia extract or some other distasteful preparation. Examine the Black Currant bushes at short intervals for "big bud," which must be picked off and burned.

Vines should be pruned and trained during this month, for if their pruning is deferred much later the cut surfaces will bleed and much energy of the plant be lost. In training the shoots allow plenty of room between them in order that the sun's rays and air may readily reach them. Last season was a most unfavourable one for Grapes in the open.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Strawberries.—The young fruits will, after the trusses have been thinned, supported, and exposed to the sun, quickly swell. The plants should be kept quite near to the glass in a house having a night temperature of from 65° to 70°, with a slight increase by day; with the sun's warmth it may be allowed to reach 85° to 90°. Our earliest plants, that are accommodated upon shelves in Pine houses, have their fruits well advanced. Syringing the foliage both during the mornings and early afternoons of fine days accelerates the swelling of the fruit, and prevents attacks of red spider. Close attention must be given to watering the plants, and it may be necessary to do this two or three times daily in bright weather. It is also important that liquid manure be frequently applied, or, less often, a light top-dressing of some quickly-acting artificial fertiliser. The temperatures should be slightly lowered by affording increased ventilation; syringing of the plants and the application of manures must be discontinued directly the fruits commence to change colour. Strawberries, to acquire their full flavour, should be perfectly ripened, and when gathering them this must not be overlooked.

Pineapples.—Fruiting plants of Queens that were started at the beginning of the year are now developing their fruits. They should be grown in a night temperature of 70°, with a corresponding rise by day. While the plants are in blossom maintain a moderately dry atmosphere, and upon favourable occasions ventilate the house early in the day, closing it again sufficiently early in the afternoon to conserve the solar heat. As soon as the flowering season is over, increase the amount of atmospheric moisture by damping at suitable intervals all the available surfaces about them, and when the house is closed for the day, lightly spray the plants overhead, and damp the surface of the bed with tepid water. At this season carefully remove all suckers and "gills" at an early stage of their growth, and keep the fruits erect by the aid of stakes. Care should be taken to keep the soil in an equably moist condition, but by no means wet, and when watering is necessary use tepid water mixed with enough Peruvian guano to well discolour it. After giving various fertilisers a trial, I have found none other better than this guano.

Late vineries.—Houses devoted to late-keeping Grapes, such as Lady Downes, Black Alicante, and Appley Towers, that require a long season in which to mature their fruit and wood, should now be closed. At the outset the sun's warmth will be sufficient to start the buds into growth. On bright days damp the rods, the walls of the house, and the borders twice daily: carefully ventilate the houses to prevent excessive warmth. Other conditions being favourable, the early growth promoted by these means will be satisfactory, and artificial warmth will not be necessary until the buds burst. Owing to the roots not becoming very active until leafage has advanced, the borders, provided they are now moist, will not require watering until that stage is reached. Young rods of vines of any description should have their upper parts bent down in order to check the flow of sap upwards, and to cause the buds to break regularly in the lower parts.

Late Black Hamburgh house.—The vines in this house receive a more natural period of resting and other advantages, as compared with most other varieties of Grapes. In cases where this Grape is required very late in the season, the vinery should be kept open until the buds begin to burst. Given subsequent good treatment, the vines will have ample time in which to perfect their crops, and to mature their wood.

THE APIARY.

By CHLORIS.

Making a start.—Although a person may be very little learned in the art of beekeeping, I do not think anyone would commence by keeping their bees in the old straw skeps, picturesque though they may appear. A bar frame hive of a standard size and pattern, in order that the parts may be interchangeable and be easily movable, should be chosen. If the prospective apiarist has a knowledge of carpentering, it will be best to purchase a hive as a pattern, and then to make any additional ones required. One or two hives will be sufficient for a start. The hives should be obtained or made at once and be fitted up ready, so that they may be used directly they are required.

Purchasing the bees.—When April arrives a skep of bees may be purchased with advantage, for in April there is less chance of the combs breaking down, because at that early season they will contain very little honey. Much care is needed when purchasing bees, as a disastrous disease known as "foul brood" is very prevalent, and a stranger might take advantage of an ignorant or unwary purchaser. If possible, an old beekeeper should be asked his advice before buying bees. There should be no difficulty in getting such aid, for beekeepers as a body are very ready to assist beginners. The bees when brought home should be driven from their old straw skep and be hived in the wooden hive already spoken of. Another method of commencing is to purchase a swarm as early as possible, approximately in May. Swarms may be purchased from the bee-appliance makers by weight, and these traders will furnish a written guarantee that the bees are free from disease.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR MARCH.

TUESDAY, MARCH 3—
Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet. Nat. Amateur Gard. Assoc. meet

THURSDAY, MARCH 5—
Exhibition of Colonial Fruits at Roy. Hort. Hall, Westminster (2 days). Linnean Soc. meet.

SATURDAY, MARCH 7—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

MONDAY, MARCH 9—
Ann. Meet. United Hort. Ben. and Prov. Soc.

TUESDAY, MARCH 17—
Roy. Hort. Soc. Coms. meet. British Gard. Assoc. Ex. Council meet.

THURSDAY, MARCH 19—Linnean Soc. meet.

SATURDAY, MARCH 21—German Gard. Soc. meet.

WEDNESDAY, MARCH 25—
Roy. Bot. Soc. Exh. at Regent's Park.

TUESDAY, MARCH 31—
Roy. Hort. Soc. Coms. meet., and Exh. of Hyacinths at Hort. Hall.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 40·7°.

ACTUAL TEMPERATURES—

LONDON.—*Wednesday, February 26* (6 P.M.): Max. 49°; Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—*Thursday, February 27* (10 A.M.): Bar. 29·7; Temp. 48°; Weather—Fair.

PROVINCES.—*Wednesday, February 26* (6 P.M.): Max. 49° Cornwall; Min 42° Scotland N.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Herbaceous Plants, Lilies, Hardy Bulbs, &c., at 12; Roses at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

WEDNESDAY
Hardy border Plants and Bulbs, Liliums, Gladiolus, &c., at 12; Roses and Fruit Trees, at 1.30; Azaleas, Palms, &c., at 5; Japanese Liliums in cases as received, Miscellaneous Bulbs and Plants, at 1, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Importations of Vanda cærulea and Burmese Dendrobes, Orchids in flower and bud, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.45.

The Culture of the Rose.

In view of the universal cultivation of Roses in English gardens, and the increased interest now taken in Rose exhibitions, it is scarcely a matter for surprise that additions to the literature of the flower are made at frequent intervals. There is a quality in the Rose that enables it to appeal to the more cultured tastes, and for this reason, perhaps, the special works setting forth the best systems of cultivation are of exceptional merit, as the contributions from the late Dean Hole, William Paul, Rev. Foster Melliar and others abundantly prove.

Every new writer on this flower finds it a matter of considerable difficulty to treat in a satisfactory manner the question of classification. Many of the finest Roses have been raised from varieties whose ancestors have been so crossed and recrossed with each other that it is impossible to say with any degree of certainty whether they should be classed as Hybrid Perpetuals, Hybrid Teas, or Teas. Rosarians still use these definitions, but a glance through the first part of the latest work* on Rose culture confirms us in the view that the time cannot be far distant when one or other of these divisions must disappear. Mr. Pemberton states that the varieties constituting these three divisions have been obtained from the species Rosa gallica, R. damascena, R. centifolia, and R. indica.

The first Hybrid Perpetuals made their appearance about the year 1840, and became general favourites for fifty years afterwards. The tea-scented Roses were introduced at about the same time, but they were fewer in number and less hardy and vigorous than the H.P.'s; consequently they were not so generally cultivated. The next step was made when certain Hybrid Perpetuals were crossed with the tea-scented varieties, this cross resulting in the production of what are known as the Hybrid Teas. These are perhaps the most valued Roses at the present time, for some of the best qualities of both parents are combined in many of the better-known varieties.

In the earlier part of Mr. Pemberton's book many of the wild Roses of this and other countries are described, and they constitute a large and at the same time a most varied and interesting group. Incidentally, we notice in the first chapter an exhortation to bear in mind that the Rose is not an exotic, but the author in subsequent chapters shows that the Hybrid Perpetuals, Hybrid Teas, and Teas have been obtained entirely from exotic, that is from foreign, species! The wild species are but seldom seen in ordinary gardens, doubtless owing to their single flowers, and to their blooming only once in the year, but many of them are, nevertheless, worthy of general cultivation. For instance, Rosa spinosissima, the Burnet Rose of Scotland, R. alpina, a thornless Rose and one of the earliest of all to flower, R. moschata, the Musk Rose, R. macrantha, R. multiflora, R. rugosa, the Ramanas Rose of Japan, and R. Wichuraiana, the trailing Rose. From some of these species, and more particularly from R. multiflora and R. Wichuraiana, many of the finest, strong-growing, rambling Roses have been obtained, and their latent capacities for producing still more beautiful varieties of the same type have not as yet been nearly exhausted.

The earlier portion of the work under review is chiefly interesting to the Rosarian from the fact that it shows how few species have so far been employed by the hybridist for raising distinct races of Roses. Mr. Pemberton draws special attention to this point, and suggests that crosses should be made between the Hybrid Perpetual and Hybrid Tea varieties and such species as Rosa multiflora, R. rugosa and R. Wichuraiana. He pictures the possibility of having the darkest red Hybrid Perpetuals with a habit like R. multiflora, and magnificent Tea Roses produced on bushes like R. rugosa. Imagine a perpetual-flowering Crimson Rambler bearing clusters in the finest stage of development of such flowers as Général Jacqueminot or Horace Martin!

The present popularity of the Rose is, no doubt, largely due to its apparently inexhaustible capacity for variation. Already there are Roses for almost every purpose for which a flowering plant could possibly be required. For example, there are dwarf-growing varieties for the rockwork, rampant climbers for covering arches and pergolas, others suitable for forming hedges and screens, to trail down banks, to climb up trees, to screen unsightly walls and buildings, or to form beds. Again, there are others which can be grown as standards, weepers, or bushes, and they may be planted with other flowers in borders. Besides these, many are valuable for forcing in greenhouses during the winter season of the year.

Seventy years ago there was scarcely a single Rose which flowered more than once in the year, hence the welcome accorded the advent of the Hybrid Perpetuals, many varieties of which afforded a second crop of blooms, although the later flowers, at least in the case of some of them, were produced but sparingly. At the present time many modern Roses flower almost continuously throughout the season. The improvement in colour has been equally great, nearly every tint, except that of blue or black, being represented.

Much still remains to be done, for many of the newer varieties lack hardiness, while others are of feeble growth, or are sadly wanting in fragrance, while too many fall easy victims to the Rose mildew. Then again we urgently need some perpetual-flowering climbing Roses. There is also one class of colour which is but poorly represented, namely, the clear shades of yellow and orange. There are many varieties which are said to have yellow flowers in the Rose catalogues, but they are only yellow in name, for on the blooms opening they rapidly fade to almost a white.

The second, and more practical, part of Mr. Pemberton's work deals in the following order with the soil and its treatment, with manures, planting, pruning, budding, cuttings, grafting and layering, also with raising Roses from seed, growing them for exhibition, exhibiting them, judging them, growing them under glass, and finally with Rose pests.

When writing of soils, he says: "No amount of good cultivation, however, take what pains you may, can ever compensate entirely for an adverse season and climatic difficulties. In nine cases out of ten it is not the soil but the climate to which success is primarily owing." No doubt Mr. Pemberton refers in that passage more particularly to growing Roses for exhibition, and his contention is certainly well supported by experience. Other things being equal, climate must always be the leading factor in successful exhibiting. In treating of the composition of the soil, he says: "Where a soil is deficient in but one of the five essential ingredients necessary for the plant, although rich in the other four, it may become more or less barren. In other words, it is the body *in minimo* which rules the crop—a most important principle." This statement is equally true of all other crops, and the cultivator who fails to appreciate the fact is sure to incur loss in the application of manures. Mr.

* *Roses, their History, Development and Cultivation*, by Rev. J. H. Pemberton.

Pemberton has not written exclusively for exhibitors, but a great part of his book has reference to the cultivation of Roses for garden decoration. In regard to pruning climbing Roses, he asks: "But what of the old shoots which have just given us masses of flower?" In the majority of cases this growth has done its work; it will either flower no more or flower feebly, the new outgrowth has been sent up to replace it. Therefore, the cultivator is advised to cut out the old shoots as soon as the flowering season has passed.

Mr. Pemberton's view of the usefulness of the Rose is much wider than that set forth by the late Mr. Foster Melliar in his *Book of the Rose*. Mr. Foster Melliar, devotee though he was, confessed that, in his opinion, the Rose was not a good garden plant, and for furnishing a display of flowers for garden effect it could not rival many other species of plants. He therefore insisted on regarding his garden as existing for the Rose rather than the Rose for the garden, content if, amongst the numerous plants bearing partially-decayed flowers, as was their wont, he was fortunate enough to discover one perfect bloom! Mr. Pemberton's appreciation for the Rose as a good garden plant, however, finds considerable justification in the large number of perpetual-flowering Hybrid Teas that have been raised since Mr. Foster Melliar's book was written.

At the end of the volume will be found descriptions of about 200 selected Roses for both garden and exhibition purposes, and we need hardly say that, in these selections as well as in the details of cultivation and methods of exhibiting related in this work, the author speaks with the authority of one who has spent all his life in acquiring practical experience in the subjects upon which he has written.

OUR SUPPLEMENTARY ILLUSTRATION.—The ancient vine at Hampton Court of which we give an illustration in the supplement to the present issue has been seen by hundreds of thousands of visitors to the celebrated gardens, but it still retains its interest for the general public and fruit specialists. The appearance of its huge, quaintly-shaped stem near the ground is sufficient to show that it is aged, and it is generally assumed to be slightly in excess of 150 years of age. That may be no great age for a Yew or other forest tree, but, seeing that during its life this old vine must have produced many score thousands of bunches of fruit, it is surprising that it should still be alive. As a matter of fact, it is now very much more than alive, for it is exhibiting renewed vigour and strength, so that those who remember its condition some 20 years ago admit that it now no longer induces fear that its end is near, but that present appearances seem to indicate that the life of the vine will be prolonged for a very long period. It was a fortunate circumstance that the former condition of the old vine and the unfitness of the habitation came under His MAJESTY'S notice. The result has been that under the superintendence of Mr. MACKELLAR, His MAJESTY'S gardener, the old vinery has been removed, a new and far more spacious and lighter structure has been built, and this now shelters the vine. With the removal of the old house there was also a thorough clearance of the mass of brick flues and base walls that so largely occupied the vinery floor. The space thus occupied has since been filled with good soil, some being sent from Windsor Park, thus creating, as it were, an expansive and new root area for the vines. Under the care of the veteran custodian, Mr. JACK, the vine has liberally responded to the better conditions. When the late Mr. BARRON wrote his famous book, *Vines and Vine Culture*, in 1883, he mentioned that the Hampton Court vine carried as many as 1,700 bunches in a season. It is no wonder that evidences of exhaustion followed such inconsiderate cropping. If the vine now carries only about 400 bunches yearly, they at least excel greatly in size those of earlier years; the berries are very fine, as black as Sloes, and of true Hamburgh flavour. Last year many of the bunches ranged from 2 lb. to 2½ lb., thus telling a very different tale from the poor, little, half-pound bunches that formerly formed the annual crop. It was a wise step to exclude visitors from the interior of the house, and permit them to view the vine from the glazed lobby shown in the inset in our illustration. Formerly visitors caused so much dust that the Grapes became coated, and had to be washed before they were distributed as gifts. The foliage also necessarily greatly suffered. Now not only are the Grapes as clean as are those grown in any private vinery, but they are so excellent in quality that they are specially reserved for the Royal table. At the present time the house is liberally ventilated and kept as cool as possible, that the crop may hang late into the autumn. The young wood made last year is wonderfully good and promising. The old vine, in its remarkable resuscitation, is an example that should be noted by Grape growers.

ROYAL HORTICULTURAL SOCIETY.—An exhibition of Colonial-grown fruit and vegetables will be held at the Hall in Vincent Square, Westminster, on March 5 and 6. Sir SOMERSET FRENCH, K.C.M.G., the newly-appointed Agent-General for the Cape Colony, and previously Postmaster-General for the Cape, will perform the opening ceremony, which will take place at 12.30 on March 5. Entries for many exhibits have been received, and include fruits (Plums, Pine Apples, &c.) from South Africa, Apples from Nova Scotia, Bitter Oranges and other citrus fruits from Cyprus, and also South African and Mediterranean preserves, cheeses, jellies, and honies. Sir SOMERSET FRENCH will show a large collection of paintings of Cape scenery executed by Cape artists. Mr. C. DU F. CHAPPINI, the Trade Commissioner for the Cape, will give a lecture at 3 p.m. on March 5 in the lecture room at the Hall on "Cape Colony and its Commercial Fruit Resources." The band of His MAJESTY'S King's Colonials will be in attendance on both days under the conductorship of Captain PETER C. ANDERSON.

———We are informed that Mr. A. W. SUTTON will deliver a lecture on "Tuberous Solanums" before the Scientific Committee in the Lecture Room at Vincent Square at 4 p.m. on Tuesday next.

THE BRITISH ASSOCIATION.—The meeting of the British Association for this year will be held in Dublin from September 15 to 22. The president for the year is Mr. FRANCIS DARWIN, F.R.S., so well known for his investigations on plant physiology. Mr. F. F. BLACKMAN, F.R.S., who, by a curious coincidence, has also specialised in the direction of plant physiology, will preside over the botanical section of the Association. It is expected that there will be a strong gathering of botanists at the meeting.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual meeting of this society will be held at the Royal Horticultural Society's Hall, Vincent Square, Westminster, on Monday, March 9, at 8 p.m.

HORTICULTURAL CLUB.—The next house dinner of the Club will take place on Tuesday, March 3, at the Hotel Windsor, when Mr. C. E. PEARSON will give a lecture, illustrated by lantern slides, on bird eggs and evolution of protective colour.

LINNEAN SOCIETY.—A meeting of this society will be held on Thursday, March 5, when the papers will be read by Prof. F. E. WEISS, D.Sc., F.L.S., on the "Morphology of Stigmaria in comparison with recent Lycopodiaceæ," and Mr. ALEXANDER PATIENCE on "Trichoniscoides albidus and T. Sarsi."

CONTINENTAL RAILWAYS AND HORTICULTURE.—A circular letter has been addressed to persons interested in horticulture to the effect that a certain number of railway vans are in course of construction which will be heated during cold weather, to enable flowers and living plants to be safely transported over the European railway system. They will be used over the international routes as defined by the Berne agreement in 1886.

FLOWER SHOWS IN AMERICA.—The special prizes to be given at the National Flower Show to be held at Chicago in November next already amount to over $2,000 in value. American growers are actively preparing for the show of the National Rose Society, to be held in the same city next month, and the year 1908 promises to be a notable one in American horticulture generally.

AMERICAN SPECIES OF CRATÆGUS.—We have received a monograph of the *Crataegus in Southern Michigan* from the pen of Professor SARGENT. It gives detailed descriptions of no fewer than 55 species, and the author observes that "it seems probable that there are still in the southern part of the State a large number of unnamed species." When we remember that all these come from a portion of one State, and that among them only three names familiar to cultivators occur, namely, punctata, mollis, and tomentosa, it is evident that Michigan is extraordinarily rich in Cratægus not known in gardens. Whilst this is undoubtedly the case, one is inclined to wonder whether American botanists are not splitting up their material rather finely—in other words, creating several species where one would serve. For our part, we suspect they are doing what British botanists have done with our native Rubi. The latter have founded species on such trivial characters or combinations of characters that the study of Brambles on their lines is hopeless for students of ordinary opportunities. They have brought matters to such a pass that there are, perhaps, three people in the country who can profess to know Rubi thoroughly. Some will regret this tendency on the ground that, being so difficult of practical application, it makes descriptive botany impossible to the ordinary man and tends to divorce the science from horticulture. Professor SARGENT'S descriptions are evidently made with exceeding care and minuteness, and characterised by that thoroughness which marks all his work. From two-thirds to a page is devoted to a technical but plain description of each species. A conspectus of the species in each group, giving their differentiating points, precedes the specific descriptions. But we note these points are often of inferior importance, and confirm the doubts expressed above. For instance, in the group Tenuifoliæ, the only difference mentioned (and from its place in the conspectus we presume it is the chief difference) between *C. glaucophylla* and *C. otiosa* is that the leaves of the former are "deeply lobed," the latter "slightly lobed." This seems hardly a character of sufficient importance to confer specific rank.

FRANCO-BRITISH EXHIBITION.—We understand that the French government proposes to set aside the sum of 795,000 francs (£31,800) to enable the State industries to be represented at the forthcoming exhibition in London. The Minister of Agriculture, with the aid of 100,000 francs, will provide for the suitable display of exhibits connected with French agriculture and horticulture

SCHOOL OF FORESTRY IN THE FOREST OF DEAN.—The School of Forestry which has been established by the Commissioner of Woods and Forests in the Forest of Dean is reported to have made satisfactory progress. There are now 14 men at the school, of whom six came from private estates and eight were Crown labourers in Dean Forest. Up to the present 13 men have passed through the school, and of these three have obtained situations as assistant-woodmen in the Royal forests, one as assistant pole inspector in the Post Office, and two as head woodmen on private estates. SIR E. STAFFORD HOWARD, in his Report for 1906-7, observes that there appears to be a satisfactory demand for the education given, though the school is still unknown in many parts of the country. The applications received for trained men show that there is a demand for the services of qualified woodmen. *Journal of the Board of Agriculture*, February, 1908

MARRIAGE.—The marriage of Mr W. T. LAWRENCE, the eldest son of SIR TREVOR LAWRENCE, took place on Monday last, the 24th inst. The wedding ceremony was a floral one. The bride wore a large cluster of English-grown Orange Blossoms, and had a tiara-shaped wreath of the same flowers on her head. The bridesmaids carried posies made of Zonal Pelargonium flowers, relieved with sprays of Erica persoluta alba and foliage of Pelargonium quercifolium.

GREVIA SUTHERLANDII.

THIS singular plant forms a small tree, and is a native of Natal, from which Colony it was introduced to our gardens about the year 1859. The name of the genus Grevia was given in honour of Sir George Grey, K.C.B., Governor-General of the Cape Colony at the time of its discovery, and the specific name is after that of its discoverer, Dr. Sutherland, who found it growing at much-exposed headlands 2,000 to 6,000 feet above the sea level. Grevia is now regarded as a member of the Nat. Ord. Sapindaceæ. The leaves are clustered at the ends of the branches, are cordate, orbicular-ovate, fleshy, glabrous, bright green and notched at the margins. The flowers are drooping, scarlet in colour, each about half an inch in diameter, and the inflorescence, which in greenhouses in this country occupy about two months in developing, form dense terminal clusters at the ends of the branches. Remarkable cup-like discs intervene between the petals and the stamens, and along the edges of which are ranged a number of stalked glands, the rudiments, probably, of abortive stamens. The species flowered for the first time in Europe with the late Dr. Moore, of Glasnevin. It has recently flowered in Sir E. G. Loder's gardens at Leonardslee, Sussex, and the gardener, Mr. W. Cook, has obligingly sent us an inflorescence, with the following information

"The specimen forwarded has been grown in a well-ventilated greenhouse having an atmospheric temperature of 50° to 60°, and in full exposure to the sun. During the winter months the house is kept rather dry, as at this period the plants are in a condition of rest. A suitable rooting medium consists of a mixture of loam and peat-soil, with a free admixture of silver sand. The foliage is benefited by frequent sprayings of water during the summer months. The plant is not susceptible to attacks either by insects or diseases. Propagation may be readily effected by cuttings."

COLONIAL NOTE.

PARA RUBBER IN CEYLON.

AN interesting account is given in an article that has recently appeared in the *Tropical Agriculturist* of the way in which the Para Rubber plant was introduced into cultivation in Ceylon. Mr. H. W. Wickham, who was engaged in planting in tropical America, was commissioned by the Government of India, acting on Sir Joseph Hooker's suggestion, to procure the seeds of the tree, in order that it might be tried in our Eastern possessions. Mr. Wickham owed it to a fortunate (for him) accident that he was able to bring a considerable quantity of seed home in the year 1876. The Inman Line commenced to run a steamship in connection between Liverpool and the Hugon. The first vessel which sailed after reaching the Upper Amazon met with trouble, and was left on the captain's hands, with no cargo for her return journey to Liverpool. Mr. Wickham therein saw his opportunity, and wrote at once to charter the ship on behalf of the Government of India, and directed the captain to be at the juncture of the Tapajos and the Amazon rivers at an appointed time. Meanwhile he set to work in the forest, with what help he could procure, to collect the seeds. These were packed, after drying, in openwork baskets made by the native women. The task of drying the oily seeds and afterwards keeping them properly ventilated required much care, and the limited time available added considerably to the difficulties. The seeds had to be conveyed in canoes to the ship at the mouth of the Tapajos. The crates were slung up in the fore hold of the vessel, and started on the homeward journey. Owing to the good offices of a friend at court, the risk of delay raised on the part of the Portuguese authorities was successfully obviated, and the seeds arrived at Kew in June, 1876. The work of planting was immediately commenced, and shortly afterwards a crop of 70,000 young Hevea plants was to be seen in the glasshouses. The first locality decided on for the destination of the seedlings was Tenasserim, in Southern Burma, but, owing to adverse circumstances, it was finally decided that they should be forwarded to Ceylon. The young Hevea plants were therefore carefully packed in Wardian cases and placed on board British India liners. There was considerable difficulty at first to persuade the planters that the Para Rubber trees did not require a swampy situation, as it was generally understood that the plants naturally inhabited such localities. This seems probably to have been due to the hasty inference drawn by an "explorer" from a few weeks' experience on the Amazon, who had seen a few plants growing in the river swamps. The real fact, however, is, that the trees occurring in the wet lands have strayed from the main Hevea forests, which occupy the higher dry land behind. Much time was consequently lost in the first instance. The report of the man who really knew the forest seems not to have reached the

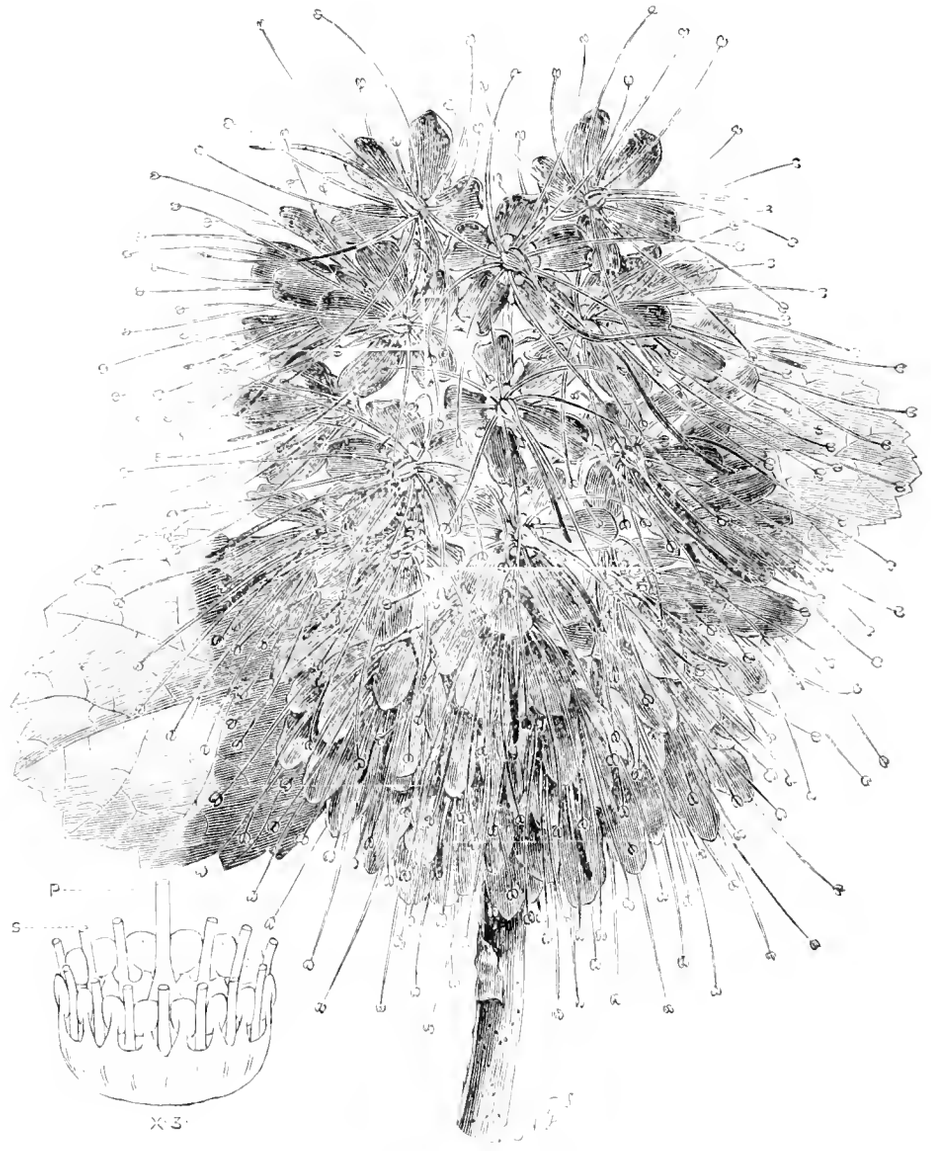


FIG. 54.—GREVIA SUTHERLANDII: FLOWERS SCARLET.

planters, but to have been overshadowed by erroneous information from other quarters. It is gratifying to remember the important part played by the Royal Gardens, Kew, in the introduction of this source of wealth in our Eastern possessions, but it should also not be forgotten that this is only one of the many great services which Kew has rendered to the Empire.

FIG. 55.—LEONOTIS LEONURUS: FLOWERS ORANGE-SCARLET.

LEONOTIS LEONURUS.

THIS is an old inhabitant of our gardens. Its popular name is the Lion's Tail plant. At the exhibitions of the Royal Horticultural Society within recent years Messrs. Veitch have frequently exhibited the plant as a winter-flowering greenhouse subject. In Wood's *Natal Plants*, Vol. I., p. 53, it is stated that in Cape Colony it is known as the Wild Dagga, and in Turkey as the Minaret Flower, an appropriate name. The following interesting statement by Dr. Andrew Smith is also quoted: "The Kaffir name, 'umfincafincane,' is taken from the sugar-birds sipping the sweets from the bottom of its long, trumpet-shaped corollas. Before the mouth of the corolla opens, which it does when the stamens are mature, the nectar is intensely bitter, but at the moment of opening the sweetness is developed. This means that nature does not wish insect marauders who cannot carry the pollen where it is required to come and rob the nectary."

A decoction of the plant is used as a medicine by the natives of Natal, and the Hottentots smoke the leaves like tobacco.

Leonotis Leonurus is a soft-wooded plant 4 to 6 feet high, with erect quadrangular stems, rounded at the angles, and furnished with opposite, oblong, narrow leaves with clusters of smaller ones in the axils. The leaves taper at the base to a short petiole, and have a few blunt teeth towards their apices; the surface is finely pubescent above, and densely so beneath.

The flowers, produced in dense whorls in the axils of the uppermost leaves; they are tubular, covered with short hairs on the outside, of a rich, bright orange-scarlet, and very showy. A succession of whorls is produced, so that if the dead blooms are picked off the plants remain in a decorative condition for a considerable period; moreover, the whorls of empty calices which remain in no way detract from the beauty of the plant.

It is of easy culture, and can be readily increased by cuttings inserted in summer after the plants have been placed out-of-doors to ripen their shoots. The young plants should be stopped when about a foot high, in order to encourage the formation of branches on which the flowers are borne. They should be grown out-of-doors during summer, and when taken inside should be given a position where they may obtain the maximum amount of sunlight. *H. Spencer.*

CULTURAL MEMORANDA.

GLORIOSA SUPERBA.

THE bulbs of these plants should at this season of the year be carefully shaken out of their old pots, and after being repotted be started into growth in a stove temperature. Gloriosas require an abundance of heat and moisture during their growing period, and for a rooting medium should be given a mixture of fibrous peat, a little loam, a small quantity of charcoal, and plenty of coarse sand. The pots should be furnished with abundant drainage material, and should be thoroughly dry, clean, and sweet before being used for the reception of the bulbs. At the end of the season moisture should be gradually reduced, and they should be kept during the winter in a resting condition in a moderate degree of warmth. These plants have a very pleasing appearance when well grown, and are effective objects when trained to wires placed at a reasonable distance from the roof of the stove or a less warm structure.

GARDENIAS.

To maintain a healthy stock of these useful, sweet-scented, evergreen shrubs, a fresh batch of plants should be raised annually by inserting cuttings of moderately firm wood either in October or at the present time. The shoots for the purpose should be inserted around the sides of small pots filled with a sweet, gritty mixture and placed in a warm propagating pit. The cuttings soon form roots, when they should be transferred singly to small pots, using a peaty soil that contains plenty of sand. If these young plants be grown on in a warm house and syringed frequently during bright weather they will grow freely and form very serviceable flowering plants during their first year. I usually stop the young growths about twice during the early part of the year to induce the formation of flowering wood and a sturdy, robust habit of growth. Two-year-old plants are very useful subjects for dwelling-room decoration, but just before they expand their flowers they are placed in a slightly cooler atmosphere. Although most gardeners affect their Gardenias a light fibrous loam, I find they prefer a rooting medium of rough peat and a small quantity of loam with a good sprinkling of sand. *H. Markham*, Wilton House Gardens.

HOME CORRESPONDENCE.

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

THE PROPOSED VEGETABLE EXHIBITION.—Mr. Beckett may rest assured we shall obtain all that is good in Potatos without the aid of the National Potato Society. Leading seedsmen will not miss an opportunity of introducing a really valuable variety for the masses as a food product. There is no fear but that each seedsman will strive to introduce varieties suitable for his own neighbourhood, but is it not mere supposition that one Potato is not suitable for any but one particular neighbourhood? Was not that most popular of all varieties of Potato, Magnum Bonum, popular in all counties, and is it not also true of Up-to-Date at the present time, as well as of Windsor Castle and many other sorts? I am not sure that Potatos deteriorate so fast as to need a Potato society to replenish varieties. Experience may teach you that even one variety for use from September until the following June is sufficient for your own requirements, even if they are extensive, but for the sake of comparison you may be induced to plant a couple perhaps. From an exhibitor's point of view, three dozen sorts may be necessary, or perhaps interesting, but this is not the point at issue. Mr. Beckett knows well how difficult it is to say when a certain Leek, Onion, Cauliflower, Celery, Cucumber, Carrot, &c., bears the correct name it should have; there is such an infinitesimal difference in the various specimens that he himself would hesitate to say they were wrongly named; varieties of vegetables leave such a narrow margin for emphasis that the most clever expert might be doing an injury to a certain exhibitor were he to disqualify. Referring to the remarks of *A. D.* on p. 61, does *A. D.* really think if such an exhibition as he would like to see were provided in London that those people who such shows are intended to educate would take the smallest trouble to visit them? *A. D* cannot make such an exhibition sufficiently attractive to induce the ordinary person to step even a little out of his way to see it. You have only to remember such a show as that held in Vincent Hall but two or three years ago, and the paucity of visitors. Again, look back a little further to the Chiswick display, and note if any but vegetable enthusiasts attended either display. Even in London, where *A. D.* would have us believe so little is done, I know that every new variety of vegetable, good or bad, is to be seen as it is introduced at the R.H.S. Hall, and yet how little noted they are by the casual visitor. Of course, there is some difference between the exhibition specimen and that which is employed as food, even in the gardens of the prominent exhibitors The ordinary person cannot obtain exhibition standard produce for his daily consumption. Neither Mr. Beckett nor *A. D.* need lament the chance of the public being unaware of what is being provided for them in the vegetable world as long as we have such enthusiastic seedsmen as at present. *Onlooker.*

POINTING EXHIBITION VEGETABLES.—*A. D.* says (p. 91): "Point judging can be applied only to collections in which the number of dishes range from six upwards." Why, I ask, cannot pointing be done in a collection of four or five dishes? I have many times noted how close in point of merit collections of four dishes in cottagers' classes have often been, and from the comparison method how difficult it was to separate two and sometimes three of the competitors. The kinds of vegetables are not always the same in all the competing exhibits, some omitting even Potatos, yet staging excellent other dishes. Surely pointing under such conditions is possible. I consider equality of kinds with a maximum of seven points is not the right method of judging a collection of vegetables. The principle should be those kinds that are generally more difficult to produce should have the preference over those less difficult. Few exhibitors will place Runner Beans on the same standard of points as Carrots. Yet some judges do this. While generally agreeing with the scheme of points allowed by *A. D* for a collection of twelve dishes, I do not think Potatos can be easily grown under all conditions. If the soil is unsuitable the tubers cannot be produced in such a satisfactory state as where it is fitted better for their growth in shapely tuber formation, free from excrescences and irregularities in shape. Again, I think Cauliflowers should have a higher range of points given them than Runner Beans. Marrows, I think, are only entitled to four points on the score of easy production. I agree that Cucumbers are not deserving of the maximum number of points, even allowing a little on the score of difficulty of production. This latter consideration is outweighed by their small edible value as a vegetable. I would place the twelve vegetables thus: Celery, Leeks, Onions, and Carrots, seven points; Peas, Cauliflowers, Potatos, and Tomatos, six points; Runner Beans and Cucumbers, five points; Beet and Marrows, four points. *E. Molyneux.*

JUDGING VEGETABLES BY POINTS.—I would remind *Hortus* that there is no value in the present system of pointing, and *D.* says, p. 30, "It does not matter also whether vegetables in collections are judged by points or without points." One often sees the maximum number of points given to certain dishes; is this wise? For one often sees better dishes than those that have been already awarded the maximum number of points similarly awarded, and it is perplexing to *Hortus* and other experienced growers to know what is the best quality and highest standard of any kind of vegetable. *D.* says, "When show committees require that collections be judged by points and fix the scale of points for each dish or kind, the judges have to do as instructed, and when such is the case the points are published on the respective collections." This is not always the case, and, for instance, I may mention the Edinburgh International Collections of Vegetables (1905), which, according to the schedule, were to be judged by points, but these points were not published, and a large amount of interest was lost by their omission. Referring to the quality of the various kinds, p. 91, when six distinct kinds of vegetables are staged, experienced judges should use their discretion as to whether a brace of Marrows exhibited, say, in May, should not receive the same number of points as Tomatos, and, again, if the Marrows were staged in the place of the Tomatos in July, to award them the maximum number of points. As *A. D.* suggests, there is still room for improvements. *Curious.*

LEAF CURL OF THE PEACH AND NECTARINE.—I read with much interest Mr. W. Fyfe's remarks on this subject, pp. 100 and 101. I have grown Peaches and Nectarines extensively on open walls in an adjoining county (Wiltshire) to that in which Lockinge Gardens are situated, and although I have been troubled with curled or blistered leaves more or less during the months of April and May, I have never sustained any loss either in the vitality or vigour of the trees or in the quantity and quality of the crop. I suppose the climatic conditions generally in Wiltshire are more favourable for the culture of Peaches out-of-doors than those prevailing in Berkshire. As soon as the leaves began to curl in the slightest degree I examined the trees daily and picked off all affected leaves and burnt them. I never allowed the foliage to become badly injured before taking this action, with the result that the trees in a short time showed no evidence whatever of having been affected with curled or blistered leaves. It is generally believed that the blistering of the leaves is caused by a spell of cold following a short period of warm, genial weather. This causes the growth to be checked, and deformity is the result. The only remedy that I know is the hand-picking recommended above. Only the worst leaves should be first pinched off trees that have been allowed to become badly affected, removing the remainder as soon as a favourable change in the weather induces fresh, healthy foliage to push forth. If aphides are allowed to effect a lodgement on the young leaves of Peach and Nectarine trees in the spring, either under glass or on the open walls, they will soon cause the foliage to curl. Fumigations of tobacco paper or XL-All vaporising compound in the evening will rid the trees under glass of the aphis; the trees should be syringed the following morning with clean water Trees growing against open walls should be syringed with a solution of tobacco juice used in the proportion of one quart to four gallons of water, this being applied after the sun has left the trees in the afternoon. One application will prove sufficient for the year, as it not only destroys the insects then on the leaves, but also renders them distasteful to future attacks. *H. W. Ward.*

———I read with interest Mr. Fyfe's letter, p. 101, with reference to the Peach blister. I also have tried many remedies, but have found no effectual cure for the disease. I am of the opinion that the blister is caused by very cold winds, which chill the leaf in its young stage, and I think this is proved by Mr. Fyfe's statement that after erecting the Peach case over the same trees they were not attacked with the malady. There is a Peach wall under my care here with a good wide border and upon part of this border I planted last year Early Peas, and the Peach trees opposite the rows of Peas did not have a leaf injured by blister, but higher up the border one tree was practically killed and the others badly injured. The part of the wall at the particular end where the trees were not affected is much higher and so it affords a better shelter. *A. Gooding.*

A SUSSEX WASTE.—Living, as I do, on the borders of the Ashdown Forest, and taking the keenest interest in all that appertains to forestry, it is impossible to pass over Mr. Simpson's article on this subject without an expression of regret that the writer should have put such a misleading picture before your readers. The article is typical of much that is written, with every good intention no doubt, but is calculated to create a vast amount of misunderstanding and to do a great deal of harm to a cause which many of us have at heart. From a forestry, and also from an economic point of view, we should like to see much of the so-called "waste land" planted, but having regard to the rights of the commoners and the extreme difficulty of enclosing any piece of common land since the passing of the Law of Commons Amendment Act, 1893, it is idle to talk of planting up the open spaces to which he refers. It is impossible within the limits of a letter to deal with the complicated question of commons and commonable lands, or with the recent Acts of which Mr. Simpson is apparently entirely ignorant. And it is useless for me to argue the question of the fertility of the land when he is under the impression that it is clay, whereas it is practically all sand, and is known geologically as Ashdown sand. It is not "good land that has been allowed to become waste"; it does not belong "to anybody"; it is not "mostly first-class agricultural land"; and what the writer has been told about the "local laws" is not a fact, and if it were it would be impossible to preserve the trees without fencing, and so excluding the commoners who need the land for grazing purposes and for cutting litter. *Leslie S. Wood, East Grinstead.*

WINTER PARSLEY.—In the issue for February 22, *P. P. R.* wrote regarding a continued supply of Parsley during winter months. At the latter end of July or early in August I prepare, say, 50 6-inch pots, using for the potting compost good loam, cow manure (passed through a ½-inch sieve), a little leaf-soil, a sprinkling of bone meal, and a quantity of old mortar rubble. I fill the pots fairly full with the compost, and after making the soil firm, sow a pinch of seed in each pot. The pots are placed on an ash bottom in a cold frame. When the seed has germinated I thin out the seedlings to four plants in each pot. I keep them in the cold frame, but when the weather is fine and heavy rains are not expected the lights are removed entirely. The pots are plunged in ashes up to their rims, and when the plants have made some good foliage and the pots are fairly filled with roots they are given applications of liquid manure about once each week, also a good sprinkling of soot occasionally. If the plants are kept in the frame, and the lights be covered with mats in frosty weather, a good supply of Parsley can be thus maintained. If the supply runs short a few pots can be put in an early vinery or Peach-house, and the plants will soon respond to a little forcing. This method served me well three years ago, when frosts and fogs destroyed all outside Parsley. *H. R., Kent.*

SICK PAY FOR GARDENERS.—The question of the liability of the employer to pay wages and provide medical attendance for the employé when sick is frequently discussed in the Press. Most industries now have their union which, among other advantages, makes provision for the sickness of its members. Gardeners, however, have not yet got so far as to form any combination for this purpose, and although many join working men's clubs or benefit societies that provide help during sickness, a great many, particularly the young men, rather than pay a small subscription prefer to risk it, feeling that they will not need such help, and that they have a better use for their small earnings. Consequently, when they fall sick, they have to depend upon charity in some form or, failing that, they have a bad time. In Germany, there is a universal system of sick pay for workmen which has been in practice for some years, and although it is not perfect, it is at any rate something certain as a standby. The gardener, whether he be employed in a nursery, a private garden, or a Government establishment, must put by a certain sum monthly into a kind of Government insurance fund. This averages about 4½d. per week, and is generally deducted from the wages of the employe monthly. Should he fall sick, from whatever cause, whether due to the nature of his employment or not, he is entitled to medical attendance, and a daily allowance equal to his monthly subscription. There is a separate scale of charges for head gardeners, foremen and the like, who subscribe about 3s. per month and receive that amount per day while sick. This arrangement is not optional but is enforced by law. Even in cases where other provision for sick pay is made the workmen must subscribe to the State fund, and in return he receives the usual help, whether he needs it or not. The State help is given for a period of six months if required. After that time, should the person still be ill, he continues to receive a reduced amount, but the cases of illness that extend over periods of more than half a year are few and far between. Medical attendance includes dentistry. Artificial teeth are also provided at a trifling cost. While it cannot be urged that the system here described is a perfect one, it has much to recommend it. There is no savour of charity in it, although 1s. 6d. per day is not a big allowance for a sick man, it is a great deal better than nothing. To this must be added medical attendance, and in Germany the working classes are very economical. While the minimum is fixed, anyone may pay more, and as a result receive more if he prefers to. Is there any practical reason why such a system should not be introduced into the United Kingdom? Surely, it would be a great deal better than the village slate club, which is not always a very trustworthy prop, and now and again proves unable to meet the claims made upon it. *J. G. W., Berlin.*

THE HARDINESS OF GUNNERAS.—Mr Arnott's appreciation of these immense-foliaged "hardy herbaceous perennials" should induce those who hesitate under the impression that the Gunneras are only half-hardy to give them a trial. For some years I was under the impression that the larger species, G. manicata, was less hardy than the more robust-looking G. scabra, but now I am of the opinion that there is little difference between the two in this respect. Unprotected crowns of both species were unharmed by 23° of frost registered on January 3 last. The mean temperature at Pencarrow during the first 12 days of this year was not more than 30·83°; therefore these Gunneras may be considered hardy in most gardens south of the Tweed. Although the crowns do not suffer from frost, the foliage of the two species of Gunnera above named will not withstand more than 3° or 4° of frost, and after a mild winter the first leaves thrown up in the spring are often killed by frosts before they have had time to unfold. As noted in these columns last year, a Gunnera sent here by Mr. H. J. Elwes, which was raised from seed collected by him in Chili, has proved to be more hardy in this respect than the two commoner species. Whilst seedlings of G. scabra spring up around the plants, I have not yet seen any seedlings of G. manicata. To produce the enormous leaves mentioned by Mr. Arnott it is necessary to plant the Gunneras in a moist, rich soil. An ideal spot is one by the side of a stream or pond, but not in boggy ground. From the time the leaves first appear until they are fully developed, liberal dressings of nitrate of soda, followed by copious waterings if the weather is dry, given fortnightly, will materially increase the size of the leaves. *A. C. Bartlett, Pencarrow Gardens, North Cornwall.*

THE FLORISTS' ART.—*F. M.*, on p. 439, appears to have quickly forgotten the special exhibition held in the R.H.S. Hall some three years ago by the Council of the Royal Horticultural Society, at which medals were offered for all conceivable classes and persons, but which ended in utter failure as far as the result was concerned, and this for several reasons. In the first place, the prizes were of the wrong kind. Not one young lady in fifty would value even a gold, much less a silver, medal as a prize for table decorations. The Council of the R.H.S. may think much of these awards, but if they—the management—were aware of the scorn some ladies display at the offer of such prizes, they would be likely, if they had any desire to encourage this phase of horticulture, to offer prizes of another description. I do not say in cash, but something at least useful. No one will say that a medal is in any way useful to a lady! Few persons who saw that show agreed with many of the awards, and fewer still saw anything to admire in it as an educational display, mainly owing, in my opinion, to the quality of the prizes. *F. M.* agrees that some of the classes should be "open," thereby enabling florists by profession to enter and thus to give object-lessons in an art in which they are admittedly efficient—in one point especially—that of making an effective display with a minimum of material; this knowledge is often sadly lacking in the ordinary gardener, who requires much material to obtain what is required in the way of effect. At Cardiff where, in July, substantial prizes are offered for table decorations, there is always an interesting display, because in the "open" class, men of reputation display of their best, and this is really an object-lesson to the amateur how to utilise silver, glass, fruit, and flowers. I think Chrysanthemum exhibitions display the most crude taste of any in the whole range of classes set apart for the public in table decoration. Exhibitors in the majority of instances go to one of the two extremes of lightness or heaviness. The larger the tables provided, the worse are the results obtained; they seem to load the vases far too heavily, or else they furnish them much too thinly to give a pleasing effect. Many exhibitors, too, arrange the colours crudely. This, however, I think, is often the fault of schedule makers. If the conditions were more precisely set out as to daylight versus artificial light, a different scheme of colouring would no doubt be employed. Many exhibitors employ flowers that are altogether unsuitable—some are "lumpy" and heavy; others again, in avoiding this defect, use those not good enough in quality. Small, quarter-sized, undeveloped buds are of little use in arrangement, yet we too often see vases on a table filled with such material. Every receptacle on a table intended for flowers should be a specimen in itself, and should be so arranged as to bear individual inspection, yet the reverse is much too frequent. *E. M.*

STRAWBERRIES.—Looking over some old numbers of the *Gardeners' Chronicle*, and some memoranda of my own, I find that the following varieties of Strawberries were once in cultivation. Market growers do not keep many varieties. The Kentish growers 30 years or so ago in the neighbourhood of Farnborough confined themselves to British Queen, President, and Sir Joseph Paxton. One grower made a fortune from the first-named variety, and he built a large hotel and called it the British Queen. Most of the Strawberries were grown on ground that had been woodland. In addition to the varieties named, the following sorts have been grown here:—Keen's Seedling, La Grosse Sucrée, Vicomtesse Hericart de Thury, Noble, Waterloo, Kitley's Goliath, Sir C. Napier, Auguste Nicaise, Loxford Hall, James Veitch, and Elton Pine. Now we only grow Royal Sovereign, Fillbasket, and Givon's Late Prolific. *W. P. K., Preston.*

THE LATE WILLIAM COLEMAN.—With the passing from life of William Coleman we have lost one of the great gardener fruit-growers and exhibitors of the nineteenth century. He made Eastnor Castle a household word in horticultural circles, and at exhibitions upheld the art of fruit culture to a high position. Not only was the late Mr. Coleman a skilful cultivator, but he was also a good writer. Young gardeners found in him an able and reliable mentor. Long as Mr. Coleman has retired from the post of gardener at Eastnor, his earlier writings and his great reputation served well to keep his memory green. It was, perhaps, amongst the incongruities of life that, eminent as he was a gardener, and especially as a fruitist, he never received the Victoria Medal of Honour. Nevertheless he has honoured gardening by his ability, his fidelity, integrity, and high-mindedness. Young gardeners to-day may well ask us to the methods which made Eastnor so famous as a great fruit garden and if they will strive to emulate William Coleman's efforts, both in the garden and in competitions, we may yet see fruit competitions keeping up their high excellence and interest. *Septuagenarian.*

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending February 22, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* was generally very changeable, with much cloud and occasional falls of rain. The unsettled condition culminated on Saturday in an extremely rough and showery state over the whole Kingdom, with violent hail and rain squalls in many localities, and thunderstorms over a large part of Great Britain. A parhelion was observed at Norwich at 10 a.m. on the 20th.

The *temperature* was again above the normal, the excess ranging from 2·7° in Scotland N. to between 4° and 5° over the Kingdom as a whole, and to slightly more than 6° in the Midland Counties. The highest of the maxima occurred early in the week in a few localities, and generally they were recorded towards its close. They varied from 55° or 54° in most districts to 52° in Scotland W. and Ireland N. The lowest of the minima, which were mostly registered on the 16th or 17th, varied from 25° in Scotland E., to 36° in Ireland N., and to 39° in the Channel Islands. The lowest minima recorded on the grass were 19° at Crathes, 21° at Balmoral, and 23° at Cockle Park, Rauceby and Cambridge.

The *mean temperature of the sea*. At all the sea temperature stations the water was warmer than during the corresponding week of last year, the difference amounting to more than 2° in several places, and to 3·3° at Penzance Bay. The actual values ranged from 47.2° at Seaheld and 47° at Newquay and Ballyglass to 39.8° at the Shipwash Lightship.

The *rainfall* was more than the normal in all districts except Ireland S., the excess being rather large over the Kingdom generally.

The *bright sunshine* was deficient except in Scotland W. The percentage of the possible duration ranged from 27 in Scotland E. and 25 in Scotland W. to no more than 11 in England E. and S.W. and Ireland S., and to only 8 in the English Channel.

THE WEATHER IN WEST HERTS.

Week ending February 26.

Frequent squalls of wind and rain. For three weeks there has not been a single unseasonably cold day, and but one cold night. On the warmest day during the past week the temperature in the thermometer screen rose to 51°, and on the coldest night the exposed thermometer registered only 5° of frost. The ground, owing to the lack of sunshine, is colder than it was a week ago, and is now at about an average temperature at 1 foot deep, and 1° warmer than is seasonable at 2 feet deep. Rain has fallen on all but two of the last 11 days, but to the total depth of not much more than ¼ inch. Hail fell on two days. Small amounts of rainwater are now coming down through each of the percolation gauges. This has been a very dull week. In fact, the sun shone on an average for less than an hour a day, which is less than half the mean duration of bright sunshine for February. On two days no sunshine at all was recorded, and on three others the sun shone for less than an hour. The winds have been, as a rule, high, and in the windiest hour the mean velocity amounted to 26 miles direction west. This is the highest wind recorded here since December 14 last year, on the same day, the 22 of inst., for the six hours ending 10 p.m. the average velocity was 23 miles. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by seven per cent. A selected bush of the Wild Hazel first showed a female flower on the 19th, which is one day later than its average date for the previous 17 years, but a week earlier than last year. *T. W., Berkhamsted, February 26, 1908.*

MARKETS.

COVENT GARDEN, February 26.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Acacia (Mimosa), dozen bunches	6 0– 9 0	
Anemones (capillare), per dozen bunches	2 0– 3 0	
— double pink ...	1 6– 2 0	
— fulgens, per dozen bunches	2 0– 3 0	
Azalea, white, per dozen bunches	3 0– 4 0	
— mollis, per bch.	1 0– 1 6	
Bouvardia, per dz. bunches ...	6 0– 8 0	
Calla æthiopica, p. dozen	2 6– 3 6	
— Guernsey ...	2 0– 3 0	
Camellias, per dz.	1 6– 2 0	
Carnations, per dozen blooms, best American varions ...	2 0– 3 0	
— second size ...	1 6– 2 0	
— smaller, per doz. bunches	9 0–12 0	
Cattleyas, per doz. blooms ...	8 0–10 0	
Chrysanthemums, selected blms., per dozen ...	2 0– 3 0	
— medium, doz. bunches ...	12 0–18 0	
Cœlogyne cristata, per dz. blooms	1 0– 1 6	
Cyclamen, per doz. bunches ...	6 0– 8 0	
Cypripediums, per dozen blooms..	2 0– 2 6	
Daffodils, various, p. doz. bunches	4 0– 5 0	
— double, per dz.	1 0– 5 0	
— Golden Spur per doz. ...	5 0– 6 0	
— H. Irving ...	4 0– 6 0	
— Princeps ...	3 6– 5 0	
Eucharis grandiflora, per doz. blooms ...	2 6– 3 6	
Freesias, per dozen bunches ...	2 0– 3 0	
Gardenias, per doz. blooms... ...	3 0– 6 0	
Helleborus, per dz. blooms ...	0 6– 1 0	
Hyacinths, Roman, per dz. bunches of 12 blooms ...	4 0– 6 0	
Lapagerias, per dozen	1 6– 2 6	
Lilac (French), per bunch	3 0– 4 0	
Lilium auratum ...	2 0– 3 0	
— longiflorum ...	2 6– 4 0	
Lilium lancifolium, rubrum and album		2 0– 2 6
Lily of the Valley, p. dz. bunches		8 0–10 0
— extra quality ...		12 0–15 0
Marguerites, white, p. dz bunches		4 0– 6 0
— yellow, per dz. bunches ...		2 0– 2 6
Myosotis, per doz. bunches ...		3 0– 4 0
Narcissus, paper white, per doz. bunches		2 0– 3 0
— Double Roman		2 0– 3 0
— Gloriosa		1 6– 2 6
— poeticus ornatus		3 6– 5 0
— Soleil d'Or, per dozen bunches		1 0– 2 0
Odontoglossum crispum, per dozen blooms		2 6– 3 0
Pelargoniums, show, per doz bunches ...		6 0– 8 0
— Zonal, double scarlet... ...		6 0– 9 0
Ranunculus, p. dz. bunches ...		9 0–12 0
Roses, 12 blooms, Niphetos ...		2 0– 4 0
— Bridesmaid ...		3 0– 6 0
— C. Testout ...		4 0– 6 0
— Kaiserin A Victoria, per dozen blooms.		3 0– 5 0
— Madame Hoste		2 0– 3 0
— C. Mermet ...		3 0– 6 0
— Liberty ...		2 0– 6 0
— Mad Chatenay		3 0– 6 0
Safrano (French), per dz. bunches		9 0–12 0
Snowdrops, per dozen bunches		1 6– 2 0
Spiræa, p. dz. bchs.		5 0– 8 0
Stocks, double white, per doz. bunches ...		2 0– 3 0
Tuberoses, per dz. blooms ...		0 4– 0 6
— on stems, per bunch ...		1 0– 2 0
Tulips, p. dz. bchs.		6 0–10 0
— best doubles		12 0–18 0
Violets, p. dz. bchs.		2 0– 3 0
— special quality		2 6– 3 0
— Parmas, per bunch ...		1 6– 2 6
Wallflowers, per dozen bunches		2 0– 3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0– 9 0	
Asparagus plumosus, long trails, per doz.	8 0–12 0	
— — medium, bunch ...	1 0– 2 0	
— Sprengeri ...	0 6– 1 0	
Berberis, per doz. bunches ...	1 6– 2 0	
Croton leaves, per bunch	1 0– 1 3	
Cycas leaves, each	1 6– 2 0	
Daffodil leaves, per doz. bunches	3 0– 4 0	
Fern, English, per dozen bunches	2 0– 3 0	
— French, per dz. bunches ...	1 0– 3 0	
Galax leaves, per doz. bunches ...		2 0– 2 6
Hardy foliage (various), per dozen bunches		3 0– 9 0
Ivy leaves, bronze		2 0– 2 6
— long trails per bundle... ...		0 9– 1 6
— short green, per dz. bunches		1 6– 2 6
Moss, per gross ...		4 0– 5 0
Myrtle (English), small leaved, per dozen bunches ...		4 0– 6 0
— French, per dz bunches ...		1 0– 1 6
Smilax, per dozen trails ...		2 0– 3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchi, per dozen	6 0– 8 0	
Aralia Sieboldi, p. dozen ...	4 0– 6 0	
— larger	9 0–12 0	
— Moseri, per c	6 0–12 0	
Araucaria excelsa, per dozen ...	12 0–30 0	
Aspidistras, green, per dozen	15 0–24 0	
— variegated, per dozen ...	30 0–42 0	
Asparagus plumosus nanus, doz	9 0–12 0	
— Sprengeri, dz.	8 0–10 0	
— tenuissimus per dozen ...	9 0–12 0	
— in 48's, per dz.	4 0– 6 0	
— in 32's, per dz.	10 0–18 0	
Ficus elastica, dz.	8 0–10 0	
— repens, per dz.	6 0– 8 0	
Gemstas, per doz.	10 0–12 0	
Hardy flower roots, per dozen ...	0 9– 2 0	
Hyacinths (Roman), per dozen pots	10 0–12 0	
— Dutch	8 0–10 0	
Kentia Belmoreana, per dozen	18 0–30 0	
— Forsteriana, dz.	18 0–30 0	
Latania borbonica, per dozen ...	12 0–18 0	
Lilium longiflorum, p. doz.	21 0–25 0	
— lancifolium, per dozen ...	18 0–24 0	
Lily of the Valley, per dozen ...	18 0–30 0	
Marguerites, white, per dozen ...	6 0– 8 0	
Mignonette, per dozen	5 0– 8 0	
Selaginella, per dozen	4 0– 6 0	
Solanums, p. doz.	6 0– 9 0	
Spiræa japonica, p. dozen	9 0–15 0	

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (**English**), per bushel.		
— Wellington ...	5 0– 9 0	
— Newton Wonder	5 0– 7 0	
— Bramley's Seedling	5 0– 7 0	
Nova Scotian, per barrel:		
— Baldwins ...	15 0–16 0	
— Ribston Pippin	15 0–16 0	
— Gloria Mundi	15 0–16 0	
— Russets ...	18 0–19 0	
— Greenings ...	15 0–17 0	
Canadian, per barrel:		
— Northern Spy..	17 0–19 0	
— Baldwin ...	17 0 20 0	
— N. Greening ..	19 0 21 0	
— Russets ...	19 0–21 0	
Californian:		
— Newtowns, per box ...	10 6–12 0	
— **"Oregon"** Newtowns, per box ...	14 0–15 0	
Bananas, bunch		
— No. 2 Canary .	6 0	
— No. 1 „ ...	6 6– 7 6	
— Extra „ .	8 6–10 0	
— Giants „ ...	11 0–15 0	
— Jamaica ...	5 0– 5 6	
— Loose, per dz.	0 9– 1 3	
Cranberries, p. case	9 0–10 0	
"Custard" Apple (Anona) per doz.	4 0– 9 0	
Dates (Tunis), doz. boxes ...	4 0– 4 3	
Grape Fruit, case	10 0–20 0	
Grapes (English):		
— Alicante, per lb.	1 3– 2 6	
— Gros Colmar, per lb.	1 0– 2 6	
— Belgian Gros Colman, per lb.	0 10– 1 9	
Grapes (Cape), per box (small) ...	3 0– 4 0	
— (large)	7 0– 9 0	
— Almeria, barrel	10 0–16 0	
Lemons:		
— Messina, case	8 0–14 0	
— Murcia, p box	6 0– 8 0	
Lychees, per box ..	0 10– 1 0	
Mandarines, (French) p. box	1 6– 1 9	
— (French) 100's per box ...	3 3– 3 9	
— (Palermo) 100's box	3 6– 4 0	
Nectarines (Cape), per box ...	10 0 13 0	
Nuts, Cobs (English), per lb. ..	0 4 —	
— Almonds, bag	42 6 —	
— Brazils, new, per cwt.	57 0–60 0	
— Barcelona, per bag	30 0–32 6	
— Cocoanuts, 100	11 0–14 0	
Chestnuts — Italian, per bag	16 0–17 0	
Oranges (Valencia), per case ...	11 0–24 0	
— Dema, p. case	13 0 25 0	
— Jaffas, per box	11 0–13 0	
— Californian Navels, p. case	12 6–14 0	
— Seville Bitters, per box	6 0– 8 0	
Peaches (Cape), per box ...	5 0–10 0	
Pears (Cape), per box ...	3 0– 6 0	
— Winter Nelis, boxes	8 0– 9 0	
— cases	12 0 14 0	
Pineapples, each ...	3 6– 4 6	
Plums (Cape), box	3 0– 6 0	
Strawberries (Englishi), per lb. ..	5 0 10 0	

Vegetables : Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen ...	2 0– 3 0	
Asparagus, Paris Green, bundle	4 0– 4 3	
— Sprue, bundle	0 7– 0 8	
Beans, French, per packet ...	0 8– 0 9	
— Broad (French), per pad ...	3 0– 3 3	
— Guernsey, p. lb.	1 4– 1 6	
— English ...	1 6– -	
— Madeira, per basket ...	2 0– 2 6	
Beetroot, per bushel	1 3– 1 6	
Brussel Sprouts, per ½ sieve ...	1 3– 1 6	
Cabbages, per doz	0 6– 0 9	
— Greens, p. bag	1 0– 1 3	
— red, per dozen	2 0	
— Savoys, per tally ...	3 0– 3 6	
Carrots (English), washed, p. bag	2 0– 2 6	
— French (new), per pad ...	2 6	
— French (new), per bunch ...	0 8	
Cauliflowers, p. dz.	1 3– 1 9	
— per tally ...	6 0– 7 0	
— Italian, basket	2 0– 2 6	
Celeriac (French), per dozen ...	1 6– 2 0	
Celery, washed, per dozen	0 8–0 10	
Chicory, per lb.	0 2–0 2½	
Chow Chow (Sechium edule), p. dozen	3 0 —	
Cucumbers, per dz.	6 0– 9 0	
Endive, per dozen	1 6– 2 0	
Horseradish, foreign, per doz. bundles	9 0–10 0	
Leeks, 12 bundles	1 0– 1 6	
Lettuce (French), per dozen ...	1 0– 1 8	
Mint, doz. bunches	2 6– 5 0	
Mushrooms (house) per lb. ...	0 8 —	
— buttons, per lb.	0 7– 0 9	
— "Broilers" p.lb.	0 6– 0 7	
Mustard and Cress, per dozen pun.	1 0– 1 6	
Onions (Spanish), per case ...	5 0– 5 3	
— Dutch, per bag	2 0 2 3	
— pickling, per bushel... ...	2 0 2 6	
Parsley, 12 bunches	2 6– 3 0	
— per ½ bushel ...	1 6– 2 0	
Peas (French), per packet ...	0 5– 0 6	
Potatos (French), new, per lb. ...	0 2 0 2½	
— Guernsey, p. lb.	0 4–0 4½	
— Teneriffe, cwt.	13 0–15 0	
— Algerian, cwt.	20 0 —	
Radishes (Guernsey), dozen ...	0 8– 0 9	
Rhubarb (English), dozen bundles	0 9– 1 0	
Salsafy, per dz. bds.	3 6 —	
Seakale, per dozen punnets ...	9 0 10 0	
Spinach, French, per crate ...	4 0– 4 6	
Tomatos (Teneriffe), p. bulle, of four boxes ...	14 0–16 0	
Turnips (English), doz. bunches...	2 0– 2 6	
— per bag ...	2 6	
— French (new), per bunch ...	0 9 —	
Watercress, per doz bunches ..	0 4– 0 6	

REMARKS. The consignments of Apples from Nova Scotia and Canada are much smaller and prices are firmer. The demand for Oranges and Grape Fruit remains good owing to these fruits being recommended to the public for consumption during the prevailing epidemic of influenza. English Grapes continue to sell freely. Bananas are cheaper but best coloured bunches are in demand. The trade in Cauliflowers is not so brisk as it has been recently. Supplies of Cape Nectarines are practically finished, the few boxes that have arrived this week have realised high prices. Peaches from the same Colony, labelled "Catalina," are of fine quality and highly-coloured. They sold readily at from 5s. to 6s. per dozen.—*T. L., Covent Garden, Wednesday, February 26, 1908.*

Potatos.

Kents: Up-to-Date, 100s. to 105s. per ton; British Queen, 90s. to 100s. per ton; Scottish Triumph, 95s. to 100s. per ton. **Lincolns:** Up-to-Date, 95s. to 110s. per ton; Up-to-Date (Blackland), 85s. to 90s. per ton: British Queen, 90s. to 100s, per ton; British Queen (Blackland), 80s. to 90s. per ton; Maincrops 100s. to 105s. per ton; Sir Jno. Llewelyn, 85s. to 100s. per ton; Sir Jno. Llewelyn (Blackland), 80s. to 85s. per ton; Royal Kidney, 90s. to 95s. per ton; Royal Kidney (Blackland), 80s. to 85s. per ton; Evergood, 85s. to 90s. per ton; Evergood (Blackland), 75s. to 85s. per ton; **Dunbars:** Up-to-Date (red soil), 110s. to 115s. per ton; Maincrop (red soil), 115s. to 120s. per ton. **Scotch:** Up-to-Date (grey soil), 90s. to 100s. per ton; Maincrop (grey soil), 100s. to 105s. per ton. **German:** Up-to-Date Bonum, 4s. 3d. to 4s. 6d. per bag; Magnum, 4s. to 4s. 3d. per bag; Imperator, 3s. 6d. to 4s. per bag. **Belgium:** Kidneys, 3s. 9d. to 4s. per bag. **Dutch:** Up-to-Date, 4s. per bag; Magnum Bonum, 3s. 9d. to 4s. per bag; Imperator, 3s. 3d. to 3s. 6d. per bag. Trade is still very quiet. Supplies are plentiful. *E. J. Newborn, Covent Garden and St. Pancras, February 26, 1908.*

COVENT GARDEN FLOWER MARKET.

There has not been much increase in trade during the past week. The imports of cut flowers have been large, and this morning the arrivals were heavier than usual. Among imported pot plants supplies of Palms from Belgium have fallen off, but Aspidistras have been received in large quantities.

Cut Flowers.

Daffodils are now the most prominent feature, and prices are very uncertain, the very finest blooms of Emperor, Victoria, and Golden Spur are sold at about 8s. per dozen bunches. The Paper-white Narcissus is now nearly over, and those seen are mostly far advanced and not of much value. N. Soleil d'Or from the Scilly Islands is abundant and good; White Pearl, Gloriosa, and others are over plentiful. Tulips are of good quality. On Mr. Holdrup's stands I noted Cramoise Brilliant and Austria, the finest of the single crimsons. Imperator is a very fine double crimson variety. Lucretia, pink; Murillo, blush, and Couronne d'Or, yellow, are other fine double varieties in the market. Mr. H. Williams grows large quantities of these flowers, and markets most of them as growing on the bulb. Mr. Pratley also has very good Tulips in flower as plants in boxes. Roses of better quality are now seen. The variety Richmond from Mr. Curry is very fine; blooms on long stems are realising 10s. per dozen. Caroline Testout is now very fine, and there are also some of the variety Mrs. J. Laign on long stems. Niphetos is the best white variety in the market. Carnations in all colours, except yellow, are abundant. Fiancee is a favourite kind with the florists. White Perfection is one of the best, the blooms remaining fresh for a considerable time. Winsor is also much appreciated. Britannia and Robt. Craig are the leading scarlet varieties. Mrs. T. W. Lawson remains a favourite; the best "crimsons" are President Roosevelt and Harry Fenn. A few good "Malmaisons" are seen. Mr. Burnett's Marmion is a great favourite, and has made high prices. Callas are more abundant and their prices have fallen. Lilium longiflorum varies: choice flowers of this species are valuable. Blooms of L. lancifolium rubrum are now of a good colour. A few examples of L. auratum are seen, but the flowers are rather small. Violets from English growers are good. Princess of Wales and La France are favourite varieties. Lily-of-the-Valley has depreciated in value. Eucharis is now plentiful. Other choice flowers seen include Stephanotis, Pancratiums, and English-grown Orange Blossoms. Orchid blooms are plentiful, and Cattleyas are cheaper than they were a week or two ago.

Pot Plants.

Indian Azaleas are still over plentiful. Apollo is one of the finest of the scarlet varieties. Vervaneana is another good kind; the flowers are usually striped, but some plants produce scarlet flowers only. Niobe is one of the best double white kinds, and Professor Walters is of a beautiful pink colour. Boronia megastigma is now coming from Mr. Sweet's nursery, also Acacia Drummondi. Edna fastigiata is very pretty. Primula obconica of a good strain is sent by Messrs. H. B. May and Sons. Pot Mignonette was noted this morning, but it is not yet of the best quality. Pelargonium F. V. Raspail in well-flowered plants were noted on Messrs. Butler Bros.' stands. Hyacinths, Daffodils, Spiræas, and Lily-of-the-Valley, in pots and in boxes, are all good. Ferns with fresh spring fronds are now plentiful. Palms and other foliage plants are arriving in large quantities. *A. H., Covent Garden, February 26, 1908.*

CATALOGUES RECEIVED.

SEEDS.

KENT & BRYDON, Darlington—Farm seeds.

R. H. BATH, Ltd., The Floral Farms, Wisbech—Plants and Seeds.

MISCELLANEOUS.

ENGLISH BROTHERS, LTD., Wisbech and Peterborough—Buildings, fencings, &c., of creosoted wood.

FOREIGN.

W. W. RAWSON & Co., 5, Union Street, Boston, Mass.—General catalogue.

V. LEMOINE ET FILS, Nancy, France—New plants.

CAUEN & LE CLERC, 8, Quai de la Megisserie, Paris—Seeds, &c.

R. & J. FARQUHAR & Co., 6 & 7, South Market Street, Boston, Mass., U.S.A.—General list.

VILLERAND FRÈRES, 28, Avenue Faidherbe, Asmères (Seine), France—Begonias, Gloxinias, Cyclamen, and other greenhouse plants.

DEBATING SOCIETIES.

SALISBURY AND DISTRICT GARDENERS'.—At the last meeting of the above society Mr. J. Challis, V.M.H., read a paper entitled "The Theory and Practice of Horticulture." The lecturer impressed upon the younger members the necessity of thought in conjunction with acting. He also gave them a simple code of rules by which they might safely be guided. It proved a highly educative paper and coming from one of the oldest members of the society was very heartily received. Mr. S. Tucker, vice-chairman, presided.

PANGBOURNE & DISTRICT GARDENERS'.—At the meeting of this association on February 5, Mr. F. W. Exler, The Gardens, Foxhill, Reading, read a paper on "Melons and their Culture." The paper gave rise to a good discussion, in the course of which much information was gained by the members. *E. W. D.*

BATH AND DISTRICT GARDENERS'.—There was an exceptional attendance at the meeting of this association held on February 13. The president (Alderman W. F. Gould) occupied the chair. Mr. T. Challis, gardener to the Earl of Pembroke, read a paper on the effects of climatic conditions on horticulture and the importance of the proper use of air, heat, and moisture for the successful growth of fruit and plants in the hothouse. The president, in thanking Mr. Challis for his excellent paper, spoke of his connection with Bath as a judge at its floral exhibitions for the past 40 years. Several new members were elected.

CROYDON & DISTRICT HORTICULTURAL.—At the meeting of this association held on Tuesday, February 18, Mr. H. Withers delivered a lecture on the life history of some of the most important insects found in the garden and field. Often, the lecturer explained, little friends in the insect world are destroyed through ignorance of their usefulness. Amongst those to be encouraged are the ladybird, whose larvæ feeds upon aphides, the golden-eyed fly, ants, and many of the Ichneumon flies. The lecturer remarked how interesting it was to watch the larvæ of the lacewing fly at work holding the aphis with its jaws and sucking the juices from the body. Unlike animals, insects had no lungs, but breathed through long tubes called trachea, running through the body and limbs, and in many instances ways had to be found for stopping these tubes, whilst other species were destroyed by poisonous juices placed in their haunts.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—At the meeting of this association held on February 18, Mr. H. G. Cox, secretary of the Reading Gardeners' Association, delivered a lecture on "Primulas." The lecture was illustrated by means of about 60 lantern slides, many of them being coloured by hand. Mr. Cox had several specimens of Primulas on view, and gave many useful hints as to their culture. Ten new members were elected.

———At a special meeting held on Saturday, February 22, under the presidency of Mr. Bound, Mr. N. E. Brown, of Kew, gave a lecture on the proper pronunciation of certain names of plants commonly used by gardeners. Aided by a blackboard, Mr. Brown began his lecture by explaining the use of Latin and Greek roots, and the difference of the long and short vowels.

CHELMSFORD & DISTRICT GARDENERS'.—On Friday, February 14, Miss Philbrick, of The Cedars, Halstead, gave a lecture on "The Daffodil." The lecture-room was filled with a most appreciative audience, and the lecturer's treatment of her subject was enthusiastically applauded.

———On the 21st inst., members of the association numbering about 100 listened to a lecture on "Mendel's Law of Inheritance," delivered by Mr. F. J. Chittenden, director of the R.H.S. Laboratories, Wisley, and formerly lecturer in biology at the County Laboratories, Chelmsford. Members had long looked forward to this lecture, and a hearty welcome was given to the lecturer.

GUILDFORD AND DISTRICT GARDENERS'.—At the fortnightly meeting of this association, held on Tuesday, February 18, 57 members assembled, under the presidency of Mr. W. Hogsden, to hear a lecture delivered by Mr. W. Seaman, representative of the Redhill, Reigate and District Gardeners' Association, on "Vegetables for Exhibition." Mr. Seaman strongly urged the importance of deep cultivation and recommended that in order to produce the best results the ground for vegetable culture should be well trenched during the late autumn and winter. *J. G.*

CARDIFF GARDENERS'.—The fortnightly meeting of this society took place on Tuesday, February 18, when Mr. R. T. Went read a paper on "Forestry." The lecturer gave some very interesting and practical information upon the subject of sowing the seeds of various trees, preparing the ground as a seed-bed, the selection of seeds, sowing, transplanting, &c. The lecturer stated that more interest was being taken each year in forestry.

SCHEDULES RECEIVED.

Newcastle-upon-Tyne Summer Flower Show to be held on July 1, 2, and 3, 1908, in conjunction with the Royal Agricultural Society's exhibition in that city.

Croydon Horticultural Society's 41st summer show, to be held in a meadow adjoining Haling Park, Brighton Road, Croydon, on Wednesday, July 8, 1908.

Canterbury and Kent Rose Society.—The 30th annual show of this Society will be held on Tuesday, June 30. The prizes include a Challenge Cup of the value of nine guineas offered in a class open to nurserymen.

Women's Agricultural and Horticultural International Union's Show, to be held in the Royal Botanic Society's Gardens, Regent's Park, on Wednesday, July 15, 1908.

Obituary.

WILLIAM COLEMAN.—The news of the death of this famous old gardener reached us just after our last issue was closed for the press. He passed away on Thursday, February 20, from heart failure, at the age of 81 years. His decease was very sudden, for about two hours previously he was engaged in his private garden. The late Mr. Coleman, although perhaps not so well known to the younger generation of gardeners, ranks high amongst horticulturists of the past century, and as far back as 1875 his portrait and an account of his life was published in the *Gardeners' Chronicle* as one of a series of articles on famous British gardeners. He was born in 1827 at Rolleston, in the eastern part of the county of Leicester, his father being gardener and manager on the estate at Rolleston for more than half a century. Leaving home for the purpose of acquiring experience, his first situation was at Cole Orton, and in 1846 he entered the service of Lord Howden at Grimston Park, Tadcaster. He also served at Pont-y-Pool Park, at that time one of the finest gardens in the county of Monmouthshire for the forcing of fruits and plants. Deceased also served at Crewe Hall, Cheshire, in the capacity of foreman, a place noted for its excellency in the culture of Pineapples and vegetables. After filling other situations, including employment at the Royal Exotic Nurseries, Chelsea, Mr. Coleman was appointed to the management of Eastnor Castle Gardens, entering on his duties there on May 1, 1860. The memorable winter of 1860-61 destroyed many of the choicest specimens of trees and plants at Eastnor, and Mr. Coleman immediately set about replacing them with the rich treasures sent home from Japan by Messrs. Veitch and Fortune. The glasshouses were all rebuilt under his supervision, and he arranged the planting of the pleasure grounds, in which he showed excellent judgment. After about 30 years of successful management of the gardens, Mr. Coleman was appointed by Lady Henry Somerset agent for the Eastnor estates, which post he well filled for about 12 years. Through failing sight he retired after 42 years of faithful service, which was greatly appreciated by his noble employers. Although relieved of his arduous duties as agent, Mr. Coleman was always active, and spent pleasant days in his beautiful little garden that contained rare specimens of Alpine and herbaceous plants. A noble, upright man of sound judgment, which was much sought after and appreciated, he will be sorely missed by those who knew him best. The funeral took place on Monday, the 24th inst., at Eastnor, and was attended by a very large number of friends. The deceased was held in the very highest esteem in that quiet country village, to which signs of mourning were everywhere apparent. It was the unanimous opinion of those present at these last rites that British horticulture had lost one of her best representatives, for no one had ever done more, both by hard work and by humorous pen, or were more successful as a gardener and administrator of horticulture.

THE LATE WILLIAM COLEMAN.

THE MARQUIS DE WAVRIN.—We regret to announce the death on the 24th inst. of the Marquis de Wavrin, Chateau de Rousele, Ghent, Belgium, one of the most enthusiastic and successful of Belgian orchidists. The late Marquis was a lover of Orchids, both species and hybrids, and was a successful raiser of good novelties, some of which he has exhibited at the meetings of the Royal Horticultural Society, as, for instance, the two forms of Cattleya Triane shown on the 11th inst.

ENQUIRIES AND REPLIES.

SEA SAND FOR A BOWLING GREEN.—In reply to Mr. W. Davis respecting sea sand for bowling greens, I have for many years past used it as a spring dressing, and the results have been very satisfactory. Some of the finest bowling greens and lawns in the North have been made so by the discreet use of sea sand, but if, as Mr. Davis states, he has put tons of sea sand on a bowling green of ordinary size in the course of two years, I do not wonder at his grass turning yellow. Sea sand must be applied at the right time and with discretion. My practice is to obtain a waggon-load every spring, in time to arrive about March. This is put on the turf immediately we receive it at the rate of a spadeful to the square yard, for if sea sand is allowed to remain in the open for any considerable length of time, its stimulating properties are washed away. Any sand that is unused in spring is kept till about September, when it is used for mixing with the soil in frames, &c. Sea sand, besides being a first-class spring dressing for grass, has a wonderful effect in destroying worms, for by its use these creatures are completely eradicated from the turf in the course of a few years. To maintain a lawn in a good condition, some other fertiliser should be applied during the late autumn or winter. It must be remembered that the grass of a lawn will turn yellow through lack of effective drainage more than from any other cause. *Thos. Francis, 31, Turton Road, Bromley Cross, near Bolton, Lancs.*

GARDENING APPOINTMENTS.

MR. KRIMBIEGEL has been appointed Superintendent of Mysore State Gardens, Bangalore, India.

MR. G. CHARLTON, for 5¼ years General Foreman in Skelton Castle Gardens, Yorkshire, as Superintendent of the Kelvinside Fruit Farm, Dundee, Natal, South Africa. Mr. CHARLTON is leaving England in April to take up his new duties. (Thanks for 1s. which has been placed in the R.G.O.F. box.)

MR. G. L. EVANS, for more than 8 years Gardener to the late Major CORBETT WINDER, as Gardener to Sir H. M. JACKSON, Bart., Llantilio Court, Abergavenny.

MR. F. HONEYMAN, for the past 3 years at St. Marnocks, Dublin, and formerly an Inside Journeyman at Hallyburton, Coupar Angus, N.B., as Gardener to Lord CLARINA, Elm Park, Clarina, Limerick.

MR. J. COOK, formerly at Hallyburton, Coupar Angus, and until recently Outdoor Foreman at Stratton Park, Micheldever, as Gardener to Mrs. HORHOUSE, Hadspen House, Castle Cary, Somerset.

MR. A. HALL, employed for the past 2 years and 8 months at Oakley Hall Gardens, Basingstoke, as Gardener to L. PHILLIPS, Esq., Deane House, near Whitchurch, Hants.

MR. A. J. WELLS, for the past 3 years Foreman, and for some time in charge of the Gardens, Forde Abbey, Chard, as Gardener to Her Grace the Duchess of WELLINGTON, at Ewhurst Park, near Basingstoke, Hants. (Thanks for your contribution to the R.G.O.F. box.)

MR. JAS. WADHAM, late of Sneyd Park House, Bristol, and previously 12½ years at Holmbury, Dorking, Surrey, as Gardener and Bailiff to Sir WILLIAM TRELOAR'S Cripples' Home and College, Alton, Hants.

MR. F. A. JOHNSON, for the past 2 years Gardener to Her Grace the Duchess of WELLINGTON, Ewhurst Park, as Gardener to A. C. DRUMMOND, Esq., Cadland, Southampton.

MR. R. STANARD, for 2½ years Gardener at Loseley Park, Guildford, as Gardener to Countess COWPER, Panshanger, Hertford.

MR. ALEXANDER METHVEN, for the past 2 years Foreman in Bothwell Castle Gardens, Bothwell, as Gardener to Mrs. DOUGLASS JACKSON, Milhigg House, Galston, Ayrshire, N.B.

Answers to Correspondents

ACETYLENE GAS LIME: *E. J. H.* This material can be used as a manure to supply the constituent lime, but it should be placed in a heap exposed to the influence of the atmosphere for a month or two before being used. It is more suitable for heavy clay lands than for the lighter and more loamy soils, and it is also more adapted for coarse-growing plants such as members of the Cabbage family than for Roses, or flowers generally. Another point to be observed is never to apply acetylene gas lime to land planted with Potatos, as it is apt to impart a very unpleasant flavour to the tubers. For Roses growing in a lime-deficient soil, use ordinary quicklime mixed with sulphate of magnesia (Epsom Salts), four parts of lime to one part of magnesia and apply 6 ozs. of the mixture per square yard any time during the month of March. In using acetylene gas lime for the coarser varieties of plants on land deficient in lime, 8 ozs. per square yard may be trenched in some time previous to planting.

BLUE SWEET PEA: *S. B. Dicks.* In the review of *Sweet Peas and their Cultivation* on p. 98, our reviewer stated that blue Sweet Peas were in existence in 1838, and that Mrs. London noted them in that year. The following passage occurs on p. 130 in *The Ladies' Flower Garden of Ornamental Annuals*, published in 1840:—". . . the blue, which has the wing and keel of a pale blue and the standard of dark bluish-purple."

BOX DISEASED: *P.* The Box leaves are affected with the Box rust Puccinia buxi. The best plan to eradicate the fungus is to syringe the bushes with Bordeaux mixture.

CHRYSANTHEMUMS: *Fossy.* All the varieties in your list belong to the Japanese section, with the exception of Mrs. C. Rogers, which is an incurved variety. Several of them, however, are quite out of date, and others in the list, though useful for greenhouse decoration, are of little value as exhibition varieties.

EUCHARIS BULBS: *C. E.* We do not consider the bulbs you send to be of first-class size, but there does not appear to be any disease in them.

GARDENER'S NOTICE: *J. H.* The length of notice you are entitled to is purely a question of custom. If you are paid fortnightly, you would probably be held entitled to a fortnight's notice, as, although this fact is not conclusive evidence on the point, yet, in the absence of any local custom or special agreement as to notice, the presumption of law is that the parties have decided for themselves what is "reasonable notice" by their agreement as to payment of wages, and that reasonable notice is the interval between two payments. In the case of domestic servants, wages are calculated at so much a year, and whatever the intervals between the payments, there is a well-established custom of a month's notice on either side. It has been decided that a head gardener, paid at a yearly rate, is entitled to a month's notice. In your own case, as a foreman gardener paid fortnightly, you should claim a fortnight's notice. —*H. M.* A gardener, like a domestic servant, is entitled to be paid his wages during temporary disablement by illness. If the master wishes to terminate his liability to continue to pay wages to a man who is unable to work, he must give notice of dismissal. In the absence of any special agreement, the length of notice to be given depends on custom, and, under the circumstances which you state, you would probably be held entitled to a month's notice, especially as you are paid monthly, though the latter fact is not conclusive evidence on the point.

GRUBS IN PEAT: *H. P.* The objects found in the peat in which your Calanthe Veitchii was growing are the egg capsules of one of the cockroaches. The females do not lay their eggs separately as most insects do, but several eggs (about 16) are laid together in a case in two rows of chambers. This case has a longitudinal slit, the edges of which are compressed together, and cemented, so that nothing can enter. When the young are hatched they discharge a fluid from their mouths which dissolves the cement, and the little creatures are then able to make their way out. You should destroy every egg case that you can find, for cockroaches are very destructive creatures to Orchids and other plants, as they gnaw the roots and young shoots. The parent insects may be killed by the same means as is adopted for exterminating cockroaches in dwelling houses.

LILY OF THE VALLEY FAILING. *Puzzled.* The Lily crowns are not suffering from disease. The growths appear to have been killed by frost.

MAPLE WITH UPRIGHT FLOWERS: *M. M. N.* The finest of the erect-racemed Maples is Acer macrophyllum, a North American species. The flowers of the Norway Maple are also borne on somewhat erect clusters. Of smaller species (the two preceding are large trees) with erect racemes A. tataricum and A. spicatum are to be recommended.

MARKET CHRYSANTHEMUMS IN POTS: *A. R. B.* The following varieties are selected from among the best seen in the market during the past season. The season of flowering varies considerably, according to the treatment afforded the plants. Madame Desgranges was one of the earliest seen in Covent Garden in the autumn of 1906, but last season the best plants of it were not marketed until October. All the various sports from Madame Marie Masse are valuable for early flowering, Horace Martin and Ralph Curtis being the most useful. Market White forms a good pot plant for early blooming, as do Lady Fitzwigram, Harvest Home, Goacher's Crimson (the two last-named, unless grown under careful treatment, lose their foliage), Geo. Wermig, and Nivette are all to be recommended. Carnie is one of the best of the early yellow varieties. Maxim (chestnut-red), Perle Rose (a pretty shade of pink), and Souvenir de Petit Ami are also worthy of culture. Of the later or second early varieties may be mentioned Mrs. Wingfield, Miss B. Miller, La Pacatole, Boule de Neige, Kathleen Thompson, Market Red, W. Holmes, Caprice du Printemps, Moneymaker, Soleil d'Octobre, Ivory, Pink Ivory (known in the market as White Star and Pink Star respectively), New Phœbus, Rvecroft Glory, and Nellie Brown, and to follow later in flowering are A. J. Balfour, Western King, Niveum, Framfield Pink, La Triomphante, Mathew Hodgson, and W. H. Lincoln. The culture of really good pot plants for market requires considerable experience and skill, and much depends upon the conditions of things at the start. Short thick cuttings should be secured, and as soon as they break into growth they should be allowed plenty of light and air and fire-heat sufficient only to keep out the frost. Pot the plants firmly in good loam, to which stable manure and some bone meal have been added. The plants should be stopped when they are about 4 inches in height, and they may require stopping again later. The cultivator should aim at securing from six to twelve shoots of equal strength and height on each plant. If more shoots than are required are present, the weaker ones should be removed. Disbudding should be attended to as early as possible, and an important matter is to have the buds in such a condition that they will all open at or about the same time. When the plants are placed in the open, plenty of room should be given them to allow a free circulation of air about them. The pots may be plunged into the ground or in a bed of ashes. Regular attention must be paid to watering, especially after the buds are set. Liquid manure may be used freely at all times, unless the plants should appear to be too vigorous at the time the buds are setting, in which case stimulants should be withheld for a time, or until the buds begin to plump up. The liberal use of clear soot water will do much towards keeping off insects, and will also stimulate the foliage, but it is important that the soot water should be prepared some time before it is required for use, as it should be quite clear when used for syringing purposes.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *W. C. & Sons.* Eucalyptus Globulus; your specimen has reached the adult stage, in which the foliage undergoes a remarkable change from that of the ordinary or seedling plants usually met with in gardens.—*J. F.* The berries are probably those of Solanum nigrum, a very common weed in gardens in the south of England.—*J. H. B.* 1, Nephrolepis Piersonii; 2, Selaginella amœna; 3, Nephrolepis ensifolia; 4, Gymnogramme Pearcei; 5, Nephrolepis pectinata; 6, Pilea muscosa; 7, Nephrolepis tuberosa; 8, Polypodium appendiculatum; 9, Lastrea Filix mas; 10, probably Tecoma jasminoides; 11, Carex variegata; 12, Davallia dissecta; 13, Polypodium pustulatum.—*E. W. S.* a, Cattleya Trianæ; b, Cypripedium venustum; c, Cypripedium barbatum Warneri.—*Cym.* Cymbidium giganteum.—*T. H.* 1, Cymbidium longifolium; 2, Restrepia trichoglossa; 3, Dendrbium cymbidioides.—*E. R. M.* A variety of Cypripedium Harrisianum.

POTATOS FOR MARKET: *Hants.* By referring to our weekly market reports you will be enabled to ascertain the principal varieties cultivated for market purposes and their relative value. The amount of the crop per acre will depend upon the quality of the soil, the variety of Potato grown, the cultivation applied, and many other details. An average crop is from six to ten tons per acre.

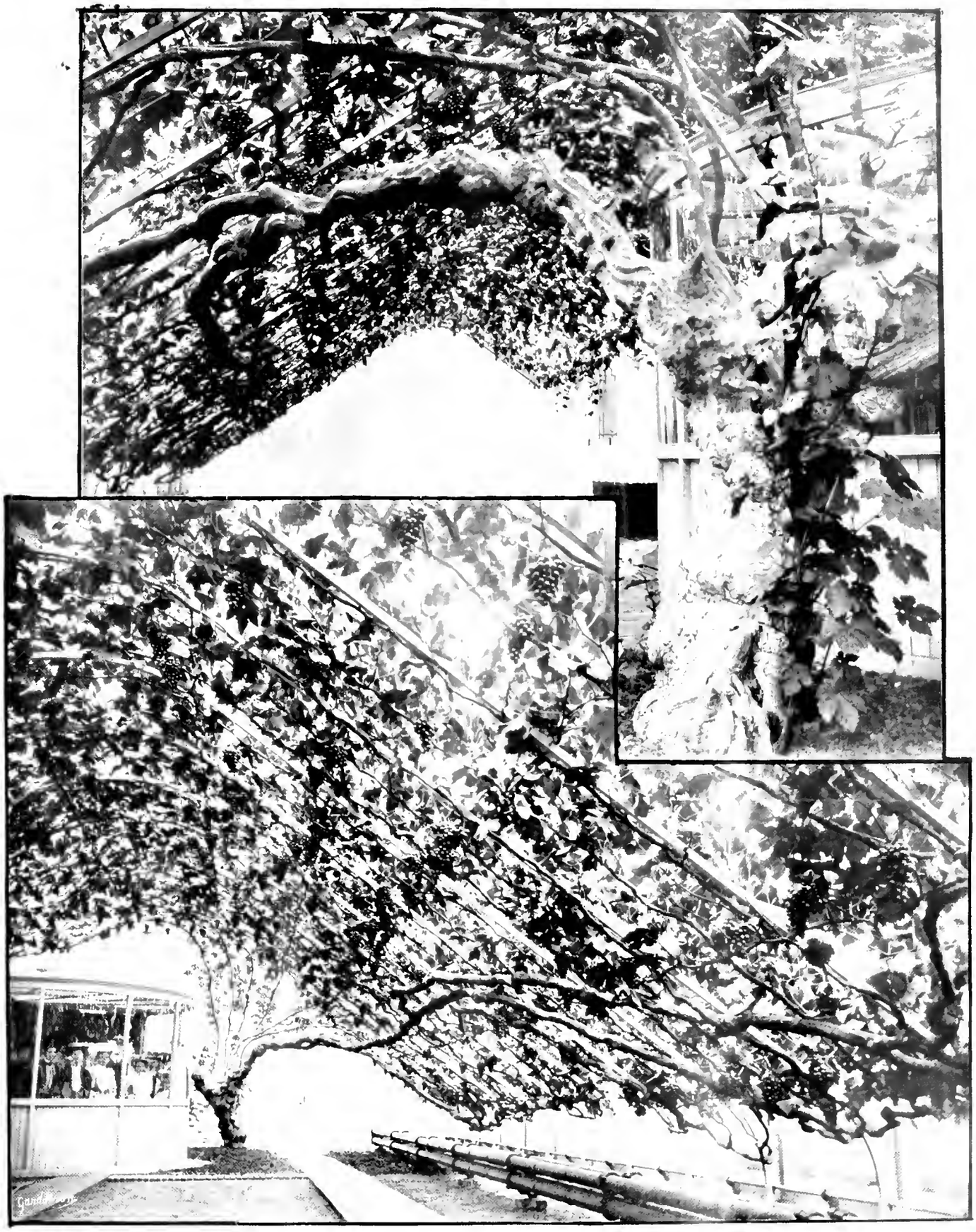
TO DESTROY TREE STEMS: *E. D.* The butts of the trees may be destroyed by blasting with dynamite. They may also be destroyed by pouring a saturated solution of saltpetre into the butt, and afterwards setting a light to the saltpetre, when the whole will be destroyed by fire. A hole should be bored in the top of the stump in which to pour the liquid.

TRUFFLE: *H. R.* The fungus you send is the common Truffle (Tuber æstivum), a species indigenous to Britain and the Continent. Another species, Tuber brumale, which is the most common on the Continent, sometimes also occurs in this country. Altogether ten species or Truffle have been found in Britain, but some are small and only the above two species are eligible to rank as esculents. We cannot determine your species, found under Cedars, merely from description, but if you will send specimens we will examine and determine its name.

VIOLETS DISEASED: *H. H.* There is no fungous disease present on the specimens you send, but they exhibit a loss of vigour and strength. Try a more generous treatment in the matter of feeding, and afford more ventilation to the structure in which they are growing.

WEEVILS: *A. L.* The creatures feed on the foliage of Ferns and other plants at night time. They may be caught by laying white cloths under the plants upon which they are feeding, and after it has been dark for about an hour throwing a bright light on the plant, when the insects will be alarmed and fall to the ground. Should they not fall the plant should be shaken. Weevils hide themselves in the most cunning manner during the daytime.

COMMUNICATIONS RECEIVED.—Beckenham Hort. Soc.—J. C.—J. M.—J. Whittow—T. L.—H. M. V—F. J.—A D.—H. R H.—Anxious—F. M W.—Rev. D. R. W.—S. A.—Chloris—G. B. M.—W. D., Jr.—A, J. L.—C. T. D.—J. O'B.—W. G. S.—A C. N.—H. Miller—G D.—S. Low—Gardener—Mrs. J. B. D.—A. D., Hindhead—W. Miller—W. H.—D. P.—P. G.—G, M.—F. G.—E. M.—F. W. D.—S, C.—H. T.—C. H. C.—S. X—W. A.—H. D. & Son—W. G.—V. H. L.—W. F.—R. L. H.—Tulips—C. T D.—Miss B.—F. J.—F. L. B.—C. B.—F. H.—H. R. W.—W. R H.—F. E. G.



Photograph.

THE OLD VINE AT HAMPTON COURT, SHOWING IN THE BOTTOM PICTURE THE NEW ARRANGEMENT FOR ALLOWING PUBLIC INSPECTION OF THE INTERIOR OF THE VINERY.

Printed by Temple

THE

Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

THE HIPPEASTRUM.

I HAPPENED recently to look into that excellent botanical work the *Amaryllidaceæ*, by the Hon. and Rev. William Herbert, published in 1837. Herbert was not only a botanist, but an indomitable hybridist and horticulturist. He monographed the genus, writing elaborate descriptions of the various species known at that time, and his keen horticultural proclivities were displayed in the work of hybridising in his own garden at Spofforth. He enumerates 31 distinct crosses of specific forms made under his own direction. In the matter of selecting names for his hybrids he had to face a difficulty which seems to give some trouble even at the present day. For instance, a cross between H. striatifolium and H. vittatum he named striatifolio-vittatum. Other names were H. solandrifloro-bulbulosum, H. reticulato-bulbulosum, and so on. To seedlings from these semi-species he proposed to give such names as Juno, Ceres, Camillus, Napoleon, &c. These were termed sub-ordinary varieties, and deserved no place in a botanical arrangement. It is interesting to remark that the varieties of Cattleyas, Lælias, Cypripediums, &c., are now losing their botanical character in much the same way. In some cases the evidence as to the original species cannot be detected in the seedlings, and to simplify matters they will have to be named after heathen gods and goddesses as Herbert advised in the case of Hippeastrums.

It is not likely that any of the hybrid Hippeastrums raised so many years ago are now in existence. While Herbert was working in England, Mr. de Graaff, as early as 1790, was cultivating the Hippeastrum at Leiden in Holland. I have a letter before me from Mr. S. A. de Graaff, dated January 30, 1890, in which he states that his father's uncle had cultivated H. Johnsonii and H. vittata since 1790. He might have cultivated the parents of the first-named variety at this early date, viz., Reginæ (1728) and vittatum (1709), but he could not have grown Johnsonii, as this variety was raised by an amateur named Johnson, who had a small garden in Lancashire in 1810. We know, however, that Mr. de Graaff, senior, was a raiser of seedlings from 1830, and Mr. S. A. de Graaff since 1862; and many very fine garden varieties have been raised at Leiden in recent years. I can well remember the sensation caused by the introduction of the variety Empress of India some 20 or 25 years ago. Messrs. Veitch, of Chelsea, obtained the stock of this fine variety, and with their own superb crosses from H. pardinum and H. Leopoldii an impetus was given to the culture of this fine genus, which has resulted in the magnificent varieties now cultivated in gardens.

Perhaps no gardener in the world has improved the genus so much as Mr. A. Chapman, gardener to Major Holford, of Westonbirt, Tetbury. Not every gardener has the opportunity or the means of obtaining such a collection, and many, if they had, would not make such good use of it. I have seen perhaps every collection exhibited from Major Holford's garden in London, and noted the improvement in form, colour and substance of petals year by year. In April, 1900, quite a hundred splendid varieties were exhibited, and many of them had received certificates and Awards of Merit from the Royal Horticultural Society and other societies. The many rich crimson and dark red forms in the Westonbirt collection were remarkable on that occasion. In some varieties the characteristic green centre was present, in others this had disappeared; "stamped out" Mr. Chapman terms it, and so deep was the tinge of colour that the back of the petals in some instances had the same rich tone as the front, and many of the spikes carried four of these exceedingly large and well-formed flowers. What an improvement such varieties as Radiance, Lord Dalhousie, Poetry, &c., are upon the early crosses from Chelsonii and Empress of India. The advance in form, size, and substance of petals is as much marked in the light-coloured varieties.

White varieties had been in existence for some years, but the first white varieties to be produced from seed were of weakly constitution, and the flowers themselves were thin and not of good substance. Mr. Fielder produced a white variety, Fielder's White, far in advance of any other, and equal in quality to the best of the Westonbirt seedlings. There were many very fine white-ground varieties in the collection, marked with pink principally. There is no doubt that the Westonbirt collection marks the furthest advance yet made in Hippeastrums.

Cultivation.

The Hippeastrum is an ornament in any garden and, its requirements being understood, it is easy to grow. Sometimes the proper cultivation is not understood. I remember being shown round a garden where expense was no object, and was surprised to see a collection of the best-named Hippeastrums out of doors. The plants had been turned out after flowering to "ripen their bulbs." It is astonishing how this idea clings to some gardeners, and is equivalent to turning out Azaleas as soon as they have finished flowering instead of putting them into a warm, moist atmosphere until the flower-buds are properly formed.

Hippeastrums require a period of growth after flowering in order to develop the bulbs. Not until the bulbs have well plumped up and the leaves have begun to decay should water be withheld and air freely admitted to the structure. By that time, the season being advanced, warm weather will have set in, therefore the ventilators of the house may be allowed to remain open night and day. This will help in keeping the plants free from thrips, red spider, and other pests.

My collection was repotted in January, the flower-pots being plunged in a moderate bottom heat. The bulbs at such a time should be well furnished with healthy roots. It is a grave error to treat them so that the roots decay at the base of the bulbs; this is sometimes caused by keeping them for many weeks together on a shelf near the glass in a cool house, or it may result from excessive applications of water in the resting period. The best treatment is to allow them to remain in the plunging material. The roots run freely into this, and they require no water after the decayed leaves have been removed until it is time to repot them. The potting soil I use is one composed of good, fibrous, well-decayed loam four parts, decayed manure one part, and leaf-mould or fibrous peat one part.

The largest single bulbs may be repotted into 8-inch flower-pots, and smaller sizes into pots measuring 7, 6, and 5 inches in diameter, but taking care to avoid over-potting. The bulbs should be placed about half their depth in the potting soil; if this is fairly moist, as it should be at the time of using, no water will be required for two or three weeks, and even when it is applied, it should be poured from a small water-pot round the inner rim, to avoid wetting the base of the bulbs until the roots have freely started. The heat at first may be 50°, raising it as growth progresses to 55°, 60°, and ultimately to 65°. When the plants are in full growth water may be applied freely, but pots plunged in a hot bed do not require water frequently. The bulbs are likely to flower in three or four months after the repotting.

Raising Seedlings.

Every grower of Hippeastrums should raise seedlings by crossing the best varieties. It is easy to remove the anthers from the

partly-opened flowers with the fingers before the pollen is scattered, and as soon as the seed-bearing flower is fully expanded it is ready to receive the pollen from another variety. The seed will ripen in June or July, and may be sown at once. If it is sown thinly the plants need not be pricked out, and they will form quite strong plants by the end of the season. The leaves of these seedlings remain green during the winter, and if three of them are repotted in January or February into a 5 or 6-inch flower-pot according to their size, many of them, under fair treatment, will produce flowering bulbs by the end of the growing season. They will not, of course, be fully grown, but strong enough to produce two or even three flowers on a spike. The plants must be kept in good health during and after the flowering period. A strict watch must be kept for thrips, as this species frequently gets upon the leaves during summer, and it is not easily destroyed by fumigating, as the insects drop into the plunging material and get up again next day; therefore fumigate the plants if it is even suspected. A species of mealy bug or aphis hides itself in the loose material at the apex of the bulbs, and if this pest becomes numerous it is difficult to exterminate. All the loose skins must be removed and tobacco powder dusted on the parts infested. *J. Douglas.*

BROUGHTON CASTLE, OXON.

(See Supplementary Illustration and figs. 57 and 58.)

FROM the appearance of this beautiful old building, as seen in our Supplementary Illustration, no one would suspect that it was erected as far back as the year 1301, during the reign of Edward I. The castle is in a remarkable state of preservation, and forms the country residence of Lord and Lady Algernon Gordon-Lennox. Broughton Castle is situated a distance of about three miles from the town of Banbury.

The Supplementary Illustration, which depicts the south front and the eastern end of the castle, shows that the surroundings of the old buildings are most picturesque, and this—apart from the natural beauty of the spot—is due to the work and artistic tastes of Lady Gordon-Lennox, who is an enthusiastic gardener.

The water seen in the foreground of the picture is part of a broad moat which entirely surrounds the castle, but it is not, as is often the case, close up to the walls of the old fortress. Thus there is a considerable area of ground, forming as it were an island, in the centre of which stands the old baronial dwelling. The keep (fig. 57) is seen in our Supplementary Illustration to be midway between the castle and the parish church of Broughton, and adjoining the keep are some ruined embattlements.

The waters of the old moat in summer time reflect the sheen of the Purple Loosestrife (Lythrum salicaria), Spiræa Aruncus, Iris and other British plants. But in addition, large beds have been planted with cultivated flowering plants and ornamental trees and shrubs. The flowering plants are such as have a good effect when viewed from a distance, especially when seen from the mullioned windows of the old castle. The plants include broad breadths of Pæonies, Roses, Sunflowers of the choicer species, Foxgloves, Liliums, Kniphofias, Shirley Poppies, and many stately herbaceous perennials. The Sea Buckthorn (Rhamnus catharticus) finds in the banks a suitable rooting medium, and the tree flowers and fruits in profusion. In the water are broad patches of the white Water-lily (Nymphæa alba) with other native aquatic plants. In the centre of the lawn and almost in the middle of our picture is seen a plant of Yew clipped to resemble the gnomon of a sundial, and the figures are planted in a circular band with the motto, "Memory lives but the hour flies," in a similar outer band.

At the left of the sundial and opposite the windows of the drawing-room is a design worked out in flower beds cut in the turf. A central one is planted with golden Yews that are clipped somewhat formally, and beneath is a groundwork of Berberis (Mahonia) japonica. The remaining beds of the design are largely planted with annual and perennial flowering plants, but several circular areas are occupied by Roses. A short distance away, and in this same lawn, is a small water basin for the accommodation of choice Nymphæas of the "Marliac" type. It is encircled by borders of Roses.

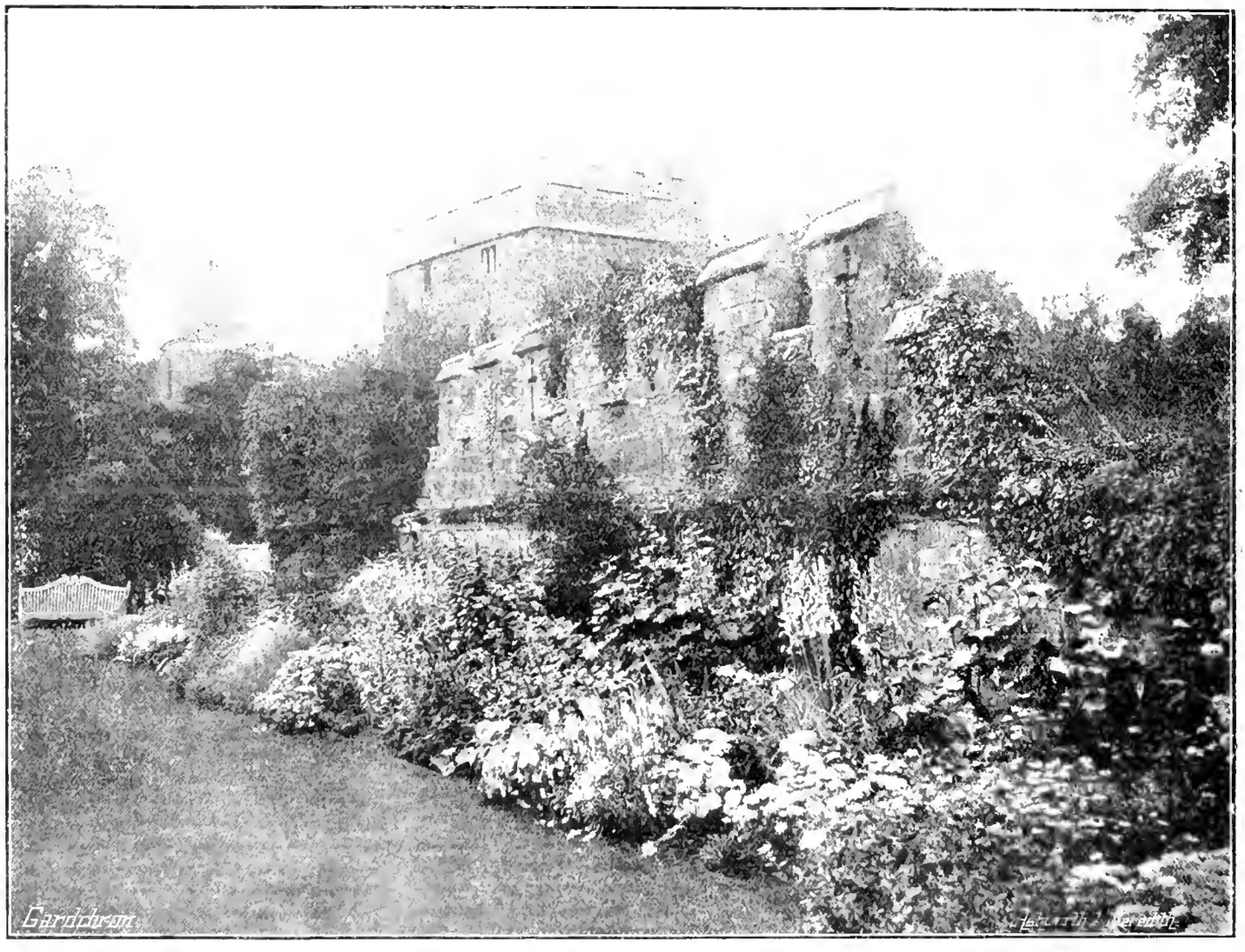

FIG. 57.—A FLORAL BORDER UNDER THE WALLS OF BROUGHTON CASTLE.

Herbaceous plants and annuals are largely employed in the embellishment of these gardens. Fig. 57 shows a portion of a very beautiful border that is filled with herbaceous perennials, and in their season annuals are cultivated in the foreground.

The old embattled walls lend a fine setting to this floral display, and the grass sward forms the path dividing it from a narrower border banked by a hedge of Yew, cut formally, and having at intervals examples of topiary in the form of birds with spreading tails. This border is usually planted with Ten-week Stocks over a groundwork of Cerastium, and having an edging formed of Mrs. Chas. Turner Viola. On the opposite side of this Yew hedge, which measures several hundred feet in length, is a dwarf band of Lavender extending the whole distance. Immediately opposite the residence the border is furnished with Liliums, of which a considerable quantity is cultivated each season, principally of the varieties L. speciosum rubrum and L. longiflorum.

There are small gardens surrounded with

The water basin is planted with choice Nymphæas, and is approached through arches of climbing Roses arising from the ends of a dwarf hedge in Yew, whose top is clipped in the manner of battlements. The circular beds are wholly planted with Pæonies, those heart-shaped with hardy perennials and annuals. Almost everywhere are Roses, the side borders being filled with dwarf plants that grow with the greatest luxuriance. The grounds are surrounded by bands of trees and borders of shrubs. The principal tree is the Alder (Alnus glutinosa), and one specimen is remarkable for its size and spread of branches. It resembles a large Oak tree, and its girth of trunk at a few feet from the ground is about 10 or 12 feet.

A thickly-wooded corner on the opposite side of the moat has been converted into a woodland retreat. The grass sward is cut into vistas or walks, and where opportunity has afforded, clumps of shrubs and strong-growing herbaceous plants have been planted. The grass in spring time sparkles with the flowers of bulbous

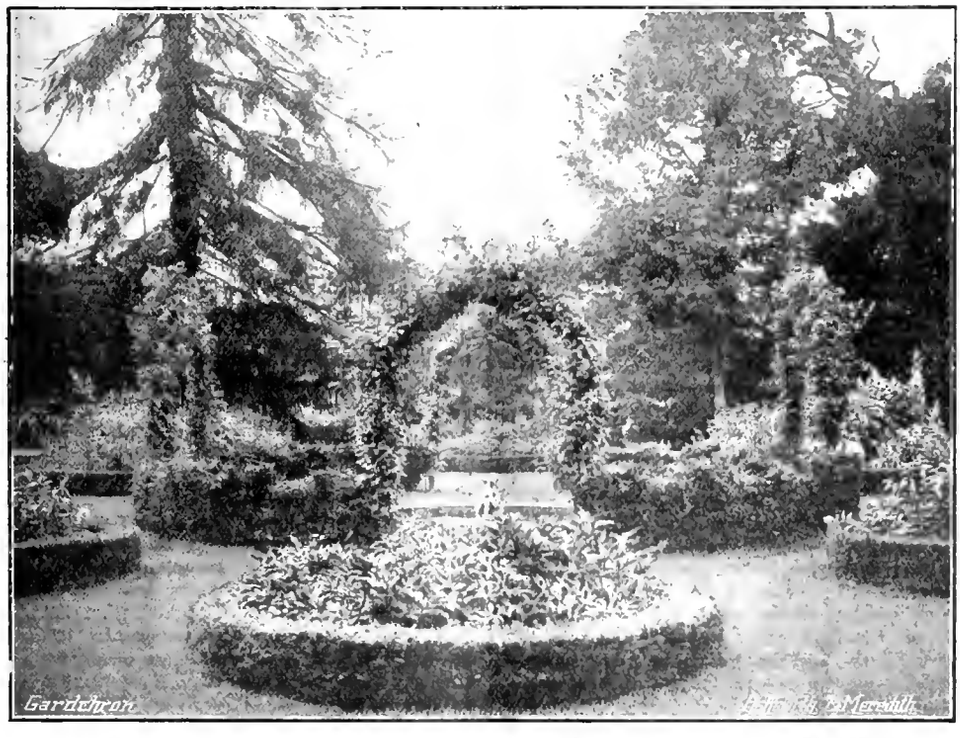

Fig. 58.—view of portion of the rose garden at broughton castle.

walls on the south-east of the castle; the first of these to be entered from the spot we have just described is known as the "Ladies'" Garden.

This small enclosure is literally a Rose garden, with broad borders of hardy flowering plants under the old walls. The Roses are massed in beds, each of one variety, and the whole forms a design of much beauty. We were informed that this was a neglected spot, until Lady Gordon-Lennox formed the Rose-garden. Another enclosed garden is next the one we have just described, and in this was taken the view depicted in fig. 58. The circular bed in the foreground is one of four alternating with others that are heart-shaped. The centre of the design is occupied by a circular water basin, around the rim of which is inscribed:—

"I sometimes think that never blows so red
the Rose
As where some buried Cæser bled;
That every Hyacinth the garden wears
Drop in her lap from some once lovely
head."

plants that are so admirable for associating in the turf for a pleasing effect.

Hereabouts is a herb garden, surrounded by a hedge of Yew. A water-garden in the centre is fed from the moat near by, and on the closely-clipped sward of banks around are seats; a lovely and cool retreat in the heat of summer time. Foxgloves grow in thousands with Funkias, Lilies, the Giant Hemlock (Heracleum giganteum), Polygonums, Spiræas of the hardier species, Tritonias, Roses, and a host of other bold subjects. One of the best Roses found to succeed beneath the shade of the trees is the variety Leuchstera.

On the east side of the mansion is a Rose-walk; the plants are trained over wooden arches, with festoons of Ivy connecting each arch, and all along the sides are standard Roses. Looking through this festooned path is seen the old parish church, a beautiful setting to this pretty scene. The church path separates the kitchen and fruit gardens from the pleasure grounds. The former are about two acres in extent, and they occupy the warm side of a slope.

There is a range of glass-houses, comprising vineries, Peach and Nectarine houses, plant stove, Melon pits, propagating house, &c. This quarter of the garden is largely planted with flowering plants, including Roses for cutting purposes, for although such a wealth of flowers adorns the beds and borders of the pleasure grounds, none is cut for decorative purposes. The gardens are under the care of Mr. George Low; they form a pretty setting for the noble building, which has survived through so long a period.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM FOWLERIANUM.

This very finely blotched variety of O. crispum, which was illustrated in the *Gardeners' Chronicle* on May 4, last year, is again in flower with J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), the inflorescence now bearing seven blooms. It is a grand variety, with deep blood-red markings on a clear white ground, and its fine qualities are well displayed on its second flowering, although the blooms are rather smaller than that from which the illustration was prepared, probably on account of its blooming two months earlier this year than last. The reverse of the flower is almost as richly coloured as the face, and the upper surface of the column is coloured deep chestnut-red.

ODONTOGLOSSUM ARDENTISSIMUM GLEBELANDS VARIETY.

This distinct variety, which is now blooming in the collection of J. Gurney Fowler, Esq., was raised by Messrs. Sander & Sons between a fine form of O. Pescatorei and the blotched O. crispum Truffautianum, and it was anticipated that a heavily blotched flower would result. In effect, however, the Glebelands variety may be compared to a very large and beautifully-formed variety of typical O. Pescatorei, the only trace of spotting being in an occasional red spot on some of the sepals; some of the flowers have all the sepals bearing spots, in others only two, and in others one. The flowers are very broad, and of fine substance, clear white, with a charming rosy flush on the sepals, and a broad transverse red blotch in front of the yellow crest of the lip.

VARIORUM.

"FORMATION OF SNOW ROLLERS."

At the meeting of the Royal Meteorological Society, held on the 19th ultimo, Mr. C. Brovett read a paper describing the formation of "Snow Rollers," which he observed at Ryton-on-Dunsmore, near Coventry, on January 29-30, 1907. There had been some snow showers during the afternoon and evening, amounting to a depth of about 1½ inches. The next morning the snow was cleared away to the bare grass, except for slight bars of snow across in tadpole-like markings, whose tails all pointed to the direction from whence the wind had been blowing all night, viz., north-north-west, and at the heads of which was heaped up the snow that had been on the bared grass, all neatly turned over in a roll. It seems that the flakes of a light, fluffy layer of surface snow are made adhesive by a rise in the temperature of the air above the freezing point, while the undersnow remains cold and dry, and the particles of damp surface snow are thus enabled to adhere to each other, but not to the dry undersnow. A strong wind may then push over little projections of the surface snow, and start them rolling, when of course they will travel and grow until the resistances overcome the propelling power of the wind. These "snow rollers" vary in size, some being only a few inches in diameter, while at times others have been seen 2 feet or more in length.

THE GENUS PHORMIUM.

THE species of Phormium or Flax Lilies have been used somewhat freely in conservatory decoration and also in connection with sub-tropical bedding, but their hardiness in the sheltered garden is not fully realised. They are very interesting objects in the landscape, and are peculiarly fitted for association with garden architecture of almost every description; their sword-like foliage, sometimes rigid and at other times with drooping tips, blends well with architectural lines. But at the same time there is that freedom of growth that makes them easy to associate with all that is good in the informal garden, provided the plants are boldly grouped on broken ground in which protected sites are always abundant. A sheltered position is very necessary even for the hardiest species; their beauty lies in the elegant foliage, and if this is liable to suffer damage by winds, their beauty is doomed from the first. One cannot regard them as being as hardy as Oaks, for in common with many New Zealand plants they find the winters of very cold districts too much for them. Wherever I find Phormium thriving in the open garden, it is invariably on sloping ground or in naturally well-drained soils. The old-established clumps by the waterside in Edinburgh Botanic Gardens probably owe their immunity from harm to their elevated yet sheltered position. I have studied these plants for some years, particularly noting their hardiness, and other examples teach the same lesson elsewhere. The plants are valued more for their foliage than for their flowers. Although there is a rugged type of beauty in a dozen long, arching peduncles of a curious bronze-blue hue, sparsely studded with yellow or buff flowers that always appear ill-fashioned, and are borne singly or clustered, one cannot compare them favourably with those of most Liliaceæ. The plant is only beautiful as a whole; the inflorescences removed from the plant are not.

The cultivation of the various species of Phormium is solely a matter of light dry soil and shelter. Seeds germinate quickly and the young plants grow rapidly in a cool house during their first year; afterwards, till strong enough to hold their own in the open, they may be grown in a cold frame. Propagation of garden varieties that do not reproduce themselves by seeds, is effected by cutting the back rhizomes into as many pieces as there are leaf scars. A bud is present at the base of every sheathing leaf, but does not grow unless the leader be injured or removed. The pieces of rhizome should be bedded in sand in a moist, heated frame till growths appear; these will make roots in due course.

The root and leaf system of Phormium resembles that of many lilies, but is very much stronger. Several plants transplant badly at all times, and where old-established clumps are split up, the leads should be re-started in pots under glass and frequently syringed till re-established. Grouping of the plants in the open should be deferred till April, and in planting, the ball of soil should be disturbed as little as possible. Under no circumstance would I recommend planting in autumn or winter. Growth that is made unchecked throughout a summer season, is hardy and well ripened, and would survive winters that would prove fatal to a greenhouse-reared or mutilated specimen. When once a colony is established, it is practically safe; individuals protect one another, and the severest frosts will not absolutely destroy them if the soil is well drained.

There are only three species in cultivation, and of these the hardiest is the poorest.

P. Cookianum (*P. Hookerianum*, *P. Colensoi*).—A dwarf species not uncommon in gardens. The growths are fan-shaped clusters of green leaves, with grey-blue reverse, generally 3 feet high; the inner surfaces of the leaves glabrous, the outer slightly rough. The inflorescences reach 6 feet in height, and consist of scattered buff-yellow flowers that are frequently aggregated into verticals, and are sparsely borne in late summer. This plant is quite hardy. I have grown it well in veritable bog earth full of stagnant moisture, but the best specimens were those on a sloping bank. In a light, sandy soil this plant makes handsome leaf clusters that a landscape gardener would appreciate.

Var. variegatum is a rare variety at present. Its foliage is handsomely variegated with creamy-white, and it stands the winter well.

P. Hookeri forms an imposing clump of bluish-green leaves recalling those of Canna in their tint. They are 5 feet long, produced in broad, fan-shaped clusters a yard across, and as they age the tips fall over, giving the plant a pendulous aspect. The spikes are 8 feet long, sub-erect, and bear quantities of dull red flowers that are not devoid of decorative character. The finest specimen I have seen of this Phormium is in the Rev. Canon Ellacombe's garden at Bitton, near Bristol. The specimen was in full flower at the time of my visit, and it impressed me with its value for the larger types of rock-gardens. The giant clump of sword-like leafage was very attractive. It is a rare plant in gardens.

P. tenax.—The common New Zealand Flax, an imposing plant for the large formal garden. The leaves are arranged in fan-like clusters that form a clump 8 to 10 yards round and more than 6 feet high; every sword-shaped leaf is perfect in outline as can be. The flower-spikes are often 10 feet high, the flowers are commonly of a reddish-buff colour, but specimens vary considerably in this respect. This species is quite common in large gardens where I have seen it grouped in clumps on lawns, or grown in tubs to be used as specimen plants on terraces. Abrupt corners have been artistically filled with it, and as a conservatory specimen one meets it in almost every garden of any size. Its hardiness in many cold districts is surprising. I have known old specimens survive winters that have proved fatal to many plants recognised as hardy, and I should have no hesitation in planting P. tenax where I was certain of wind shelter and a well-drained soil. In very cold gardens offering every risk of failure, I would trust the Powerscourt variety to do its best, and should not expect disappointment.

Var. purpurea is a striking form, whose leafage is purple tinted, and when quite young shows a tint of blue that proves very attractive. I have not seen such giant specimens of this, but am confident it is as hardy as tenax, and in the matter of leaf colouring it is one of the best "foliage" plants one can grow.

Var. variegata is a popular conservatory variety, and may be used in many ways. It is an elegant plant, whose tall, sword-shaped leaves are freely variegated with yellow and white. In common with most variegated Monocotyledons, it suffers, in very hot and in very cold weather, from injury to the whitest parts of the variegation, and it is not an uncommon circumstance to find a particularly well "coloured" leaf partly rent in two, the tissues having become seared where there is least chlorophyll. Shelter from winds is therefore imperative, and, in addition, the protection of some deciduous, small-leaved tree as a sun screen is desirable.

Var. Veitchii is an attractive form of variegatum, and possesses foliage which is narrow and quite erect, with a variegation in the form of small stripes of white. It is more liable to disfigurement than the true variegatum and is also less graceful, but it proves excellent for tub culture, and it is to be recommended for that purpose. *G. B. McM.*

PLANT NOTES.

SPARMANNIA AFRICANA.

THIS greenhouse plant is a native of South Africa, where it is known as the "Stock Rose," and in its native habitat it flourishes along the edges of forests as a rampant weed. The species is a very old inhabitant of gardens, having been introduced through Dr. A. Sparmann (after whom it is named), a Swedish botanist, who accompanied Captain Cook on his second voyage round the world.

Sparmannia africana is a soft-wooded shrub attaining to a height of from 10 to 20 feet in its native country, with the younger stems and branches more or less herbaceous. The alternate, hairy leaves are light green in colour, cordate-acuminate in shape, 4 to 6 inches long, with from five to seven angular points; the blade is pendulous, with an erect leaf-stalk 3 to 6 inches long.

An inflorescence of the plant is figured in the *Botanical Magazine*, t. 516, where the writer remarks that "the flowers are produced in the same manner as in the common Pelargonium, which it is very like in its inflorescence, the flowers nodding before they are expanded, and becoming erect as they approach maturity." The sepals and petals are pure white; the former are covered on the outside with hairs; the centre of the flower is occupied by a tuft of purple stamens, surrounding which is a ring of barren yellow filaments, the distinctive character of the genus.

Where space can be afforded, it is probably most effective when grown as a standard, but small, bushy plants also furnish an abundance of bloom.

Belonging to Tiliaceæ, an order containing several valuable fibre-producing plants, it is not surprising to learn that an excellent fibre has been obtained from the stems of Sparmannia. An analysis of this fibre, which is sometimes known as "African Hemp," is given in *Technical Reports and Scientific Papers of the Imperial Institute*, p. 93, and a note in the valuable **Forests and Forest-flora of Cape Colony*, recently published, also calls attention to the plant. This latter work states that the Kama Fibre Syndicate was formed to exploit the fibre, and, although it ceased operations after a few years, it was not owing to any inherent defect in the fibre itself.

The yield of fibre under cultivation is estimated at 10 tons per annum per acre of raw material, which equals half a ton of clean fibre per annum per acre. The value of a sample sent to England was £32 per ton, that of flax at the same time being £36, of Mauritius Aloe £33, and of New Zealand fibre £30 per ton. The cost of preparing the fibre is about £8 per ton.

The "Stock Rose" is said to come up spontaneously in forests cleared by burning the undergrowth, and is also readily raised from seed. The appearance of a plantation when the plants are in flower is said to recall that of a coffee estate in India. [A double-flowered variety was illustrated in our issue for April 14, 1883, p. 477.—ED.]

ITEA VIRGINICA.

This pretty North American shrub, referred to by *F. M.* on p. 115 is very interesting from the fact that when in full bloom it is particularly attractive to butterflies, especially to the showy members of the genus Vanessa.

The period at which it flowers (midsummer or somewhat later) is early for the "Red Admiral" to put in an appearance, but a few specimens may generally be seen hovering over the flowers, which are nearly as attractive to these butterflies as are the pink flowers of Sedum spectabile later in the season. *H.*

* *The Forests and Forest-flora of Cape Colony*, by Thomas R. Sim, F.L.S., F.R.H.S., Conservator of Forests, Natal. Published with the authority of the Government of the Cape of Good Hope, 1907.

USES OF THE MOTOR IN HORTICULTURE.

(Concluded from page 116.)

THE smallest in size, but by no means the least useful motors for horticultural purposes, are motor lawn mowers and motor rollers. Steam and electrically-propelled mowers were in use twelve or more years ago, and were described in the *Gardeners' Chronicle* for March 28, 1886, p. 401; but the petrol-driven motor has only been applied to the lawn mower comparatively recently. A description of one working very satisfactorily at Kew appeared in the *Gardeners' Chronicle* for June 20, 1903, p. 398, and in the issue for July 25, 1903, p. 61, some notes were published concerning another machine of a similar character.

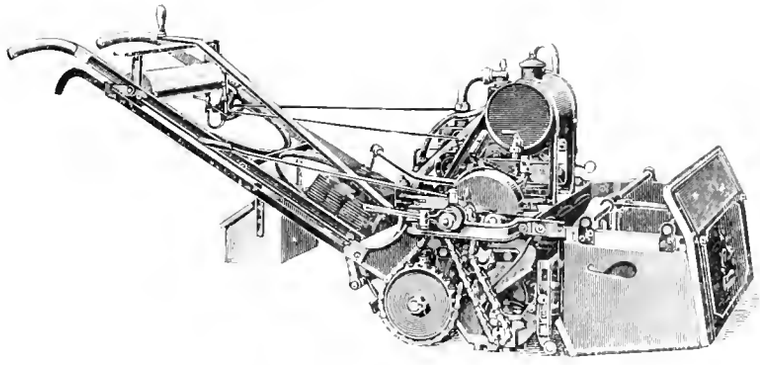

FIG. 59.—MESSRS. ALEX. SHANKS AND SON'S PETROL MOTOR MOWER; SIZE 30 INCHES, WEIGHT 7 CWTS.

The larger mowers are constructed with cutters 42 inches in width, have a powerful water-cooled engine, weigh nearly 1 ton, and cost almost £200. These are very useful where a large area of grass has to be kept well mown and rolled, and, being fitted with a seat for the driver, steering wheel, reverse gear, and levers for throwing the cutters out of gear, they are extremely handy, and capable of being easily worked by one man. Others of various sizes are obtainable, and the smallest are fitted with an air-cooled engine, handled like an ordinary mower, weigh about 3 cwts., and cost about £70. Even with a small machine a man can do a great deal more work than with a horse-drawn mower, and provided he is fairly intelligent, he should be able to keep the motor in order at very little expense. In these days when the motorcar is so common in country houses, a motor mower could be kept in order by the mechanic in charge of the car, and the handy man be employed to drive the mower and keep it clean.

The great amount of work that can be performed by the machine is not its only recommendation to the gardener. Where horse mowers are employed it has always been found difficult to entirely prevent the horse's hoofs from damaging the turf; but with motor mowers there is no trouble of this kind. The management and steering of the motor mower are easy to a man who has had two or three days' practical instruction from the makers, even though the sward is broken up by numerous flower beds and shrubberies.

Motor rollers are made to which either grass cutters or lawn mowers may be attached, and the two functions of cutting and rolling carried on simultaneously.

For ordinary lawns the mower itself is an excellent roller, and the weight may be, to a certain extent, regulated, whilst in the winter the cutters may be either removed or put out of gear, and the machine used as a roller only. This adaptability makes it of particular value on golf courses and on athletic grounds. Their extensive employment for this work is undoubtedly their best recommendation, and as, in my opinion, there is nothing so satisfactory to the prospective purchaser as the experiences of other users, a day or two would be usefully employed devoted to such inspection and enquiry.

Another duty which gives the gardener much heavy labour during dry summers is the quantity of carrying work involved in watering. Every suburban householder thoroughly appreciates the value of the familiar garden hose attached to the scullery tap, and it would be difficult to say how much greater would be the value of a small, mechanically-driven pump in a large garden, and as the engine on the lawn mower or roller may be used to drive a pump by means of a belt, it is another duty for which the machine should receive credit. Water thrown in the garden cannot be neglected, and as it is perhaps heavier than any other task, involving, as it does, much bucket work and hand pumping, any labour-saving method would be welcomed.

The machines are well worthy of consideration, and the accompanying illustrations are representative of the types of several firms, the names of which are already well known to horticulturists. *Hugh Miller, F.E., M.E.*

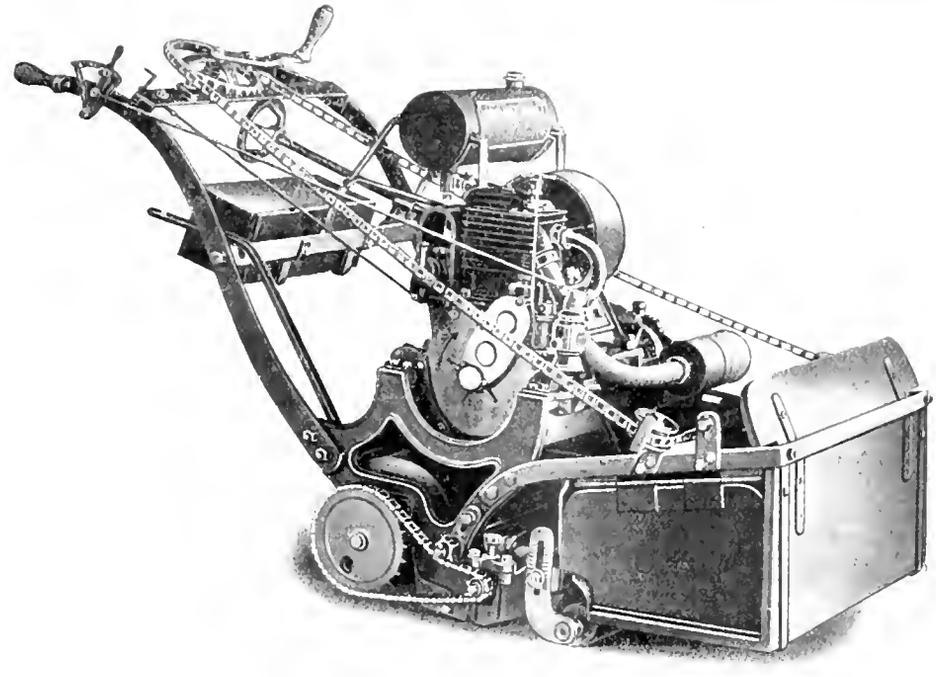

FIG. 60.—MOTOR LAWN MOWER MANUFACTURED BY MESSRS. RANSOMES, SIMS AND JEFFERIES; SIZE 24 INCHES, 2¾ H.P. PETROL MOTOR WITH MAGNETO IGNITION.

GRAFTING VARIETIES OF CLEMATIS.

THE most suitable stock for propagating by grafting the many beautiful hybrids and varieties of Clematis is *C. vitalba*, it being superior for this purpose to *C. flammula*, which was largely used formerly.

To secure the stock plants, seeds should be sown in the spring, and the roots may be grafted the following season, but it is better to transplant the seedlings at the end of the first year, in order to obtain stronger plants. If they are used when they are one year old the entire seedling is required as a stock, whereas in the second year many suitable pieces of roots can be severed from each plant, and the latter can be again planted so as to form new roots for the following year, but it is advisable to discard the plants after their third or fourth year.

The plants of the varieties that are required to be propagated are, if perfectly hardy, wintered in the open. During January or February they are pruned and placed indoors in a gentle heat, and this quickly causes the buds to break into growth. After a lapse of three or four weeks the young shoots are suitable for furnishing grafts, and it is essential that they should be worked before they become too ripe, otherwise the buds will not develop into shoots during the same year.

The propagating-house should contain cases which can be kept close and have a bottom heat of from 70° to 75°. If a layer of about 6 inches of cocoanut-fibre refuse be placed in the bottom of the propagating cases, it will form an excellent material in which to plunge the pots to their rims, which is a great advantage.

When the wood of the scions is in a suitable condition it is cut off the plants and severed midway between two nodes (joints), and care should be taken to prevent the shoots from becoming dry or withered.

In the axils of the petioles of each pair of leaves are the buds, and at the scion being of sufficient thickness, a sharp knife can be carefully used to split the stem down between the buds, thus securing two grafts from each part, but if sufficient scions are obtainable without this operation, they are better used whole.

Of the many methods of grafting, that known as the whip system is to be recommended, and great care is needed in making the cut. This should commence at the joint, and only a little of the tissue beneath the bark should be taken off. The cut should be finished by turning the knife a little, in order to sever the stem almost horizontally. This horizontal portion does not come in contact with the stock, the result being the formation of a callus over the exposed surface, and in a short time roots are emitted from the callus, and these enable the plant to become eventually established on its own roots. The stocks having been taken up from the ground, a suitable piece of root is selected and made ready for the scion, and the two are then bound firmly together with moist raffia. When the tying is completed the union should be covered with damp Moss until it is convenient to pot the plants. The compost for potting should be light in texture and moist, the latter precaution being essential, because no water should be given to the plants at their roots until growth has commenced.

The most suitable pots are thumbs, and the scion should be potted as deeply as possible without covering the buds.

After the pots have been plunged, the cases should be closed, and with the use of sheets of brown paper the light should be excluded for at least a week. The cases will require to be kept open for half an hour daily in order to allow the accumulated moisture to escape.

In about a fortnight growth will have commenced, and when the new shoots are a few inches in height the plants should be taken out of the cases. The growths should immediately be made secure by tying them to supports, otherwise they will be liable to become broken at their bases.

A few weeks later they will be ready for shifting into 5-inch pots, and after this potting they should be given a cool treatment. In July or August the plants should be plunged in the open, and as soon as they are thoroughly hardened they will be ready for their permanent quarters. *W. B. Little.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Lælia anceps and its varieties.—These winter-blooming Mexican Lælias merit a place in every collection. Complaints are sometimes made that they are shy flowering plants, but such is not our experience. The coloured forms are more compact in growth and certainly produce their flower spikes much more freely than most of the white-flowered varieties. The flowering season is now past, and the plants should be placed in a suitable position to rest until the season comes round again for them to commence growth. Upon the treatment afforded them during this period will largely depend the success or failure to flower them well. The longer the plants are at rest the better is the chance of obtaining flowering growths, as growths completed late in the autumn seldom fail to produce flower spikes. Place the plants in the lightest and most ventilated part of a cool intermediate house, and afford the roots only sufficient water to keep them healthy and the pseudo-bulbs plump. If a large batch of these plants is cultivated and there is not a special house devoted to them, it will be advisable to set apart a portion of a house for their culture, choosing a position where the rays of the sun will reach the plants at all seasons, and when the ventilation can be so arranged that plenty of fresh air may be admitted whenever the outside conditions are favourable.

Repotting.—The Lælias belonging to this section produce a cluster of new roots from the last made pseudo-bulb shortly after the flowering season is past, and the white varieties do this much earlier as a rule than the coloured forms. When these new roots are first observed, attention should be directed to the repotting or resurfacing of the plants, but on no account should they be disturbed unless it is really necessary. In cases where repotting must be performed, let the whole of the compost be shaken from the roots, removing any dead roots and the back pseudo-bulbs that are no longer of service to the plant. Teak-wood baskets are preferable to pots or pans as receptacles, especially when the plants have to be suspended from the roof rafters. These should be sufficiently large to accommodate the specimens for a few years without further root disturbance. When repotting, place all the "leads" towards the centre of the baskets, so that the rhizomes will have a greater distance to travel before growing over the sides. Provide ample means of drainage and employ a similar compost to that recommended in last week's Calendar for Cattleyas, as a rooting medium. Newly potted plants are best placed on a stage for a period, and sprayed overhead daily till such time as new roots have penetrated the compost, after which they should be treated as previously advised. If the rooting medium should get into a soddened condition the new roots will decay directly they enter the compost.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Palms for decorative purposes.—These should be cultivated in as small pots as possible, and when they require to be repotted a rich compost should be employed that will remain nutritive for a long period. It may be formed of strong loam, with ¼-inch bones added freely. This will be suitable for strong-growing Palms, such as most of the Kentias, Arecas, &c. The soil should be pressed down the side of the pot very firmly, as this will help to induce compact growth. For the less robust sorts a compost of peat, loam, and sand should be used, but potting should be done firmly, as in the case of the stronger-growing sorts. For the species Cocos Weddeliana a compost of peat and sand only should be used, unless the loam is of a very light nature, and then only a small portion. Any Palms that do not require a larger pot than they now occupy should have the top soil pricked up and removed, afterwards top-dressing with fresh soil and some good artificial manure. Palms can be kept in good health for many years together without repotting, if attention is given to feeding with suitable manures and the roots are never allowed to suffer from drought. Shade the plants from all direct sunshine, and syringe them freely on every favourable occasion, taking care to syringe the under side of the leaves. Keep a sharp look-out for thrips. It will be found that occasional syringings with clear soot water will help to keep insects in check, and waterings of clear soot water will improve the colour of the foliage.

Gloriosas.—The shoots are now growing freely, and should be encouraged to run up strings similar to those used for Dipladenias, but if the plants are required for exhibition they should be trained on a ballon-shaped trellis from the commencement, first training the shoot as low down to the rim of the pot as possible, with a slight incline all round as the shoot extends. Turn the plant round once a week, so as to prevent it becoming one-sided, and place it in as light a position of the hothouse as possible.

Rhododendrons (Azaleas).—Plants that have done flowering should have all the seed pods picked off, and be kept in an atmosphere heated to 60° to encourage as much growth as possible, syringing and shading them in bright sunshine. As soon as the plants are seen to be growing freely, any that require repotting should be given attention. The old ball must be pricked up slightly all over, and notice should be taken that it is in a fairly moist condition; if it is not, it should be soaked in a pail of tepid water before potting. A compost of peat and sand alone is best for Azaleas. Great care must be taken in potting to see that the soil is made very firm, adding small quantities at a time. Following the potting, watering must be done very carefully. Ascertaining the weight of the plant by lifting it is the best way of learning if these newly-potted plants require water, but this cannot be done in all cases. Plants that have flowered freely and have not been re-potted will be benefited by a slight sprinkling of Peruvian guano on the surface of the soil, which should be slightly pricked up afterwards with a small sharply-pointed stick. The soil of any pot plant which has a hard, close surface should be pricked up occasionally, so as to change the channels for the water and admit air more freely into the soil.

PUBLIC PARKS AND GARDENS.

By James Whitton, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Formation of parks.—Following on my remarks pertaining to playgrounds for children, I have now to deal with those larger areas which more properly fall within the designation of a public park. These may vary in size from five to 500 or more acres. Not two of them will be alike in character of situation, but each will require special study and treatment to suit the needs of the district in which it is situated. This point is particularly true in respect to the necessities of large towns where there usually are well-defined residential and industrial districts. One of the most frequent causes of discord in municipalities is the question of the relative treatment of districts including that relating to the provision of public parks. Therefore, in the planning as well as in the subsequent management of parks, due care must be exercised to prevent the creation of any feature which might give use to friction between the residents in different districts.

Park design.—The subject of park design is one on which the divergence of opinion is as wide asunder as the poles. It is also one that demands, from a municipal point of view, the most careful consideration and study. When one bears in mind that municipal rates everywhere are tending to increase yearly, and that the expenditure of public money is rightly becoming more closely scrutinised, it is the duty of responsible persons to see that full value is obtained for every penny spent. Therefore the aim ought, in the first instance, to be directed towards making the place realise to the full the object of its existence. In some towns the "park" is only a crudely-treated playground, the outstanding features of which consist of an obtrusive bandstand, a series of paths leading to no feature in particular, a few scraggy trees and shrubs dotted about without any meaning, and a general air of untidiness prevails. Not attempt is made by the authorities to make the place one of such interest and beauty as to add considerably to the amenity of their town, or to serve as a pleasure resort for the general community where, along with the means for muscular exercise for the young and vigorous, provision is also made for the enjoyment and physical recreation of those whose years and inclinations demand recreation of a less exacting nature. In such cases there appears to me to be a lack of appreciation of the higher ideals of civic government. On the contrary, there are parks where the treatment runs to the opposite extreme, and is too "villa-gardenesque" in character. The general design may be excellent, but nevertheless be ruined owing to failure to appreciate its points and purposes. Over the greater part of the area trees and shrubs are dotted about in a haphazard manner, and they have been so trimmed and pruned as to destroy all the beauty and character they naturally possess, and cause them to wear that air of smug complacency characteristic of Dutch dolls. The grass swards and paths are faultlessly kept, while the intricacy of the design of the flower-beds is only equalled by the brilliancy and garish display of their occupants. Fortunately, this type, which was chiefly encountered in smaller parks, is less in evidence at the present time than it was some years ago. The flower-bed business is one which acts as a pitfall to many excellent young gardeners. They must learn that while townspeople like to see flowers, they do not want them in every corner. These extreme examples are stated simply to direct the attention of those young gardeners who are desirous of entering upon this branch of their profession, to a matter which they should study on every occasion, so that when their opportunity arrives they may avoid faults of management of the kind indicated above, and be in a position to direct the authorities towards the adoption of a sounder and simpler system.

THE FLOWER GARDEN.

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

Spring flowers.—Bulbs are now making rapid progress, and it will be well to mulch the ground with manure from a spent Mushroom bed or with Cocoa-nut refuse. Unless this is done, heavy rains are liable to spoil the foliage and flowers by splashing. Beds and borders of spring flowering plants should be made neat and clean before the flowers open, as the work can be done much quicker and with less damage than afterwards.

Calceolarias, Pentstemons, Gazanias, Alyssums, &c., raised last autumn from cuttings, and that have been wintered in cold frames, ought now to be given full exposure unless there is frost. Pinch the leading shoots, to induce the formation of side growths. Gaillardias raised from seeds sown last July in the open and transferred to unheated frames for the winter need full exposure to the weather before being planted out. Pentstemon barbata (Chelone barbata) treated in the same manner as Gaillardias, produce tall spikes, densely tufted with drooping red flowers, and are very handsome.

Gladiolus.—If early flowers are required in beds, borders, or for cuttings, some of the earliest and hardiest varieties, such as Gladiolus, Colvillei alba, The Bride, rosea, and rubra, and G. brenchleyensis, bright scarlet, should be potted into 4-inch pots and placed in unheated frames, and when well rooted be transplanted. Or they may be planted now in the position in which they are intended to flower, provided the ground is in good working condition.

Lobelia cardinalis and varieties placed in heat early in February will now be in good condition for potting; use 4-inch pots, and a compost of leaf-soil, loam, and sand. When pulled apart, divisions of the plants with roots and two shoots are quite large enough. Keep the plants in gentle heat until they have become established, after which time they should be removed to cooler quarters.

Garden walks require constant attention to keep them in good condition, and nothing contributes more to the general good effect than well-kept paths. During the present month much can be done, even with the hoe, to lessen the number of weeds that would otherwise appear in the summer months. But when weed-killers are used, the advantage is very marked, not only are weeds and moss killed, but a brightness is imparted to the gravel and the smooth surface is retained. Accidents to animals or vegetation from the use of the poison may be easily avoided when the instructions for use issued by the vendor are properly carried out. Frost having loosened the surface, frequent rolling will be necessary. Box edgings may now be lifted and relaid. If the gravel has become dirty on certain paths, let fresh gravel be applied.

Roses.—The hardier climbing varieties should by this time have all old wood removed and the young wood laid in and securely fastened. The yellow and white Banksian Roses, when allowed to assume a natural form against a wall in some warm and sheltered corner (as is essential for these varieties), need very little pruning beyond the removal of old and weak growths after the flowering period in July. When strong growths 20 feet in length are well flowered, they are very handsome.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Planting.—Where the planting of fruit trees was interrupted in the autumn by unfavourable weather or other causes advantage should now be taken on dry days to prepare the stations as previously recommended. Provide drainage where necessary, and get a supply of fresh compost in readiness, so that no delay may afterwards occur in completing the work of planting, which should be pushed forward at every favourable opportunity. It is important that the soil should be sufficiently dry to bear treading with the feet and firming well over the roots. Supply each tree with a suitable stake immediately after planting, tying the tree to the stake so as to prevent its being swayed to and fro by winds. Stakes for standards should be driven into the sub-soil before the trees are planted.

Raspberry canes.—The canes upon established plantations may now be shortened to a plump bud and tied up singly to strained wires as recommended in a previous Calendar. Being gross feeders, yet surface-rooting plants, liberal mulchings are necessary. Unless the surface soil has become hard, no digging should take place, and even then the surface should only be lightly pricked over with the fork. It is not yet too late to plant young canes. The ground for these should be thoroughly prepared, as was recommended in the Calendar published in the *Gardeners' Chronicle* for January 11. A true stock of the variety Superlative is still the best red fruiting variety. Baumforth Seedling and Northumberland Fillbasket are also two good varieties. Guinea is the best yellow variety. November Abundance and October Yellow are two good and reliable autumn-fruiting varieties. The canes of these autumn-fruiting varieties should be cut down to the ground level in spring.

Apricots.—The buds of these trees have plumped up very fast during the recent mild weather, and trees growing against the warm wall of a house will soon be bursting into bloom. At this stage the bloom-buds are very susceptible to injury from frost, and the protecting material should be placed over the trees on frosty nights. The material should, however, only be made use of in severe weather or when frosts threaten, it being necessary that the trees should be fully exposed both night and day in mild weather. Care should be taken not to dispense with the means of protection before the young fruits are sufficiently protected with the foliage of the trees.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Lettuce.—Plants raised from seeds sown in autumn which have been wintered in unheated frames can now be safely planted out in a warm, sheltered part of the garden. If room can be found for them at the foot of a south wall or fence, it will make a considerable difference as to the time when they will be fit for use. Lift the plants with a garden trowel, taking care to retain as much soil about the roots as possible. Plant them very firmly and apply a good watering. Where space can be spared, part of the crop should be planted out into unheated frames as near the glass as possible, using soil which is known to be free from wireworm. Both the Cabbage and Cos varieties respond well to this method of culture; the growth being naturally much quicker, the quality at this season is much improved. Plants raised in heat should be pricked off immediately the second leaf appears, cultivating them in unheated frames. Make further sowings of both Cabbage and Cos varieties under glass.

Forcing Asparagus.—One more good batch of crowns should be lifted and planted in frames that are not provided with bottom heat; the protection of the glass alone will be sufficient to encourage the growth just in advance of that in the open air. Never allow the roots to be exposed to the air for one minute longer than is necessary; more failures are caused by such exposures than any other cause.

Asparagus beds.—If it is contemplated making and preparing new beds, either by way of supplementing those which have done duty for some years or for further increasing the supply, the work should be proceeded with at once and all got in readiness for planting in the first week of April. Fortunately, Asparagus does not need all the trouble and expense that was generally thought necessary by our forefathers, the primary requirements being good drainage and a liberal depth of soil. On very wet land the beds should be elevated above the natural level of the staple, and alleys thrown out during the winter months, but on light, porous soils this work is not only unnecessary, but injurious. The beds should be thrown out 4 feet wide, thus allowing three rows of plants to a bed. An alley 2 feet in width should be made between each bed. Should the sub-soil prove to be very bad, this should be entirely or partially removed, and be replaced by a more suitable mixture.

Celery.—The main and last sowing should now be made in pans and placed in a gentle heat. Prick out seedlings that germinated last month into boxes, putting the plants at distances of 2½ to 3 inches all ways. Do not expose these plants to great heat, but guard them as much as possible from suffering a check to growth. The latest Celery still in the ground ought now to be lifted and stored in fine soil or cinder ashes under the shade of a north wall; this will retard the plants from running to flower.

Celeriac.—Seeds of Celeriac should also be sown at the present time.

Egg plant [*Solanum Melongena*].—This is both useful and ornamental, and should be grown by all who possess a reasonable number of glass-houses. Both the white and purple kinds are worthy of cultivation, but the former is generally preferred for culinary purposes. Seeds may be sown now, and the seedlings raised in a hot, moist atmosphere. Cultivate them in a similar house, and they will fruit well in pots measuring 6 or 7 inches in diameter. The plants will need to be protected from red spider.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Planting Vines.—Should the planting of vines be contemplated, it should be attended to as soon as the canes, previously prepared for the purpose in a cool house, are bursting their buds. If the borders have been formed according to the directions recently given, those inside the house will now be in a suitable condition for the reception of the vines. When planting, make the holes sufficiently large to enable the roots to be spread out at their full length. The soil about the roots of the pot vines should be moderately moist when the plants are about to be turned out. Carefully disentangle the roots, remove any damaged portions by means of a sharp knife, and spread them out as directed in specially prepared soil, making this firm about them. Complete the operation by mulching the border with short litter, and afford enough tepid water to allow the soil to settle firmly about the roots. The canes should be carefully secured to bamboo or other straight stakes, and if undesirably long be disbudded to the desired length, and subsequently, after all danger of bleeding is past, the disbudded portion should be cut off.

The late Peach house.—In order that the trees may not be attacked by aphis when they are in blossom, the structure should be fumigated with the XL-All vaporiser immediately before the flowers expand. A change in the treatment will be necessary as soon as the blossoms commence to open. Careful attention must be given to ventilation, according to the external conditions. A distribution of the pollen should be effected during the warmest part of the day by gently shaking the branches of the trees, or pollination may be performed by some other means, such as dusting the flowers with a rabbit's tail. These precautions, together with a comparatively dry atmosphere in the house, will invariably at this season of the year ensure a free set of fruit. Except during severe frosts in low, damp situations, it will not be necessary to employ artificial heat for this house.

Bananas.—Little skill is required to produce this fruit in perfection in this country, and, except in some large establishments, houses are seldom exclusively devoted to the culture of Bananas. The plants may be satisfactorily grown, and their fruits ripened in an ordinary plant store, or other house of adequate dimensions, commanding plenty of artificial heat. Under such circumstances they have been fruited in these gardens, both when planted out in beds, and with their roots confined in boxes. Suckers readily become established when potted in receptacles suitable to their size and plunged in a brisk heat. When well rooted they may be transferred to their fruiting quarters. It is not necessary to make fresh borders or beds each time, as suitable suckers may be left upon the old stools to take the place of those that have fruited. A suitable compost is loam mixed with decayed manure and leaf-soil or peat. Established plants, and particularly old stools, require frequent applications of liquid manure, and plentiful supplies of tepid water. Musa Cavendishii is a dwarf species, and the most desirable sort to grow for fruiting purposes.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, etc., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matter which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MARCH 7—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet. Meeting at Carr's Restaurant, Strand, under the auspices of the British Gardeners' Association.

MONDAY, MARCH 9—
Ann. Meet. United Hort. Ben. and Prov. Soc.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich: 41°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, March 4*: 6 P.M.: Max. 42°; Min 28°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March 5* (10 A.M.): Bar. 29·9; Temp. 40°; Weather—Fair.
PROVINCES. *Wednesday, March 4*: 6 P.M.: Max. 43° Ireland S.W.; Min 38° Hertford.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND THURSDAY—
Herbaceous Plants, Lilies, Hardy Bulbs, &c., at 12; Roses at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

WEDNESDAY—
Hardy border Plants and Bulbs, Liliums, Gladiolus, &c., at 11.30; Roses and Fruit Trees, at 1.30; Azaleas, Palms, &c., at 5, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Imported and Established Orchids at 12.45, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

Herbaceous Plants.

The recent discussion as to what constitutes a hardy herbaceous perennial should serve a useful purpose by focussing attention on what experience has proved to form a very debatable subject. Our correspondents have clearly emphasised the great divergence of interpretations put upon the term herbaceous, and it cannot be otherwise than satisfactory to have elicited, in the course of friendly controversy, the different views of exhibition judges and others whose opinions are entitled to the fullest consideration.

The whole subject affords an admirable example of the kind of difficulty that lies in the way of framing comprehensive definitions that will stand the test of practical application. When we turn to the best botanical writers who treat of these matters, we find that they have obviously felt the difficulty of the position, and thus they often seem to sound an uncertain note in delimiting their categories. But it is not very difficult to discover, under their reserved expression, the guiding thread that runs through their classifications.

Thus Duchartre, whilst defining the "herbaceous" stem as one that is soft, not firm in texture, and generally green, goes on to add that herbaceous perennials "generally persist only by means of subterranean portions, forming new flowering stems every year." It is quite clear that the texture of the stem was in his judgment the leading feature. The limited duration of the stem commonly, but not necessarily, results from a sappy, non-woody condition of the organ. De Candolle, in his well-known and admirable treatise, *Organographie Végétale*, says that "Herbaceous stems usually persist only for one year, either the whole plant, or the aerial parts of it, dying away." Later on he says that perennial stems are generally of harder texture, and are only herbaceous whilst the shoots are young. De Candolle's statements are of interest as clearly enunciating the principle that annuals are to be regarded as herbaceous plants, which some of our correspondents appear to have doubted.

This is still more explicitly emphasised in Hooker's English edition of Le Maout and Decaisne's *Descriptive and Analytical Botany*. The stem is described as herbaceous when it is "soft and easily broken, such as are annual, biennial, and many perennial stems." Bentham (*Handbook of the British Flora*) at first appears to give some colour to the common definition by describing the herbaceous perennial as one "in which the greater part of the plant dies down after flowering," but inasmuch as he includes in this category all the perennials except those in which "the woody part forms the greater part of the plant," such plants as Pansies, Daisies, and others of similar character, must obviously be included in the herbaceous class we are considering or be altogether disregarded!

But although we may clearly perceive that there is no essential or invariable relation between the herbaceous texture of a stem and the limited period of its duration, the two qualities as a matter of fact are often found to occur together, and it is to this circumstance that the prevailing confusion on the matter is to be attributed. We even find instances where this confusion appears to be reflected in the works of well-known writers, but this probably is due to the fact that the definition is not given as a whole, but occurs partly in one connection and partly in another. Thus Asa Gray describes the herb as a plant with no persistent *woody* stem above ground, and this is perfectly correct. But he goes on to say that it "dies annually, or after flowering, down to the ground at least." Thus the centre of gravity of the definition has, by an odd inversion of the original meaning of the words, come to rest in the deciduous nature rather than the physical texture of the plant. Moreover, this error has become so firmly implanted that, as some of our correspondents have already pointed out, an evergreen foliage has been held to disqualify a plant as herbaceous, and to relegate it to the suffrutescent or suffraticose classes. The difficulties of describing such plants as Primula, Kniphofia, Iris, Saxifrage, Campanula, and Viola, not to mention a host of other examples, as suffrutescent, are so great as hardly to require further comment.

The fact is the definition of herbaceous perennial, as set forth by the leading horticultural authorities in this country—and we are only concerned with our own societies at home—is obviously faulty and ought to be amended rather than maintained merely for the sake of the appearance of stability. Dr. Lindley has well observed, in the preface to his *Vegetable Kingdom*, that it is impossible to "regard perseverance in error [as] commendable for the sake of what is idly called consistency."

The Council of the Royal Horticultural Society, in formulating their *Rules for Judging*, wisely foresaw that some emendations might become necessary as time went on, and they expressly safeguarded themselves against the charge of having irrevocably stereotyped the regulations included in that Code. It is, of course, not desirable that alterations should be made without sufficient reason in a document which carries such weight as does the Code, but we submit that the time has arrived when a radical change in respect of Rules 179 and 180 has become imperative. Those who originally framed the two rules in question plainly entertained doubts as to their general suitability, as is shown by the further recommendations they proceeded to make whereby the very restrictions which subsequent experience has shown to have worked vexatiously might be removed. They suggested that the simple term "hardy flowers" should be employed, and in this way it was hoped that the otherwise inevitable difficulties might be avoided.

But the disadvantage attending the use of the term "hardy flowers" without further qualifications has already been pointed out by several of our correspondents. It is, however, really provided against by the limiting paragraphs which follow the recommendation under Rule 181 of the Code. The exclusion from a class for perennials, of such plants as Wallflowers, Snapdragons, and others which are usually cultivated as biennials, at any rate when grown for exhibition purposes, is sufficiently provided for under Rule 183. But much good would result from the preparation of a list of such doubtful plants as are intended to be definitely excluded under this rule. In the same way it is eminently desirable to frame a list of doubtful plants which are to be excluded from a competition of hardy herbaceous plants, enumerating the species that are intended to be shown only in the shrubby classes. It would not be easy to frame such lists, nor to describe the limits which will determine the position of many of those that require specially defining. But possibly a collaboration on the part of the Scientific and Floral Committees of the Royal Horticultural Society might be able satisfactorily to settle the class of the doubtful claimants to the rank of herbaceous perennials.

It may, however, be pointed out that many of the practical difficulties that have come under our own observation have been caused by the tendency on the part of those who were called upon to officiate as judges to place artificial limitations on the terms employed in the schedule.

For instance, we have a letter on our table from an exhibitor at a provincial flower show held last August who competed in a class for a "bouquet of hardy garden flowers." He included Sweet Peas in his exhibit, and subsequently the judges wrote upon

his card, "Peas not hardy flowers." So far as it is possible to follow the reason that led the judges to take such an erroneous view, it would appear to rest on the fact that Peas are annuals, but how can it be claimed that they are not hardy, and on what grounds were annuals excluded when the schedule contained no hint as to whether annual, biennial, or perennial plants were intended for that particular class? In every such case judges should interpret the schedule liberally, and refuse to disqualify an exhibit when the circumstances do not actually compel them to do so. In judging a class for "hardy flowers" when the schedule contains no limitations or exclusions, it would be incorrect to disqualify bulbous or tuberous plants, herbaceous plants, or even flowers cut from a Horse Chestnut tree, the only requirement being that the plant is ordinarily capable of growing out of doors from year to year without protection. The class for "herbaceous perennials" may include any perennial plant that does not form woody stems; and bulbous or tuberous species should not be disqualified unless they are definitely excluded by words inserted in the schedule. In like manner the words employed by another Society, "hardy herbaceous plants," without any qualification, obviously do not exclude annual, biennial, or perennial plants, even if the latter should be bulbous or tuberous species; the only qualities insisted upon are those of hardiness and freedom from woody stems. If the term "herbaceous plants" be used alone, then it would include species from the hot-house equally with those from the open garden. All these and similar cases may appear perfectly simple, but that they are frequently adjudicated upon in an unsatisfactory manner is proved by letters we have received from exhibitors who have suffered unjustifiable disqualification in the competitions.

ADDITIONS TO THE KEW HERBARIUM DURING 1907.—We learn from the *Bulletin of Miscellaneous Information*, Kew, that during last year over 12,000 sheets were presented or sent in exchange to the Herbarium by about 120 persons and institutions, while over 7,000 sheets were purchased.

MR. GEORGE P. MILN.—The Council of the Chester Paxton Society has awarded the Gold Medal of the Society to Mr. G. P. MILN, the honorary secretary and treasurer. Mr. MILN is a most capable organiser, and he has initiated and carried to a successful issue many important schemes for the improvement of the local exhibitions of fruits and flowers. He has also gathered around him a band of practical men who have done much to improve the cultivation of hardy fruits and other branches of horticulture. He has done excellent work in connection with the flora of Cheshire, especially with regard to the Gramineæ; and for his services to science the Chester Society of Natural Science, to which he has also acted as honorary secretary for the last 20 years, awarded him a few years ago the Kingsley Memorial Medal. The gold medal of the Chester Paxton Society was presented on the occasion of the annual dinner of the society held on February 22, which the members and guests attended at the invitation of the president of the society, Mr. A. W. ARMSTRONG. The presentation was made by the founder of the society, Mr. J. D. SIDDALL, who in the course of his remarks eulogised Mr. MILN's labours on behalf of the society, and in support of his testimony he quoted figures shewing the rapid progress made by the society since 1891. In 1907 the amount of prize-money offered in the schedule was: Fruit classes, £48 12s.; Chrysanthemum classes, £42 17s. 6d.; total, £90 19s. 6d. In 1891 the figures were: Fruit classes, £20; Chrysanthemum classes, £8; total, £28. The number of subscribers last year was 311, but in 1891 they were only 80. There had also been a great increase in the merit of the individual exhibits, and all this was largely due to the work of Mr. MILN. The gold medal is inscribed: "To G. P. MILN, in recognition of services rendered as Hon. Secretary and Treasurer, February 8, 1908."

BRITISH GARDENERS' ASSOCIATION.—We are informed that a public meeting will be held at Carr's Restaurant, Strand, on Saturday, March 7, at 7 p.m. Mr. GEORGE GORDON will preside on this occasion, and an address will be delivered by Mr. JNO. WEATHERS, secretary of the Association.

THE SURVEYORS' INSTITUTION. The next ordinary general meeting will be held on Monday, March 9, at 8 o'clock p.m., when the adjourned discussion on the paper read by Mr. W. G. S. ROLLESTON on "The Small Holdings and Allotments Act, 1907," will be resumed.

PORTRAIT OF DR. D. H. SCOTT, F.R.S. The Jodrell Laboratory of the Royal Gardens, Kew, was the scene of an interesting ceremony on the afternoon of February 29. The occasion was that of handing over to the custody of Col. PRAIN, the Director of Kew, a portrait of Dr. D. H. SCOTT, F.R.S., who for nearly 10 years was the Honorary Keeper of the Laboratory. Dr. SCOTT retired from this office a little more than two years ago, but during his tenure of the post the Laboratory became widely recognised as a place from which were issued many important results of botanical investigations carried on by himself and by other workers there. It was a happy idea to commemorate Dr. SCOTT's connection with the Laboratory by placing his portrait in the building the value of which he has done so much to enhance. It was from the first decided that the subscribers should be limited to those who had at some time or another actually worked in the Laboratory, and this plan has been steadily adhered to. Thus the gathering which took place last week possessed a real significance in the history of this department of the establishment at Kew. Professor A. W. OLIVER, who presided at the meeting, opened the proceedings with a sketch of the botanical activities of the subject of the portrait, and Professor F. O. BOWER followed with an account of the work of the Laboratory. Other speakers were Mr. WALTER GARDINER and Mr. GWYNNE VAUGHAN. Col. PRAIN, in accepting the portrait, which is to be hung in the Laboratory, adverted to the loss caused by the retirement of Dr. SCOTT, but hoped that the occasion might be regarded as a good augury for the future success of the institution. Dr. SCOTT replied in an interesting and humorously reminiscent speech.

NATAL BOTANIC GARDENS.—We are informed that the Natal Government have found themselves obliged to reduce the expenditure upon the Natal Botanic Gardens and the Herbarium. The grant to the Herbarium has been taken away entirely, whilst the grant to the gardens has been reduced from £350 to £150. This action has necessitated the discharge of two of the assistants and a considerable reduction in the salaries of the director and his curators. It is difficult to see how the important work of the department can be carried on effectively under these straitened circumstances. *Kew Bulletin*, No. 2, 1908.

ANNUAL DINNER OF NURSERY EMPLOYEES.—About 30 of the employees of the firm of Messrs. R. B. LAIRD & SONS, Limited, held their first annual dinner in BISSET'S Rooms, Haymarket, Edinburgh, on Friday evening, the 28th ult., under the presidency of Mr. ROBERT LAIRD, managing director, to whose efforts the staff was indebted for a most enjoyable evening.

PRESENTATION TO MR. DAVIS.—On February 28 the gardeners at Hall Place, Tonbridge, made a presentation to the head gardener, Mr. DAVIS, on his retiring after 37 years' service.

TRAPS FOR ANTS.—Writing in our contemporary, *Revue de l'horticulture* (Belgium), Mons. I. WYSELLE describes a simple and ingenious method of getting rid of these pests. He wetted sponges with sugary water, and placed them near the nests. The ants were attracted in large numbers, and crowded into the sponges. They were afterwards killed by plunging the sponges into hot water, and by repeating the process several times the nuisance was overcome. It is perhaps not likely that all the ants would be caught in this way, as some would not leave the nests, but the method deserves a trial, as at any rate the numbers could be kept down in cases where for various reasons it might be impossible to exterminate them in other ways. Ants, however, are sometimes credited with more damage than they deserve. We have seen a fine patch of Potentilla nitida, growing on a rock-garden, not only none the worse for, but actually improved by, their presence. The young shoots rooted freely in the powdery earth which they excavated when making their nests, and the plant was incomparably more flourishing than a number of others which were not infested, but otherwise were growing in the same garden under apparently similar conditions.

***THE AGRICULTURAL HOLDINGS ACT, 1906.** Mr. G. A. JOHNSTON'S book on this subject has not taken long to secure the honour of a second edition. Though perhaps somewhat too technical for the reader untrained in legal procedure, the volume must prove of considerable utility at the present time to those upon whom the duty falls of preparing or approving leases of agricultural holdings (a term which, by the way, has not yet been extended by the Government to include nursery grounds) while bearing in mind the changes which will occur when the Act of 1906 comes into force on January 1 next. The various Agricultural Holdings Acts are brought together in a form very handy for reference by the practitioner, and the clauses which will stand repealed after the present year are usefully distinguished by small type. We trust the author may not think us ungrateful if we express the hope that the long-promised Consolidation Bill, codifying the Statutes on this subject, may soon render obsolete this part of the volume. The Act of 1906 (known at the time as the Land Tenure Bill) was so altered during its passage through Parliament that it contains many faults for which the original draftsman cannot justly be held responsible, but the ultimate result proves the inconvenience of the increasing tendency to graft new legislation on to earlier Acts of Parliament. The Appendix to the present edition of the book under notice is greatly strengthened by the inclusion of the Board of Agriculture Rules and County Court Rules of procedure and forms. The comments on the clauses of the new Act deserve careful perusal, those which deal with the present-day tendency towards fixity of tenure being especially worthy of notice by students of modern legislative methods as well as by landlords and their agents.

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* *The Agricultural Holdings Act, 1906.* By G. A. Johnston,

CALCIUM CYANAMIDE.—This nitrogenous fertiliser, which is being manufactured on a somewhat extensive scale on the Continent, has several times formed the subject of enquiry on the part of our correspondents. We note with much pleasure therefore that Mr. A. D. HALL, Director of the Experimental Station at Rothamsted, has published the results of his investigations on the manurial and keeping qualities of calcium cyanamide in the current number of the *Journal of the Board of Agriculture*. As the substance is made from calcium carbide, which, as is well known, yields the poisonous and inflammable acetylene gas when it is moistened with water, it is satisfactory to learn that the amount of carbide actually present is so small as to be quite negligible from the point of view of safety. Further, the cyanamide keeps well, and, under the ordinary conditions of storage loses very little of its manurial value. One of its chief drawbacks is the very fine powdery state in which it is sent out, which renders it troublesome to sow on the land, whilst it was not clear whether it could be mixed with other fertilisers without damage either to them or to itself from the manurial point of view. The Rothamsted experiments, however, prove that it can be mixed with super-phosphate, and in this form it can be more easily applied to the land. The acid super-phosphate is converted into the di-calcium phosphate, and this, although slower in its action than the super-phosphate, is still available in the soil as plant-food.

THE ORIGIN OF THE POTATO.

ON February 20, at a meeting of the Linnean Society, Mr. Arthur W. Sutton read an interesting paper on this subject, illustrated by numerous lantern slides, showing the peculiarities of various species of tuber-bearing Solanums which had formed the material for experiments extending over more than 20 years. These experiments were made with the twofold object of determining the question as to which wild species had yielded the Potato of commerce known as S. tuberosum; and, having discovered this, to reinforce, if possible, the resistant powers of the commercial Potato against disease by the infusion of a stronger strain. The records relating to the cultivated Potato go back

FIG. 61.—SOLANUM COMMERSONII.

to the 12th century, and the plant has consequently become so modified by selection that the task of discovering which of the wild, tuberiferous species formed its starting point has become a very difficult one; all the illustrations available, and even the nomenclature of S. tuberosum, obviously referring to the modified cultivated forms and not to a wild species. In 1883, at the suggestion of Lord Cathcart, who had been impressed by the great annual loss suffered through the Potato disease, Mr. J. G. Baker made an exhaustive study of the various species of tuber-bearing Solanums, with the above-mentioned object in view. The results of his investigations were

FIG. 62.—SOLANUM TUBEROSUM, PAULSEN'S BLUE GIANT.

read at a meeting of the Linnean Society held on January 17, 1884. At that time it was thought that S. Maglia (Schlecht.), commonly known as Darwin's Potato (see fig. 66), was most likely to yield the best results, as it was itself a native of the low-lying, swampy soils of the Chonos Archipelago, and therefore might be expected to be able to withstand the disease from which the cultivated Potato suffers when it is exposed to damp conditions. Mr. Sutton followed up Mr. Baker's researches by attempting crosses between S. Maglia and S. tuberosum, i.e., the Potato of commerce, but only succeeded in obtaining one hybrid which, after 20 years' cultivation, has yielded nothing equal in value to existing commercial Potatos. Fig. 66 represents S. Maglia from Mr. W. G. Smith's drawings of S. Maglia as grown in Reading trial ground, showing bifid stigma, pollen grains, &c. This species may therefore be regarded as a negligible factor in the evolution of the cultivated Potato or in the improvement of it as far as disease-resisting qualities are concerned. Various attempts were made with other species, viz., S. Jamesii, S. Fendleri, and S. Ohrondii, the last of which Mr. Baker considers to be identical with S. Commersonii (Dunal), but no results of any value were obtained, and further efforts in this direction were consequently abandoned. In 1901 Mr. Sutton was surprised to see in the French journals that S. Commersonii, a perfectly wild and constant species, was reported by Monsieur J. Labergerie, of Verrières in France, to have suddenly produced by a bud-sport a Potato which on examination seemed to be of the most developed cultivated type. The specimens subsequently offered under the name of S. Commersonii "Violet" (Labergerie) undoubtedly answered to that description. Potato experts, however, could not admit this supposed origin without further proof, since no other instance had hitherto been known of a new variety of cultivated Potato arising except from seed. Bud-sports do not occur in this connection, or, at any rate, they are not sufficiently authenticated. Thus, most botanists regarded it with scepticism, since the so-called "mutation" presented all the specific characters of S. tuberosum and none of S. Commersonii, which is opposed to the recognised nature of any "sport." Still greater doubt arose when it was found that the so-called S. Commersonii "Violet" (Labergerie) seemed absolutely identical, even in microscopic detail, with a well-known and widely-distributed Potato known as the "Blue Giant," and it may be presumed that a tuber, or portion of one bearing a bud, was accidentally present in the soil in which the S. Commersonii tubers of M. Labergerie were grown, and that this in due course asserted itself among them. Fig. 61 represents Mr. W. G. Smith's drawing of wild type of S. Commersonii, showing cordiform berries, pollen grains, &c. Fig. 62 is taken from his drawing of "Blue Giant," and shows round seed berry, pollen grains, &c., whilst fig. 63 illustrates Labergerie's so-called mutation S. Commersonii "Violet," with round seed berry, pollen grains, &c. From a study of these figures it will be observed that the pollen grains of the type Solanum Commersonii are of a true elliptical form, whereas the pollen grains of the Blue Giant Potato, like the pollen grains of all other cultivated Potatos, are perfectly distinct from those of the wild type, being of a very irregular and broken form, and the pollen grains of Labergerie's so-called mutation correspond in every detail with those of the Blue Giant. This point is more fully brought out in fig. 64, where the pollen grains in question are shown in the bottom row. This case has already been so thoroughly discussed, that I merely allude to it here as having formed the incentive for further research on Mr. Sutton's part, and this time, fortunately, with results which promise to be of great value. It is, however, to be noted that these results have not been reached by hybridizing, but rather by close observation of the several species of tuber-bearing Potatos in Mr. Sutton's collection. One result of the experiments has been the discovery that in every case where the truly wild nature of a species was determined, the offspring invariably came perfectly true to the parental type, as correlated with this, the pollen grains were all evenly elliptical and uniform in size.

With cultivated Potatos, on the contrary, the offspring from seed are invariably very diverse in size, shape, and colour, while the pollen grains, as already mentioned, are, with one exception (a cultivated Potato extensively grown in the Andes, and, unlike any European Potato),

FIG. 63.—SOLANUM COMMERSONII, VIOLET (LABERGERIE).

very irregular in shape and size, and never truly elliptical. Fig. 64 represents pollen grains of several wild types magnified 600 diameters, contrasting with pollen grains of "Blue Giant" and Labergerie's so-called mutation. There are therefore two characters in S. tuberosum, i.e.,

the Potato of commerce which, apart from specific differences in foliage and flower, distinguish it from all known wild types; these are diversity of offspring and modification of the pollen grains.

Mr. Sutton's numerous slides depicted several species of Solanum, and variants of S. tuberosum received from Mexico and elsewhere, all of

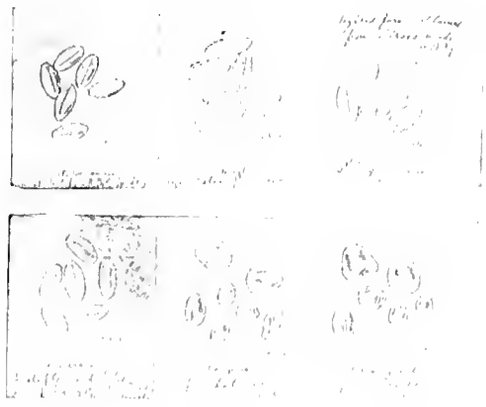

Fig. 64.—pollen grains of species and varieties of potatos.

Top row: S. etuberosum, S. Maglia, and S. Maglia × cultivated Potato.

Bottom row: S. Commersonii, wild type S. Commersonii violet, and Paulsen's Blue Giant.

which, however, are of secondary interest as compared with S. etuberosum Lindley, to which so far I have not alluded. The species was received some 20 years ago by Mr. Sutton from the Edinburgh Botanic Gardens as a wild one of Chilian origin. It is, despite its name, etuberosum, meaning non-tuber-bearing, certainly the nearest approach as a wild species to S. tuberosum as cultivated, since though it differs in habit, and has hairy foliage and also purely elliptical pollen grains, it produces edible tubers, and these, in the course of 20 years, have increased under cultivation from less than an inch in diameter to a fair marketable size, while in flavour they cannot be distinguished from ordinary ones. Fig. 65 represents Mr. W. G. Smith's drawing of S. etuberosum as grown at Reading, with pollen grains, spotted seed berries, tubers, &c. The specific characters are sufficiently marked to differentiate the type S. etuberosum clearly from our cultivated Potato, despite its points of agreement. Like other wild types under cultivation, S. etuberosum is extremely shy in producing seed; flowers and pollen may be plentiful enough, but after 20 years' cultivation at Reading it was only in 1906 that a single seed berry was obtained, and thus the first opportunity is afforded of testing its capacity as a wild species of producing true progeny. Mr. Sutton was surprised to find that of the 20 plants which were raised from seed, not one was exactly a replica of the parental form, although several showed distinct S. etuberosum character. Indeed, the whole batch, both in haulm and tuber, exhibited a degree of diversity such as might have sprung from the seed of the ordinary cultivated Potato. This variability extended to size, colour, and every other character; in some cases, indeed, the tubers were already of marketable size. In one instance only did any of the seedlings differ materially from the seedlings of the commercial Potato, and the tubers of this plant were not only deep purple in skin, but the flesh was also of the same deep purple colour, corresponding in this respect with one of the cultivated types of potato grown in Chili. A curious feature in S. etuberosum is that the seed berries are prettily spotted (see fig. 65). This diversity raises the question whether S. etuberosum is really a true species, or whether it is merely another example of introduced tubers derived from cultivated strays, such as have been received from time to time from S. and N. America (Mexico) ostensibly as wild plants. That the diversity of the Reading seedlings is due to cross-fertilisation Mr. Sutton does not consider likely, as in his experience this rarely occurs, and the seed capsule was found in the centre of a large number of S. etuberosum plants. It is noteworthy that all the other wild types which reproduced themselves pure from seed had an equal chance of being cross-fertilised. Happily, attention having now been concentrated on S. etuberosum, both self-fertilisation and cross-fertilisation have resulted in further seed supplies from the type and from some of its diverse offspring, and it is especially important to note that the pollen of the one seedling plant examined was of the true, wild, elliptical form. With this fresh material, it is hoped that light may be thrown on the origin of S. etuberosum on Mendelian lines in the coming season. Perhaps, however, the most noteworthy fact in connection with S. etuberosum, and certainly the most important from an economical point of view, is that in it we have a promise of the attainment of the primary object of the research suggested by Lord Cathcart and commenced by Mr. J. G. Baker, viz., the production of a really disease-resisting Potato. For 20 years S. etuberosum has been grown in experimental grounds at Reading, surrounded for comparison by varieties of the Potato of commerce, many of which season after season have been more or less subject to the disease Phytophthora infestans. Despite this, there has never been the least sign of this disease either on haulm or tuber of S. etuberosum, so that a score of years of cultivation have failed to affect its resistance to the pest. *Chas. T. Druery, V.M.H., F.L.S.*

HOME CORRESPONDENCE.

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

The Proposed Vegetable Exhibition.—I can assure *Onlooker* it is a great relief to my mind, as I am sure it will be to many others, to be assured that the Potato will be well looked after without the aid of the defunct National Potato Society. I am quite sure *Onlooker* does not wish to misconstrue the meaning of the paragraph relating to varieties for certain dis-

Fig. 65.—solanum etuberosum.

tricts. I did not mean to infer, neither did I say that one Potato only is suited for a certain district; my actual words were: "No doubt five or six varieties would be ample in *Onlooker's* locality, but I doubt very much if those same varieties, which, in his opinion, are the best, would be as popular in other parts of the country. Even one of the three varieties named by him, viz., Windsor Castle, one of the finest Potatos ever raised, I have known to fail lamentably in many localities. With regard to the wrong naming of other kinds of vegetables, if I made the assertion that varieties were wrongly named to deceive the judges and public, I venture to say I should have the courage of my conviction. What I contend, and always have done, is that vegetables do not receive the

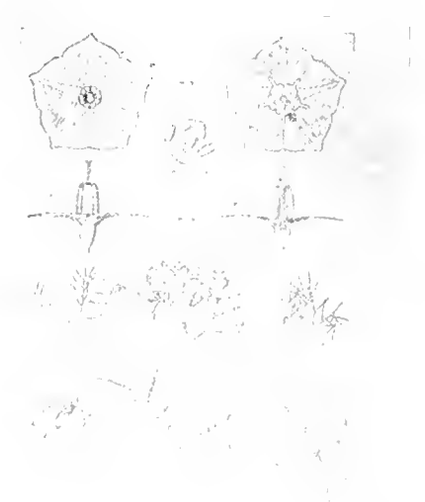

Fig. 66.—solanum maglia.

encouragement they deserve. What has given a stimulus to nearly every trade or profession, but the influence of exhibitions and competitions? *Onlooker* asks why the Vegetable Show at Vincent Square was not a success. I can tell him why, for the same reason that the show of table decorations failed, viz., insufficient encouragement by way of prizes. Was there any more attractive exhibit at the R.H.S. annual meeting than the Potatos exhibited by Messrs. Sutton & Sons, or did anything receive so much attention from the general public as this exhibit? *E. Beckett.*

——With respect to the objection to London vegetable exhibitions on the ground that no one will visit them, I would like to know what chances the public have had to see them? When collections of vegetables are exhibited at the Temple shows visitors crowd over them so greatly it is difficult to inspect the produce. When there were vegetable competitions at the old Royal Aquarium they attracted crowds to see them. If few went to see the vegetable exhibition at Chiswick in 1903, is it not true that no exhibition of any nature has attracted many visitors to Chiswick for a number of years past? The attendance at the Horticultural Hall show a few years ago may have been small, but what chance had the public to learn of its existence? Let the Royal Horticultural Society but make an annual vegetable exhibition at Vincent Square a regular feature in its programme, as it does with fruit, then the attendances will be satisfactory. *A. D.*

Herbaceous Plants.—For perhaps the twentieth time in my life I find gardeners discussing the word "herbaceous." Isn't it sufficient to say herbs? annual, perennial, hardy, tender, tuberous, bulbous, conuous, aquatic, pot-herbs; or what not? Surely no one could mistake plants so described. The definition "a plant producing annual flowering stems from a perennial root-stock" is fallacious. In the sub-tropics many herbs are perennial bloomers. *James MacPherson, Trenton, N.T., U.S.A.*

Rust on Chrysanthemums.—My experience is that the rust fungus can be destroyed without pinching the leaves, as Mr. Lunt advised on p. 70. Before taking the small plants out of the propagating case, prepare a staging for them to also hold a layer of ashes, which should be given a dusting of soot, then damped down with a rose can. If this system is persevered with all along through the season, the rust will not thrive. I have seen bad cases cured with this simple treatment. *C. Vickers.*

THE GUNNERAS.—I am pleased to observe Mr. Bartlett's note in your issue for February 29. The Gunneras are considerably hardier than many imagine them to be, and both G. manicata and G. scabra succeed perfectly in many gardens north of the Tweed, although in comparatively mild districts, where they will succeed well in sheltered places, they are occasionally killed by late frosts if the foliage has begun to unfold, and the plants are in a position where cold draughts of wind strike fully upon them. Hence the desirability of protection. There are many plants considered much hardier than the Gunneras which will succumb under these conditions. At one time I thought that G. manicata was more tender than G. scabra, but longer experience and observation have modified this opinion, and I believe that G. manicata is as hardy as the other species. I think, however, that the little G. magellanica is more tender than either, and I do not recollect having seen it in northern gardens where it has stood over several winters. I have lost species twice from spring frosts, and I know several gardens where it has been destroyed from the same cause. Regarding the size of the leaves of Gunnera manicata to which I referred in my note in your issue of February 15, I may say that these leaves, 9 feet in diameter, were only produced by the most liberal feeding. I am speaking from memory when I say that the finest examples I have seen are such as received a most liberal supply of manure, this amounting to three cartloads of good farmyard manure annually. Mr. Bartlett is correct in saying that the best plants are obtained when cultivated in a moist position, but not in a bog; plants of Gunnera manicata by the waterside should be a little above the level, and in such a position that, while the roots can reach the moisture, the crowns are well above it. This is a common necessity with many moisture-loving plants, but it is not a point which is sufficiently studied by those who are planting them. *S. Arnott.*

A SUSSEX WASTE.—Mr Leslie Wood states that the land under discussion is *not clay*, but "practically all sand." I refer him to the Geological Map and Survey of Sussex, and to the *Encyclopædia Britannica* for a reply, where he will see that about two-thirds of the county consists of almost pure chalk, and that the next greatest tract is what is called the "Forest Ridge," where the "waste" is, consisting almost throughout, of the stiff Wealdon clay, "occupying nearly all the inland district of Sussex." The clay is so good and extensive that brick-making is the chief industry, there being about 1,500 brick factories in the locality. I know what this clay is like, for I have had to plant in it on estates wide apart, but on the same formation, and have, in every case, had the greatest difficulty to find a spot suitable for a home nursery, the clay being so stiff as to render the planting of young seedling forest trees almost impossible until heavy dressings of leafmould from the wood, or light garden refuse had been added to make the clay workable. I expect to be near East Grinstead next month, and I think I could find Mr. Leslie Wood one day's stiff exercise, at least, in pulling his legs out of the clay, and show him a portion of the county he does not appear ever to have seen before, although situated at his door. *J. Simpson.*

LILIUM GIGANTEUM.—Unlike the famous "Indian Lilies" described in a recent issue of the *Gardeners' Chronicle*, this great Lily, which is a native of the lower slopes of the Himalayas, is equally adapted for conservatory or open-air cultivation. It is also one of the very few Lilies that not only endure, but are greatly benefited by a strong mulching of stable manure. It is the opinion of my friend, Mr. McDonall, of Logan, in this parish, who has grown it, like myself, for many years—though somewhat more extensively—that, without this effective manurial application it gradually degenerates into considerably smaller and more impotent bulbs. This fact, which I feel certain cannot be questioned, is the key to its continued successful cultivation. It is well grown at Monreith in this county by Sir Herbert Maxwell, who might perhaps give us his experience of this unique Lily in some future issue of the *Gardeners' Chronicle*. I have had Lilium giganteum in my own garden over 10 feet high, and bearing nearly a dozen of its ivory-white, violet-stained, intensely-fragrant, funnel-shaped flowers. The most impressive specimen of this great Indian Lily of which I have ever heard, was one that reached in Cavens Garden, Kirkbean, Kirkcudbrightshire (where its cultivation is made by the head gardener a kind of specialty), the enormous height of 14 feet. It quite overtopped the lofty garden-wall, and was the admiration and wonder of all beholders. Lilium giganteum is occasionally grown by enthusiasts from seed, which it produces in great abundance; but it is much more frequently propagated from offsets, when the immense bulb—which usually takes four years for its development—has become exhausted in the production of the flowering stem. *David R. Williamson*

SOCIETIES.

ROYAL HORTICULTURAL.

MARCH 3.—The meeting of the Committees held on Tuesday last was after an interval of three weeks. It was therefore anticipated that a good display of flowers would be staged. This belief was fully justified, for the display was one of the best ever seen in the Hall. There were no fewer than three Gold Medals awarded, which is in itself significant of the quality of the exhibition. It was generally remarked that, probably, never before have two such fine displays of Orchids been seen at these exhibitions as those exhibited by Major HOLFORD and Sir JEREMIAH COLMAN, Bart.: whilst the displays of forced flowering shrubs and plants were deserving of praise. The attendance was large, and at times the number of visitors was so great that it was difficult to make an inspection of the exhibits. At the afternoon meeting 110 new Fellows were elected, and a lecture on "Bulbous Plants in New Zealand" was delivered by Mr. E. White.

Floral Committee.

Present: W. Marshall, Esq. (chairman), and Messrs. Henry B. May, W. A. Bilney, Jas. Walker, Jas. Douglas, T. W. Turner, G. Reuthe, Jno. Green, J. F. McLeod, W. Howe, J. Jennings, C. J. Salter, W. Bain, Chas. Dixon, E. J. Cook, R. C. Reynolds Nevill, Herbert J. Cutbush, Arthur Turner, R. C. Notcutt, W. P. Thomson, E. H. Jenkins, W. J. James, Geo. Paul, R. Hooper Pearson, J. W. Barr, C. R. Fiebler, C. T. Druery, Geo. Gordon, W. Cuthbertson, and Rev. Page Roberts.

A fine display was made with flowering bulbs by Lady TATE, Park Hill Gardens, Streatham Common (gr. Mr. W. Howe). There were included among the plants shown Tulip American Lac (pink and yellow—a striking blend of colouring), the white Joost van Vondel, Rose Grisde-lin, Unique (yellow and white), Grace Darling (scarlet), Thomas Moore (orange and scarlet), &c. Other subjects were Narcissi Victoria, Henry Irving, Golden Spur; Lilium longiflorum, Solomon's Seal, Callas, and Roman Hyacinths. The whole was relieved with small plants of Azalea and Bamboos. (Silver-Gilt Lindley Medal.)

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, showed a large number of the finer exotic Ferns in capital examples. There were large plants of Asplenium caudatum, of Davallia tenuifolia Veitchii, Pteris Childsii, Adiantum Capillus Veneris imbricata, shown on a pillar in pockets of cork, Lomaria gibba, Gymnogramma elegantissima, Polypodium conjugatum, Adiantum Bausei, and several other small-growing species. (Silver-Gilt Flora Medal.)

Messrs. R. & G. CUTHBERT, Nurserymen, Southgate, exhibited many forced plants of large and small sizes, all wonderfully bloomed. Varieties of Azalea mollis were intense in their colours. Lilacs were abundantly flowered, but the plants, in some cases, were not distinguished by good forms. Plants of Magnolia speciosa were well bloomed. The arrangement adopted of placing dwarf beds of Azalea mollis between groups of taller plants enabled patches of bright colours to be formed that were superior in effect to the system ordinarily adopted in staging groups of similar plants. (Gold Medal.)

A fine display of hardy forced plants was also made by Mr. L. R. RUSSELL, nurseryman, Richmond. The plants employed in forming the large group were Azalea indica, A. mollis, Lilac (especially fine being the white-flowered Marie Legraye), Clematis indivisa lobata, and Buddleia asiatica. (Silver Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, exhibited Ferns in moderate number, the finer specimens being Nephrolepis todeoides, Pteris Childsii, Davallia solida, Lomaria platyptera, &c. Other plants were interspersed amongst the Ferns. We noticed the scented-leaved Pelargonium Clorinda, having rosy-red blooms in trusses; Clematis indivisa lobata; Primula × kewensis, and P. obconica. (Silver Flora Medal.)

Messrs. W. CUTBUSH & SONS, Highgate and Barnet, made a big floral display with hardy forced plants. The principal subjects in the group were Wistaria sinensis, Indian Azaleas in variety, Lilac with white and coloured flowers, Rhododendrons, Ledums, Pyrus japonica, Daphne chrysantha, Kalmia glauca, a quantity of Hepaticas, Dielytra spectabilis, Ericas, &c. In another part of the Hall Messrs. CUTBUSH showed many varieties of tree Carnations as cut flowers. (Silver-Gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, made a large display of bright colour with Zonal Pelargoniums, and with blooms of Primula sinensis of almost every tint. There were other plants of Primulas of the stellate type, and these also were in many colours and shades. The plants were profusely flowered, and, consequently, of a highly decorative character. (Bronze Flora Medal.)

Messrs. HUGH LOW & Co. showed a group of greenhouse Acacias in bloom, including A. armata, a species not often observed in bloom when in a small stage of growth, the pretty A. cordata, A. magnifica, &c. The firm also showed on an adjoining table their Cyclamen, Low's Salmon, to which an Award was recently made. These were in company with other varieties of this useful greenhouse subject, with Grevillea alpina, Lachenalias, Daphne indica rubra, &c. The display was edged with the hanging shoots of Lotus peliorhynchus, although not in flower. This firm completed their group with a meritorious group of Carnations of the winter-flowering type. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, had a most interesting array of greenhouse flowering plants, arranged on the table they usually occupy at these meetings. The brightest of all these plants was the beautiful Coleus thyrsoides, exhibited in a batch of a dozen or more plants. Another splash of colour was provided by densely-flowered plants of greenhouse Azaleas, specially fine being the varieties Apollo, Empress of India, Sir J. T. D. Llewelyn, and the dwarf-habited "Hexe," the last-named being in 3-inch pots, Coreopsis Grantii, Lopezia miniata, Primula × kewensis, Kalanchoe Dyeri (very fine as shown), and a batch of pot plants of American Carnations with foliage, &c., furnished the remainder of the group. (Silver-Gilt Flora Medal.)

Messrs. W. PAUL & SON, Waltham Cross, Herts., filled one corner of the hall with a group of Camellias, having both pot plants and cut flowers. This firm are prominent cultivators of this old subject, which has so largely gone out of favour of recent years. The exhibit contained most of the best varieties in season, and there were several kinds of Messrs. PAUL's raising. The largest plants were arranged under the wall, the best noticed being Contessa de Hainant (blush rose); Adelina Benvenuti, very similar in colour to the preceding; alba plena, still unsurpassed amongst the white varieties; Mars, a semi-double variety of a red colour; Marchioness of Exeter (pink), and Mad. d'Offory (white). There were cut sprays of many other kinds displayed in baskets, and the inclusion of several well-flowered plants of Clematis indivisa lobata added an additional interest to the exhibit. (Silver Flora Medal.)

Messrs R. VEITCH & SON, Exeter, displayed sprays of interesting shrubs, trusses of Rhododendron flowers, and hardy Heaths. A branch of Cotoneaster angustifolia was exhibited in fruit. Berberis Bealii was freely flowering, as was a branch of the pretty Andromeda japonica.

Mr. R. GILL, Nurseryman, Tremough, Penryn, Cornwall, showed a collection of Rhododendron flowers, all of which were taken from plants growing in the open. A new variety of the R. arboreum type, named Mr. Henry Shilson, has large rose-coloured flowers set in a huge truss. Other fine trusses were those of R. barbatum, R. arboreum album, and hybrids of this species: R. Harrisii, and the variety Duke of Cornwall.

Guernsey-grown Carnations were displayed by Mr. H. BURNETT, of that island. He exhibited some choice blooms of such notable varieties as White Perfection, Mrs. H. Burnett (soft salmon-pink), Enchantress, Britannia, &c., the whole being relieved with trails of Asparagus Sprengeri and Smilax.

Another exhibit of these popular flowers was presented by Mr. W. H. PAGE, Tangley Nurseries, Hampton, who used a setting of Adiantum Ferns and vases of Liliums for their better display. (Bronze Flora Medal.)

Mr. GEO. MOUNT, Rose Nurseries, Canterbury, exhibited the new Rose Joseph Lowe, a variety shown by Messrs. LOWE & SHAW, LTD., Uxbridge, at the last Holland House exhibition. Mr. MOUNT also showed the new H. T. Richmond in well-developed blooms. (Silver Flora Medal.)

Lord ZOUCHE (gr. Mr. Spillard) showed a number of well-cultivated plants of Cyclamen latifolium in 9-inch pots.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed forced Lilac, Primula obconica gigantea, P. × kewensis, and a few Alpine plants, including the single red-flowered Hepatica and the prettier single-flowered blue species, also Hellebores and early-flowering Irises. (Bronze Flora Medal.)

Messrs. JOHN PEED & SONS, West Norwood Nurseries, exhibited Cacti, Agaves, Saxifragas, hardy Primroses and Hepaticas, together with a large batch of plants of Lachenalia Nelsonii, L. Rector of Cawston, L. aurea, L. luteola, and L. Cammii.

Mr. G. REUTHE, Hardy Plant Nursery, Keston, Kent, showed miscellaneous hardy plants and Alpines, Hepaticas, Saxifragas, Cyclamens, Primulas, various bulbs, Irises, Corydalis, Eranthis cilicica, species of Crocus, and a quantity of Rhododendron flowers. (Bronze Flora Medal.)

The GUILDFORD HARDY PLANT NURSERY, Guildford, showed Alpine and other hardy plants of an herbaceous nature. We noticed a fine array of the pretty Anemone blanda, another of Iris reticulata, Omphalodes verna, Megasea cordifolia, hardy Heaths, &c.

Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester, also showed some pretty members of the Alpine and herbaceous sections plants which meet with greater favour each year. The specialities shown by Messrs. WALLACE included Crocuses in variety, Irises, of which we may mention a fine exhibit of Iris Danfordiæ, having yellow flowers on short peduncles; Adonis amurensis, Saxifraga burseriana major, and a host of other pretty flowering subjects.

Some splendid vases of Lily of the Valley were exhibited by Mr. ROBERT SYDENHAM, Birmingham, as growing in fibre without provision for drainage. There were also Tulips, Narcissus, and Hyacinths, all in the same excellence of health and freedom of flowering, grown in the same manner, the pots being handsome, glazed receptacles, with a green exterior. This system of bulb culture is to be recommended for plants intended for room decoration.

Messrs. HEATH & SON, Cheltenham, showed a selected strain of Primula × kewensis, together with its parents. They had also a row of a variety of the old florists' Primula named Rose Queen, a name significant of its colouring. There were also star or stellata Primulas, and a few rare Alpine plants.

The Misses E. & M. KIPPING, Hutton, Essex, showed a selection of Alpine and hardy garden flowers, arranged in a setting of virgin cork, in imitation of a small rock-garden. There were Primroses, Hepaticas, Anemones, Saxifragas, &c.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., also exhibited hardy plants and flowers, including many varieties of Narcissus which had flowered in frames.

Lady LEWIS, Harpton Court, Kington, Hereford, showed vases of Violets of the improved garden varieties.

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, had a remarkably fine batch of plants of Cyclamen ibericum amongst other spring-flowering subjects. We noticed a lilac-coloured form labelled C. i. lilacina. Sprays of Daphne Mezereum in the white and type-coloured forms were most freely flowered. There were also Irises, Primulas, Fritillaria aurea, Hepaticas, and many other plants.

Messrs. W. WARE, LTD., Feltham, Middlesex, displayed hardy flowering plants, many of which were Alpine species. The collection was arranged in a setting of cork with soil, &c., to present a realistic appearance. There were many Primulas in flower, including P. denticulata, Hellebores in variety, and Saxifragas, amongst which were well-flowered plants of Saxifraga apiculata, &c.

Lord HILLINGDON, Hillingdon Court, Uxbridge (gr. Mr. A. R. Allan), displayed 50 or more plants of Lachenalia Nelsonii, all of which were freely flowered and exhibited good culture. They made a meritorious group, and the effect was relieved by plants of Grevillea robusta intermingled amongst them. (Silver Banksian Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, showed a few hardy Alpine plants in flower in boxes. As a background were arranged small Conifers and other dwarf trees and shrubs suitable for the Alpine garden. Buxus balearica has relatively large foliage, the leaves being pleasingly edged with a narrow golden band.

The Misses HOPKINS, The Mere, Shepperton, showed Alpines and a selection of species of Primula, Hepatica, Saxifragas, &c.

Mr. J. WILKINSON, Highlands Gardens, Minchinhampton, showed Cyclamens of the papilio, speciosa, and fringed varieties.

Mr. F. H. CHAPMAN, Rye, showed Freezia virginalis and two pink seedlings, and also a quantity of F. Chapmanii.

Messrs. BROOKS & Co., Nurserymen, Worthing, showed a seedling of Primula sinensis labelled The Empress: the variety gave evidence of being a good break. An old garden plant now seldom seen in cultivation was noticed in Gardenia citriodora.

Mr. F. MOORE, Glasnevin Botanic Gardens, Dublin, exhibited flowers of a few new hybrid Lachenalias; these were remarkable for their large size and rich, golden-yellow colouring.

AWARD OF MERIT.

Helleborus "Peter Barr."—A variety with strong, erect growths and deep, richly-coloured purple flowers, with white stamens and anthers. The merit of the variety lies in its clear colour. Shown by Messrs. BARR & SONS, King Street, Covent Garden.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, J. Forster Alcock, R. A. Rolfe, H. Little, W. Boxall, Sir Jeremiah Colman, Stuart Low, A. A. McBean, J. Cypher, F. J. Hanbury, F. M. Ogilvie, J. Charlesworth, W. Cobb, H. A. Tracy, W. H. White, Gurney Wilson, H. Ballantine, J. Wilson Potter, C. J. Lucas, Norman C. Cookson, R. Brooman-White, H. G. Alexander, H. J. Chapman, C. H. Curtis, A. Dye, W. Bolton, and F. J. Thorne.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), staged an excellent group, perfect alike in the condition of the plants, their profuse display of flowers, and the admirable manner in which the whole was arranged, the various classes being excellently grouped for effect. The Society's Gold Medal was awarded for the group, and several novelties were given Awards. For new plants see Awards. Among the plants staged were many fine specimens, showing the effects of their good culture for some years past at Westonbirt. The Cattleyas comprised splendid specimens of C. Trianæ, the most remarkable of which were the varieties Hydra, Perfecta, Amabilis, Imperator Westonbirt variety, Optima, Katie Wigan, Bismarck, and Aurora. A plant of the beautiful, broad-petaled, white C. chocoensis, Westfield variety, represented it in fine condition. The Dendrobiums were freely flowered, and contained two new hybrids of good quality, viz., D. Perseus (nobile × Wiganiæ xanthochilum), and D. Psyche (Cassiope × Wiganiæ xanthodulum), the fine D. W. xanthochilum being also well shown, together with D. nobile nobilius, D. Ainsworthii amœnum, D. rubens grandiflorum, D. Apollo, D. Schneiderianum, D. Ophir, D. Rainbow, and others. From the back, the fine flowers of several good Lælia anceps Schroderiana, good Odontoglossum crispum, the fine O. Wilckeanum Rex, a grand O. Loochristiense with four spikes of 56 flowers (Cultural Commendation), and other elegant varieties arched forward above the Cypripediums and other dwarfer plants. The Cypripediums included C. Chapmanii superbum, the green and white C. Maudiæ, a specimen of C. Euryades with 20 blooms, C. Scipio magnificum, a very fine flower; varieties of C. aureum, including Hyeanum, virginale, Œdippe, and the pale yellow-green and white C. aureum Surprise; C. Lathamianum with about 20 flowers, and many others. The Lælio-Cattleyas were represented chiefly by pretty hybrids raised at Westonbirt, some being shown in quantity and exhibiting remarkable variation in the tint of their flowers, especially those of L.-C. Ariel (Gowanii × Dowiana aurea), of which about 70 plants were staged, divided primarily into two distinct colours, each set giving still more variation, their yellow, copper red, and ruby flowers being very distinct, showy, and abundantly produced. L.-C. Goldfinch (L.-C. Warnhamiensis × C. Dowiana aurea) was also shown in several forms, the bright yellow variety with magenta lip being the best; it is a very desirable hybrid. Others were L.-C. Arbaces (C. labiata × L.-C. Cassiope); L.-C. Aladdin (C. Warscewiczii × L.-C. Ingramii); L.-C. Pizarro (L. Jongheana × C. Dowiana aurea); L.-C. Dorothy (C. Schroderæ × L.-C. Doris); and L.-C. Barbarossa compacta, all distinct and pretty hybrids. Also specimens of the white Cœlogyne cristata, and variety lemoniana; a fine specimen of the scarlet Sophronitis grandiflora; the brightly-coloured Sophro-Lælia Psyche, a good example of Lycaste Balliæ var. Mary Gratrix; Brasso-Cattleya Digbyano-Mossiæ, B.-C. Thorntonii, B.-C. Madame Hye, and B.-C. Pluto were also included; a very striking effect was made with the massed forms of C. Trianæ in the centre, a group of the gold and red form of Lælio-Cattleya Ariel on one side, and of the copper-red form on the other.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), was awarded the Society's Gold Medal for an equally fine and well-arranged group, in which the handsome home-raised hybrid Dendrobiums for which Gatton Park is famous were the prominent feature, and these have never been shown in finer condition. The centre of the group had at the back a number of plants representing good forms of Cattleya Trianæ, Lælio-Cattleyas, Phalænopsis, &c. At one end were many graceful white and purple Calanthes, with the violet Odontoglossum Edwardii; at the other, Calanthes and the orange and scarlet hybrids of Epidendrum Boundii. In front, bright colour was given by the scarlet Epiphronitis Veitchii, Sophronitis grandiflora, and Masdevallias; and among the most prominent of the Dendrobiums were D. signatum, D. Wiganiæ xanthochilum, D. Wardianum album, Gatton Park variety, pure white with a yellow disc; and several new hybrids, two of which received Awards. Specially fine were Dendrobium Cybele aurora, and other forms of D. Cybele; a batch of pure white D. noblie album, D. Othello colossus, D. Mrs. Alfred Rogers (Hildebrandii × Findlayanum), a charming blush flower with a soft green disc. At one end were the handsome Cymbidium Lady Colman, C. Gattonense, and a selection of Phaius and Phaio-Calanthes; at the other, several finely flowered Cymbidium grandiflorum. With the showier kinds were a good number of curious and interesting species, including the dwarf Angræcum hyaloides, the gnat-like Pleurothallis macroblepharis, and other singular Pleurothallis; Bulbophyllum sauvissimum, Scaphosepalum antenniferum, Brassavola nodosa grandiflora, Dendrobium Hodgkinsoni, and other rare species.

Spathoglottis aureo-Veillardii, S. Colmanii, and other bright yellow and ruby-red hybrid Spathoglottis, raised at Gatton, the new white Diacro-Cattleya Colmanæ, illustrated in a recent issue of the *Gardeners' Chronicle*, the pretty Saccolabium bellinum, and other rare plants were also included, the whole forming a most remarkable group, and a fine exhibition of what can be produced by good cultivation.

NORMAN C. COOKSON, Esq., Oakwood, Wylam, was awarded a Silver-Gilt Flora Medal for a group of very fine Odontoglossums, in which were several home-raised seedlings, and a notable O. crispum Chapmaniæ (Cooksonianum × Cooksoniæ), flowering in two years from the first-made pseudo-bulb, which bore two flowers of fine shape heavily blotched with deep rose-purple, and which promises to be a very fine acquisition. Also in the group were O. crispum St. Alban, having a finely-branched spike of 28 flowers; the famous O. c. Puttinum, O. c. Mrs. Peeters, O. c. tessellatum, the handsome O. c. Mossiæ, closely blotched with purple; the beautiful O. c. Memoria Battle of Waterloo, illustrated in the *Gardeners' Chronicle*, January 11, p. 18, and other varieties.

Messrs. JAS. CYPHER & SONS, Cheltenham, secured a Silver Flora Medal for a varied group, in which were a good selection of fine varieties of Cattleya Trianæ, Cypripediums, Dendrobiums, &c., were included, the front centre being of scarlet Sophronitis in fine plants. Among the best noted were Dendrobium Farmeri with several spikes; the yellow D. Wiganiæ xanthochilum, fine forms of D. nobile, and some of its pretty hybrids; Odontoglossum Wiganianum, varieties of O. crispum, O. elegans Pollett's variety, O. Mulus, and a pleasing chestnut-red hybrid with primrose margin and tips to the flowers; Cypripedium Venus, and other showy Cypripediums; Brasso-Cattleya Thorntonii, Brassavola Digbyana, &c.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr. Mr. Duncan), was voted a Silver Flora Medal for a group of varieties of Odontoglossum crispum, O. Adrianæ, and other Odontoglossums, together with a selection of hybrids of Cattleya Percivaliana, and a well-flowered example of Ansellia africana.

Messrs. CHARLESWORTH & Co., Bradford, secured a Silver Flora Medal for a group containing several quite new hybrids, two of which secured Awards. Another and still more interesting plant was Odontoglossum Eleanor (cirrhosum × Uro-Skinneri), the first hybrid of O. Uro-Skinneri. The ground colour of the sepals and petals is pale green, prettily spotted with chocolate red; lip white, with curiously-arranged dark red markings. The centre of the group contained the bright orange and red Lælio-Cattleya Hypatia, in company with a good specimen of the white and rose Eulophiella Elisabethæ, Cymbidium Woodhamsianum, a good selection of Cattleya Trianæ, and Odontoglossums, including the elegant O. Phœbe; the scarlet Odontioda Vuylstekeæ, the white Brasso-Cattleya Queen Alexandra, Angræcum citratum, and other rare species and hybrids.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), staged an effective group of Dendrobiums, Odontoglossums, Oncidium splendidum, Sophro-Lælia Psyche, Lycastes, &c. (Silver Banksian Medal.)

Messrs. SANDER & SONS, St. Albans, staged a group in which the principal objects were two fine forms of their Cymbidium insigne Sanderi, both of which secured First-Class Certificates. Also specially noteworthy in the group were Odontioda Lairesseæ with a good spike of pretty purple and rose flowers; a good example of the white Cœlia Baueriana, Vanda suavis, Saccolabium calceolus, Epidendrum Wallisii, good Cattleya Trianæ, Cypripedium Curtisii (Sander's variety), certainly the best and finest in colour of its class; C. Orion var. aureum (insigne Sanderæ × concolor Sanderæ), with lemon-yellow flower spotted with purple, and Cattleya Trianæ triumphans, a large and beautiful form. (Silver Banksian Medal.)

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, staged a group, principally hybrids, the central plant, Lælio-Cattleya Daffodil, being a charming novelty (see Awards). With it were a selection of brightly-coloured hybrids between Cattleya Trianæ and Lælia Cowanii, that varied considerably; a plant of the yellow Oncidium Jamesonii, several good Odontoglossums, cut flowers of Lælia Statheræ, Cypripedium Mary Beatrice, C. Helen II., and others. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Enfield, staged a group in which was a plant of Odontoglossum crispum Carmen, a grand flower handsomely tinged and blotched with rose-purple, the margin and some small patches on the segments showing white. Others noted were the singular Pleurothallis Roezlii with five racemes of large purple flowers; a selection of Dendrobiums, including several of the white D. nobile virginale, Cymbidium Wiganianum, C. Ballianum, varieties of Cypripedium aureum, and C. insigne, C. insigne E. J. Seymour being a finely-formed and distinctly marked flower; a very dark form of Odontoglossum cordatum and Sophronitis Lowii, with yellow flowers, tinged with salmon colour. (Silver Banksian Medal.)

Mons. MERTENS, Mont St. Amand, Ghent, was awarded a Silver Banksian Medal for a group of good hybrid Odontoglossums, Cypripediums, Cattleya Trianæ, &c.

Mons. JULES HYE DE CROM, Ghent, Belgium, showed a small group of cut flowers of his very handsome white Cattleya Suzanne Hye de Crom (Mossiæ Wageneri × Gaskelliana alba).

Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White), showed Zygopetalum Ballii magnificum, with fine white, wax-like flowers, the sepals and petals finely marked with deep rose and the base of the lip with claret colour. Also the neat little Maxillaria variabilis unipunctata.

Messrs. HEATH & SONS, Cheltenham, staged a selection of Cypripediums, Cattleyas, &c.

J. BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), showed Cattleya Luddemanniana var. Empress, a fine white flower with a singular dark pencilling on the whole of the veining. Also Lycaste Skinneri Princess Ida, a distinct lightly-coloured form.

H. J. ELWES, Esq., Colesborne, Andoversford, sent varieties of Pleione Yunnanensis, and two hybrid Cypripediums.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cattleya Parisiensis (C. aurea × C. Parthenia), a pretty hybrid with blush-white sepals and petals, the latter having a purplish veining; lip showily displayed, chrome yellow, lighter towards the crimped margin, and having a purple mottling in front.

C. L. N. INGRAM, Esq., Elsfield House, Godalming (gr. Mr. T. W. Bond), showed cut blooms of three fine forms of Lælio-Cattleya Dominiana Elstead variety.

Messrs. STANLEY & Co., Southgate, staged a group of Cattleyas, Dendrobium primulinum, D. crassinode, &c.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cymbidium insigne Sanderi superbum, from Messrs. SANDER & SONS. A variety having large white flowers tinted with rose, the broad labellum being finely spotted with deep rose-purple.

Cymbidium insigne Sanderi splendens, from Messrs. SANDER & SONS. Flowers large and wax-like, white tinged with rose and having a distinct claret line on the sepals and petals and a mauve tint on the heavily-spotted lip.

Dendrobium Cybele, Gatton Park variety (nobile nobilius × Findleyanum), from Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate. One of the best and most perfectly-formed hybrids yet raised, the large and broad-petalled flowers having a white ground, the segments tipped with magenta-rose, the disc of the lip maroon with an orange blotch.

AWARD OF MERIT.

Dendrobium Chessingtonense, Gatton Park variety (aureum × Wiganiæ variety), from Sir JEREMIAH COLMAN, Bart. A fine yellow flower, with dark base to the lip.

Maxillaria luteo-alba, from WALTER COBB, Esq., Normanhurst, Rusper (gr. Mr. C. J. Salter). A fine old species, with white and yellow flowers, shown in grand condition.

Brasso-Cattleya Helene Maron, from Mons. CHAS. MARON, Brunoy, France. Probably a secondary hybrid of B.-C. Digbyano-Mendelii. Flowers large, pale lilac, with a few purple markings at the base of the fringed lip.

Lælio-Cattleya Pizzaro (L. Jongheana × C. Dowiana aurea), from Major, G. L. H HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). A very distinct hybrid of fine substance, with well-displayed sepals and petals of bright rose colour. Lip a shade of orange, with some rose-purple markings.

Lælio-Cattleya Daffodil (L.-C. Mercia × L. Jongheana alba), from Messrs. ARMSTRONG & BROWN, Tunbridge Wells. A charming flower of medium size and fine substance, clear white, with a buttercup-yellow tint on the tips of the sepals and petals. Lip deep yellow, shading lighter towards the crimped margin.

Sophro-Lælia Felicia (L. pumila præstans × Sophro-Lælia Heatonense), from Messrs. CHARLESWORTH & Co., Heaton, Bradford. A bright purple flower with darker lip.

Odontoglossum Clytie (Edwardii × Pescatorei), from Messrs. CHARLESWORTH & Co. A very graceful hybrid, with branched spike of pretty rose-pink flowers barred with claret colour.

CULTURAL COMMENDATION.

To Mr. H. G. Alexander (Orchid grower to Major G. L. HOLFORD, C.I.E., C.V.O.), for a fine Odontoglossum loochristiense with four spikes bearing together 56 flowers.

To Mr. C. J. Salter (gr. to WALTER COBB, Esq.), Normanhurst, Rusper, for a fine specimen of Maxillaria luteo-alba, with about 70 blooms.

Fruit and Vegetable Committee.

Present: Mr. A. Dean (Chairman), and Messrs. A. R. Allan, E. Beckett, J. Davis, J. Harrison, J. Jacques, G. Kelf, W. J. Jeffries, R. Lye, J. Lyne, W. Pope, H. Markham, J. McIndoe, H. Parr, G. Reynolds, P. D. Tuckett, P. C. M. Veitch, O. Thomas, J. Vert, and G. Wythes. The absence of the Chairman and both Vice-chairmen was due to indisposition.

There was little brought to the notice of this Committee. Amongst the chief of the exhibits was a collection of 10 varieties of Apples sent by Lord ZOUCHE, Parham Park, Pulborough, the best fruits being those of Annie Elisabeth, Gloria Mundi, Blenheim Pippin, and The Queen.

Three varieties of Apples were displayed by T. B. T. HILDYARD, Esq., Flintham Hall, Newark (gr. Mr. Langstone). The varieties were Annie Elisabeth, the fruits much ribbed; Gascoyne's Scarlet Seedling, and a seedling named Langstone's Seedling, a variety much resembling Beauty of Kent.

Mr. W. PETERS, Leatherhead, sent fruits of two seedling Apples, also a dish of a late variety of stewing Pear much resembling Marie Louise D'Uccle for name.

SHROPSHIRE HORTICULTURAL.

FEBRUARY 28.—The annual meeting of the Shropshire Horticultural Society was held on the above date. The Mayor (Mr. R. S. Hughes) occupied the chair during the first part of the proceedings.

Mr. W. W. Naunton read the annual report, in which the committee stated that they had again to congratulate the members of the Society upon a most successful show, the attendance at which was in excess of any previous year. The total receipts from all sources amounted to £5,922 12s. 8d., being £283 17s. 5d. above that of the previous year. The number of annual subscribers had steadily increased, the subscriptions last year amounting to £536 11s. The receipts at the gates on the two days were also greater, amounting to the sum of £3,485 4s. 3d., as against £3,317 10s. 11d.

Mr. James Vine then presented the financial statement. With regard to the summer show, the prize money expended amounted to £1,238 12s. 3d. The Society's total receipts for 1907 amounted to £5,922 12s. 8d., and the payments to £5,136 1s. 8d., leaving a balance of £786 11s. The receipts from the summer show amounted to £5,683 9s. 4d., and the payments to £4,449 3s. 11d., leaving a profit on the summer show of £1,234 5s. 5d. Mr. Stainer was elected President for the ensuing year.

The committee was re-elected, Mr. R. D. Bromley filling the vacancy caused by the death of Mr. J. Evan Jones.

The honorary secretaries, Messrs. Adnitt and Naunton, were re-elected.

MARKETS.

COVENT GARDEN, March 4.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Acacia (Mimosa), dozen bunches	6 0-9 0
Anemones per doz. bunches	2 0-3 0
— double pink ...	1 6-2 0
— fulgens, per dozen bunches	2 0-3 0
Azalea, white, per dozen bunches	3 0-4 0
— mollis, per bch.	1 0-1 6
Bouvardia, per dz. bunches ...	6 0-8 0
Calla æthiopica, p. dozen	2 6-3 6
— Guernsey ...	2 0-2 6
Camellias, per dz.	1 6-2 0
Carnations, per dozen blooms, best American various	2 0-3 0
— second size	1 6-2 0
— smaller, per doz. bunches	9 0-12 0
Cattleyas, per doz. blooms	8 0-10 0
Chrysanthemums, selected blms., per dozen ...	2 0-3 0
— medium, doz. bunches ...	12 0-18 0
Cœlogyne cristata, per dz. blooms	1 0-1 6
Cyclamen, per doz. bunches ...	6 0-8 0
Cypripediums, per dozen blooms..	2 0-2 6
Daffodils, various, p. doz. bunches	3 0-4 0
— double, per dozen	4 0-5 0
— Golden Spur per doz. ...	5 0-6 0
— H. Irving ...	4 0-6 0
— Princeps ...	3 6-5 0
— Sir Watkin ...	4 0-5 0
Eucharis grandiflora, per doz. blooms ...	2 6-3 6
Freesias, per dozen bunches ...	2 0-3 0
Gardenias, per doz. blooms... ...	3 0-6 0
Helleborus, per dz. blooms ...	0 6-1 0
Hyacinths, Roman, per dz. bunches	4 0-6 0
Lapagerias, per dozen	1 6-2 6
Lilac (French), per bunch	3 0-4 0
Lilium auratum ...	2 0-3 0
— longiflorum ...	2 6-4 0
Lilium lancifolium, rubrum and album	2 0-2 6
Lily of the Valley, p. dz. bunches	6 0-9 0
— extra quality ...	12 0-15 0
Marguerites, white, p. dz. bunches	4 0-6 0
— yellow, per dz. bunches ...	2 0-2 6
Myosotis, per doz. bunches ...	3 0-4 0
Narcissus, paper white, per doz. bunches ...	2 0-3 0
— Double Roman	2 0-3 0
— Gloriosa ...	1 6-2 6
— poeticus ornatus	3 0-4 0
— Soleil d'Or, per dozen bunches	1 0-2 0
Odontoglossum crispum, per dozen blooms	2 6-3 0
Pelargoniums, show, per doz bunches ...	6 0-8 0
— Zonal, double scarlet	5 0-8 0
Ranunculus, p. dz. bunches ...	9 0-12 0
Roses, 12 blooms, Niphetos ...	2 0-4 0
— Bridesmaid ...	3 0-6 0
— C. Testout ...	4 0-6 0
— Kaiserin A. Victoria, per dozen blooms..	3 0-5 0
— Madame Hoste	2 0-3 0
— C. Mermet ...	3 0-6 0
— Liberty ...	4 0-10 0
— Mad. Chatenay	3 0-6 0
— Safrano (French), per dz. bunches	9 0-12 0
Snowdrops, per dozen bunches	1 6-2 0
Spiræa, p. dz. bchs.	5 0-8 0
Stocks, double white, per doz. bunches ...	2 0-3 0
Tuberoses, per dz. blooms ...	0 4-0 6
— on stems, per bunch	1 0-2 0
Tulips, p. dz. bchs.	6 0-10 0
— best doubles ...	12 0-18 0
Violets, p. dz. bchs.	2 0-3 0
— special quality	2 6-3 0
— Parmas, per bunch .. .	1 6-2 6
Wallflowers, per dozen bunches	2 0-3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum cuneatum, dz. bchs.	6 0-9 0
Asparagus plumosus, long trails, per doz.	8 0-12 0
— — medium, bunch ...	1 0-2 0
— Sprengeri ...	0 6-1 0
Berberis, per doz. bunches ...	1 6-2 0
Croton leaves, per bunch	1 0-1 3
Cycas leaves, each	1 6-2 0
Daffodil leaves, per doz. bunches...	3 0-4 0
Fern, English, per dozen bunches	2 0-3 0
— French, per dz. bunches ...	1 0-3 0
Galax leaves, per doz. bunches...	2 0-2 6
Hardy foliage (various), per dozen bunches	3 0-9 0
Ivy-leaves, bronze	2 0-2 6
— long trails per bundle... ..	0 9-1 6
— short green, per dz. bunches	1 6-2 6
Moss, per gross ..	4 0-5 0
Myrtle (English), small-leaved, per dozen bunches ...	4 0-6 0
— French, per dz. bunches ...	1 0-1 6
Smilax, per dozen trails	2 0-3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Ampelopsis Veitchii, per dozen	6 0-8 0
Aralia Sieboldi, p. dozen	4 0-6 0
— larger	9 0-12 0
— Moseri, per dz.	6 0-12 0
Araucaria excelsa, per dozen ...	12 0-30 0
Aspidistras, green, per dozen ...	15 0-24 0
— variegated, per dozen	30 0-42 0
Asparagus plumosus nanus, doz.	9 0-12 0
— Sprengeri, dz.	8 0-10 0
— tenuissimus per dozen ...	9 0-12 0
Azalea indica ...	24 0-36 0
Begonia Gloire de Lorraine, p. dz.	9 0-12 0
Boronia megastigma, per dz.	24 0 —
Callas, per dozen..	10 0-12 0
Cinerarias, per dozen	8 0-10 0
Clematis, per doz.	8 0-9 0
Cocos Weddelliana, per dozen	18 0-30 0
Crotons, per dozen	18 0-30 0
Cyclamen, per dozen	9 0-12 0
Cyperus alternifolius, dozen ...	4 0-5 0
— laxus, per doz.	4 0-5 0
Daffodils, per doz. pots	5 0-6 0
Dracænas, per doz.	9 0-24 0
Erica hyemalis, per dozen	9 0-15 0
— melanthera ...	12 0-18 0
— persoluta alba	24 0-30 0
— Wilmoreana ...	12 0-18 0
Euonymus, per dz.	4 0-9 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*).

	s.d. s.d.
Ferns, in thumbs, per 100... ...	8 0-12 0
— in small and large 60's ...	12 0-20 0
— in 48's, per dz.	4 0-10 0
— in 32's, per dz.	10 0-18 0
Ficus elastica, dz.	8 0-10 0
— repens, per dz.	6 0-8 0
Genistas, per doz.	6 0-10 0
Hardy flower roots, per dozen ...	0 9-2 0
Hyacinths, per dz. pots	10 0-12 0
— Dutch	8 0-10 0
Kentia Belmoreana, per dozen	18 0-30 0
— Fosteriana, dz.	18 0-30 0
Latania borbonica, per dozen ...	12 0-18 0
Lilium longiflorum, p. doz.	21 0-25 0
— lancifolium, per dozen ...	18 0-24 0
Lily of the Valley, per dozen ...	18 0-30 0
Marguerites, white, per dozen ...	6 0-8 0
Mignonette, per dozen	5 0-8 0
Selaginella, per dozen	4 0-6 0
Solanums, p. doz.	6 0-9 0
Spiræa japonica, p. dozen	9 0-15 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples (**English**), per bushel:	
— Wellington ...	5 0-9 0
— Newton Wonder	5 0-7 0
Bramley's Seedling	5 0-7 0
Nova Scotian, per barrel:	
— Baldwins .	15 0-16 0
— Ribston Pippin	15 0-17 0
— Gloria Mundi	15 0-16 0
— Russets ...	18 0-19 0
Canadian, per barrel	
— Northern Spy .	17 0-19 0
— Baldwin	17 0-20 0
— N. Greening	19 0-22 0
— Russets	19 0-21 0
Californian:	
— Newtowns, per box	10 6-12 0
— "Oregon" Newtowns, per box	15 0-18 0
Bananas, bunch:	
— No. 2 Canary .	6 0 —
— No. 1 ,, .	6 6-7 6
— Extra ,,	8 6-10 0
— Giants ,, .	11 0-15 0
— Jamaica	5 0-5 6
— Loose, per dz.	0 9-1 3
Cranberries, p. case	9 0-10 0
"Custard" Apple (Anona) per doz.	4 0-9 0
Dates (Tunis), doz. boxes ...	4 0-4 3
Grape Fruit, case	10 0-20 0
Grapes (English):	
— Alicante, per lb.	1 3-3 0
— Gros Colmar, per lb ...	1 3-3 0
— Belgian Gros Colmar, per lb.	0 10-1 9
Grapes (Cape), per box (small) ...	1 6-3 0
— (large)	6 0-10 0
— Almeria, barrel	10 0-16 0
Lemons:	
— Messina, case	8 0-10 6
— Murcia, p box	6 0-7 6
Lychees, per box...	0 10-1 0
Mandarines, (French) p. box	1 6-1 9
— (French) 100's per box ...	3 9-4 0
— (Palermo) 100's box	2 3-3 0
Nectarines (Cape), per box ...	10 0-13 0
Nuts, Cobs (English), per lb .	0 4 —
— Almonds, bag	42 6 —
— Brazils, new, per cwt. ...	57 0-60 0
— Barcelona, per bag ...	30 0-32 6
— Cocoa nuts, 100	11 0-14 0
Chestnuts:	
— Italian, per bag	16 0-17 0
Oranges (Valencia), per case ..	12 0-22 0
— Denia, p. case	13 0-25 0
— Jaffas, per box	11 0-13 0
— Californian Navel's, p. case	11 0-13 0
— Seville Bitters, per box .	6 6-7 0
Peaches (Cape), per box	5 0-10 0
Pears (Cape), per box	3 0-6 0
— Winter Nelis, boxes	8 0-9 0
— cases	12 0-14 0
Pineapples, each	3 0-4 6
Plums (Cape), box	3 0-6 0
Strawberries (English), per lb. ..	5 0-12 0

Vegetables : Average Wholesale Prices.

	s.d. s.d.
Artichokes (French), per dozen .	2 0-3 0
Asparagus, Paris Green, bundle	4 0-4 3
— Sprue, bundle	0 7-0 8
Beans, French, per packet .	0 8-0 9
— Broad (French), per pad ...	3 0-3 3
— Guernsey, p. lb.	1 4-1 6
— English ..	1 6 —
— Madeira, per basket	2 0-2 9
Beetroot, per bushel	1 3-1 6
Brussel Sprouts, per ½ sieve ...	1 3-1 6
Cabbages, per doz.	0 6-0 9
— Greens, p. bag	1 0-1 3
— red, per dozen	2 0 —
— Savoys, per tally	3 6-4 0
Carrots (English),	
— washed, p bag	2 0-2 6
— French (new), per pad ...	3 0-3 6
— French (new), per bunch ..	0 8 —
Cauliflowers, p. dz.	1 3-1 9
— per tally ...	6 0-7 0
— Italian, basket	1 6-2 3
Celeriac (French), per dozen ...	1 6-2 0
Celery, washed, per dozen	0 8-0 10
Chicory, per lb. .	0 2-0 2½
Chow Chow (Sechium edule), p. dozen	3 0 —
Cucumbers, per dz.	5 0-8 0
Endive, per dozen	1 6-2 0
Horseradish, foreign, per doz. bundles ...	9 0-10 0
Leeks, 12 bundles	1 0-1 6
Lettuce (French), per dozen ..	1 4-1 6
Mint, doz. bunches	2 6-4 0
Mushrooms (house) per lb.	0 8 —
— buttons, per lb	0 7-0 9
— "Broilers" p. lb.	0 6-0 7
Mustard and Cress, per dozen pun.	1 0-1 6
Onions (Spanish), per case ...	5 0-5 3
— Dutch, per bag	2 0-2 3
— pickling, per bushel	2 0-2 6
— Spring, per dz. bunches ...	2 0-2 6
Parsley, 12 bunches	2 6-3 0
— per ½ bushel .	1 6-2 0
Peas (French), per packet	0 5-0 6
Potatos (French), new, per lb. ...	0 2-0 2½
— Guernsey p. lb.	0 4-0 5
— Teneriffe, cwt.	13 0-14 0
— Algerian, cwt.	20 0-22 6
Radishes (Guernsey), dozen .	0 8-0 9
Rhubarb (English), dozen bundles	0 11-1 1
Salsafy, per dz bdls.	3 6 —
Seakale, per dozen punnets .	9 0-10 0
Spinach, French, per crate ...	4 0-4 6
Tomatos (Teneriffe), p. bdle. of four boxes .	14 0-18 0
Turnips (English), doz. bunches ..	1 9-2 6
— per bag .	2 6 —
— French (new), per bunch ..	0 9 —
Watercress, per doz. bunches .	0 4-0 6

Remarks.—The supplies of English Grapes are shorter and prices are firm. Best quality Denia and California Oranges continue to sell freely. Oregon Newtown Pippin Apples are much dearer; they are now arriving in a very fine condition. A good demand exists for Teneriffe Tomatos, but consignments of these fruits are small. A few boxes of Australian Apples received this week were at the time of writing awaiting a purchaser. *P. L., Covent Garden, March 4, 1908.*

Potatos.

	s. s. per ton
Kents—	
Up-to-Date	95-110
British Queen ...	90-100
Scottish Triumph...	95-100
Lincolns—	
Up-to-Date	100-110
— (Blackland) ...	85-90
British Queen ...	90-100
— (Blackland) ...	80-90
Maincrops	100-110
Sir Jno. Llewelyn...	90-100
— (Blackland) ...	80-85
Royal Kidney ...	85-95
— (Blackland) ..	80-85
Evergood	85-90
— (Blackland) . .	75-85
Dunbars—	
Up-to-Date (red soil)	110-115
Dunbars—	
Maincrop (red soil)	115-120
Scotch—	
Up-to-Date (grey soil)	90-100
Maincrop (grey soil)	95-100

	s. d. s. d. per bag
German—	
Up-to-Date ..	4 3 —
Magnum Bonum	4 0-4 3
Imperator... ...	3 6-4 0
Belgium—	
Kidneys	3 9-4 0
Dutch—	
Up-to-Date ...	— 4 0
Magnum Bonum	3 9-4 0
Imperator... ..	3 3-3 6

The amount of trade this week is slightly in excess of that of last week, there being a rather better demand for the best samples of tubers. *E. J. Newborn, Covent Garden and St. Pancras, March 4, 1908.*

COVENT GARDEN FLOWER MARKET.

The market is crowded with imported cut flowers. Daffodils from the Channel and Scilly Islands arrive in large quantities, and considerably depreciate the value of those home grown. The amount of business done is much less than at the corresponding period of last year. Complaints are made that street hawkers sell flowers at lower prices than those at which the florists purchase them, but these cheap flowers do not bear a close inspection in regard to quality.

Pot Plants.

Good flowering plants have been selling more freely. Cinerarias are remarkably fine. The leading market growers have a special strain of these plants, in which are seen compactness of habit and large inflorescences of bright and distinctly-coloured flowers. Genistas are abundant and their prices are lower. Well-flowered plants of the old double white Primula are seen; the larger double-flowered varieties of this plant appear to have almost gone out of cultivation. The ordinary single varieties are fairly good. Begonia Gloire de Lorraine is now becoming scarce in the market. Spiræas are of better quality than those seen a week or two ago. Azaleas are over-abundant. It is surprising that the Belgian growers do not adopt the pyramidal form of training their Azaleas, for pyramid plants sell better and make higher prices than those with flat heads of bloom. Among Ericas, E. persoluta alba and E. Wilmoreana are the leading varieties seen. Boronia megastigma and Acacias in several sorts are obtainable. A. ovata and A. Drummondii are favoured by the florists. Ferns are supplied in large quantities from several growers; those in small pots have bright and fresh fronds. Palms are plentiful, but they are not selling readily. Other foliage plants include Aralias, Araucaria excelsa, Ficus elastica, and F. repens.

Bedding Plants, &c.

Several growers are now sending in "store" boxes of summer bedding plants such as Lobelias, Calceolarias, Zonal Pelargoniums, Marguerites, Fuchsias, and other subjects. The number of plants in each box varies from about 40 to 60. Hardy plants include Primroses, Polyanthuses, and Daisies in flower. Roots of garden plants are now abundant, also Carnations in pots. There are also Hyacinths, Narcissi, and other bulbs just starting into growth, and suitable for planting. Also Pansies and Violas with their first flowers opening.

Cut Flowers.

Daffodils are the leading feature amongst cut flowers. Those from English growers are certainly the finest. Emperor, Golden Spur, and Victoria are leading varieties. Some of the short-cupped Narcissus are abundant. Tulips are plentiful, the double-flowered varieties in several colours being very fine; the best have realised from 18s. to 30s. per dozen bunches. Forced Roses are now coming in; blooms of Richmond and Liberty have long flower stems and clean foliage. General Jacqueminot is also good; this cannot be had with long stems, but it is much more fragrant than the other red Roses named. Caroline Testout and Bridesmaid are the best pink varieties. A few good blooms of Mrs. J. Laing have been noticed. Callas and Eucharis are more abundant. Lily-of-the-Valley spikes from forced crowns are not of such good substance as those from the retarded stock. Orchid flowers are plentiful, and include Cattleyas, Cœlogynes, Cypripediums, Dendrobiums, Lælias, &c. Some very good medium-sized white Chrysanthemums are seen. *A. H., Covent Garden, March 4, 1908.*

CATALOGUES RECEIVED.

E. R. Davis & Sons, The Nurseries, Yeovil, Somerset—Begonias.
Thomas S. Ware (1902), Ltd., Ware's Nurseries, Feltham, Middlesex—Hardy Perennials.
Wm. Watson & Sons, Ltd., Clontarf Nurseries and 18F, Nassau Street, Dublin—Garden flowers.
William Thompson & Co., Ltd., Shipquay Street, Londonderry—Farm seeds, manures, and implements.
James Carter & Co., 237-8 & 97, High Holborn, London—Seeds.
Toogood & Sons, Southampton—Farm seeds.
J. Cheal & Sons, Lowfield Nurseries, Crawley—Dahlias.
Cooper, Taber & Co., Ltd., 90, 92, Southwark Street, London, S.E.—Wholesale list of Seeds.
Amos Perry, Enfield, Middlesex—Perennials; New and Rare Plants.
The Chemical Union, Ltd., Ipswich—Fertilisers.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—At a recent meeting of this association Mr. W. H. Scott, of the Hermitage Gardens, Twyford, Berks., read a paper entitled "Do Plants Sleep?" He referred to the various movements noticed in certain plants at different times of the day, according to the varying state of the weather, temperature, and light.

PANGBOURNE & DISTRICT GARDENERS'.—A meeting of this association was held on Wednesday, February 19. Mr. F. Tunbridge, The Gardens, Three Elms, Henley-on-Thames, read a paper on "Annuals." The lecturer related what he considered to be the best methods of cultivating annuals in different positions and for various purposes. *E. W. D.*

BECKENHAM HORTICULTURAL.—At the meeting held on February 14, Mr. J. R. Pocock, College Nurseries, Bromley, gave a lecture on "Hardy and Rock Plants." The lecturer stated that care should be taken in selecting the stone for the rockery, as some kinds of stone soon became soft and crumbled. In building the structure a start should be made at the bottom, finishing with the largest stones at the top. Very choice plants should be planted near the base, where they can receive the greatest amount of attention. Plant firmly and incorporate plenty of grit, or sand, in the soil. Pieces of sandstone placed beneath the leaves help to prevent the foliage from damping in winter, and also keeps the roots moist in summer. *J. Carr.*

DEVON AND EXETER GARDENERS'.—A paper was read before the members of this society by Mr. C. Budd, Montpellier Gardens, Exeter, on "The Study of Plants in Ancient and Modern Times." Mr. Budd compared the methods of early times with those of the present day, and thus showed by comparison the great advance made in horticultural knowledge and practice. A paper was also read by Mr. Percy Meyer, landscape gardener to Messrs. Robert Veitch & Son, of Exeter, the subject being "Hardy Trees and Shrubs, and their Effective Arrangement." *A. H.*

JERSEY GARDENERS'.—The usual monthly meeting of the members of this Society was held on February 11. Mr. A. Smith, the President, occupied the chair. Mr. G. Cooper read an interesting paper entitled "Fruit Enemies and their Treatment," which was greatly appreciated. An interesting discussion followed. The annual supper, concert, and dance was held in the Oddfellows' Hall, St. Heliers, on February 18. About 100 members and friends were present. Afterwards a concert was given which was attended by an audience of about 150 persons. The silver and bronze medals won by the members in competition at the monthly meetings were handed to the winners by the President. *G. C.*

SALISBURY AND DISTRICT GARDENERS'.—At the last meeting of this society the proceedings were devoted to "Questions." Mr. Hibberd, of Wilton House Gardens, acted as leader, and some very important questions were forthcoming, resulting in an animated discussion. *W. Y.*

BRISTOL AND DISTRICT GARDENERS'.—A meeting of the above association was held on Thursday, February 27, under the presidency of Dr. Shingleton Smith. A large gathering of the members attended to hear a lecture upon "Orchids" given by Mr. Hunking, gardener to Alderman Dix, Hampton Lodge. The lecturer stated that the Orchid family was a very comprehensive one, and it would be impossible for him to speak of all the members. The successful flowering of Orchids largely depended upon the rest given the plants after their growth was completed. The floors of the Orchid houses at Hampton Lodge are formed of a layer of coke about two feet thick, and this is well saturated at times with liquid manure. The questions of ventilation, shading, insect pests, and diseases were dealt with by the lecturer. *H. W.*

GARDENING APPOINTMENTS.

(*Correspondents are requested to* ***write the names of persons and places as legibly as possible.*** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*)

Mr. JAMES CLARKSON, late Foreman in the gardens, Cally House, Gatehouse, as Gardener to Lady BORTHWICK, at Ravenstone Castle, Whithorn, Wigtownshire. (Thanks for contribution to R.G.O.F. box.)

Mr. FRANK GRAY, for over 4 years General Foreman, Shiplake Court Gardens, Henley-on-Thames, as Gardener to E. F. GILL, Esq., Lashbrook Lodge, Shiplake, Henley-on-Thames.

Mr. E. BLISSETT, for the last 3 years Foreman at Ivy Hall Gardens, Pocklington, as Gardener to Mrs. MILLS, Acomb Hall, near York.

Mr. R. BATT, for the past 3 years Inside Foreman in Lord NORTHBROOK'S Gardens at Stratton Park, Micheldever, Hants., as Gardener to Mr. BEAUMONT, Dodington Park, Chipping Sodbury, Gloucestershire.

SCHEDULES RECEIVED.

Brighton and Sussex Horticultural Society's Shows to be held in the Dome and Corn Exchange, Royal Pavilion, Brighton. Spring, April 7, 8; Summer, August 18, 19; Chrysanthemum, November 3, 4, 1908.

Breconshire Horticultural Society's Show, to be held in the Market Hall, Brecon, on Thursday, August 13, 1908.

Answers to Correspondents.

AMPELOPSIS.—*A. C. N.* The variety you have is probably one of the forms of the plant known in gardens as Ampelopsis Veitchii, the correct name of which is Vitis inconstans. This plant is extremely variable, and you appear to have obtained plants of an inferior variety. The variety known as V. inconstans Lowii should suit your purpose, as it assumes a bright red colour in autumn, the leaves being also of small size.

ASTILBE (SPIRÆA) JAPONICA FAILING: *Jeannet.* The clump which you label No. 1 has at some time received a check, which has resulted in killing the leading crowns, so that weaker axillary growths only have developed, and these are not strong enough to produce flowers. In No. 2 clump the principal crowns have developed properly, but this clump has not been subjected to the same degree of forcing as the one of which you complain.

CONSTRUCTING A SMALL ROCKERY: *G. S.* You will require 1 ton and a half of stone, either of sandstone or weathered limestone, and about five cartloads of light, sandy soil for constructing your rock-garden. Any spare soil you may have about the garden will serve to fill up the extreme centre. The width of the plot will not allow you to build higher than 4 feet above the ground level, but you could excavate the natural soil to somewhat diversify the site. The correct way to build a small rockery is to imitate a natural outcrop of rock. An inclined plane is generally more artistic than horizontal formations, and it enables the builder to project small bluffs of stone from the rock-bed and to recess the formation at will. On terraces of rocky pockets filled with soil plants will grow well, but there is nothing in such structures that calls for recommendation. A stone-supported bank with the lines of stratification well defined and a series of recessed plateaux of soil made thereon is the best scheme for such a garden. An excessive use of rock-stone is not desirable, and if you cover one-third of the rockery surface with stone, it will be sufficient. Try to get every stone of the rock-garden placed in such a way as to suggest they are outcrops of one rock mass that is partly covered by soil. It does not matter how much you vary the surfaces, or how widely dissevered are the prominent bluffs one from the other, provided you keep the natural formation of the rock-stones well maintained throughout. Allow the structure to settle well before you commence to plant.

GARDENER'S NOTICE: *Gardener.* Refer to the replies printed in the last issue. You might have given the man notice during his absence from duty.

GRAFTING APPLES AND PEARS: *Anxious.* Apples are generally grafted on seedling Apple stocks or on a dwarfing stock known as the "Paradise." Pears are grafted on seedling Pear stocks or on the Quince, the latter having a dwarfing effect upon the grafted Pear.

KENTIA: *Palm.* You do not say to which species the Palm belongs. Offer it for sale to some of the nurserymen, or make it the subject of an advertisement.

NAMES OF PLANTS: *W. G.* Dendrobium primulinum and Cœlogyne flaccida.—*W. H. R.* Dendrobium fimbriatum oculatum. *C. H. C.* Abies Pinsapo.—*S. N.* 1, Thuya plicata; 2, Thuya dolabrata; 3, Cupressus Lawsoniana; 4, Cryptomeria japonica var. elegans; 5, Cryptomeria japonica; 6, Bignonia species; we cannot determine which in the absence of flowers.—*J. H.* Cattleya Trianæ and Dendrobium nobile, both good varieties.—*F. T.* 1, Oncidium pubes; 2, Oncidium sphacelatum; 3, Odontoglossum blandum; 4, Masdevallia simula; 5, Stelis muscifera.—*J. J.* Cypripedium insigne. Recent importations have produced many varieties. The one you send is very similar to the original form. *W. E. S.* 1, Not found; 2, Odontoglossum gloriosum; 3, Odontoglossum Coradinei; 4, Oncidium Forbesii; 5, Masdevallia Veitchiana; 6, Cypripedium Calypso; 7, Cypripedium (Selenipedium) Dominianum.—*Correspondent.* 1, Picea excelsa; 2, Tsuga canadensis; 3, Cupressus nootkatensis aureo-variegata; 4, Cupressus pisifera plumosa aurea; 5, Picea ajanensis; 6, Rubus species, send again when in leaf.

PEACH BLISTER: *A. S.* This affection is generally brought about by cold north or east winds, although the disease itself is due to a fungus known as Exoascus deformans. The presence of the disease is largely determined by the situation of the trees; those in an exposed position being the most liable to attack. We are afraid that covering the trees with a material such as you suggest will prove of little avail; the better plan will be to follow the advice given by Mr. Fyfe on p. 100 of our issue for February 15. See also letters on this subject in our last issue, p. 140. Red spider may be combated in the summer months by a frequent use of the syringe or garden hose.

PEACH BUDS DROPPING: *F. L. B.* The injury is generallly caused through dryness of the roots at an earlier stage. During the resting season roots are often allowed to become too dry, and this, in the opinion of many competent growers, is the cause of the mischief. Excess of moisture at this season, or any other cause contributing to a check, will have the same effect.

PEACH SHOOTS DISEASED: *C. B.* The shoots are affected by a disease—Botrytis. Cut out the damaged shoots and burn them. Spray the healthy portions of the tree with a reduced solution of permanganate of potash. Prevent cold draughts and chills in the house.

PEACH SHOOTS: *C. H. G.* There is no trace of disease in the shoots received.

PELARGONIUM LEAVES SPOTTED: *G. M.* Leaves or portions of plants sent for examination should not be enclosed in a letter. They should be properly packed in damp moss and be enclosed in a box. Your specimens reached us in such a damaged condition that it was impossible to accurately determine the cause of the trouble. We do not think the spotting was caused by disease, but is rather the result of some cultural error.

PELARGONIUMS DYING: *P. G.* We cannot suggest a reason for the plants dying, unless we see one of the plants and know more of the conditions under which they have been cultivated. Trouble sometimes arises from sulphurous fumes escaping from the stokehole. If you are a Fellow of the Royal Horticultural Society, you can have an analysis of the soil and water conducted by Dr. Voelcker, 22, Tudor Street, London, E.C., on payment of a small fee.

PICEA: *C. H. G.* We cannot find any signs of organic disease.

SOIL INOCULATION: *W. F.* In our issue for December 7 last was published an article by Professor Bottomley, explaining the whole question of soil inoculation. Seeds such as you describe may be purchased, and some inoculated seeds were exhibited at the Royal Horticultural Society's meeting on Tuesday last.

STRAWBERRIES FAILING: *F. H.* We cannot tell the reason of the failure, except that it is due to some check during their season of forcing. Have the plants been too heavily dosed with applications of patent manures?

TULIPS FAILING TO FLOWER: *Tulips.* We find no disease present in the bulbs you send; the failure to flower is probably the result of the bulbs not being properly ripened before they were harvested last autumn.

VIOLET ROOTS: *F. E. G.* There is no disease present in the specimens received. The dead portions are covered with a saprophytic mould, which has developed on the dead tissue.

WALNUT TREE: *Mrs. J. B. D.* The Ivy is decidedly injurious to the Walnut trees, and you should therefore remove it without delay.

COMMUNICATIONS RECEIVED.—Naval Officer—Robert W. Jr.—C. H. G.—W. T.—J. V. & Sons—Hortis—Dr. P.—J. M.—J. S.—B. L.—Constant Reader—S. B. D.—Irene H.—Alex. K.—R. P. B.—M. & S.—G. W.—H. J. C.—C. T. D.—H. R.—C. H. P.—Mrs. M.—H. T.—J. Mayne—W. J.—A. S.—G. W. Y.—V. H. L.—W. B. L.—A. D.—A. H.—W. T.—J. E. D., Jerusalem—T. C.—W. W.—T. F.—W. M.—J. W.—M. Bros.—Major J.—V. D.—G. B.—E. G. L.—H. L.—R. F.—T. N.—J. H. W.—W. T.—H. G. L.—Anxious.

Broughton Castle, the residence of Lord Algernon Gordon-Lennox, as seen from the south west.

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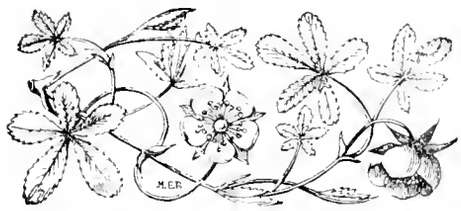


THE
Gardeners' Chronicle
No. 1,107.—SATURDAY, March 14, 1908.

CONTENTS.

ILLUSTRATIONS.

ORIGIN OF ERFURT EXPORT TRADE.

ONE of the greatest benefactors of the city and locality of Erfurt was Christian Reichart, who was born July 4, 1685, and died on July 30, 1775. The story of his life has been recently told by Dr. Hans Haupt in *Die Erfurter Kunst und Handelsgärtnerei*, and it cannot fail to appeal to all who are interested in horticulture. Educated for the law, Reichart employed his more than common mental faculties as Deputy Burgomaster, Councillor, Assessor to the Ministry, gymnasium (college) Inspector, and finally as Member of the Mercantile Commission. The highest services that he rendered to his country and to the town of Erfurt in particular were undoubtedly connected with the development there of gardening and farming. Knowing nothing of the cultivation of the land when the family property fell into his hands, he committed to writing everything that came under his notice concerning field and garden operations, so as to turn them to practical use, collecting a rich treasure of knowledge from observation and experiment that enabled him to bring farming and gardening to an unexampled degree of perfection. His work, *Land und Garten* (Treasury of the Farm and Garden), which appeared in 1753, and had in 1703 reached its fifth edition, is a masterpiece, which in many particulars forms an example that may well be copied today, and has been a guide to thousands of his countrymen. He appears to have included in its scope the entire range of field and garden culture, even that of medicinal plants. Of great excellence were the chapters on harvesting and the choice of seeds in regard to the retention of the useful properties and racial points in vegetables. In the year 1758 Reichart's *Einleitung in den Garten und Ackerbau* appeared, and many new methods concerning the cultivation of Cauliflower and other vegetables, the planting and cultivation of Watercress, the care of fruit trees, Grape vines, &c., were made known. The chapter on gardening as an art and science is a mine from which the most experienced of modern gardeners may extract something of value in his business. In Watercress culture he introduced the raised beds, with broad trenches between for conveying the water from the three springs. The water has a temperature of about 15° C., and never freezes in the winter, thus enabling growth to be made all the year round—a circumstance of the greatest importance to Watercress cultivation in Dreibrunnen. In the summer the water was spread over the raised beds by workmen with broad shovels or scoops. It is owing to this abundant application of water and to the accurately measured quantity of manure afforded that the heavy crops of Cress, &c., were obtained. The trenches, as will be understood, were carefully levelled and neatly banked. The area of the Dreibrunnen land is about 140 acres, the half of which consists of paths, banks or beds, and trenches; of the other half 57 acres are under vegetable crops, and 17 acres under Watercress culture. The Cress grown in the water channels is of peculiar tenderness and fine flavour, and in order to preserve these excellencies extraordinary care is taken. The laying-out of the land cost Reichart a large sum of money, and the people laughed at the first at what they considered to be his ridiculous labours, but when they saw the abundance of the crops obtained, they very soon copied his methods. Tettau, in his work, *Erfurt Past and Present*, states that the annual crop amounts to 50,000 schock of bundles (schock = 60 bundles or bunches).

During the occupation of Erfurt by the French from 1806 to 1815, the Cress greatly pleased these salad lovers, and the method of culture practised made so great an impression on Napoleon that he resolved on its introduction to France, and arranged to send to Versailles to have beds laid down according to the Erfurt methods, and from this place the system spread over the whole of France.

A similar method of raised beds and trenches was extended to the cultivation of Celery, Cauliflower, Kohlrabi, Cabbage Lettuce, Cabbage, Savoys, Cucumbers, Asparagus, Spinach, Leeks, Radishes, and potherbs. Regal wrote about this method of cultivation: "The beds are planted with Cauliflower and Kohlrabi at the margins, with Cabbage Lettuce and, later, Celery as the between crops. The Cauliflowers are succeeded by Kohlrabi, Cabbages, or Savoys." The gross income of an acre of ground in the Dreibrunnen land at that period came to the sum of £37, and the cost of cultivation, inclusive of rent, to £30, so that the net profit amounted to £7. The expense upon cultivation became much less when a larger area than an acre was undertaken, it being estimated that the clear profit from 1 acre in one year came to the sum of £24 in the year 1865.

Reichart's aims and teaching were, first and foremost, to get from all cultivated land the greatest possible clear profit. That this had not already been done was due, in his opinion, to the circumstance that those engaged in the business were practically, but not theoretically or scientifically, instructed. In a communication concerning this subject, he repeated the opinion of D. Kuhnhold: "We have here in Erfurt really no gardeners, seeing that they have not studied horticulture, but only a lot of agriculturists. A gardener should possess much more knowledge and experience than our folk here. It is a matter of common knowledge that when a groom falls from a horse, or a farmer from a village settles in our town, and works a year or two as a day labourer and rents an acre or two, he at once dubs himself a gardener, and allows himself to be publicly so called." These are the men who guard their secrets, instead of exchanging their opinions with other men, thus helping to elevate their entire class; and they were vexed when anyone, like Reichart, published his experiences in a book. It mattered to Reichart not in the smallest degree whether anyone belonged to the craft or not, but only what he performed. He could say, without boasting, that he by research and experiment had learnt more than a man who passed the whole time in his garden. It was a pleasure to him to publish for the common good that knowledge which he had acquired through his researches. As a means of teaching the results of experiments among farmers, gardeners, and the community in general, the higher schools were useful. Reichart busied himself heartily with the treatment of the subject of "Œconomy" in the high schools. The poor results of the academical lectures of that period were noticeable in the students themselves, because the whole subject of rural economy in those schools were mostly looked upon with disdain. The ground for such a scornful view of œconomy lay in the literature and, above all, in the method of instruction. The literature did not deal with the really important matters of the subject taught, and the teachers had no practical experience, but merely discoursed about things they had never seen. Reichart desired above all things that such teachers should speak about matters they understood, that the lectures should follow a systematic course, and that means should be found for practical work.

These desires of Reichart's have been long carried out in the high schools of Germany, and are worthy of mention, as showing how deeply he was fascinated by his problem and with the means for raising the industries of the field and garden. The means Reichart advised for reaching this end was the 18 years' course of cropping the land without fallow. This theory is particularly important, as having led to the fusion of farming and gardening. The inducement to

take this view was given by the heavy crops obtained from the Dreibrunnen land, and the excellence of the vegetables grown thereon, which had captured the markets of the country around Erfurt, so far as the means of road travelling at that time permitted. Besides this, the results of his cultures at Dreibrunnen caused a great increase in the area under seed crops, and started a flourishing trade in seeds with foreign countries. Already in Reichart's time the interior trade of Erfurt in horticultural wares had given way to export trade.

We give here the 18 years' course recommended by Reichart, which in the course of time led to the enormous extension of the seed trade of the town and neighbourhood. The only fault to be found with this system was the great number of labourers it required; but this righted itself in time, for the profits were so remunerative that the farmers and gardeners were able to pay higher wages than other employers, and, as a consequence, a shortage of workpeople was not felt. A worn-out piece of land was chosen for the course, and was heavily manured, and at the proper time dug deeply or ploughed with four horses, and the following course began :—

1st year—White Cabbage and Kales.
2nd year—Onions, or, if the care of this crop made too much work, Cabbage was planted, and usually did better in the second year than the first.
3rd year—Parsnips, red Beetroots, Radishes, Carrots, and eventually Cucumber seeds.
4th year—Safflower, Poppy, Beans. The only preparation of the land necessary is harrowing.
5th year—Red and White Carrots or Turnips and Parsnips.
6th year—Safflower, Poppy, and Millet.
7th year—Winter Rye.
8th year—Winter Rye. The second ploughing or digging and manure is given at the end of this year. This second crop is better than the first.
9th year—Barley and Summer Rye or Summer Wheat.
10th year—The land must this year be deeply dug or ploughed, and sown with red Carrots and white and red Beets.
11th year—Poppy, Anise, Safflower, Fœniculum vulgare (Fennel), Carraway (black), and Coriander.
12th year—Winter Rye.
13th year—Barley, Summer Rye, and Summer Wheat.
14th year—Millet, Fœniculum vulgare, Peas, Beans, Lentils, Coriander, &c.
15th year—Barley.
16th year—Carrots, Vetches, and Coriander.
17th year—Rye.
18th year—Oats.

Various alterations, according to Reichart, may be allowed, but the main principles of the course should remain. In this course of 18 years, while in 10 years garden crops exclusively are grown, the entire field cropping is made to serve gardening purposes. In this manner the vegetable field culture began, and later on came the flower fields, as the population took generally to the raising of flowers and flower seeds.

The above brief narrative touches on the chief results of the activities of a far-seeing, scientific cultivator, who was the founder of the trade of Erfurt as we know it to-day. *F. M.*

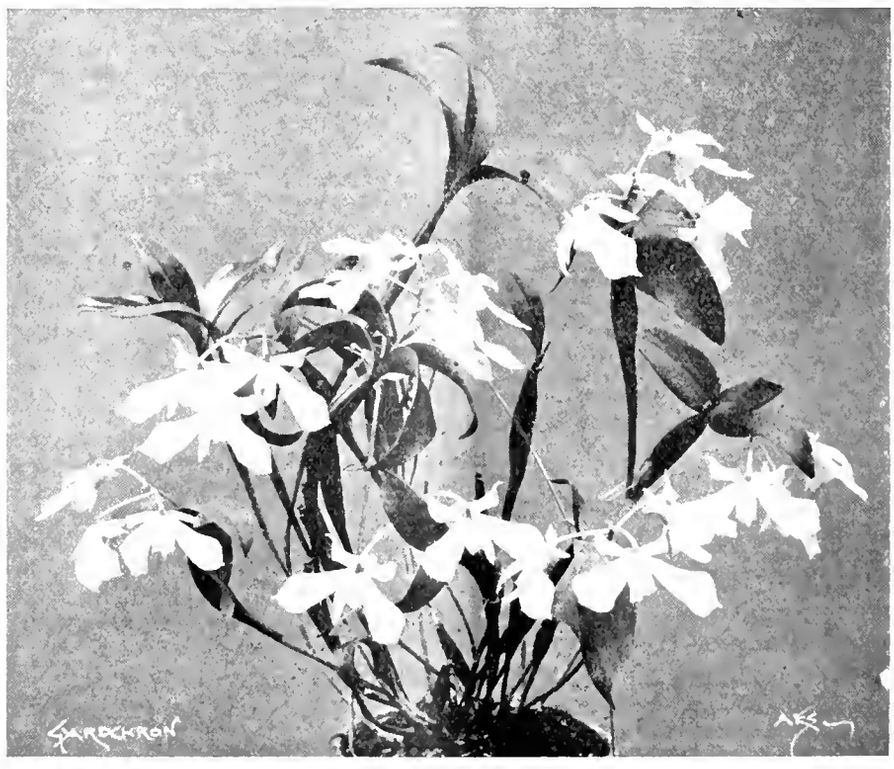
DENDROBIUM MADONNÆ.

OUR illustration (fig. 67), taken from a photograph by Mr. C. P. Raffill of a plant which recently flowered in the Royal Gardens, Kew, represents this pretty species, which unfortunately is still a rare plant in gardens. It belongs to the section which includes D. Johnsoniæ, D. atroviolaceum, and other species which are usually grown in gardens in the warm house in company with D. phalænopsis Schroderianum, D. superbiens, &c. D. Madonnæ is a tolerably free-growing and free-flowering species, the flowers being white with some rose-coloured markings on the front of the lip.

It was first introduced from New Guinea by Messrs. Sander & Sons, who flowered it in 1899.

FLOWERING BULBOUS PLANTS.

THE number of plants of a bulbous nature that may be planted in the spring is considerable, and with most of them smaller numbers are needed than of the varieties that flower earlier in the year.



[Photograph by C. P. Raffill.

FIG. 67.—DENDROBIUM MADONNÆ: FLOWERS WHITE, WITH ROSE-COLOURED MARKINGS.

An uncommon and charming bit of planting may be made by associating Hemerocallis (Day Lily) with one of the few plants of similar colouring, i.e., the Pilosum Poppy. This tawny apricot is little represented among our garden flowers. These Lilies flower over a long period, and more persistent still are the double forms, and among these last H. Kwanso fl. pl. should certainly find a place. Even a single group becomes finely effective, and though I prefer autumn planting, these Day Lilies are always to be found included among the plants of a bulbous nature recommended for spring planting.

The Anemone and the Ranunculus add a delightful brilliancy early in summer, when they are planted in the first week in March or earlier. Nothing quite fills their places, for both are refined and choice types of blossoms, so that in none of the picked and best positions are they incongruous and out of place. It should be remembered that the Ranunculus especially rejoices in plenty of moisture during its period of growth, and a watering occasionally with liquid manure is beneficial. One of the most gorgeous bits of planting I ever recall was a long, narrow bed, cut in a lawn, wholly planted with Ranunculi.

Last year I was struck with the effective use of Galtonia (Hyacinthus) candicans among the bedded-out plants. A large round bed had a bold central group of this summer flowering plant, while around it large flowered Petunias were established. The bulbous plants gave character and distinctness, besides variety of height, and well-defined lines. In some districts this Hyacinthus candicans is treated as a perfectly hardy subject, but I have found by experiment that in cold, wet soils the plants live longer and are more certain to flower well if lifted each year. In this, as with the Hemerocallis, not only the floral value has to be considered; not a little has to be allowed for the decorative value of the outline of the whole plant long before flowering commences. In this respect it is superior to the Gladiolus and the Montbretia, and I would never plant Gladioli and Hyacinthus candicans side by side.

Montbretias increase rapidly, and require to be lifted every other year if possible. To have them at their best, the corms should be planted singly and 6 inches apart. I planted them thus last spring in a moist position, and aspect due east, and some of the flowering stems grew over 4 feet in height, and produced a wealth of blossom. They had not been lifted for the winter, and were divided early in March after root growth had commenced.

The old-fashioned Spiderwort (Commelina cœlestis) has that subtle and almost indescribable appearance of being what is called "old-fashioned." In many gardens a satisfactory way of treating it is to grow it from seed and treat it as an annual. It is one of the few bulbous plants we can grow to flower the first season from seed sown in the spring. Besides the blue

variety there is also a white one, but this is not so desirable nor so decorative as the better known blue one. No one would dream of using this plant in the bedding-out scheme. It is distinctly a border plant.

I have not nearly exhausted the list of bulbous plants for spring planting. There are the Alstroemerias that should be established on some warm, well-drained border, as should also the hardier of the species of Amaryllis. I know of Crinums growing unlifted and unprotected in the cold clay soil of a London suburban garden. There are the Agapanthus Lilies to establish in tubs; the beautiful Tigridia pavonia, together with many newer hybrid forms, must not be forgotten, and no position is more favourable than a raised bed; the latter end of March is early enough to plant this last. The bulbs should not be deeper set than 3 to 3½ inches, nor farther apart than 4 or 5 inches. *Practical Gardener.*

AMERICAN NOTES.

WINTER IN THE PARKS.

Superintendents and gardeners in the Chicago and other North American city parks have a serious problem to consider in endeavouring to keep their plants alive during the winter. The keen winds that blow over Lake Michigan, when the temperature hovers around 10° or 15° below zero, cut off everything green that is exposed above ground, and the covering of 18 inches or so of leaves and straw litter gives the flower and Rose borders anything but an attractive appearance. The severe winters and hot dry summers are terribly hard even on the grass, and the appearance of the sward in April, all black and bare after an unfavourable winter, would dishearten anyone not used to it. But growth is very rapid when spring opens and the trees and shrubs take on lovely spring colouring here not seen in the British Isles. The Birches are especially beautiful with their warm, red-brown tints, overlaying the silvery white bark. The berries hang late on Berberis Thunbergii, one of the finest dwarf shrubs, perfectly hardy and beautiful at all seasons. But though the parks are dreary in winter from a horticultural point of view, they are not so otherwise. High toboggan slides are crowded all day, and well into the night, by merry throngs. The frozen lagoons are lively with skaters almost as enthusiastic over their sport as the neighbouring Canadians, while the warming and rest houses are full of happy, healthy and joking beings that would drive away melancholy from the most "grouchy" individual. An amount of good that is simply incalculable results from such grand park and boulevard systems as those of Chicago, whether one considers the health, happiness, or morals, of the dwellers in these immense and otherwise ugly cities. *H. R. R.*

ROSES.

Two new (?) Roses, named after prominent American ladies, are Mrs. Potter Palmer and Mrs. Marshall Field. It is a pity our growers did not wait until they had really good American kinds to name after American ladies, for the first is simply a colour sport from Mme. Abel Chatenay, and precisely similar in every other respect, while the other is a European variety, picked out from a number of others that reached this side without label or history. But these names have only been bestowed by market growers, and as real American Rosarians, such as Mr. E. G. Hill, of Richmond, Mr. John Cooke, of Baltimore, and others are working along legitimate lines, there are great hopes that this re-naming of old Roses—so long a feature—will cease.

CARDIFF CASTLE.

To the average reader the name of Cardiff will suggest coal and its attendant dust and smoke, but the city of Cardiff, in cleanliness and general smartness, is quite up-to-date and compares favourably with many of our leading cities. True, Cardiff is the largest coal-exporting port in the world, but the coalfield lies miles away.

Good gardens and gardeners abound in the district, as a visit to the annual summer and Chrysanthemum shows will prove; in connection with these one is reminded of the great loss both societies have recently sustained by the sudden passing away of the genial secretary, Mr. H. Gillett, who for many years has most successfully held that position. The public parks are not least among the horticultural attractions at all seasons. Our purpose, however, is to revisit the scenes of many triumphs of the late Mr. Andrew Pettigrew, who for many years served the late Marquis and Marchioness of Bute as head gardener.

Some of the late Mr. A. Pettigrew's triumphs were pot vines, Melons, and Cucumbers; of the latter a variety named "Cardiff Castle" is one of the best, and is still exclusively grown in the Castle gardens.

Mr. H. R. Farmer, who for several years loyally supported the late chief, and, as foreman, necessarily attended to the details of the operations resulting in such success, was in turn appointed to the important position of head gardener, and has had sole charge for about five years. The reputation of the gardens has been well maintained, and the pot vines in both the last seasons were fully equal to the magnificent specimens of years ago, whilst Melons, both in quantity and quality, were excellent. The varieties of Grapes used for pot culture are for the most part Black Hamburgh, Black Alicante, Grizzly Frontignan, Foster's Seedling, Black Morocco, and Alnwick Seedling. The two last-named are special favourites for the purpose, and both crop and colour exceedingly well. A pair of vines of Alnwick Seedling were arranged on an iron-framed arch (see fig. 68), and formed the chief item of decoration on the dinner table on the occasion of his Majesty the King's visit last season; these carried 20 bunches each of well-finished fruit, averaging 1 lb. in weight. Madresfield Court is also well grown, but Diamond Jubilee, after several years' trial, has been discarded. Mr. Farmer grows his vines in one season for fruiting the next, putting in the buds in January, and practises judicious feeding, "little and often" being his motto.

The ever-expanding city has so encroached upon the old garden, that its removal was imperative, hence houses and new gardens have been formed elsewhere. Those who have been privileged to visit the old garden will remember the remarkably fine fruit trees planted and so well trained by the late Mr. Pettigrew, mostly Apples and Pears, originally bush-formed, having long spur-laden branches in bearing condition from the ground to the extremity. These gigantic specimens Mr. Farmer is removing to other positions, and may he be successful with them.

Wending our way towards the new garden, we become reminiscent, and where once stood the home of our former host we find that his son, Mr. W. W. Pettigrew, has most appropriately arranged a pretty triangular flower-garden for the Corporation: and what a transformation is here! The magnificent, costly municipal buildings and Law Courts occupy the main position in the now open Cathays Park, and beyond, a grand pile of buildings is being erected, the University College, buildings fully worthy of the "metropolis" of Wales.

Visions of a distant past were vividly conjured up when inspecting the old Castle green, the moat, and the keep. The moat is now stocked with goldfish, and recently-planted Nymphæas, and will doubtless ere long be a pretty feature.

Fig. 68.—Pot vines as grown in Cardiff Castle gardens.

The new garden is a square of five acres, within substantially-built, brick-faced walls on three sides, the south being bounded by a green fence, otherwise open to a lovely stretch of lawn, skirted and broken by belts and beds of ornamental trees and shrubs, with a peep in the distance of the Castle tower.

The glass-houses are arranged in the background of the square; they are commodious, conveniently arranged as regards water and heating details; they are also substantially built (all teak wood), the work being done by the estate experts. The old span-roofed vinery has been re-erected in three divisions, and contains all Muscat-flavoured varieties. Madresfield Court has always been a favourite here, and still continues in favour, and so also does Canon Hall Muscat, but how rarely is the last-mentioned variety seen nowadays in good condition.

The wall carries a 90 feet by 14 feet Peach house in three divisions, with trees on a curved

trellis and on the back wall, the arrangement admitting of plenty of light for all the trees. There are several span-roofed houses 60 feet by 20 feet, besides the large vinery is 60 feet by 26 feet. Behind the Peach range wall are a number of useful open and closed sheds, offices, messrooms, &c., and underneath these, in addition to the boiler-house, there is capacious cellarage, 180 feet by 14 feet, which is intended for wine storage, Mr. Farmer having charge of the famous "Castell Coch," and other vineyards on the estate. Castell Coch vineyard is about 9 acres, and has, I believe, been in cultivation from the late 'seventies. It is impossible here to enumerate all the good plants contained in the houses—Palms, highly-coloured Crotons, and general decorative species, "Malmaison" Carnations in large quantities, excellent quality, and size; 300 Calanthes, Eucharis grandiflora and other species, large specimens of Adiantum tenerum Farleyense, &c. Nearly every gardener nowadays has a "pet" Tomato of his own raising, very often better than the best. Cardiff, not to be outdone, also has one, and without wasting too many superlatives upon its description, it really is a good one both in cropping qualities and in flavour.)

Renovations in the pleasure grounds are being made, and quite a large programme of work is in prospect. Probably a watercourse, called the "Feeder," which runs through one part, may be utilised for ornamental effect. It will be interesting to watch developments in this 40 acres of pleasure-grounds, where success has certainly been achieved during the past season in colour effects. Large beds, sufficiently widely separated by greensward, are admirably adapted for bold treatment. One of these beds was gorgeous with three colours of East Lothian Stocks behind a front border of the white variety.

Speaking of colour effects, why are our gardens not arranged with a view to these matters as regards their permanent subjects? Trees and shrubs in almost endless variety are at hand for the purpose, and what magnificent and various pictures are possible with an artist's mind and eye to conceive and arrange the first making, or indeed the renovating, of old gardens! *Monganwg.*

THE ROSARY.

CULTURAL NOTES FOR MARCH.

As it is well to safeguard the plants against all danger from severe weather, the protective material already about them should not be entirely removed until the end of the present month, when all danger from this cause will probably be passed. Standard Briar stocks that have been injured by frost can now be shortened back to sound wood. As the top growths of most Roses become exhausted after the bushes have been planted for a few years they should be cut away and their place be taken by younger wood. The pruning of hybrid, perpetual, and other varieties of Roses can in the south be proceeded with at intervals of a week or 10 days, and be continued throughout the month. The Tea-scented, Noisette and other tender varieties should be pruned from the end of March until April 10. In the north and Midlands the operation should be done from 10 to 20 days later, but the cultivator must be guided by the season, aspect and local circumstances. Old rosarians used to prune their Rose trees in the autumn, but their varieties were limited, and the plants were of a more hardy constitution than many of our present varieties.

Notwithstanding the recent severe weather, Roses are exceptionally forward, and strong-growing varieties of the hybrid perpetual type can now be pruned. The shoots should be cut back to from five to eight buds, weaker growing plants to four or six, but the severity of pruning should depend on the health of the individual.

Plants of the Moss, Provence, Hybrid China, and summer blooming varieties should have their superfluous shoots and old wood removed (if these were not cut off directly after flowering), leaving only the best ripened growths of the current year. Austrian and Penzance Briars should be similarly treated. Any Roses that have been injured by the late frosts should be cut back to sound wood by the end of March. The pruning of Teas and Noisettes can be left until the end of the present month or early in April.

Roses that are planted out under glass will now be breaking into growth freely, and as the house has been closed for a few weeks a little ventilation can be given in the middle of the day by the top ventilators. An occasional syringing with clear water will keep down insect pests, including red spider. An atmospheric temperature of 50°, rising to 55° with the sun's heat, should be maintained, and an increase of ventilation and atmospheric moisture must be permitted as the season advances.

The repotting into 5-inch pots of the grafted plants should now be well advanced. Vaporise at intervals to destroy insect pests, and place the plants well up to the light to prevent a weakly growth. All the earliest forced plants that have flowered can be removed to a cooler house to make room for the final batch of the autumn-potted plants that are now in a cold house or frame. These plants will continue the season of flowering until the end of May or early June, after which the outside plants will be giving a supply of flowers.

As the blooms are cut from the early house, the old flower shoots that are well matured can be used until the end of the month for herbaceous grafting, if stocks are available for the purpose.

ROSE CUTTINGS.

Any surplus wood can be used as cuttings in the propagation of Roses on their own roots. Rose cuttings are often rooted on a bed over a hot water tank, a practice to be recommended, but as a rule the old-fashioned hot-bed made up outside is resorted to. A two-light, box frame measuring about 11 feet 6 inches by 7 feet 6 inches is the handiest for the purpose. In order that the bed may retain its heat for a considerable time, it should be from 3 to 4 feet thick at the back and not less than 3 feet 6 inches deep in the front, after first being well trodden and allowed to settle. The hot-bed should be made of well-fermented manure that is not too moist, and a clear margin of 18 inches should be allowed all around the frame so that a fresh lining can be supplied when the heat declines. As soon as the bed is completed, the movable boxes with the lights can be placed on the top of the hot-bed, and when the bottom heat has dropped to 75° or 80° the pots containing cuttings should be plunged in a layer of cocoanut fibre or fine ashes. If there is an excess of vapour in the frame, provide a little ventilation at the back, but without unduly lowering the temperature. Place one, or not more than two, cuttings in each small pot; by the use of pots the ball of soil about the roots can be kept intact when the rooted plants are repotted. Well-ripened portions of shoots having not more than two nodes or joints usually root freely. The best rooting medium is a sandy loam with a layer of pure sand on the surface. The heat can be properly maintained until the cuttings are well rooted, by linings of manure, and it may be conserved at night time by placing mats or other coverings over the lights. Shade the cuttings from bright sunlight during the daytime. They should be well rooted in a fortnight or three weeks, and when they are well established they should be shifted into slightly larger pots. *J. D. G.*

WILD ROSES.

HERR F. BRETTSCHNEIDER gives utterance, in *Gartenflora*, to regrets that Wild Roses are not made more use of in the public gardens and parks of Germany. His complaint will perhaps find an echo in the minds of many who have marvelled at the absence of this beautiful native flowering bush from such places in this country. Our Wild Roses, grouped into three or four well-marked species, exhibit a wonderfully great range of variety, and many of them are incomparably more beautiful than the specimen shrubs so often grown in public gardens. But of course they take up a considerable space if they are to be allowed to show themselves at their best, and to many people plants that are native are also worthless. Perhaps some direction of public taste might be given by the more frequent use of such splendid Roses as Anne of Geierstein or Jeanie Deans, which, like many others of their class, are free-flowering, of good habit, and are also beautiful in form and foliage in the season when they are not in bloom.

VEGETABLES.

AN EARLY SPINACH.

THE older and smaller-leaved varieties of Spinach are usually sown for an early supply of this vegetable, but a new introduction—The Carter—comes in much earlier and has a larger leaf than these older kinds, and these are important details at this season. The new variety has thick, fleshy, dark-green leaves, and does not run to seed so quickly as the prickly or smaller varieties. On account of its larger size, the plants should be afforded more space than is given to the older type. For several years I relied upon the Victoria variety for my first crop of Spinach, but The Carter is much superior to Victoria, and its extra earliness is a great gain. Spinach sown on a warm border germinates and grows quickly, and on good land it is fit for use in a few weeks after sowing. Many gardeners sow the seed too thickly. When grown closely together it is impossible to obtain good leaves, and a thick sowing has the effect of causing the plants to bolt. A severe thinning of the seedlings well repays for the trouble. In many gardens the culture of winter Spinach is impossible, and in such cases an early spring supply is especially valuable. For this sowing The Carter is to be recommended; it matures quickly and the leaves when cooked are of excellent flavour and of a deep green colour.

TWO EARLY POTATOS.

AMONGST the many varieties of Potatos in cultivation it is not an easy matter to select the two best, but for an early supply of tubers the varieties May Queen and Ninetyfold are probably unsurpassed. Many persons have room in their gardens for an early crop of this vegetable, although they may be unable to grow later ones on account of the land being required for winter vegetables. The varieties named are especially valuable in this case, as they mature so quickly, thus leaving the ground available for other crops.

To take May Queen first—this is a free cropper, and its name is most appropriate, for given a good soil and a warm border, it is ready for harvesting in May; indeed, one of the chief characteristics of this variety is that as soon as the tubers are large enough to lift they are of excellent quality. The haulm is very dwarf, and this character makes it a suitable border variety for planting at this season when warm sites are none too plentiful in the garden. It differs from the older early Ashleaf variety in that most of the tubers are of a size large enough for use, thus giving a much greater crop. In the southern parts of the kingdom, May Queen is a favourite for early market supply. Of late years this

variety has been largely grown in Cornwall, and I strongly advise its planting in gardens. The haulm is of a hardier nature than that of the Ashleaf variety, and it is not so readily injured by frost.

Ninetyfold is a distinct Potato to May Queen, but it is its equal in point of quality. It produces a splendid crop of large tubers and, in my opinion, is second to none as a cropper when its season is taken into consideration. This variety has been in commerce for some years, and long enough to prove its merits. It was raised about ten years ago, and has found increased favour yearly as it has become better known. Even when lifted late in May or early in June the tubers are of remarkable size and in great quantity. Ninetyfold is a more robust grower than May Queen, therefore I recommend its culture to northern growers or for heavy land. The haulm is very strong, though dwarf, and I advise the planting of moderately large seed tubers, and the allowing of plenty of room between the rows, for there is no gain in crowding the plants. The tubers when cooked are of excellent quality, and of remarkably dry texture for an early Potato. For many years the Ashleaf varieties only were grown for first supplies, but since their introduction May Queen and Ninetyfold have largely supplanted them, for these newer kinds are not so readily injured by spring frosts, and they give earlier and heavier crops. *G. Wythes.*

THE FERNERY.

HARDY FERNS.

As the season has now returned when Fern collections can best be overhauled in preparation for the period of active growth, a few words in that connection may not be out of place. After the long rest which the plants have had since they became dormant in the late autumn, they are now in the best condition to stand removal or even the drastic operation of division for propagating or other purposes. The chief other purpose we have in view is the separation of bunched-up and crowded crowns which result from the growth of lateral offsets, which all the crown-forming Ferns—the Lastreas, Shield Ferns, and Lady Ferns—produce more or less abundantly. If these are permitted to accumulate, the inevitable result is that the main or mother crown suffers by competition with her offspring, the fronds become smaller, and, in the case of varieties, develop less character, while the offsets themselves are naturally also checked by root competition below the soil. Another evil is that, owing to the crowding together of the fronds, scarcely any of them can grow freely, and the result is a tangled bush instead of a symmetrical and handsome plant such as an isolated single crown can produce. At the present time, as the new fronds are still snugly packed away in the crown, while the old fronds, even of evergreens, have become shabby and in any case will perish early in the season when the new ones monopolise the vigour of the plant, division can be effected with little risk of damage, all that is necessary being to avoid squeezing the crowns. The whole plant may be forked up bodily, if necessary, to facilitate separation, and it will then be seen that each secondary crown is attached so slightly that it can be forced off with a blunt trowel, and will then come away with its own independent bunch of roots, all ready for separate planting, while the main crown remains practically intact to same end. In the case of the Lady Fern, lateral crowns occur less definitely, the central crown often splitting into two or more instead, each gradually growing away from the other, leaving a sort of Siamese twin connection. Here separation is not so easy, but can be effected if the upper parts of the connecting link be cut partly through and the two or more crowns forced gently asunder by hand pressure, when each will be found supplied with roots as with the other Ferns cited. In any case, the results of these dividing operations is a much robuster individual growth, a greater development of the varietal character shown by the fronds, and a better display of same by the freedom of all-round growth permitted. Some Ferns, such as the various Polypodies, Bladder Ferns, and Spleenworts, which do not form definite crowns, but have a more or less bunchy or diffused character, due to creeping rootstocks, and the formation of separated fronds are best left alone, as they do not suffer in the same way; but if it is desired to increase the number of specimens, the Polypodies may be divided by cutting off portions of these creeping rootstocks provided with a frond or two and a growing top, each such portion then rooting and establishing itself independently. The Spleenworts and Bladder Ferns, if in good clumps, can be pulled apart and separately planted, but otherwise should not be meddled with. Hartstongues and Blechnums stand somewhat midway between the two kinds of rooters, but if grown to clump form, individual centres of growth can be easily seen, and can be pulled asunder in like fashion. It is, however, not advisable to disturb either of these unless for propagative purposes, as the same reason does not exist as with crown-forming Ferns proper. Ferns in pots should be left alone if in good condition, unless re-potting is required, owing to need for further root room. In this case, pots a size larger should be chosen; the old ball, if not sour or full of dead roots, should be left intact, and good soil carefully filled in to the space available. The best general compost for Ferns is one part good loam and one part leafmould, with a liberal dash of coarse silver sand, but in the open ordinary good garden soil, not clayey, permits of very healthy growth, the main desiderata out-of-doors being shelter from wind and, if possible, some shade from hot sunshine. Beds or rockeries facing north are best as affording these conditions. Finally, we advise our readers not to devote space to the common weed forms of British Ferns as hawked about the streets or sold for a penny a root by nurserymen, but to obtain a selection of good varieties, many of which are cheap enough to be within the reach of all. *Chas. T. Druery.*

[Photograph by J. Gregory.

FIG. 69.—MAXILLARIA LUTEO-ALBA WITH 70 FLOWERS, AS SHOWN BY WALTER COBB, ESQ. (GR. MR. C. J. SALTER), AT THE LAST MEETING OF THE ROYAL HORTICULTURAL SOCIETY.

(See *ante*, p. 158.)

The Week's Work.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

The Orchard house.—Trees of Apples, Pears, and Plums in pots that are intended to furnish a supply of ripe fruit a little in advance of the ordinary outdoor crops should now be placed in a cool house. If the trees received the necessary attention last autumn in the matters of repotting and top-dressing, and have been properly plunged during the winter, their roots should be in a satisfactory condition for gentle forcing. They should be placed in a light, airy glasshouse, and ample space must be allowed about each tree. Fumigate the plants before the blossoms expand, and whilst the flowers are open admit plenty of ventilation in agreement with external conditions, both by night and by day. During wet, dull weather, a little artificial warmth will be beneficial. The blossoms of Apples and Pears should be pollinated daily. As soon as the flowers fade, syringe the trees on fine days in the morning and again in the evening. At the proper time attend to any necessary disbudding, stopping of the shoots, and thinning of the fruits.

Cucumbers.—Early raised Cucumbers planted as advised in a former Calendar upon hillocks of a suitable compost will, with the increased light, make a rapid progress in growth. A high temperature, accompanied by an abundance of atmospheric moisture, must be maintained in the pit: the night warmth should be 70°, and the day (with sun's heat) 90°, but ventilation should be carefully admitted when the temperature reaches 80°. Replenish the hillocks as the roots demand it with light top-dressings of fibrous loam, mixed with a small quantity of flaky leafsoil and horse manure, and enriched with some fine bone meal, or some other suitable fertiliser. These top-dressings, combined with applications of tepid, weak liquid manure, will maintain the plants in a vigorous state of bearing. Attention must be given to the proper tieing, thinning, and stopping of the shoots, and in order that the plants may not become crowded, each lateral should be stopped at one leaf beyond the fruit. Remove old and useless leaves, and do not overcrop the plants.

Cucumbers in frames.—The present is a seasonable time for preparing ordinary frames for summer crops of Cucumbers. Prepare the necessary fermenting material by mixing stable manure and tree leaves, turning the heap a few times for the purpose of dispelling the vapours that are formed during fermentation. The bed should be about 5 feet in depth, and be 18 inches wider all around than the limit of the frame. Place a single layer of thin turves over the bed inside the frame, and on a hillock of suitable compost under the centre of each light, plant the Cucumbers when the temperature of the bed has declined to 80°.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Cucumbers.—Plants which were planted early in January in the Cucumber houses should now be bearing freely. Do not overcrop them in their early stages, but attend regularly to the thinning and stopping of the growths, encouraging the plants to replenish the whole of the trellis with young shoots. Never allow any fruits to remain on the plants after they are ready for use, as they will keep perfectly fresh if cut, and their stalks placed in salt water, storing them in a structure where the atmospheric temperature is similar to that in the house where the plants are cultivated. Apply a little top-dressing over the roots about once a fortnight. Never allow the plants to suffer for want of moisture at the roots or the fruits are certain to be bitter. Apply plenty of stimulants to the roots when the plants are in full bearing, for the purpose of which drainings from the farmyard, properly diluted, will be found excellent; by way of change, apply Clay's fertiliser according to the directions. Damp the paths during the afternoon with strong manure water. Strong plants may now be put out in frames on well prepared hot-beds. These will require careful nursing till the weather is more genial. The soil should be warmed and the plants put out during the warmest part of the day. Do not use an excessive degree of bottom heat, but endeavour to maintain an even temperature by adding fresh linings of fermenting material as required. A little ventilation is necessary early in the morning to allow any condensed moisture to escape before the sun has power to burn the foliage, but the lights may be closed early in the afternoon, conserving as much sun heat as possible. The lights should be well covered at night with mats or similar material. Make another sowing in small pots for a successive crop.

Tomatos.—Early autumn-sown plants will now be bearing freely, and little difficulty will be found in maintaining a good supply of ripe fruits from the present time onwards. The plants may now be cropped much more freely, but liberal feeding will be necessary. Successional plants, which have been placed in their trial pots should not be unduly forced, but encouraged to make stout, short-jointed growth. Admit air freely whenever the weather is favourable. A good sowing of seed should now be made for raising plants to furnish the principal supply during summer and autumn, both for growing under glass and planting in the open. For the latter purpose care should be taken to select those sorts only which are free-fruiting, and which mature quickly. Many of the decorative kinds of Tomatos are not only extremely ornamental, but are also useful, the flavour of many of them when well ripened being superior to many of the larger-fruited kinds, and where the fruits are eaten in an uncooked state, I strongly advise some of these should be grown. Sunbeam, a yellow-skinned variety, is one of the best, and is well suited to anyone who has only a limited amount of glass.

Cauliflowers.—In many districts it will now be perfectly safe to put out autumn-sown plants in their permanent quarters, but a sheltered site should be chosen, and if it becomes necessary, owing to exceptionally severe weather, some slight protection should be afforded the plants. A few small Spruce boughs placed round each plants is as good as anything. Plants growing in pots which are intended to yield the earliest supplies ought now to be well established, and these will be much benefited if a good surface dressing of decayed manure and loam be given them, and manure water every other watering. Grow them in a cool house near the glass. Make another good sowing of seeds of the varieties Autumn Giant and Early Giant.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Provision of full-sized parks.—In an earlier article I alluded to the difficulties attendant on the acquisition of sites generally. When in municipal politics the question of the hour happens to be that of parks extension, the number of eligible situations recommended generally by interested parties—is often considerable. When however, they come to be examined it is difficult to find one suitable to meet the many requirements which parks are expected to serve. The area must be sufficient to admit of due provision for the playing of the popular outdoor games, such as cricket, football, and hockey, all of which demand more space than the games of tennis, croquet, or bowling. Then, as boating and model yacht sailing are yearly increasing in popularity, provision has to be made for one or more sheets of water for these pastimes. These sheets of water can serve a two-fold purpose by providing a winter amusement such as sliding and skating when frosts prevail. Besides these, free space must be provided for children amusing themselves in safety without restriction; while the tastes and wants of the elderly people and invalids must likewise be considered. Along with these, the convenience and accessibility are factors of no mean importance; while the price of the land and the cost of laying it out to meet the requirements indicated equally demand the most careful consideration.

The question of local feeling.—In the selection of a site for a park, local feeling usually has less influence than in the case of the smaller areas already dealt with. This is chiefly due to the fact that the choice of larger areas is more limited, and, as the initial outlay is greater, the authorities are not so readily disposed to yield to the clamour of persons who, not knowing all the facts of the case, are unfitted to give an opinion on its merits. Most frequently the greatest difficulty is that of price. Naturally, the majority of landowners insist on getting the highest possible value for their property, and when the situation happens to be in a district where building sites are in demand, the question of price is a matter of serious moment to urban authorities, whose rating power for park purposes may be too limited to meet a great expenditure.

Suitability of disused residences.—In the neighbourhood of an expanding city a situation possessing all the requirements is rarely available. There is one, however, not infrequently encountered, which goes a long way towards the desired object, and is readily accepted and appreciated by the town dwellers. That is an old residential estate well furnished with fully-grown trees and shrubs. If such be exposed for sale in "eligible building lots," which means the ultimate cutting down of the grand old timber, the chances are that the feeling of resentment created in the minds of the townsfolk by such a proposal will be quite sufficient to raise the question of its acquisition as a park. In this connection many persons will assert that the purchase of such a place is brought about purely on sentimental grounds, consequently a higher price, they say, is demanded and is paid for it, when a cheaper piece of land, perhaps contiguous, or in the vicinity, but devoid of trees and the ordinary adjuncts of a residential property, would have equally well served the purpose. With this view I entirely disagree, as being too narrow and parochial for the situation. We all are more or less creatures of sentiment. Therefore, when public sentiment tends towards the preservation of the historical or picturesque environment of a city, it is an evidence of a proper appreciation of its amenities. Quite apart from the point of sentiment, should it happen that such a site is placed as the alternative to one with no natural adornment, though the price may be from a fourth to a half more, I would, from experience of both types, and from a public point of view, recommend its purchase as the better investment. In the first place, considerable value should be put on the appreciation of these old places by the public, who find in them a sense of rest and retirement which, after the noise and bustle of busy streets, is most enjoyable; while in the many natural features characteristic of old country houses there is a perpetual source of charm and pleasure which cannot be found in newly-made places, no matter how skilfully planned or planted they may be. Then it also possesses the further advantage of being made quickly available for public use, requiring, in most cases, only the widening of the footpaths. The public have thus the immediate use of their property, while the authorities have time to study the position before making those alterations which probably will be necessary to make the place suitable for its purpose. In adapting such a situation for public use I have found that the costs are infinitesimal in comparison with the formation of a new park on what was purely agricultural land—a point which, in the end, will prove the value of the investment.

Work of adaptation.—In adapting a property of this description for a public park, every endeavour should be made to retain its particular characteristics. Some parts may require drastic alteration, but every feature ought to be most carefully studied before making any serious change. The disposal of the mansion is, perhaps, the most difficult problem. Some designs lend themselves readily for adaptation, and no serious expense will be involved in converting such a house into a local museum, reading-room, restaurant, or similar institution, such as may be required to meet the wants of the public or the department; while the stables and usual outbuildings can be utilised for park work generally, as well as providing shelters and waiting-room accommodation. Another feature which ought to be retained is the garden. This particular adjunct of a residential property always proves one of much interest to the public. Though the cultivation of vegetables has to be discontinued, if the quarters are used as a nursery for trees and shrubs, as well as a reserve for the flower garden proper, the educative value which a park ought to possess will be very materially increased.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq. Keir, Perthshire, N.B.

Seedlings.—Plants raised from seeds sown last month must not be kept in a close atmosphere, and as soon as they are fit to handle they should be pricked out singly and be afterwards placed in a position close to the glass. Cold draughts must not be permitted to reach them, and they need shading from bright sunshine. Watering must be carefully done at this stage.

Primula stellata.—Plants of the "star" Primula, potted into 8-inch pots and grown for a second year, form splendid specimens when in flower for decorative purposes. These old plants are late in coming into bloom, which is an advantage, for they prolong the season after the one-year-old plants have passed out of flower. Some time before they are repotted a portion of the bottom leaves and all the flower stalks should be cut off, and a mixture of leaf-soil and sand be pressed firmly around the collar of the plant, when in a short time fresh roots will protrude from the neck of the plant; during repotting care must be taken not to damage these fine roots. After potting them place the plants in a house having an intermediate temperature, and shade them from bright sunshine. Apply water sparingly for some time after potting. Other varieties that are desired for another year may be propagated by layering. The shoots should be prepared as in the case of Carnations by making a slight incision half through the stem and then pressing the shoot firmly into leaf-mould and sand piled well above the rim of the pot. A suitable position for the plants at this stage is a shelf in the full exposure to the sun in a vinery. Primula shoots may be rooted freely in this manner, but it is essential that the compost should always be slightly damp, although not wet. In about six weeks these layers will be ready for separating from the parents, when they must be potted into small pots and be given a similar treatment to that afforded to seedling Primulas.

Caladiums.—Plants that are starting into growth should have the old soil shaken from their roots and be repotted singly into small pots. Very little water will be required until the plants commence to grow freely, but they should be syringed twice a day. Shading will be necessary only when very bright sunshine prevails, for plenty of light causes the colours to develop. As soon as the small pots are well filled with roots they should be re-potted into larger receptacles. Provide plenty of drainage material, and as a compost use a mixture of loam, leaf-soil, peat, and sand in equal portions. No manure should be used in the potting medium, for it is much better to feed with liquid manure after the pots are filled with roots. Place the plants in a light position in a house with a temperature of 65° to 70°, and if the pots are plunged in bottom heat it will be an advantage. When fully grown they may be removed for a time to a warm greenhouse, but the temperature should never be allowed to fall below 55°. As soon as the foliage begins to fade water must be withheld from the roots and the plants be removed to a dry and warm house. They are best wintered in a dry place in the plant stove.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire.

Pruning.—Flowering and other shrubs that are cultivated for winter effect may be pruned during the present month. It will be necessary, however, to leave the more tender species, as, for instance, the Golden Elder, until the last. In cutting back the shoots leave about 3 inches of last season's wood. The result of this annual cutting back is to obtain stronger growth and finer colour in the foliage and wood. Many of the Spiræas may be cut back every year with advantage; so may Hydrangea paniculata, Euonymus europæus, Tamarix japonica, Cornus sanguinea, Prunus Pissardii, and numerous Willows, &c. Such flowering shrubs as the Almond, Crataegus, Prunus, &c., may be pruned much upon the same principle as Pears, Plums, Cherries, and Peaches. Owing to the natural habit of many of the best shrubs being what is desired, they should be pruned very lightly or not at all. Such are Berberis stenophylla, B. vulgaris purpurea, B. dulcis, B. Darwinii, B. japonica, and B. Thunbergii. Evergreen shrubs such as Aucubas, Box, Privet, Laurel, Berberis Aquifolium, Yew, &c., should be examined every season for the purpose of keeping them as near as possible to their natural character, and prevent them from encroaching upon the space needed by weaker growing plants. If the shrubs are given proper attention they will be the better fitted to withstand severe weather or heavy falls of snow. On the morning of March 3 there was a fall of 3 inches here, and on March 4, 5 inches; on March 5 there was 12° of frost. The snow pressed heavily upon tender subjects until relieved by shaking. Many large boughs of Elms fell to the ground from the weight of snow.

Flowering shrubs not yet to be pruned.—Such species as Weigela, Honeysuckle, Ribes, Hypericum, Philadelphus, and Kerria, are best pruned after they have flowered, but the pruning should consist in simply removing, if necessary, some of the older wood. A variety of Kerria known as variegata is distinct, having a slender habit and green, yellow, and white variegation. It may be grown under partial shade, and the variegation will be preserved.

The perennial Phlox.—As soon as the plants commence to grow, a good mulching of well-rotted manure should be applied over the roots. This is the best time to propagate the plants. Each clump will produce so many shoots from the base that they will benefit by being considerably thinned. When these shoots are from 2 to 3 inches long they may be employed as cuttings. Each cutting should be potted into a thumb pot, which should be plunged in a gentle heat. When they have made roots repot them into 5-inch pots, and each plant will produce a handsome spike of flowers at about August if grown in a position out of doors fully exposed to the sun.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Miltonias.—The species M. vexillaria and its varieties thrive best in a cool intermediate house. At the present time the flower-spikes are visible in the partially-developed growths, and the latter are pushing forth new roots freely. The plants, therefore, will need more moisture both at the root and in the atmosphere than hitherto, and the foliage should be freely syringed daily with tepid soft water whenever the weather is bright. This treatment will benefit the plants and help to prevent the multiplication of thrips, a troublesome pest, especially the small yellow kind, which is very partial to Miltonis. Before the flowers commence to expand, mild fumigations of the house at about every ten days with some safe vaporising compound will be useful. If thrips were not kept under they would attack the foliage and flower-buds in their tender stage, causing disfigurement. Some experts advocate the repotting of M. vexillaria at about the present stage, but I prefer to leave them until after the flowering season.

M. Roezlii and M. Bleuana. The culture of these plants should be very similar to that afforded M. vexillaria, except that M. Roezlii requires more heat, and should, therefore, be placed in a shady corner of the warmest house. M. Bleuana is a hybrid from M. vexillaria and M. Roezlii and should be grown in an intermediate temperature. Repotting is best done when the new growths are a few inches high, and they are making new roots. Avoid overpotting, as the plants give better results when the roots are confined.

M. spectabilis and its varieties, M. Regnellii, M. candida, M. Clowesii, and others that flower late in summer and autumn, all require a warm atmosphere. These can usually be accommodated in the Cattleya house, selecting the shadiest part for them. The plants are now making their growth, and when the new growths are about to make a fresh batch of roots, new rooting material may be afforded to any of the plants that require it. Plants of this section having creeping rhizomes require considerable space to permit of extension, and the rhizomes should be kept pegged down to the material as fast as they extend. Pans are the best receptacles for these plants, and as copious supplies of water are necessary during their season of growth, perfect drainage should be afforded and only a thin layer of compost employed. The compost may consist of Polypodium fibre, Osmunda fibre, and clean fresh sphagnum-moss in equal parts. Mix these materials well together and press the compost firm about the roots.

Sophronitis grandiflora.—This highly-coloured little epiphyte thrives best in shallow pans suspended from the roof rafters, and succeeds well with quite cool treatment. A light position should be afforded, but the plants should never be exposed to bright sunshine. If repotting is necessary, it is best done immediately after the flowering, as new roots are then being made by the partially-developed growths. These plants grow freely in a compost similar to that previously advised for Cattleyas, putting plenty of drainage beneath it and fixing the roots firmly in the material. Afford a liberal supply of water to the roots during their growing season.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Bush fruits.—If the Gooseberry bushes have been left unpruned owing to the fear of damage by birds, the work cannot be longer deferred, but must be pushed to completion as soon as possible. Some cultivators deliberate as to whether they should prune before the sap is in motion and the buds swelling. If the work is postponed to that stage greater care has then to be taken or many of the buds will be broken away from the shoots. There are many methods of pruning the Gooseberry, but the primary point to bear in mind is the need there is for so shaping the bushes that light and air may easily circulate through them, as these conditions are most conducive to fertility. Commence pruning by removing the shoots from the centre of the bushes, shortening the leading shoots but little, excepting those which are likely to hang too near to the ground. When the centre is made sufficiently open, examine the bushes all round, and remove any shoots that cross with each other, or any that are too thickly placed, removing the tops of shoots here and there to secure a uniform bush. Dessert varieties require rather more severe thinning in order to obtain fruits of the best quality. It is not yet too late to plant, but care should be taken to do the work when the soil is in proper condition. In choosing a site and varieties, have regard to providing for succession of crops, so that a regular supply of fruit may be ensured as long as Gooseberries last. Method should be observed in the planting, keeping each variety together, in order that greater convenience will follow when netting and gathering of the fruit becomes necessary. Early autumn is doubtless the best time to plant, but for various reasons it is often necessary to postpone the work until spring.

Currants.—These are most accommodating as to soil and situation, and even when Gooseberries are cut by late spring frosts the Red Currant in particular is almost certain to bear a good crop. Early and late varieties should be planted in a similar manner as recommended for Gooseberries, to furnish an early and late supply for kitchen purposes. A few bushes of the white-fruiting variety should be planted, as these are appreciated when thoroughly ripe for dessert; when planted as double or treble cordons against north or west walls, and protected from wet and birds, they will keep in good condition until November. In pruning, shorten the shoots back to about two buds, and the leading shoots to 6 or 8 inches.

Black Currants have not been so reliable in recent years owing to the injury caused by Currant bud mite. No variety seems immune from this pest [Boskoop's Giant is commended as being less liable to attack], which makes clean stock more difficult to procure. The simple operation of pruning consists in the annual thinning of the old shoots to let in light, and others which cross, allowing the young growths to develop.

EDITORIAL NOTICE.

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Letters for Publication, *as well as specimens of 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.*

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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.

TUESDAY, MARCH 17—
Roy. Hort Soc. Coms. meet. British Gard. Assoc. Ex. Council meet.

THURSDAY, MARCH 19—Linnean Soc. meet.

SATURDAY, MARCH 21—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—41·9°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, March 11* (6 P.M.) Max. 48°; Min. 40°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March 12* (10 A.M.): Bar. 29·9; Temp. 42°; Weather—Fair.
PROVINCES.—*Wednesday, March 11* (6 P.M.): Max. 48° Cornwall; Min. 41° England N.E.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Herbaceous and Border Plants, Lilies, and Hardy Bulbs, at 12; Roses at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Perennials and Border Plants, Hardy Bulbs, &c., at 11.30; Roses and Fruit Trees at 1.30, Azaleas, Palms, &c., at 5; 760 cases Japanese Lilums, received direct, and 1,000 Miscellaneous Plants, Bulbs, &c., at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Vanda Cœrulea, Burmese Dendrobes, Established Orchids, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Clover Sickness.

The farmer who cultivates arable land is only too well acquainted with "Clover-sick land," for although red Clover is perhaps the most remunerative crop that can be produced both for its return as hay and for the improvement it effects in the fertility of the soil, yet on few soils can it be grown with success more frequently than once in four, five, or even seven or eight years. If Clover be sown at shorter intervals it grows freely enough until winter, when, as a rule, it is killed off to such an extent as to be worthless as a crop. The severity of the winter seems to have little to do with the amount of damage, nor has the richness of the soil or the cultivation it has received any marked effect upon the result. At Rothamsted attempts have been made since 1849 to grow Clover and other leguminous plants year after year on the same land, but the extent of the failure may be seen from the following figures for one of the plots where a complete manure, including phosphates, potash and nitrate of soda was used. In 1849, the first year, about 4½ tons of Clover hay per acre were obtained; a crop of Wheat was then taken and the Clover re-sown; in 1851 the yield of hay was only about one ton, rising to rather more than two tons in 1852, and followed by complete failure in 1854. During the next 20 years a crop of Clover was only obtained on four occasions, and each time between one and two tons only of hay were obtained; on five other occasions Clover was sown and failed completely; nor has any measurable crop been obtained since that time, though every other year an attempt is made to grow Clover, a bare fallow being taken as a preparation. The nature of the manures applied to the various plots made no essential difference to the results; where large quantities of potash were used the Clover was always better, but as far as could be seen no kind of manure would enable the land to carry Clover continuously. The only success attained in this direction at Rothamsted has been on a little plot, now on the lawn in front of the house but originally a piece of a rich border in the kitchen garden, where Clover has been grown with only one or two failures every year since 1854. The crop is now very weak and has to be frequently re-sown, but as lately as 1905 two cuts yielded at the rate of 23,000 lbs. of green stuff per acre, equivalent to more than 2½ tons of Clover hay per acre.

The destruction of the Clover plant in the winter was formerly attributed to an eelworm (Tylenchus devastatrix) in the soil, but whether this is ever a contributory cause or not, in most cases the plant is found to be attacked by the fungus Sclerotinia trifoliorum, which invades the crown and central stem of the plant and leaves behind in the degraded tissues the characteristic little black sclerotia, which form a resting stage of the fungus. So far, then, the case seems simple enough; in the Sclerotinia we have a fungus destructive of Clover and one which leaves the land infected with its resting spores, so that the land must be cropped without Clover for several years until the fungus has disappeared from the soil.

There are several reasons, however, for regarding this theory of Clover sickness as incomplete; admitting the fact that Sclerotinia effects the destruction of the Clover, it does not explain why Clover growing on land that has recently carried a healthy crop should thereby become more susceptible of infection. Air-borne spores are certain to drift on to the normal crop on healthy land, yet as far as has been observed infection does not take place, and when the Clover field is ploughed up in the autumn no sclerotia are left in the soil. In the ordinary course it is a healthy and not a diseased crop residue which is ploughed under, and though Sclerotinia will grow in the laboratory on dead Clover stems it has not been shown that the residue of dead Clover plants left in the soil become infected during the autumn and winter following the growth of the Clover crop so as to leave the ground full of sclerotia. Thus evidence is lacking for two points essential to the ordinary theory of Clover sickness: that a healthy Clover crop leaves behind sclerotia in the soil and that the origin of the infection which destroys the crop on Clover-sick land is sclerotia in the soil and not air-borne spores.

If mere infection is really the cause, why should Clover have remained healthy so much longer on the garden soil at Rothamsted than on the arable land? Sclerotia in scores have been picked out of the soil of this plot at one time, and can be found there abundantly enough to-day, yet the Clover manages to survive—weakly, indeed, but on the similar plots on the arable land it never survives the winter at all.

Again, Clover that is growing mixed with grasses continues indefinitely on the same soil without showing signs of infection. At Rothamsted, for example, on the permanent grass plots that are manured exclusively with mineral salts without nitrogen, more than half the vegetation is made up of leguminous plants, Lathyrus pratensis, and White and Red Clover being the chief species. Under these conditions no Clover sickness is apparent; similarly on the narrow strips of grass dividing the arable plots which refuse to grow Clover, both White and Red Clover plants are abundant and show no signs of dying out. As they must be exposed to contact with the spores of the disease we can only conclude that Clover plants living in grass land do not become predisposed to Sclerotinia infection.

Another fact of importance is that the crop on Clover-sick land sometimes escapes infection and destruction during the winter, when, however, it only continues to grow in a weakly fashion and yields badly. A good example of this was seen at Rothamsted, when parts of the plots on which attempts had been made to grow various leguminous crops for many years were ploughed up, and after five crops of Wheat were sown with Clover, Vetches and Lucerne in breadths extending across the old plots. Where the new Clover plot crossed the old ones the growth was weaker than elsewhere, although no disease was seen; similarly the Vetches were weaker where they came on the old Vetch plots, and the Lucerne showed the same weakness without disease where Lucerne had been growing previously. These facts would suggest that Clover sickness is only a special case of a more general phenomenon—the way the growth of any crop more or less unfits the land to carry the same crop again in the following season.

At Rothamsted Wheat has been grown for 64 years in succession upon the same land without much falling off in yield where a complete manure has been supplied; similarly Barley has been grown for 55 years and Mangolds for 32 years on the same land. But a decline in yield of the Barley, at any rate, can be traced, even if this is doubtful in regard to the Wheat, and it must not be forgotten that Lawes and Gilbert failed to induce Swede Turnips to grow for many years on the same land. Other crops other than those of leguminous plants are reputed to render the land quickly "sick," e.g., Flax and Strawberries; on the contrary every practical cultivator knows with what vigour a crop starts on land that has not produced a similar one before, just as the value attached by a gardener to "maiden loam" is not solely a question of the plant food it contains. There is thus some reason to suppose that in considering the benefit derived from a rotation of crops some unexplained factor exists, in that any crop does in some way injure the soil for the growth of the same crop in the following season, certain crops being much more potent in this way than others.

According to this view, when Clover is sown on land that has carried Clover not long before it becomes so weakened that it falls a ready prey to any spores of Sclerotinia which

may reach it, although it can resist the attack of these spores when it is growing on healthy land.

How the plant can injure the soil for its own renewed growth is still a matter of speculation; Dr. Whitney and his colleagues of the Division of Soils of the U.S. Department of Agriculture consider that the plant actually excretes substances toxic to itself, thus reviving one of the oldest theories regarding the rotation of crops, but their conclusions have not as yet found any general acceptance. Two French observers, Pouget and Chouchak, consider that the bacteria in the nodules of leguminous plants excrete compounds injurious to fresh plants, and bring forward an experiment to show that if Lucerne be watered with an extract from soil in which Lucerne had long been growing its yield is depressed. But in their experiments only four pots seem to figure and the yields are so small that it is very unsafe to draw any conclusions from them; in consequence their theory must be regarded as still entirely a matter of speculation. Other possible hypotheses may be advanced, such as the supposition that the bacteria in the nodules of the leguminous plants may by continued growth in the plant pass into a quasi-pathological condition and act as parasites (it is an observed fact that Clover plants on Clover-sick land form nodules freely and are not suffering for want of inoculation), but pending the results of a series of trials that are now in progress it would be idle to discuss the numerous possibilities. However, to the author, it seems that the fungus Sclerotinia trifoliorum is only the proximate cause of the death of the Clover plant, the ultimate cause of Clover-sick land is still to seek.

OUR SUPPLEMENTARY ILLUSTRATION.—One of the most interesting and valuable sections into which winter-blooming Begonias may now be divided is the type which Messrs. JAMES VEITCH & SONS have raised by crossing the tuberous-rooted varieties with Begonia socotrana. The first hybrid was distributed in 1885 under the name of John Heal, in compliment to their skilful plant-breeder, whose successful work is illustrated in these Begonias as in many other plants. Since that time a considerable number of varieties have been first exhibited at the shows and subsequently distributed in gardens. The variety Mrs. John Heal was sent out in 1895. The flowers are about 2 inches wide, the petals equal and overlapping, rich rosy-red, produced freely on plants 1 foot high (see fig. 71). In the Supplementary Illustration is shown a batch of plants which were cultivated at Eshton Hall, the residence of Sir M. WILSON, Bart., and they represent such successful culture we have pleasure in reproducing the following information kindly supplied by Mr. LEON SQUIBBS, the gardener at that place. "The cuttings were taken in March, and inserted in a compost of peat moss in the stove. As soon as they had made roots, each plant was potted singly into a pot 3 inches in diameter, using a potting compost of loam, leafmould, peat, and sand in equal proportions, all the materials having first been passed through a ¾-inch sieve. When they had rooted sufficiently, they were re-potted into pots 5 inches in diameter, the compost being fibrous loam, leafmould, and peat in equal parts, with some dried cow manure and a little sand. They were finally potted into 7 and 8-inch pots, a similar compost, with a little soot and bone meal added, being again used. The plants were cultivated in a moist stove atmosphere from start to finish, but they were shaded from hot sunshine. They were watered twice weekly, either with liquid manure from the farmyard, or after an application of Clay's fertiliser, and occasionally with soot water. All the flower-buds that appeared before September were pinched off, but after that time the plants were allowed to flower. Many of the sprays were 1 foot to 1 foot 6 inches, and the bloom 2 inches in diameter. It is advantageous to remove the plants into a house of intermediate temperature after they have developed a considerable number of flowers, as this ensures a longer period of blooming, and the plants are rendered more serviceable for house decoration; they have proved invaluable here for this purpose. Begonia Mrs. Heal surpasses Gloire de Lorraine in effectiveness. This latter Begonia is given the same treatment, and the plants have measured 3 feet in diameter and as much in height." It may be added that this type of Begonia, combining as it does characteristics of the tuberous-rooted and fibrous-rooted species, needs to be treated very

FIG. 70.—BEGONIA SOCOTRANA HYBRID.
(Showing growths from axils of leaves, and formation of tuber at base of stem.)

carefully as soon as the flowering season is past. At fig. 70 is reproduced a photograph showing the condition of a plant as it should appear at about March 1. At that time the plants are busy forming tubers, as the tuberous species would do, and also producing growths from the axils of the leaves, which is a characteristic of the fibrous-rooted species. They should be kept in a warm, freely-ventilated house, and watered sparingly about once each week. The culture should be directed to getting the tuber to swell properly and to mature fully, for which purpose it is necessary to keep the leaves healthy and green as long as possible. When the young growths from the axils of the leaves have become long enough, they may be removed for use as cuttings for the increase of stock. At the beginning of the month of June, the plants should be cut down to about 2 inches from the base, and they may then be cultivated for another season, but should not be hastened into growth by exciting culture.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held on Tuesday, March 17, in the Society's Hall, Vincent Square, Westminster. A lecture on "Beautiful Flowering Trees and Shrubs" will be delivered by Mr. G. GORDON, V.M.H.

FRIEDERICH LUCAS.—On February 9 the business manager of the German Pomological Society, FRIEDERICH LUCAS, of Reutlingen, was presented by his friends with a honorary gift. When Herr LUCAS resigned his office on April 1 last year, after a service of 20 years, the wish was expressed in horticultural circles in general to do honour to the man who had accomplished so much, both by his literary work and by his long-continued services in the improvement of fruit-growing among German-speaking peoples. Donations were subsequently received from all quarters of Germany, Austria, Switzerland, and other countries, insomuch that not only a writing table and chair were purchased, but a sum of 1,290 marks remained over, which will form a memorial fund, the "FRIEDERICH LUCAS Stiftung," the interest on this sum being expended in premiums to deserving students of the Pomological Institute of Reutlingen, as Herr LUCAS himself may decide.

BOTANICAL MAGAZINE.—The March number contains illustrations and descriptions of the following five plants:—

SINNINGIA REGINA, tab. 8182.—This fine purple-flowered variegated-leaved plant is closely related to S. speciosa, the wild ancestor of the cultivated Gloxinias. Nothing more is known of its habitat than that it was brought from Brazil by Mr. DE SMET-DUVIVIER, a nurseryman in Ghent. It was described in the *Gardeners' Chronicle* (Vol. xxxvi., p. 87) in 1904. The stem springs from a stout tuber, and the flowers are pendulous from short peduncles, about 15 to 20 blossoms being expanded at the same time. The cultural requirements are the same as those of Gloxinia; the plant seeds freely, and cuttings of the leaves may also be used for its propagation.

CYPRIPEDIUM DEBILE, tab. 8183.—This is a pretty little plant, not very showy, as green is the prevalent colour of the flower; the petals and sepals have, however, a brown blotch at the base, and the lip mostly white streaked with brown. It is suggested that it may be sufficiently hardy to be grown in the open, but it would require one of the higher ledges of the rockery to display its rather modest charms when it flowers in April. (See fig. 166 in *Gardeners' Chronicle*, December 23, 1905.)

PYRUS ARIA VAR. MAJESTICA, tab. 8184.—Many varieties of the White Beam tree are known, and the subject of this illustration is growing in the Kew Arboretum, where it flowers and fruits freely almost every year. The origin of this, one of the finest varieties of the species, is unknown, and it is regarded as probable that it originated in cultivation.

BERBERIS ACUMINATA, tab. 8185.—Like so many of the Barberries, this species hails from the East, having been discovered by DELAVAY in China (Yunnan) in 1882. It has since been found by Dr. A. HENRY and Mr. E. H. WILSON in the mountains of Western Hupeh, where it seems to occur at an altitude of 5,000 to 6,000 feet above the sea. The specimen for the illustration was supplied by Messrs. JAMES VEITCH & SONS, and was raised from seeds collected by Mr. WILSON, the plants flowering last May at Coombe Wood. The leaves of the evergreen shrub are lanceolate and spinous-serrate, the yellow flowers are borne on red stalks in fascicles of, usually, five to nine, and are followed by black berries with a glaucous bloom.

ROSA WILLMOTTIÆ, tab. 8186.—This beautiful simple Rose was raised by Messrs. JAMES VEITCH & SONS from seeds collected in Western

China by Mr. E. H. WILSON. It forms a shrub 5 to 10 feet high, and is nearly glabrous, with slender red-brown branches. The leaves are crowded and each bears about nine leaflets. The flowers are purple-rose, about 1 to 1¼ inch across.

CIGARS FROM LONDON GROWN TOBACCO.—We extract the following remarks from our contemporary, *Tobacco:* "Cigars made from Tobacco actually grown in London appear an impossibility and an absurdity, but in reality they are neither. A portion of the 1906-7 London Tobacco crop, grown experimentally at Regent's Park for the last International Tobacco Exhibition, has been manufactured. The plants were shown at the last Tobacco Exhibition—at the next, which takes place on the 21st inst. at the Royal Horticultural Hall—the cigars themselves will be shown. For the first time a representative selection of commercial seed from Cuba, America, Germany, and other Tobacco-growing countries has been brought to maturity on English soil. Tobacco growing is looming large just now as a first-class problem for Parliament. Ireland has wrested her charter of liberty in this respect from the Government; Scotland has already put forward a Bill for similar emancipation. And now, after all this, we have at one sweep the London-grown and London-cured leaf and the cigar manufactured therefrom. These cigars, let us hasten to add, are smokable, though a certain measure of patriotism and London pride is required to rise to the level of their aroma and taste. But one thing they are, and that is honest. They may be described without offence under the Merchandise Marks Act as the 1906-7 London crop, and as English all through, wrapper, 'bunch,' and filler. In order that the British public may see what London can do in the way of Tobacco growing, it has been arranged to make a special exhibit of these cigars at the Tobacco Exhibition as part of a display in which the pick of United States and Colonial leaf will also be included. They will be labelled Flor de London."

BIRDS AND SPANGLE-GALLS.—The *Kew Bulletin* (1908, No. 2) contains an interesting note showing that certain birds will eat the common spangle-galls, which form the well-known red plate-like bodies on oak leaves. These galls were found in the crop of a grey-hen, a black-cock, and a pigeon. It would be interesting to know whether they are of any nutritive value to the birds, or whether they are only picked up by them in mistake for seeds.

FIG. 71.—BEGONIA "MRS. HEAL": FLOWERS ROSY-RED.

Linnean Society.—A meeting will be held on March 19, at 8 p.m., when the following papers will be read:—The Rev. Canon Norman, F.R.S., F.L.S., &c., "The Podosomata of the Atlantic and the Arctic Oceans"; Mr. T. F. Chipp, "A Revision of the Genus Codonopsis"; Mr. E. Hindle, on the "Holothurians from the Red Sea."

Conditions of Employment at Kew.—We learn with satisfaction that one of the new regulations affecting the journeymen gardeners at Kew has been rescinded. The old practice was that men who had completed the two years' term as journeymen should be allowed to remain until they had obtained situations elsewhere, unless, as sometimes happened, they were not quite up to the mark. Such an arrangement was fair to the men; it encouraged effort, and it was advantageous to the gardens. The Board of Agriculture, however, recently decided that the term must be strictly limited to two years, with the result that something like a dozen men might have been thrown out of employment in winter. There is no garden, either public or private, where such a hard-and-fast rule is enforced, and the revision of the decision on the part of the Board cannot fail to meet with general approval. In answer to a question asked in the House of Commons on March 5 by Mr. Summerbell, member for Sunderland, it was stated that "the men who had completed their two years' term would continue to be employed until they had obtained situations elsewhere, provided that they continued to give satisfacion and that they used their best endeavours to find other situations."

Presentation in a Glasgow Park.—Mr. Gavin Prentice, who has been park foreman in Glasgow Green for the long period of 38 years, was presented on the 7th inst. with a purse of sovereigns from the parks' staff and interested friends on the occasion of his retirement. The presentation was made on behalf of the subscribers by Mr. Whitton, parks superintendent, who, in doing so, briefly recounted what had been done to improve the condition of the Green during Mr. Prentice's tenure of office, and said that nearly every tree and shrub now existing there had been planted under his supervision. Mr. Whitton then introduced Mr. Jeffrey, who has been for nearly 11 years outside foreman at the Botanic Gardens, and has been appointed to succeed Mr. Prentice.

Death of Mr. E. J. Castle.—Mr. E. J. Castle, a well-known horticulturist and writer, died at Lyminge, Kent, on March 4, at the early age of 39 years. For some time deceased was associated with Mr. Walter P. Wright in editing *The Gardener*, but removed to Lyminge owing to ill-health.

American Gooseberry-mildew.—At the Downham (Norfolk) Police Court on the 2nd inst. a fruit-grower was fined £10 for having on February 14 failed to adopt such measures for the prevention of the spread of the American Gooseberry-mildew as were specified in a notice served on him under Article 6 of the Order of the Board of Agriculture and Fisheries.

Bulbs failing to Bloom.—Complaints have been almost universal this season over the uncertainty of many bulbs, especially Hyacinths, to produce a good crop of flowers. The trouble has been felt as much abroad as in this country, and in many of the Continental journals we constantly meet with similar expressions of disappointment. Even in Holland and Belgium the same tale is told, and the cause doubtless is to be attributed to the exceptionally unfavourable summer of 1907, which prevented the proper ripening up of many bulbs, and thus caused a number of inferior ones to find their way into the markets.

Are Olives Fruits?—According to a paragraph in our contemporary *Le Jardin*, the Italian Government some two years ago, under a law prohibiting the importation of vegetables, refused to allow a consignment of Olives from Greece to enter the country. It required an action at law to decide that Olives are fruits, and the Italian authorities were mulcted in 400,000 francs damages, as well as in costs, for having acted on the supposition that they were merely vegetables.

Lilac Trees.—Lilacs are so well known for their troublesome habit of producing suckers, that the notice of the Rumpenheim Lilacs in the current number of the *Kew Bulletin* is of some interest. For many years a pair of Lilacs grew in the gardens at Cambridge Cottage (the residence at Kew of the two last Dukes of Cambridge), which formed clean trunks and produced no suckers. The larger trunk was 4 feet 2 inches high and 2 feet in girth. It is suggested that the plants, which were brought from Rumpenheim-on-the-Main, near Frankfort, were originally raised from seed and not from cuttings, as is more commonly the case, and that the lack of suckers may possibly be attributed to this circumstance. Since the death of the late Duke in 1904 the trees have been moved, one of them to Windsor, the other to the lawn in front of Kew Palace.

Fig. 72.—View in the Primula house at Messrs. J. Carter and Co.'s nursery.

NURSERY NOTES.

Messrs. Jas Carter & Co., Forest Hill.

At the present time Chinese Primulas are the chief feature in the nursery at Forest Hill, several large houses being filled with plants in full flower. They do not appear to be grown very strongly, but this may be an advantage, seeing that they are cultivated expressly for the production of seed. We noticed in one house a selection of a few plants of each colour specially set aside for cross-fertilising, and for producing seed for cultivation by the firm itself. But in the larger batches also, all the flowers were remarkably true to colour, and the plants possessed an equally good habit. Several distinct types were noted. One termed Bouquet had flowers of large size and a leafy development beneath each whorl of blooms.

Of white varieties, King Edward was one of the finest, but Elaine, a Fern-leaved variety with dark leaf stalks, is also a good one. Holborn Queen is pure white, with pale green foliage, and Princess May, a very fine blush-coloured flower, borne on bold trusses. Holborn Blue showed great improvement on the original type, and varieties of paler shades of blue and mauve were also observed. The variety Holborn Coral may be specially referred to as being of remarkable substance and a most pleasing shade of coral pink. The deep red varieties showed great advance on the original Chiswick Red, which has proved of so much value to breeders of Primulas.

The semi-double varieties are now procurable in most of the shades of colours found in the single flowers. Snowflake was the best white variety, being of good habit, with several whorls of flowers above each other. Prince of Wales is a lovely shade of pink, and the red and scarlet varieties were very bright.

In some of the houses the results of careful fertilisation with the brush were apparent, there being every indication of a good crop of seed. A separate brush is kept for each variety, and this effectually prevents any undesirable crosses being made.

The stellata varieties are kept by themselves, and in these the colours were very decided, several having a dark zone around the eye being very pretty. One variety of a bluish-mauve shade was distinct, and the bright crimson and vermilion shades were worthy of special note. A batch of plants with pure white flowers presented a mass of blossoms.

Cinerarias are also extensively grown for seed purposes. In one large house, which was filled with plants of the best florist's type, a few of the first flowers were opening, and a little later they will make a fine show. In another house the stellata type was well represented. The Cactus-flowered varieties were further advanced than the ordinary type, and showed that the plants will come very true from seed.

Herbaceous Calceolarias receive careful attention, and a large batch of plants was well advanced in growth. Gloxinias, tuberous Begonias, Petunias, &c., were being prepared to fill the houses after the present occupants have yielded their seed harvest. A.

THE FRANCO-BRITISH EXHIBITION.

By the courtesy of the secretary of the Franco-British Exhibition, which will be held at Shepherd's Bush, we are enabled to publish an illustration (fig. 73) of the exterior of the "Garden Club." The building has a frontage of 300 feet, and a depth of over 130 feet. The club will be under the direction of a committee, presided over by the Earl of Jersey, and including, among others, Viscount Selby, Lord Alverstone, Lord Blyth, Lord Desborough, and Lord Strathcona. Further particulars of the accommodation provided by the building and the conditions of Club membership were printed in our issue for February 1, p. 73

HOME CORRESPONDENCE.

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

The Recent Colonial Exhibition at Westminster.—It is greatly to be desired that before the Royal Horticultural Society holds its next exhibition of Colonial produce in June, that the authorities representing the several Colonies of the British Empire should, if they really appreciate the efforts of the Royal Horticultural Society, be far more energetic than was evidenced in connection with the recent show. What a remarkable contrast this Colonial Exhibition presented to the spectacle that was seen on the 3rd instant in the hall! It was at the best a poor and disappointing display, such as the promoters should have felt themselves humiliated to place before the public as representative of Colonial produce. It was easy to explain that much of the expected produce was delayed on board ship, but earlier shipping of the commodities would have prevented that incident. A feature which also needs the attention of the authorities is that such exhibits as those of the Army and Navy Stores, and some others, were quite heterogeneous in character and included produce from several Colonies not specified; thus they failed to furnish that particular information the public need. Every exhibit from any given colony should not only be staged as such under the control of the representative of that colony, but should have attached the name of the grower, the colony, and the district where it was grown. Home dealers, whether from London or elsewhere, should be excluded, because they are merely distributors, and not producers. *F.R.H.S.*

Cultivation of Species of Phormium.—Mr. G. B. Mallett, in his interesting article (in the issue of March 7) on the genus Phormium, gives as his experience that these plants thrive best and prove hardiest in sheltered and *well-drained* soils. He says "the cultivation of the various species of Phormium is solely a matter of light, *dry* soil and shelter." And again: "I should have no hesitation in planting P. tenax where I was certain of wind shelter and a *well-drained* soil." (The italics are mine.) I am surprised at this, for in its native country P. tenax (New Zealand Flax) is essentially a swamp, or, rather, an aquatic plant, for the New Zealand swamps are practically shallow lakes choked up with vegetation. It is in these swamps, often several square miles in extent, or in similar conditions, that P. tenax grows almost exclusively, thriving best and attaining its largest dimensions in about 1 foot of water, though it often grows in deeper water up to and over 4 feet deep. On the contrary, though isolated clumps may often be seen on the land, probably where folds or hollows of the ground favour a retention of moisture, they evidently are not at home there and, compared with plants growing in the swamps generally, have a stunted appearance. As a matter of fact, the Flax cannot hold its own on dry land against the Ti-tree and Bracken, and it is always noticeable how the serried ranks of the Flax end abruptly where the ground rises at the edge of a swamp. Nor is the climate so very mild in some parts where P. tenax grows. When surveying among the swamps at Okoroire (about 150 miles south of Auckland) one winter, there was a frost nearly every night for a month or more, enough to freeze the water in shallow pools, though ice never formed in the swamps, and the Flax was apparently not affected in the least. And P. tenax grows far south of this. It is true that it does not follow that the same conditions that suit a plant in its native country will be best for it in an English garden. The cultivation of exotic plants is generally a compromise. Nevertheless, P. tenax is so certainly a water-loving plant that I venture to suggest that growing it in dry and well-drained soil may result in a lack of vigour which renders it less able to withstand a low temperature, and so gives it the reputation of a lesser degree of hardiness than it really possesses. "The old-established clumps by the waterside in Edinburgh Botanic Gardens" that Mr. Mallett mentions are, I think, some support to this view. I think also that it is probable that it cannot stand much lime in the soil. Though I did not pay much attention to this point, it is my impression that there is no limestone formation of any sort in the Waikato district, where the great Flax swamps are, the whole area south of Auckland to Lake Taupo being chiefly of volcanic origin, and the swamp water is noticeably soft and generally strongly impregnated with iron. It was, I believe, largely owing to these same reasons (dislike of lime and a dry soil) that Iris lævigata was at one time thought to be deficient in hardiness, and it is a plant with a very similar semi-aquatic habit. Another very analogous case is that of Dierama (Sparaxis) pulcherrima. This grows in the Transvaal in marshy ground on the high veldt (much the same as the peaty bogs on the upland moors in this country). This plant also has the reputation of being half-hardy here, and certainly if planted in a light, dry soil, it does generally die out. But when planted in wet, peaty soil, or, still better, in a moderately stiff loam that holds the moisture well (and does not contain an excess of lime), it is perfectly hardy, flowering every year and increasing rapidly. *A. J. Bliss.*

Decorations at the Town Hall, Leeds. The Town Hall is a grand structure, and the principal apartment, viz., the Victoria Hall, is of great height and size. In this building, the Lord and Lady Mayoress recently gave a reception and dance to some 1,200 to 1,400 citizens and friends. The Lady Mayoress being a Canadian lady, the parks superintendent, Mr. A. J. Allsop, decided to give a Canadian aspect to his decorations. The large orchestra was studded and grouped with branches of Spruce, Scotch Pine, Larch, Swiss Pine, Birch and Alder in varying sizes. The floor surface was covered with common Bracken, and here and there patches of a strong-growing grass; out of this were (in what may be termed small glades) growing groups of Daffodils in variety

Fig. 73.—Exterior of "Garden Club" at the Franco-British Exhibition.

The idea was to suggest a portion of a Canadian forest, in which the musicians were to perform the dance music. On the front of the orchestra a small terrace was formed of white diamond trellising with stout pillars, on the tops of which were vases filled with Scarlet Pelargoniums. The trellis was daintily supplied with tall Pelargoniums also, all of them well furnished with flowers. In an open forecourt of this terrace, and level with the main floor space, were seats for the Lord and Lady Mayoress to receive their guests. Both sides of the main hall were furnished with diamond trellising for some 8 to 9 feet upwards, with recesses here and there for seats. In these the trellis was of a lighter character than the rest so as to give depth and variety. Over this trellis Ivy in variety was apparently growing from its base, with here and there some strong-growing pieces of Periwinkle furnished with scarlet berries, which suggested those of Pyracantha, and they were very effective. On the tops of this projecting trellis were groups of smaller Conifers, viz., Cupressus, Thuyopsis, Retinosporas in variety, with a natural admixture of Birch, large branches of Ribes and the ordinary Dog or Wild Rose. On the two latter were affixed quite naturally sprays of Crimson Rambler Rose (in imitation), the whole forming a beautiful picture when lit up in the evening. The large space under the gallery, which is at the opposite end to the orchestra, was grouped more or less in a similar way. The pillars that support the gallery were well furnished with strong-growing Ivy to imitate a natural tree. Out of these sprang in one case Birch branches naturally furnished with Rambler Roses, in another Dog Roses, and so on. Immense pieces of Bamboo were made the centres of groups of flowering and foliage plants worked out in a natural way. With the exception of Scarlet Pelargoniums, used for the terrace, the splashes of colour were mainly supplied by the Rambler Roses and Daffodils in variety. The idea and the way it was carried out gave great pleasure. *Yorkshire Gardener.*

Lilium giganteum.—The Rev. D. R. Williamson invites me to give my experience of the giant Lily, and I very willingly respond, albeit I have no secret to reveal, for this beautiful plant is among the easiest of its family to cultivate. It is about 40 years since a friend gave my father a couple of bulbs, which were at that time a novelty, and we have never been without the species since that time. The requirements of this Lily are fulfilled by a soil of good loam, with a liberal admixture of pulverised peat and some sharp grit, and a cool sub-soil. Shelter from parching winds in spring is essential, else the great, shining radical leaves, one of the chief beauties of the plant, get seared and torn. A woodland Lily,

it is usually recommended that it be grown in shade, but in the humid west it does best in full sunshine, although doubtless on hot soils in the south, as at Wisley, its growth is more vigorous among trees than in the open. Seed is produced in abundance, and germinates with the greatest freedom, but not until it has lain 12 months in the boxes. The bulbs take six or seven years before attaining flowering size. I have not tried Mr. Williamson's plan of mulching with farm manure, though it is easy to understand how growth in such a gross surface-feeder might thereby be stimulated to grander proportions. But I find that many flowering plants and shrubs, other than Lime-lovers, respond as freely to pure peat mixed with the staple as to anything else. The giant Lily is a grand subject for naturalising in woodland, but I have not yet tested whether its attractive foliage will escape the ravages of rabbits and hares. *Herbert Maxwell, Monreith, March 10.*

Grafting Varieties of Clematis.—The article which appeared in the issue for March 7 is interesting; but the writer does not touch upon a point of great importance, viz., "Is the hybrid Clematis more successful when grafted, or when cultivated on its own roots?" The failures that are so frequent and annoying are commonly attributed to the fact that the plants are not on their own roots; Mr. W. Robinson takes this view in *The English Flower Garden*, where he says: "The hybrid kinds are all grafted, and this is no doubt the reason why they die off like flies, and why these fine plants, of which hundreds have been raised, are so rarely seen well grown in gardens." I am not aware that the truth of this theory has been thoroughly established, my own experience having been inconclusive, and I think that the views of practical gardeners on the subject would be opportune. If gardeners could feel as sure of success with hybrid varieties of Clematis as, say, with Roses, they would have much less hesitation in planting them. Is the failure that suddenly overtakes the Clematis confined to grafted plants only? Are hybrid varieties of Clematis easily raised from layers, or does this depend on the particular sort that is being cultivated? *Harold Evans.*

Loss of Trees by Gale.—The gale that passed over England on February 22 effected much damage in this district. The storm was at its height at 3.30 p.m., and for about three minutes there was a perfect hurricane. The severity of the storm only lasted some 15 minutes, but for hours afterwards the wind continued high. Rain fell in torrents during the storm to the depth of 0.23 inch. During the three minutes already mentioned, some large Conifers, including Pinus austriaca, P. Cembra, P. Laricio, Abies excelsa, A. alba, &c., were uprooted; some of them were upwards of 60 feet in height, with a girth of from 3 to 4½ feet at 3 feet from the base. We had no fewer than 83 trees of this description uprooted, 57 of which stood on either side of a carriage road; the storm took a complete sweep through these 30 yards wide by 103 yards long, and did not leave a single tree standing. The scene of wreckage after the storm was a sight that one does not wish to see many times in a lifetime. This storm was the worst that it has been my lot to experience, notwithstanding that which occurred in Hertfordshire and Essex during the summer of 1897. *G. W. J., Kimpton Manor Gardens, Lincoln.*

Floral Arrangements.—Within the past few years the Gypsophilas, Statices, Saponarias, and other small flowers have, to a great extent, taken the place of green foliage in the arrangements of flowers for effect, and are regarded entirely as garnishing materials. This has led to many mistakes among the competitors at various flower shows, when, as in the case of Sweet Peas, Carnations, Chrysanthemums, &c., prizes are offered for decorations, and it is stated that no other flowers, but any foliage may be used. In such cases disqualifications have resulted through Gypsophila being introduced. In order to obviate this, the National Chrysanthemum Society have altered their rule, and in future where "other foliage" may be used, Gypsophila, Statice, and Saponaria may also be introduced in the arrangements. This alteration will undoubtedly be much appreciated by most exhibitors, and it is a rule which should be noted by other flower-show committees when compiling their schedules, for, in addition to the flowers named above, there are others which might cause trouble should the present rules be adhered to strictly. The Smilax, for instance, is often used while in flower. Asparagus Sprengeri is a more decided example, for though the flowers are comparatively inconspicuous, when present they add to the beauty of the greenery. The object of the restrictions has been to show the value of a particular flower when shown separately or with foliage, and it may be difficult, when other flowers are allowed, to draw the line. I have seen exhibits which have been disqualified through the use of Gypsophila, yet no notice has been taken of the use of Asparagus Sprengeri with flowers on the sprays. Experienced exhibitors should not need much advice, but I have seen quite old hands at exhibiting fall into errors through overlooking the fact that some rule has been altered. In preparing schedules, these small technical points should be given greater prominence, for there are always some among the defeated exhibitors who look them up. I remember once, when taking notes at a show, I was asked "Why should Asparagus Sprengeri in flower be allowed, while another exhibitor was disqualified because he had used Gypsophila paniculata?" I have referred to Saponaria, and as there are several species, it may be asked if all are admissible. I have not yet seen the rule in print, but it should be specified that it is Saponaria vaccaria and its white variety which are allowed. These are recent additions to the small flowers we see in Covent Garden Market. Last autumn the ordinary pink type was abundant. It has occurred to me that for the Chrysanthemum exhibits the Committee might have gone a little further, for during October and November the perennial Asters take the place of other small flowers. A. Tradescanti, A. vimineus, and A. ericoides include some pretty varieties with very small flowers on light branching racemes. It would perhaps be better to make a rule that where any special flowers are to be prominent, it should be left to the exhibitors to add any other foliage or small flowers as garnishing, and no disqualifications should occur, but judges could decide if the most had been made of the particular flowers, which should be the chief attraction of the exhibits. Or, it would be better still if the judges of the leading shows could meet and come to some definite arrangement which should apply to all shows, for at the present what is allowed at one show is disallowed at another, though the wording in the schedules regarding the rule may appear to have the same meaning. Disqualifications through some slight error dishearten new exhibitors, and though they may be clever at arrangements, they do not come forward again. In the Chrysanthemum exhibits there are other points which have to be considered; in one class the blooms shown in vases must not exceed certain dimensions. The exhibitors may keep within the bounds when arranging their exhibits, yet before the judges go round some flowers may fall over a little and exceed the dimensions. Disbudding, or, rather, "not disbudded" blooms is another question which has two sides. An amateur with a limited stock to select from may have to take some sprays of blooms from which it is necessary to remove certain flowers which have been damaged in some way; it may be that they have been disfigured by caterpillars or other insects, or, perhaps, damaged by wind or a little overblown. If the rule "To be shown as grown" is taken literally, no disfigured flowers can be removed, and this is a disadvantage to the exhibitors, and it also detracts from the beauty of the exhibits when viewed by visitors to the shows. During the past season the question of disbudding has been made a prominent feature at Chrysanthemum shows, and the decision that the flowers must be shown "as grown" in the "not disbudded" classes requires amendment. *A. Hemsley.*

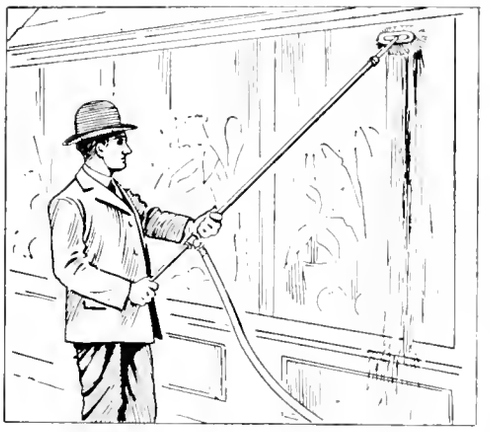

Fig. 74.—A window washing apparatus.

Poisonous Compounds for Horticultural and Agricultural Purposes.—It is satisfactory to find that the "Poisons and Pharmacy Bill" successfully passed its second reading in the House of Lords on the 5th inst., and was referred to a Joint Committee of both Houses of Parliament. The horticultural trade is materially interested in this Bill, as by Clause 2, power is given for persons, other than chemists, such as nurserymen, seedsmen, and agricultural agents, to stock and sell (under provisions to be made by the Privy Council) weed killers, insecticides, sheep dips, &c. It will be remembered that the "Traders in Poisonous Compounds for Trade Purposes Protection Society" has for years past been working to this end, and it is due to the efforts of the society that this clause has been inserted in the Bill. All those interested in the sale of these compounds should assist the society in its efforts to get Members of Parliament to support Clause 2 of the Bill, so that the same may become law this Session. *G. H. Richards.*

WINDOW WASHING APPARATUS.

An appliance similar to that illustrated at fig. 74 and manufactured by the Foley Manufacturing Co., Chicago, has recently been figured in the American horticultural journals. The water is supplied direct to the bristles of the brush by means of an attached hose, the supply being easily regulated by means of a small stop-cock. By its use, says our contemporary *Gardening*, the necessity for a pail and often a step ladder and other impedimenta are done away with, while the continuous flow of clean water swills the dirt right away, none of it being carried to the pail on the brush, as in the older methods. The brushes are made of water-proofed wood, and hand-stitched with non-rusting brush wire. The handle is made of galvanised steel, reinforced by a hollow wooden handle, which makes it impossible to collapse even if stepped on. Each one is equipped with a pair of ¾-inch standard hose couplings, and can be readily attached to any garden hose. It is made in three lengths, 6, 8, and 10 feet, but the brush can also be detached from the handle and attached to hose for washing wagons, carriages, or live stock, &c.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

March 3.—*Present:* Sir John T. Dillwyn-Llewelyn, Bart. (in the chair); Prof. G. S. Boulger, Rev. W. Wilks, Messrs. A. W. Sutton, R. A. Rolfe, J. Douglas, J. T. Bennett-Poe, C. T. Druery, de B. Crawshay, G. Massee, G. S. Saunders, W. Cuthbertson, G. Gordon, W. Hales, A. Worsley, E. M. Holmes, S. Pickering, F. J. Chittenden (secretary), and numerous visitors.

Inheritance of albinism in Orchids.—The following communication was received from Mr. C. C. Hurst, F.L.S.:—Two distinct and definite cases of albino Orchids producing coloured forms when crossed were recently brought before this Committee by Mr. H. J. Chapman. Such facts expected by the Mendelians, are important, inasmuch as they go to show that albinism in Orchids is inherited in a similar manner to albinism in Sweet Peas and Ten-week Stocks, and in accordance with Mendel's law. An albino Orchid is distinguished from a coloured one by the absence of purple sap. For instance, the well-known Paphiopedilum (Cypripedium) insigne Sanderæ is an albino form from which the

purple ray of the type has disappeared. Recent experiments with Sweet Peas and Stocks, carried out by Mr. W. BATESON, F.R.S., Mr. R. C. PUNNETT, and Miss E. R. SAUNDERS, at Cambridge, have fully demonstrated that the appearance of sap colour depends on the simultaneous presence of two colour factors. If both of the colour factors are present the sap is coloured, but if either (or both) of the colour factors is absent, the sap is colourless. With regard to the cases of Paphiopedilum (Cypripedium) brought forward by Mr. CHAPMAN, for the sake of simplicity we will call the two colour factors C and P. The typical coloured forms of P. insigne, P. bellatulum, P. callosum, and P. Lawrenceanum will therefore be carrying both of the colour factors C and P. Their albinos will, on the other hand, be carrying either the C factor alone, or the P factor alone (or neither). The known facts of the breeding of albinos of these four species seem to be in accordance with the conception that P. insigne Sanderæ and P. bellatulum album are carrying the factor C alone; while P. callosum Sanderæ and P. Lawrenceanum Hyeanum are carrying the factor P alone (or vice versâ), as the following table, comprising all the results known to me, shows:—

TABLE A.

1. P. insigne Sanderæ (C) × P. insigne Sanderæ (C) gives albinos (C C).
2. P. callosum Sanderæ (P) × P. callosum Sanderæ (P) gives albinos (P P).
3. P. Lawrenceanum Hyeanum (P) × P. Lawrenceanum Hyeanum (P) gives albinos (P P).
4. P. Lawrenceanum Hyeanum (P) × P. callosum Sanderæ (P) gives albinos (P P).
5. P. callosum Sanderæ (P) × P. insigne Sanderæ (C) gives coloured hybrids (C P).
6. P. callosum Sanderæ (P) × P. bellatulum album (C) gives coloured hybrids (C P).
7. P. bellatulum album (C) × P. Lawrenceanum Hyeanum (P) gives coloured hybrids (C P).

The next table gives the remaining possible matings between the albinos concerned, together with the *expected* results:—

TABLE B.

1. P. bellatulum album (C) × P. bellatulum album (C) should give albinos (C C).
2. P. bellatulum album (C) × P. insigne Sanderæ (C) should give albinos (C C).
3. P. insigne Sanderæ (C) × P. Lawrenceanum Hyeanum (P) should give coloured hybrids (C P).

Future results will show how far the above conception, based on Mendel's laws, is correct. If Mr. CHAPMAN thinks well to self the coloured hybrids that he obtained from two albinos, he may expect to get, on the average, nine coloured forms to seven albinos.

Bi-generic hybrid Orchid.—Mr. R. A. ROLFE, A.L.S., drew attention to the bi-generic Orchid Epi-diacrum Colmanii shown by Sir JEREMIAH COLMAN, Bart., and raised between Diacrum bicornutum ♀ and Epidendrum ciliare ♂, and remarked that this new and interesting hybrid approached closely in habit, inflorescence, and form of flower to the pollen parent. He also commented upon the question of the nomenclature of bi- and poly-generic hybrids, saying that he considered it best to compound the name of the hybrid from the names of the parent species, and to avoid conventional names, unless they were so formed, as long as it is possible to do so.

Green-flowered Primula sinensis.—Mr. A. W. SUTTON showed a plant of Chinese Primula with green flowers, arising apparently from chlorosis of the corolla. The seed had been sown in 1904 and onwards, and had each year bred true, until this plant had appeared among the seedlings raised last year. Only once before had Mr. SUTTON seen a similar thing, and that was in 1902, when the same kind of sport occurred in another stock of double white P. sinensis, but in that case the flowers were not so well developed. The pollen of this plant appears perfect, and possibly seeds may be obtained hereof.

Colour sports in Boronia and Eria.—Mr. H. J. VEITCH showed a plant of the albino form of Boronia megastigma, a portion of one branch of which bore flowers of the normal colour, purplish brown, thus reverting to the type from which the sport arose.

Crocus with parts in fives.—From Mr. H. J. ELWES, F.R.S., came a Crocus flower having ten perianth segments in two whorls, five stamens alternate with the outer perianth pieces, and a five-branched style.

Curious Mushroom.—Mr. H. HARRIS, of Denne Park Gardens, Horsham, sent a Mushroom having a second complete but inverted Mushroom attached to the pileus.

"Canker" caused by Monilia.—Mr. DUNLOP, of Armaghmore, sent a branch of Apple Lord Derby with cracked bark, giving it the appearance of incipient canker. Inspection revealed the greyish sclerotia of Monilia fructigena in the cracks, and Mr. MASSEE said that this fungus, which is perennial in the tissues, forms sclerotia beneath the bark, causing the latter to be raised and to crack. Spores are formed on these sclerotia, and the disease spreads thence to the young leaves, shoots, flowers, and fruits.

Begonia rust, &c.—Mr. R. H. CURTIS sent leaves of Begonia Gloire de Lorraine with rusty spots and markings on the leaves due to the attack of the Begonia mite. This pest is difficult to eradicate, but constant vigilance and fumigation whenever necessary will usually keep it under. A good wash for dipping plants attacked by mites is made by kneading a handful of soft soap with a quantity (indefinite) of flowers of sulphur, and dissolving the whole in 1 and 1½ gallons of water; but even this, probably the most deadly wash for mites, and, at the same time, harmless so far as the plants are concerned, is not always efficient in killing the eggs of the mite.

Tuberous Solanums.—Mr. A. W. SUTTON read a paper on "Wild Types and Species of Tuber-bearing Solanums," illustrated by lantern slides.

COLONIAL EXHIBITION.

MARCH 5.—The tenth exhibition of Colonial produce, held at the R.H.S. Hall, Vincent Square, under the auspices of this society, was opened on the above date by Sir Somerset French, K.C.M.G., Agent-General for Cape Colony. The exhibition much resembled those that have preceded it, and as several collections of fruits had not arrived in time for staging at the opening ceremony, the hall was even more sparsely occupied than on former occasions.

The principal exhibits were from the South African Colonies, but Nova Scotia contributed a collection of Apples, for which a Gold Medal was awarded. This high award was also granted to Mrs. C. DU P. CHIAPPINI, for table fruit decoration and collection of fruit; T. J. POUPART, Esq., Covent Garden, for Grapes, Apples, Melons, and other fruits; and the ARMY AND NAVY AUXILIARY STORES, for a collection of Colonial fruits.

So far as fruit was concerned, the Grapes hardly excelled the samples received so cheaply from Spain, and were much inferior in quality and appearance to home glass-grown Grapes. Melons lacked the attractive appearance seen in well-grown British fruits, but the round, ribbed green Murthe Melons from the Cape were of a delicious flavour, although some three weeks or more had elapsed since they were cut. The large yellow Peaches seen were not tempting; but some white Peaches of a medium size, and Nectarines, though small, were much more attractive. The Japanese Kelsey Plum was freely shown on all the Cape stands, many of the fruits being very large. It is a clingstone variety. Pears were plentifully shown, especially Williams' Bon Chrétien, Duchess d'Angoulême, and Beurré Hardy. These fruits had been carefully packed in boxes, and came to hand in a condition of perfection. The best Apples came from Nova Scotia and Ontario. Whether in tubs or boxes they were generally rich-coloured and handsome.

BRITISH GARDENERS' ASSOCIATION.

METROPOLITAN MEETING.

MARCH 7.—A meeting was held on this date at Carr's Restaurant, Strand. It was convened especially in the interests of gardeners employed in the London public parks, but was open to all engaged in horticulture, and a representative attendance was secured. Mr George Gordon, V.M.H., occupied the chair, and had for his supporters Messrs. E. F. Hawes (treasurer), John Weathers (secretary), T. Lewis, and R. L. Castle (members of the Executive Council).

The chairman opened the proceedings shortly after 7 p.m. with a brief introductory speech, in which he reviewed the necessity for, and the advantages of, a strong association of gardeners. He commented upon the isolation of gardeners, their inadequate pay, and the many difficulties under which they laboured, that individually they were almost powerless to remedy. In combination on co-operative principles, it might be possible to improve the condition of gardeners, and at the same time benefit the employers. The progress must necessarily be somewhat slow at first, but it was better to advance gradually and surely than to rush ahead heedlessly and court disaster. The chairman regretted to hear some say they would wait to see what the B.G.A. did before joining. This was an exceedingly selfish idea; it simply means that they would take advantage later of the work and self-denying efforts of those who were now strenuously endeavouring to establish the association on a substantial basis.

Mr. J. Weathers dealt with the various attempts which had been made to form gardeners' societies, stated the mistakes which had led to failure, and described the origin of the British Gardeners' Association. One of the essential objects was to distinguish the true gardener from those who claimed the title without justification, of whom unfortunately there were far too many. When horticulturists speak of a gardener they know exactly what they mean, but the general public use the name in a very vague manner, and this has resulted in a serious lowering of the status and pay of experienced men. The B.G.A. requires full information respecting a man's experience and ability before admitting him to the ranks, and the Certificate of Membership is therefore a proof that he is not an impostor as regards the work he undertakes to perform. This should not only be beneficial to the man, but also a safeguard to the employer. Mr. Weathers referred to other evils, such as excessively long hours, unpaid overtime, insanitary and incommodious bothies, which demanded attention, and upon which the B.G.A., it was hoped, might eventually be able to effect improvements. Over 300 members have joined the association in the past year, but though the total now exceeds 1,200, many more should join, as the annual subscription of 2s. 6d. is so low that it must be within the power of all.

The advantage to gardeners of having an official body behind them in the case of any dispute about the payment of wages, keeping the terms of agreements, verbal or otherwise, as to notice to quit, &c., were described at some length, and several instances were given where the B.G.A. had already rendered substantial help in this way, without having to resort to legal remedies. All such matters were enquired into very closely by the Executive Council, and when a legitimate grievance was found to exist, the rules authorise the officials to deal with it as may be deemed advisable in the interests of members.

The *Journal* of the B.G.A., which has been issued quarterly, and will now be published monthly, is also a means of helping gardeners. Reference was made to the Cardiff District Council, who had adopted the B.G.A. Certificate of Membership as a sufficient indication that the man was a qualified gardener. It was believed that both in the London County Council parks and the Royal parks and gardens, substantial improvements might be effected if the authorities would give attention to this subject, and endeavour to make a satisfactory distinction between the experienced and inexperienced men.

Mr. E. F. Hawes followed with some pertinent remarks upon the admission of members, stating that all the B.G.A. required was proof of experience, which need not have been gained in large gardens only. It often happened that highly-qualified men had been trained in small places. He also referred to the examinations in horticulture which, as at present carried out, did not fulfil the objects which the B.G.A. had in view. In reply to a question that was asked Mr. Hawes further stated a sub-committee of the B.G.A. Executive Council had been appointed to consider the subject and submit a scheme and report at the next annual meeting.

Mr. T. Lewis gave some interesting reminiscences about bothies of former years, and he described one that was most seriously defective 30 years ago, and is very little better now, notwithstanding the sanitary inspectors and local boards.

In response to an invitation from the chairman, questions were asked by those present, which were fully dealt with by the secretary, and, after a prolonged discussion, it was decided that a metropolitan branch of the B.G.A. be

formed to meet periodically on the same lines as the other branches of the association. It was also decided that a meeting should be held for the purpose of organising the branch, on March 21 at the same place, i.e., Carr's Restaurant.

RICHMOND (SURREY) BRANCH.

February 25.—A public meeting was held in Richmond, Surrey, on the above date. Mr. E. F. Hawes gave an interesting address, and especially emphasised the need for co-operation amongst professional gardeners. He was supported by Mr. Dallimore, who dwelt on the necessity for drawing a line of distinction between the gardener and the garden labourer, and by Mr. J. Weathers, who gave much useful information relating to the B.G.A., and said that the executive council was always ready to support any of its members in litigation, provided they could state a good case. *W. B. L., Branch Sec.*

HORTICULTURAL CLUB.

March 3.—The usual monthly meeting took place on the above date, Mr. Harry J. Veitch presiding. Mr. Chas. Pearson, who had promised to give a lecture on Birds Eggs, was unable to be present. Mr. R. H. Read very kindly filled the gap at short notice, and gave a description of an ornithological excursion in Southern Spain, illustrated by numerous lantern slides. The lecturer prefaced his exhibition of views and nests *in situ* by a graphic account of his trip in the spring of 1906, the object of which was the study of the birds of that country. On the way thither he passed through Bordeaux, where he saw immense forests of Pines, largely devoted to the production of turpentine, every tree being scored longitudinally and provided with little collecting cups, the raw product being worked up by Terebine factories on the spot. Passing onwards, the various phases of spring vegetation were touched upon, and also, of course, the numerous species of birds, many of which were obviously migrating in enormous numbers on their way hither and elsewhere, willow warblers, blackcaps, nightingales, &c., figuring among them. Arrived in the Jerez or sherry-producing district of Spain—the word sherry being really an approximation to the Spanish name, while the old word sack was a corruption of seco or dry, sherry sack meaning dry sherry—the lecturer made his way to the curiously constituted bird paradise known as the Marismas, a vast area of flat land covered during the winter and spring by about 2 feet of water, which dries up in the summer, leaving large expanses of sun-dried mud, varied by stretches of sand and shingle. Birds of innumerable kinds abounded here—herons, stilts, terns and other waterfowl, and egrets, kites and other birds of prey. A curious arboreal feature in this district was that owing to the scarcity of fuel, the pine trees were all denuded of their lower branches and were consequently reduced to somewhat mop-like forms. In some places drifting sand invaded both trees and smaller vegetation, and some of the slides showed curious effects arising from it. Among the most interesting slides were those showing various nests, such as those of herons and eagles, &c., which were built high up in lofty trees, while another series depicted ground nests, in many cases hardly worthy of the name, the eggs being laid in all but invisible groups among rough stones and shingle, and by their mottled coloration, almost defying the eye to detect them. The nest and eggs of many aquatic birds were also shown cosily planted amid the reeds and rushes, which in many cases necessitated standing knee-deep in water in order to obtain the photograph.

SCOTTISH HORTICULTURAL.

March 3.—There was a crowded attendance in the Goold Hall, Edinburgh, on the above date, of members of the Scottish Horticultural Association, when Mr. Whytock, gardener to the Duke of Buccleuch at Dalkeith Palace, the president of the association, delivered his inaugural address. His subject was "The Horticultural Outlook." Horticulture, he said, as they had to deal with it at the present time, might be divided into four large important and distinct sections, namely, nurserymen and seedsmen, market gardeners, city and town gardeners, and the private gentleman's gardener. Scottish gardeners were found the world over, and from that chief centre in Scotland they might safely assert a large proportion of these men had gone forth. The highest excellence in the large private gardens in Britain was undoubtedly attained between the years 1850 and 1870, during which time it was said that Drumlanrig was the finest garden in Europe. Nemophilla, Verbenas of various colours, Stocks, Tom Thumb Pelargoniums, and Calceolarias which were used at Drummond Castle, Bothwell Castle, and Tulliallan Castle gardens about 1860 would be despised now. Mr. Whytock compared the improved lot of the young gardener at the present time with his lot in past years, when the journeyman's wage was 11s. weekly. By 1870, it was pointed out, the period of depression in trade had passed away. Horticulture began to be thoroughly democratised, and the market garden, public gardens and pleasure grounds came into prominence.

There was probably no city in the kingdom that had been more favoured with winter gardens in their parks and gardens than Glasgow. As few of these glass houses were in existence when the present superintendent, Mr. Whitton, was appointed, it would seem that that very able gardener by his initiative induced liberal-minded merchant princes in Glasgow to give large sums for their construction, and also to make gifts of beautiful pleasure grounds. In spite of the agitation which had been carried on since the year 1870, Edinburgh had not yet got anything of the kind. After a reference to the excellent entertainment which the Society's shows provided, the President said that during the past 30 years in the enormous increase in industrial and mercantile energy, and the corresponding increase in wealth, horticulture had been equally energetic. The people had now splendid pleasure grounds and beautiful gardens of their own to walk in and enjoy, and they had brought to their own doors incomparably better fruit, flowers, and vegetables than could be got 30 years ago, and at such low prices that it was surprising they could be so cheaply produced. There was admittedly some depression at present, but they were justified in thinking the depression would soon pass. Commercial horticulture had a great future, and probably gardeners would find that they would have more specialists in their ranks. The art of gardening would flourish more than it had yet done, and there would be plenty of room and good wages for competent men.

An exhibit of Lilacs and Indian Azaleas, grown by Mr. Reid, was shown during the evening, which bore testimony to the efficacy of electric light in bringing the bloom rapidly to perfection. All the plants had been grown side by side, but two of the Lilacs and two of the Azaleas had been continuously exposed to electric light for from 10 to 14 nights, and were in beautiful flower, while in the plants shaded from the light the flowers were mostly in the bud stage.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

February 20.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Warburton, Cowan, Sander, Keeling, Shill, Ashton, Cypher, Parker, P. Smith, and Weathers (hon. sec.).

There were fewer Cypripediums shown on this occasion, owing to the lateness of the season for these Orchids, but there was a first-class show of other subjects.

J. Macartney, Esq., Bolton (gr. Mr. Holmes), exhibited Lælias and Cattleyas in competition for prizes offered by Messrs. Hugh Low & Co., and was awarded a Bronze Medal, while the same exhibitor gained a Silver Medal in the "Thomson" Competition.

A. Warburton, Esq., Haslingden, gained Silver Medals in the "Sander" Competition and in the "Thompson" Competition. Amongst the plants shown by Mr. Warburton were Cypripedium × Empress of Russia, which received an Award of Merit, and Odontoglossum sceptrum var. Masoreelianum, an albino form, and to this a First Class Certificate was granted.

H. J. Bromilow, Esq., Rainhill, Liverpool (gr. Mr. Morgan), staged a group of Cypripediums, many of which were well-known species and hybrids. Cypripedium Fairrieanum var Othello, a handsome dark variety, received an Award of Merit. A Silver Medal was awarded to the group.

R. Farrer, Esq., Carnforth, was awarded a First Class Certificate for Odontoglossum × ardentissimum Ingleborough var.; the flower is distinct and beautiful, being not unlike O. × a. var. Robsoniæ.

S. Gratrix, Esq., Whalley Grange (gr. Mr. Shill), gained First Class Certificates for Cypripedium × aureum var. Lækenense, and C. × Mrs. J. E. Shill (Actæus × Leeanum), also an Award of Merit for Dendrobium Thwaitesiæ.

Messrs. Charlesworth & Co., Bradford, staged a charming group of plants, to which a Silver Medal was awarded. In the exhibit was Sophro-Lælia Feliciæ, a richly-coloured hybrid between Sophronitis grandiflora and Lælia Dayana, and to this plant an Award of Merit was granted. Cymbidium Woodhamsianum, shown by the same exhibitor, received a similar award.

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherby), exhibited Odontoglossums, including both species and hybrids. A Silver Medal was awarded the group, and the following four plants were given Awards of Merit:—O. × Warnhamense, O. × Harryano-triumphans Ward's var., O. × Ossulstonii Ward's var., and O. Pescatorei var. Louise.

R. Ashworth, Esq., Newchurch (gr. Mr. Fletcher), staged a group, which included Odontoglossum × Loochristiense var. Mikado. (Bronze Medal.)

Messrs. Cypher & Sons, Cheltenham, were awarded a Silver Medal for a choice display, consisting of good Cypripediums, Dendrobiums, &c. Bronze Medals were awarded to Messrs. Heath & Sons, Cheltenham; Moore & Co., Rawdon, near Leeds; J. E. Sadler, Newbury, Berks; Keeling & Sons, and W. Shackleton, Bradford, for groups of Orchids. *P. W.*

COMMONS AND FOOTPATHS PRESERVATION.

At the recent monthly meeting of the Commons and Footpaths Preservation Society, it was reported by the chairman (Lord Eversley) that the society had received from upwards of 200 members of all parties of the House of Commons promises to support its Rights of Way Bill, introduced by Mr. R. Winfrey, M.P., the second reading of which had been set down for May 29. The Bill provides that proof of the use of a way for twenty years without interruption or permission in the case of freehold land, or forty years in other cases, shall be sufficient to enable a court of law to assume that dedication has taken place. The solicitor stated that in consequence of the society's opposition, the Liverpool Corporation had withdrawn from its General Powers Bill a clause which would have enabled the corporation to close public footpaths extending over its Rivington Waterworks Catchment area without complying with the safeguards imposed in the public interest by the Highway Acts. The threatened sale of the site and grounds of the Duke of York's School at Chelsea was also considered, and it was unanimously resolved, upon the motion of Sir William Vincent, seconded by Sir Robert Hunter: "That in the opinion of the society it is eminently desirable that if the removal of the Duke of York's School from Chelsea to Dover be completed, a portion of the present site should be reserved for open space purposes, especially as it is understood that the cost of the removal would be more than met by the sale of only two-thirds of the site at Chelsea, and that such action as may be necessary be taken on behalf of the society in Parliament or elsewhere to attain this end." It was reported that the society's scheme for the regulation of Towyn Trewan Common, Anglesey, a tract of 1,300 acres of open land, was proceeding satisfactorily. Up to the present £1,391 had been received or guaranteed towards the £1,800 needed to acquire Ludshott Common and the wooded slope facing Waggoners' Wells, Bramshott, 560 acres in extent and one of the most beautiful commons in the Hindhead district. It was stated that only three weeks remained for raising the residue of the purchase money—£407—and it was decided to issue an appeal for this sum.

ANSWERS TO CORRESPONDENTS.

CHRYSANTHEMUMS TO FLOWER IN JANUARY: *H. Reynolds.* It is not an easy matter to cultivate the latest flowering Chrysanthemums. We have before us a letter from one of the leading growers, who states that where one succeeds ten may fail, and this has been repeatedly proved. This correspondent sent splendid blooms of one variety to market in January, but we learn from another market grower that with him the same variety has entirely failed. Cultivators have to reckon with the weather, and last autumn was particularly unfavourable for the late varieties. The plants may be started early, but must be kept growing freely and stopped from time to time until about August. Only the strong, free-growing shoots should be left to mature their flowers; the most successful cultivators get from eight to twelve blooms on each plant. In some varieties fifteen blooms of good quality may be grown on each plant. It is essential to provide sufficient pot room and manure to keep the growth vigorous and free up to a certain point, but it being necessary to secure flower-buds, if growth appears too vigorous, the manure must be withheld until the buds appear. The variety Mrs J. Thompson has held out up to the end of January, Allman's Yellow nearly as late, but Nagoya does not hold out quite so long. Madame R. Oberthur has been very good up to last week. Madame Therese Panckouke is one of the very best. T. Canning is a good flower, but few growers succeed with it. The latest crimson variety noted in the market is W. J. Crossley, but this requires careful treatment. Growers who fail with this variety succeed better with Matthew Hodgson. Only those cultivators who have the advantage of sunlight during the autumn can grow the latest flowers. In districts where fogs prevail, it is next to impossible to flower Chrysanthemums so late in the season.

CINERARIA SEEDLING: *H. G. L.* There are varieties already in commerce similar to the one you send us, and which has no particular merit.

CORRECTION.—In column 3, p. 146, of our last issue, for Rhamnus catharticus read Hippophaë rhamnoides.

DAMAGED FOLIAGE: *A. B.* By the appearance of the various specimens received, it is evident that there is a very unsuitable atmosphere, at times at least, in the house in which the plants are cultivated. If the interior of the house has been recently painted, or if the hot-water pipes have been painted with unsuitable colouring material, or even if the house has been insufficiently ventilated, the plants might be expected to suffer in this manner. Such damage has occasionally arisen from fumes from the stokehole getting in. These are matters which you must investigate yourself. Meanwhile, do not employ an excessive degree of fire heat; ventilate carefully, leaving the ventilator open just a little throughout the night.—*Constant Reader.* See answer to *A. B.* Condensed moisture, by reason of the temperature falling suddenly, may have contributed to the injury.

EMPLOYMENT IN THE LONDON PARKS: *R. E.* The public parks of London are under the management of two authorities—the London County Council and His Majesty's Board of Works. The latter authority has control over the Royal parks, including Hyde, Regent's, St. James', Greenwich, &c. For admission to these you should apply to the respective superintendents. For admission to the staff of the London County Council's parks apply to Col. Sexby, 11, Regent Street, London, W. The wages of the gardeners employed in the London parks are highest under the London County Council.

EVERGREEN OAK: *T. H. G.* The spots on the leaves are due to a fungus of the genus Ascochyta. Species of this group cause leaf spots on many plants. Burn all fallen leaves as soon as possible. If the Oak is but a bush, hand-picking of the leaves and burning them will prevent the disease effectually. Spraying will be of no use, as the fruiting portion of the fungus lies well protected underneath the felty layer of stellate hairs on the lower surface of the leaves. This special pest is called Ascochyta quercus ilicis (Guss.).

GARDENING IN AMERICA: *J. S.* A list of American gardening journals with their addresses was published in our issue for February 15 last. In respect to wages paid to gardeners in America, they vary as in this country, but they are generally higher than in England, against which must be set the increased cost of living in that country. As an example of the knowledge required and the wages paid, it may be remarked that in a recent issue of the *Florists' Exchange*, published at Duane Street, New York, appeared an advertisement for "a first-class Rose, Carnation, Chrysanthemum, Violet, and general stock grower," the remuneration offered being 15 dollars per week, a sum equal to £3 2s. 6d.

HARDY CYCLAMEN: *B. L.* In regard to the length of time these species require to become established, much depends upon the nature of the corms. If they are imported (collected) corms, one year is sufficient for *C. neapolitanum*, but very old corms of this species may never regain strength after transplantation. If the site is somewhat dry, and there is ample lime in the soil, *C. Coum* will become perfectly established in the second year, but old corms may not break into growth for several years afterwards. *C. europæum* is not a satisfactory garden plant at any time, and, although many thousands of corms are annually collected and sent to this country, but few survivors remain in a thriving condition in the third year. Home-raised seedlings are not much better than imported corms, and many die before flowering. The best way of establishing Cyclamen is to pot the corms, start them in a frame, and plunge the pots outside as soon as growth is in evidence. Allow the corms to remain until they flower and seed. When in seed, plant them out in their permanent home. These plants bury their own seeds, and thereby form colonies around the original clumps.

HIPPEASTRUMS: *H. S.* The material received is not sufficient for proper examination. The portion of flower-spike mentioned in your letter was not enclosed!

HYACINTHS: *W. H.* There are traces of roots on your Hyacinths, but they have been destroyed by a small mite, a species of Rhizoglyphus, probably R. dujardinii, which is known to occur on roots of Hyacinths. It would be better to place the bulbs on a layer of sand and not directly on the soil, as is done in your case. The sand encourages the growth of roots, and afterwards when penetrating into the soil they are better able to resist an attack of Rhizoglyphus.

MANURES FOR VINES AND PEACHES: *Anxious.* Nitrate of soda and sulphate of ammonia supply immediately available nitrogenous plant-food, while sulphate of potash and superphosphate supply the mineral elements only. Bone meal supplies both phosphates and a little slowly-acting nitrogen. For vines mix together one part sulphate ammonia, two parts sulphate potash, and three parts superphosphate, and apply at the rate of ½ oz. per square yard once a week from the time the laterals are 1 foot in length until the berries begin to colour. The mixture may be sown on the surface and watered in with a weak dilution of drainings from the cow-shed. Each watering after the Grapes are set should be sufficient to pass through the soil and drainage. When vines are in a strong, healthy condition and heavily cropped, and it is doubted whether the berries will finish perfectly, a good external watering of cowshed drainings through a liberal mulch of rotten manure very often turns the scale in favour of the Grapes. Immediately after the Grapes are cut, both the external and internal borders should receive an application of bone meal at the rate of 1½ ozs. per square yard, to be lightly forked in. The vines will also derive great benefit from another mulching of short manure or decaying leaves to keep the surface moist during the autumn months. For Peaches, lightly fork into the border during winter or very early in spring a mixture composed of two parts bone meal, one part sulphate of potash, and three parts superphosphate, to be given at the rate of 4 ozs. per square yard. When the Peaches are set, and the trees are in free growth, a liberal application of diluted cow-shed drainings should be given every evening, as the roots then have the benefit of a cool, refreshing bath, extending throughout the night. At this stage of growth, and more especially if the weather is warm, it is not easy to water a properly-drained tree too liberally.

MANURES FOR YOUNG VINES: *Constant Reader.* The success of a vine border will depend greatly upon the class of soil at your disposal. The soil should consist of two-thirds good friable, turfy loam, the fibre of which will not too readily decay, and which will at all times admit of a free passage of water, which the vine requires copiously. But lest the soil should in course of time become close and inert, the remaining third should consist of lime-rubble, powdered charcoal, and burnt earth, with 3 lbs. bone meal, ½ lb. sulphate of potash, and 2 lbs. superphosphate to each 2 cwt. of soil. Animal manures need not be used for young vines, but a liberal application of weak liquid manure from horse stables or cow-sheds may be given in subsequent years at short intervals from the time the leaves unfold until the fruit is nearly ripe.

NAMES OF FRUITS: *J. C. P.* Apple Rymer.—*W. B. B.* Dumelow's Seedling, syn. Wellington.

NAMES OF PLANTS: *R. F.* 1, Pittosporum tenuifolium; 2, Danaë Laurus (Alexandrian Laurel); 3, Podocarpus chilina; 4, apparently Nerium Oleander; but the leaves are usually in whorls of three.—*T. N.* 1, Phillyrea media buxifolia; 2, Osmanthus rotundifolius.—*W. W. H.* Sparmannia africana, a South African plant. It thrives admirably in the dwelling-house, and may often be seen in bloom in cottagers' windows.—*T. I. T.* 1, Dendrobium Kingianum; 2, Iria acervata; 3, Miltonia spectabilis; 4, Ada aurantiaca.—*J. J.* Epidendrum ciliare.—*V. H.* 1, Selaginella Wildenovii; 2, Nephrolepis exaltata; 3, Pteris longifolia; 4, Polystichum angulare; 5, Adiantum cuneatum; 6, Adiantum caudatum.—*G. C.* Sequoia sempervirens.

QUICK HEDGE: *V. S.* The shoots are suffering from a species of Cytospora, which is the forerunner of a more highly-developed fungus of the genus Valsa. All the Rosaceous plants are liable to its attacks. If you cut the plants back beyond the diseased spots, it may save the rest.

SPECIALISING: *F. B.* If you wish to become a specialist in some branch of horticulture, you cannot do better than continue your studies and duties among Orchids, of which plants you have some knowledge already. To become an expert in any one branch of gardening needs not only an aptitude for that particular section of gardening, but also a love of the subject. If you have the artistic taste and instinct for landscape work, that branch of gardening is to be recommended. You should endeavour to obtain admission to some large garden, such as the Royal Botanic Garden at Kew, where you could gain an insight into most of the branches of horticulture, and thus choose for yourself.

VIOLETS: *E. G. S.* The Violets are attacked by the fungus Ascochyta, often referred to in these pages, and for which there appears to be no remedy. Procure a fresh stock of plants.

VIOLETS FOR CANCER: *J. W.* We receive occasional letters from correspondents asking whether the application of Violet leaves can be used with any expectation of cure in cases of cancer. It cannot be too strongly stated that in properly diagnosed cases of this disease such experiments are worse than useless. They involve waste of invaluable time, and defer the surgical aid which, so far as our knowledge goes, affords the only chance of relief that can be hoped for. Of course there are some cases known, but they are unfortunately rare, in which the growth has become apparently naturally arrested in its advance, but the advice of a properly qualified medical man should be sought in every instance as early as possible, for therein lies the patient's best—we had almost said only—chance.

COMMUNICATIONS RECEIVED.—R. L. H.—H. M.—T. G. D.—Hortus—Constant Reader—E. S. S.—H. M. V.—E. B.—C. B. P.—W. W., Dudington—V. H. L.—W. J.—R. H. S.—Wisbech—H. M.—Rev. G. H.—C. T. D.—P. Aquatias—S. A.—J. Whitton—H. R. R.—F. J.—R. Woodward, Jun.—W. J. B.—T. C.—F. G. T.—H. S. T.—de B. Crawshay—A. O.—J. M.—T. L.—W. C. A. & Cie.—F. K.—W. E. G.—V. G.—W. H. W.—J. O'B.—J. U.—G. P. S. H. R. R.—F. G.—H. R. G.—J. L.—W. McI.—J. M.—W. C.—Major B.—G. B.—W. L.—W. T.—Naval Officer.

WINTER-FLOWERING BEGONIA, "MRS. HEAL," A HYBRID FROM B. SOCOTRANA AND A TUBEROUS-ROOTED VARIETY; AS GROWN AT GARGRAVE GARDENS, NEAR LEEDS. THE SPECIMENS WERE CULTIVATED IN 8 IN. POTS AND GREW TWO FEET OR MORE IN HEIGHT.

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CONTENTS.

ILLUSTRATIONS.

SEEDS AND SEEDLINGS.

NOW that the time for general seed-sowing is at hand, gardeners should bear in mind that upon the quality of the seeds will depend mainly the character of the plants which will result from their sowing. The first essential of a seed is that it shall be of such a nature as to practically ensure that the resulting plant will reproduce the parental character undeteriorated. It is because a large number of plants under cultivation are of such a mixed character, and their seeds consequently cannot be relied upon to reproduce the parental form, that it becomes necessary to propagate them by cuttings, budding, or division.

For the amateur to collect seed from plants of this description is to court what florists would describe as failure, though it occasionally happens that amongst the varied offspring a valuable novelty appears, by reason of the capacity for variation which is possessed more or less by all plants. At the same time, the florist has found that if skilled and careful selection is carried out, seed can be obtained which will reproduce the parental type truly, with little or no tendency to variation. In such cases the reputation of the seed-grower is an important factor to the purchaser, forming as it does some guarantee for the quality of the crop.

Seed also varies in respect to its state of development. If a packet of seed be examined, it matters little what seed it may be, it will be found that the grains vary in size, and as greater size usually indicates a larger store of nourishment for the incipient seedling, it is obviously worth while to sow the larger ones in preference to the smaller. This is especially the case where seeds are of sufficient size to be sown separately.

It is very important that seeds should be sown thinly in order that the seedlings may be given a fair start. No matter how good the seed may be, if on germination a crowd of seedlings is produced, the tiny plants will suffer a weakening effect that can scarcely be overcome by subsequent thinning out, a process that is often indulged in to a wasteful degree. It is not intended, however, to imply that thinning out should always be unnecessary, for in practice it is sometimes desirable, even when the seed has been sown with judgment. But the amateur is too often induced to err in the other direction, i.e., of sowing too thickly, by the fact that the packet of seed supplied to him would often suffice to fill his space entirely if every seed were given an opportunity to grow, and hence he sows within a small area which a good, healthy plant could entirely fill to advantage enough seed to produce scores. Nature commonly avoids this. Take, for instance, a ripe Poppy capsule raised aloft on its slender stalk. Round its upper edge is to be seen a series of perforations almost like those in a pepper castor, and as the wind blows the fruit sways backwards and forwards, and slowly scatters its contents broadcast over a considerable area. All the Composites send their seeds far and wide; the Balsam tribe and the Woodsorrel are types which shoot their seeds yards away from the parent. The result, as we see by chance-sown plants in our gardens, is such a measure of robustness which is rarely seen in plants raised from seeds sown by the packet in a limited area.

The seed sower should, therefore, first obtain seed of really good plants from a reliable source, and finally give them sufficient room to develop from the very outset of their existence by remembering nature's lesson in regard to broadcast distribution. *C. T. Druery, V.M.H.*

FRUIT IN NEW ZEALAND.

HAVING regard to the delightful climate of this colony, the traveller naturally expects to meet with an abundance of good fruit there. Arriving in Auckland at about the middle of December, I found Strawberries were plentiful everywhere. They are grown in almost every garden, and at Christmastide the berries are much in request for picnic parties and numerous other social functions. The varieties mostly grown for market purposes are Marguerite and Trollop's Victoria, but in point of flavour I found the old Carolina Superba the best of those I tasted.

In the province of Auckland nearly all fruits indigenous to temperate or semi-tropical climates thrive, consequently the cultivator in that district has a great range of fruits to select from. Although Apple trees grow well and bear freely, it is disappointing to find the trees are infested with the American blight or woolly aphis. This pest attacks root and branch alike, and spreads with great rapidity, so much so that the whole of the trees in many orchards have had to be grubbed up and burned. Government experts and other persons are doing their best to combat the insect, but so far they have only met with moderate success. The variety Cox's Orange Pippin is especially susceptible to its attack. Northern Spy is said to be immune from the blight, but this is not entirely true, for at Henderson a tree of that variety was seen to be badly infested. Pear trees are largely grown, and generally bear abundantly. Many of the varieties popular in Britain are favourites in the colony, including Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Hardy, Doyenné du Comice, Flemish Beauty, Jargonelle, Louise Bonne of Jersey, and Winter Nelis. Cherries are not largely grown in the Auckland district, but I was informed that I should see more of them as I proceeded southwards. Peaches, trained as standard trees, are to be seen in almost every garden, but the European varieties are not often planted on account of their delicate constitution and being so subject to the dreaded silver-leaf disease. Seedlings raised from the American yellow-fleshed kinds seem to be the most in favour. The varieties Crosby and Elberta are largely grown for marketing purposes. "Kia Ora," Maori-land, and Osprey Improved are said to be handsome, valuable acquisitions. As the fruits of these kinds were not ripe at the time of my visit, I cannot pronounce an opinion as to their quality. An orchard of standard Peach trees with Gooseberry bushes growing under them, although common in New Zealand, is one of the things not seen in Britain. Nectarines are not so largely grown in the colony as Peaches; the yellow-fleshed kinds of this fruit are also preferred. The best varieties met with are Byron (Rivers'), Darwin (Rivers'), Ansenne, Twyford Surprise, and Gold Mine; the last named is a new variety of great promise, and some of its largest fruits are said to measure 9¾ inches in circumference. The skin is of a beautiful bright bronzy-red, the flesh being of a pinky-cream colour, melting, and delicious in flavour. This novelty should prove an acquisition in the mother country.

Apricot trees grow well and bear abundantly. They are trained either as bushes or short standards. The majority are either American or local varieties, but also I saw trees of Moorpark, Hemskerk, and Large Early, varieties well known in British gardens. The European varieties of Plums are not so extensively known in Auckland as in Otago, where the climate is cooler. The trees, however, suffer so much from silver-leaf disease that they are passing out of cultivation, Gages being the only kinds that do well. The Japanese Plums and their hybrids furnish valuable substitutes; these grow freely and are not very susceptible to insect pests and fungoid diseases. They yield prodigious crops of delightful fruit. Mr. McIndoe, at Otahuhu, grows about a dozen varieties, the best and most popular sort being Burbank, which is a very delicious fruit. The fruits of another variety named Satsuma

are largely used for preserving purposes; excellent jam is made from its bright red flesh, the conserve being highly esteemed by the colonists. The varieties Wickson, Doris, Kelsey, Kikko, and Gold are what the market growers term good "shippers." Trees of the last-named variety when laden with ripe fruit are conspicuous objects.

The Persimmon, in common with all other Japanese fruits, is admirably adapted to the climate of the north island. Its fruits vary in colour from bright orange-red to light vermilion, and they are highly esteemed by the New Zealanders. Fig trees are met with in many gardens, Brown Turkey, Brunswick, and Angelique being the kinds most frequently cultivated. Melons are plentifully grown, the favourite kind being the Spanish Water Melon. The Loquat apparently succeeds well, a local variety named Thane's Prize being considered the best. Oranges, Limes, and Lemons, especially Lemons, are other fruits that are extensively grown in the colony.

Lemons are inferior to those from Sicily and other parts of Italy. The Lisbon and Eureka are varieties in demand. The Limes known as Tahitian and West Indian are considered the best. The Purple Guava is grown in many gardens forming a bush that produces fruits abundantly. Guava jelly is a much esteemed luxury. A popular fruit is that of the Maurandia (Passiflora edulis). It is usually planted in stony or rocky places or against walls, dead trees, &c., where its rambling growths have a free run, and in such a position enormous crops of the purple fruits are produced. So great is the demand for the berries that they are to be seen in almost every fruit shop window. One cultivator of this fruit informed me that although his crop would be nearly two tons, he would have no difficulty in disposing of them at remunerative prices. As grown in New Zealand its flesh and flavour somewhat resemble those of a good yellow Gooseberry The Cape Gooseberry is cultivated extensively for market purposes, and the fruits meet with a ready sale. Occasionally I saw plants of the Loganberry, American Blackberries, Medlar, Prickly Pear, Pomegranate, and the Tree Tomato, the last-mentioned as bushes quite 6 feet in height and as much in diameter, bearing numerous clusters of fruits. The berries were not matured at the time of my visit, but they are very highly esteemed by the inhabitants. Raspberries and Currants are not much grown in the colony, indeed the Black Currant cannot be grown successfully in New Zealand. Diseases and insect pests infest Apple and stone fruits very largely, and this, I think, is principally due to the short mild winters of the north island. The trees have but a short resting season, and insects breed all the year round. *J. McIntosh, V.M.H.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM ROTUNDUM.

THIS magnificent variety, which has again bloomed with J. Gurney Fowler, Esq., Glebelands, South Woodford, takes a prominent place in the front rank of the very best forms of blotched O. crispum, and when it attains sufficient strength to show itself at its best may be adjudged to be one of the finest which has yet appeared. In the matter of fine shape, breadth of both sepals and petals (features which are wanting in a large proportion of the otherwise good spotted O. crispum), it resembles the fine O. c. Cooksoniæ. The reverse of the sepals and petals is bright violet-purple, with a white margin. The sepals have clusters of reddish-purple blotches surrounded by smaller rose-purple ones. The fringed petals have large irregular blotches of a deep violet-purple tint, around which is an irregular band of rose-purple spots of varying size. The lip is of good size, white, with chestnut-brown blotches, and a yellow crest. It is one of Mr. John Carder's collecting, and first sent forth a flower with Mr. Gurney Wilson, Glenthorne, Haywards Heath, who named it rotundum, because of the circular form of the flower and the broadly ovate sepals and petals.

PIPTANTHUS NEPALENSIS.

WHILST there exists no lack of climbing plants capable of filling almost every garden requirement, there is always room for a good flowering evergreen whose foliage is excellent at all times and whose flowers are very attractive throughout summer, especially if the plant be one that can grow and thrive in normally poor soils provided the situation is warm, sunny and sheltered. Piptanthus nepalensis, the climbing Laburnum, more familiar, perhaps, to gardeners as Thermopsis laburnifolia, fulfils these conditions in no small degree, and wherever it is grown it is valued for its distinctive features. Although described as tender, save in sheltered situations, I have seen and admired many plants thriving under conditions which Ivy could barely endure, and when I note flowering specimens of considerable age in the East of Fife, in Forfarshire, in Cumberland, and in several Midland gardens, it becomes evident that its hardiness is considerable. The crux of the matter lies in the type of plant acquired. In common with most leguminous plants, Piptanthus makes simple roots 3 feet in length, whose first impulse is to descend as deeply as they can go; it then develops stems 3 feet long or more the first season, and reaches a height of 10 feet in the third year. Such a plant would thrive indefinitely; it has possession of the site and speedily covers the wall space allotted to it. What happens to the nursery-reared specimen is this. It is invariably reared from seeds, and when a foot high its roots are trimmed and the plant potted; its year's growth may exceed a foot. Soon, however, it finds the pot too restrictive, and shows

FIG. 75.—PIPTANTHUS NEPALENSIS, FLOWERS YELLOW.
(From a sketch by Mr. Worthington Smith.)

CATTLEYA TRIANÆ J. GURNEY FOWLER.

MANY thousands of Cattleya Trianæ have been imported from widely-separated localities in Colombia, and while no Cattleya displays so great variation in the form and colour of the flowers, it is very rare to find one so far in advance of others of its class as this beautiful variety, which bloomed out of an importation by Messrs. Sander last year, and is again flowering with J. Gurney Fowler, Esq. The flower is a perfect model of floral perfection, the broad sepals and the almost orbicular crimped petals being of a delicate blush pink. The broad crimped labellum is bright mauve-crimson, with a narrow lavender-coloured margin, the disc being yellow.

signs of debility owing to drought, lack of food, or other circumstances, and from this debilitated condition it never recovers. One can recommend with every confidence that two or three seeds of Piptanthus should be planted where the plant is to grow. They germinate quickly, and will outstrip the pot specimen in the first six months of their life. At midsummer, choose the strongest seedling and pull out the others. The youngster will require no "stopping." Its unripened tip will succumb to frosts, and in the following spring it will make lateral growths, each terminated by a raceme of yellow flowers that in shape closely resembles a bunch of Grapes, the individual flowers bearing a close resemblance to those of our native Gorse in colour, size, and shape. The foliage is also particularly attractive. The leaves are trifoliate, with lobes that are much broader than those of Laburnum, and are nearly as large as those of well-grown Broad Beans and exactly of similar shape. They are very glabrous, and are of that deep green colour which is characteristic of Ceanothus divaricatus when in health. The tallest plant I have seen was 15 feet high, but this had reached the top of the wall four years ago and had been stopped annually, the outgrowing shoots sharing the same fate. Flowers are never produced in excess, but in just that measure one can appreciate. *G. B. Mallett.*

FOREIGN CORRESPONDENCE.

PLANTS OF THE BIBLE.

THE kindly criticism of the *Plants of the Bible*, by the Rev. George Henslow, in the *Gardeners' Chronicle*, for January 25, 1908, was thoroughly appreciated.

It seems more probable that the Apple is the Quince, and this change will be made in the next edition of the little book.

Inasmuch as the Paliurus does not grow around Jerusalem, it can hardly be the Christ-thorn.

By "spelt," I suppose is meant Triticum spelta, and this, so far as I know, is not grown in Palestine at all, hence Vicia ervillea appears more likely to be the plant intended by "rie." *J. E. Dinsmore, The American Colony, Jerusalem, Palestine, February 22, 1908.*

———With regard to Paliurus, if it does not *now* grow around Jerusalem, it must have been exterminated since 1889; for Dr. Tristram says (*The Natural History of the Bible*, p. 428):—"The Arabs of the Jordan Valley at the present day . . . confine the name Sanur to the P. aculeatus, or Christ's Thorn. . . . It is common about Jerusalem."

With regard to the Kussemeth, the Hebrew word translates "spelt" (in B.V.); no one knows what it actually was, but as it always accompanies a cereal in the three passages, it is supposed to have been some variety of Wheat. The *modern* term refers to a Wheat of a cooler climate. I have seen it cultivated in Switzerland, but it may stand for numerous sorts. At the present day nearly 20 varieties of Wheat are known in Egypt, and one Triticum tricoccum has been found in the tombs. De Candolle (*Origin of Cultivated Plants*, p. 363) says:—"I imagined it was perhaps the allied form T. monococcum," not now in Egypt. The Arabic words for Wheats of Egypt are numerous; but neither Kirsenni nor Chirsanat (given by Tristram) occurs amongst them. No one has suggested Vicia ervillea; this would have been more likely included as pulse. It has only been lately introduced into Egypt. *George Henslow.*

TREES AND SHRUBS.

DWARF CONIFERS.

A CONSIDERABLE number of dwarf Conifers are suitable for cultivation on the rockery or in small beds. Few of them ever grow more than about 4 feet in height, and require many years to attain even that size. In habit they are either spreading, or upright and compact, or, as in the case of some of the Pines, ruggedly picturesque. Some of them are natives of mountainous regions, while others have originated as garden varieties, but all are equally at home on the rockery or similar positions where they have a deep and fairly dry root-run, as they are very impatient of too much moisture at the root.

JUNIPERUS.

J. japonica var. aurea (Hort).—I have never been able to quite make out exactly what this plant is. According to the *Kew Hand-list* it is a synonym of J. chinensis var. aurea, but the latter is an upright-growing plant of a bright yellow colour, very handsome, but rather tender, while J. japonica var. aurea is a spreading plant with long branches irregularly placed, but usually arranged in a flattened, fan-shaped manner. The colour is a shade of deep orange-yellow. It is an easy plant to grow, and will attain to a good size, but may easily be kept within bounds.

J. Sabina (the Savin).—This is a well-known dwarf, spreading shrub of irregular habit, with dark green foliage and purple berries. There are some four or five varieties, of which the var. procumbens (the Waukegan Juniper) and var. prostrata (both of them neat-growing, prostrate plants), var. tamariscifolia, a round, dwarf bush with glaucous foliage, and var. variegata, with creamy-yellow or white variegation, are the best.

J. virginiana var. globosa is a round, bushy plant, attaining a height of no more than about 3 feet, with bright green tufted branches tipped with bronze in the winter. It is a comparatively new plant, and is likely to be an acquisition for positions suitable to it.

J. virginiana var. kosteriana.—This resembles the typical Red Cedar in general appearance, except that the growth is somewhat coarser, and the plant does not grow more than about 2 feet or so in height. It is of a round, compact habit, and is of a bright green colour all the year round.

J. virginiana var. tripartita is a dwarf, spreading form, with sharp-pointed glaucous foliage and branches usually divided in threes. It is a fairly fast-growing plant, and requires room to develop.

J. communis var. alpina (J. canadensis).—A form of the Common Juniper. This plant is found chiefly on the mountains in Northern Canada, though it also occurs in Northern Europe and Asia. It is a dwarf, spreading shrub, rarely more than 3 feet in height, with long, slender shoots symmetrically arranged, and clothed with narrow, sharp-pointed leaves marked with silvery lines. In winter the foliage assumes a bronzy tint. J. communis var. alpina aurea resembles the variety alpina except that it is of a bright golden tint in summer, changing to orange in winter.

CUPRESSUS.

C. Lawsoniana var. nana (dense).—This is a plant of compact habit, and it takes many years to reach a height of 4 feet or so. It is broadly pyramidal in shape, with dense, compressed foliage of a rich, deep green colour. It is a handsome plant, and very useful in a small state. There is a sub-variety (var. nana glauca) with a more pronounced glaucous hue than the variety nana.

C. obtusa var. pygmæa.—Although this is an old plant in English gardens, it is not at all common. It grows from 1 foot to 2 feet in height, and spreads symmetrically on all sides. Its neat habit and bright green foliage renders it a desirable plant for the rockery.

C. obtusa var. nana (densa).—This is an upright pyramidal, or broadly conical plant of slow growth and dense habit. The tufted foliage is of a deep green hue, and the plant can either be grown into a small specimen 6 feet or so in height, or be kept dwarf and spreading by cutting the leader away.

C. obtusa var. nana aurea resembles the variety nana in habit, except that it is not quite so dense, and is of rather freer growth. The colour is of a bright golden-yellow, which is effective all the year round, and especially so in winter.

C. pisifera var. nana aurea variegata is a comparatively rare plant, growing about a foot in height, and spreading horizontally on all sides. The growth is dense and bright green in colour, splashed and spotted with pale gold.

THUYA.

T. occidentalis var. globosa.—The habit of this plant is well described by its name, the upright growths springing from the base, and composing a rounded, compact plant suitable for the rockery or a position where a dwarf, formal plant is required. In summer the foliage is of a bright, grass-green hue, changing to a brownish tint in winter.

CRYPTOMERIA.

C. japonica var. elegans nana.—This is a dwarf plant with soft, linear leaves densely crowded on the short branches. In summer it is of a bright, cheerful green, which changes to a bronzy-crimson in winter. A neat and effective plant at all seasons.

TSUGA.

T. canadensis var. albo-spica.—Strictly speaking, this is not a dwarf plant, as it attains to a height of 10 feet or so with age, but its rate of growth is slow, and its habit and colour so pleasing that it is worthy of inclusion among those plants suitable for the back of the rockery. The branches are slender and gracefully arching, and clothed with small leaves tipped with silvery-white. It succeeds best in a moderately dry situation sheltered from cutting winds.

PICEA.

Most of the dwarf forms of Picea are varieties of P. excelsa (the Common Spruce), all of which will grow best under rather moister conditions than most of the dwarf Conifers. The best of the dwarf Spruces are P. excelsa var. clanbrassiliana, var. clanbrassiliana elegans, var. dumosa, var. Gregoryana, and var. pygmæa, all of which have a certain resemblance to each other, being of a round, compact habit with dense, crowded foliage of varying shades of green. P. excelsa var. Remontii is a dwarf form of erect habit, the branches all having an upright tendency, while the colour is of a bright, cheerful green all the year round. It is a miniature, well-grown specimen Spruce, and is perhaps the best of its class.

ABIES.

A. balsamea var. hudsonica is a small, stunted Silver Fir, with leaves about an inch long, deep, shining-green above, and silvery beneath. In habit it is irregularly pyramidal, with short, thick branches on which the foliage is densely crowded. Unfortunately it is liable to attacks of scale, and does not always thrive as well as it might do.

PINUS.

P. Laricio var. pumila.—This variety of P. Laricio is a dwarf, dense Pine rarely more than 2 feet in height, with short branches having the foliage clustered at the ends. It is a more picturesque than handsome plant, but has a distinct appearance that is quite in keeping if grown on the rockery.

The *var. pygmæa* closely resembles mula.

P. montana.—This variable species is found throughout the mountainous regions of Central Europe at elevations of 5,000 feet or more. At its best it rarely exceeds 15 feet or so in height, but is more often met with about half as high. It is a branching, bushy shrub with leaves about 2 inches long, densely clustered on the stems, and dull to dark green in colour. Its slow growth and dense, branching habit render it peculiarly useful on the rockery. There are several varieties of this Pine, the best dwarf ones being var. Mughus and var. Pumilio, both of which are preferable to the type as dwarf plants.

P. sylvestris var. aurea is a slow-growing form of the common Scotch Pine (not Scotch Fir, as it is often erroneously called), with leaves 2 inches to 3 inches long, of a glaucous-green tint in summer, changing to a bright golden hue in winter.

P. sylvestris var. globosa. This is a round, compact plant with foliage of a bright, glaucous tint. In habit it is pyramidal, with the side branches usually ascending, and keeps its compact, globose shape throughout. Essentially a plant for a dry spot.

P. Cembra var. pumila.—A slow-growing Pine, this variety rarely reaches a height of more than 3 feet. In habit it is spreading, or even creeping under certain conditions, the irregular branches being clothed with silvery leaves about 2 inches long. It is an old introduction from North-Eastern Asia, but is not often seen.

P. Strobus var. nana. This is a dwarf form of the well-known Weymouth Pine, and makes a small bush about 3 feet or so high, with numerous slender branches clothed with soft, light green leaves marked with silvery lines. When well grown and flourishing, it is a graceful and distinct-looking plant. The variety prostrata resembles the variety nana, except that the habit is less erect and more spreading. *J. Clark.*

LILIUMS AS BEDDING PLANTS.

FOR producing a bold floral effect in the flower garden, few subjects are more suitable than the larger-flowered species of Lilium, such as L. longiflorum, L. auratum, L. speciosum, &c. Many of these Lilies have varieties that, from a garden point of view, are even more desirable than the type. At fig. 76 is represented a bed of the beautiful variety of L. longiflorum, known as eximium, growing in a bed in Kew Gardens in association with a hardy Heath. These large-flowered Liliums are often associated in beds with other Ericaceous plants, such as Azaleas, Rhododendrons, and Kalmias.

The protection afforded to the Lilies by the shrubs during the early period of their growth enable the bulbs to be planted early, and this gives the plants a good start. The effect of the flowers is also enhanced by their setting of foliage beneath and around them. The conditions of soil and moisture in such beds are suitable to the bulbous plants, and especially is this method of planting valuable in the case of large beds near to a lake or on a large lawn, the flowers of the Liliums relieving the somewhat monotonous greenery of these early-flowering shrubs. Lilium longiflorum var. eximium is known as the Bermuda Lily, and has by some botanists been raised to specific rank.

FIG. 76.—LILIUM LONGIFLORUM EXIMIUM FLOWERING IN A BED CONTAINING ERICAS.

KEW NOTES.

THE CONSERVATORY.

THE rich yellow flowers of Tecoma Smithii, although somewhat out of season, are even more welcome than they were in early winter. The plants of Kalanchoe Dyeri, a species introduced from British Central Africa a year or two ago, are carrying useful heads of large white blooms. Another plant of recent introduction from Africa is the yellow-flowered Coreopsis Grantii. Dicentra (Dielytra) spectabilis is a common hardy plant, albeit a most useful one for greenhouse decoration when brought along gradually in heat. Several large specimens of Jasminum primulinum in 12-inch pots are thickly clothed with yellow flowers. The secret of success with this plant appears to be to encourage the development of as much young growth as possible, and by plunging the plants in the open air during the summer and autumn enable them to thoroughly ripen the shoots. During the winter, place them in a cool house, where only sufficient heat is maintained to prevent frost, and give the plants very little water.

A useful Coleus to follow C. thyrsoideus is C. shirensis. The colour of the flowers is not such an effective shade of blue, being a dark purplish-blue, but it is nevertheless a valuable addition to the greenhouse plants. Several large specimen Camellias planted out in one of the beds are blooming freely. C. reticulata is by far the most beautiful, with large semi-double bright rose-coloured flowers.

The west wing of the house is almost entirely devoted to Ericas, Acacias, &c. At the present time the pride of place amongst the subjects in flower must be accorded to a large

plant of Darwinia (syn. Genetyllis) Hookeriana, a heath-like plant belonging to the natural order, Myrtaceæ. The small flowers are borne in terminal heads, usually six together, enclosed in a brick-red coloured involucre. These last in perfection for three or four months. A number of plants of Eriostemon affinis and E. myoporoides are clothed with white flowers tinged with pink in a young state. The Australian representatives of the Heaths, namely, the genus Epacris, make a good show with their long slender shoots thick with flowers. Most of the plants are garden hybrids.

Several species of Acacia form useful decorative subjects grown in pots, while others are better planted out in large structures, notable amongst the latter being the Silver Wattle, A. dealbata. The best plants flowering here in pots are A. Drummondii, A. hastulata, A. obliqua, and A. longifolia var. magnifica. The Correas are another Australian family deserving of mention, the most useful decorative plants being C. speciosa and the varieties curiosa, magnifica, and major, also C. cardinalis. Erica Veitchii is grown as a pot plant, and very useful it is. The plants grown outside at Kew have suffered rather badly from frosts, except where planted in a sheltered position or afforded protection.

Boronia megastigma and B. fastigiata (syn. polygalifolia), with pink flowers, will soon be at their best. Olearia ramulosa has small, pure white, Daisy-like flowers. Also deserving of note are Chorizema cordatum flavum and Helichrysum humile.

FORCED TREES AND SHRUBS

are extensively used for the decoration of this house in late winter and early spring. A few of the best at present in flower are Spiræa prunifolia flore pleno, Prunus triloba flore pleno, Prunus pseudo-cerasus James H. Veitch, Pyrus floribunda and the variety atrosanguinea, Viburnum Opulus var. sterile, Rhododendron sinense, better known in gardens as Azalea mollis, R. Cunningham's White, R. fastuosum, Staphylea colchica (delightfully fragrant), Kerria japonica flore pleno, Lilacs Charles X., Marie Legraye, and Madame Lemoine.

EARLY-FLOWERING BULBS.

Amongst single Tulips the tall orange-scarlet Prince of Austria is prominent; Mon Trésor (golden yellow), Rose Gris de Lin (rose-pink); Double Tulips: Salvator Rosa (deep rose), Couronne d'Or (yellow-shaded orange); Narcissus: Glory of Leiden, Golden Spur, Obvallaris, Sir Watkin, Grand Monarque, Jaune Suprême; Crocus species, including C. biflorus (white, striped black), C. chrysantha (yellow), C. Imperati (dark violet), C. Sieberi (purple); Crocus varieties: King of the Blues, Sir Walter Scott (striped), Reine Blanche White and Cloth of Gold; Hyacinths (single): Grand Maitre (porcelain blue), Baron van Thuyll (dark blue), Baroness van Thuyll (pure white), MacMahon and City of Haarlem (yellows), Moreno (pink). A large group of seedling Hippeastrums furnish the brightest patch of colour in the house. Several of the dark red Sir William type, for which the Kew collection is noted, are prominent. *D. D.*

LAW NOTE.

ASSESSMENT OF GREENHOUSES.

CONSIDERABLE satisfaction appears to have been caused amongst growers, as well as some of the trade papers, by the result of an Assessment Appeal heard recently before the District Committee of a certain County Council in Scotland. The appeal was made by a firm of market gardeners, who contended that they were entitled to a reduction in rates under the Agricultural Rates (Scotland) Act 1896, in respect not only of the land cultivated by them, but also of other portions of their land covered by greenhouses. Counsel for the growers in question contended that the greenhouses were used exclusively for the cultivation of Tomatos and for horticultural purposes, and that the mere fact that the climate necessitated a covering of glass and artificial heat did not exclude the occupiers from the benefit of the Act. After adjourning the matter for further consideration, the committee finally allowed the appeal, and accordingly the growers were held entitled under the Act to a reduction of rates in respect of their glasshouses as well of their uncovered land.

It is, of course, natural for English growers to assume that what is reasonable in Scotland is equally reasonable in England, and, accordingly, to draw the inference that they themselves are entitled to claim similar relief. Unfortunately, however, there appears to be serious ground for believing such an inference to be entirely incorrect. In the first place, it must be remembered that there are two Agricultural Rates Acts of 1896, one applying only to England and the other only to Scotland, and there is considerable difference in their wording.

Both Acts, it is true, are intended to confer special privileges, in the matter of rating, on agriculturists, but the systems both of land tenure and of rating differ very considerably in the two countries, and it is, therefore, inevitable that the Acts dealing with this subject should also differ.

The first point to be noted is that whereas the benefit of the English Act is conferred on occupiers of "agricultural land," that of the Scotch Act is extended to occupiers of "agricultural land and heritages." But perhaps the most important point to be observed when comparing the two Acts is the marked distinction which the English Act draws between "land" and "buildings." Section 1 sub-section (2) of this Act expressly provides (inter alia) that it shall not apply to a rate which the occupier of agricultural land is liable, as compared with the occupier of buildings and other hereditaments, to be assessed to, or to pay, in the proportion of one-half or less than one-half.

[It is to be observed that no similar clause is contained in the Scotch Act.]

This provision seems therefore to be the keynote of the whole question, and the pointed distinction which is there drawn between "land" and "buildings" affords the ground upon which English nurserymen would be held to be debarred from claiming relief in respect of their greenhouses under the English Act, although their Scotch brethren would apparently be entitled to claim relief in similar circumstances under the corresponding Scotch Act. It may be noted that the Scotch Act does not specifically mention nursery grounds, though the English Act does so; this, however, does not affect the point with regard to the distinction to be drawn between land and buildings, which it is now desired to emphasise.

In the case of the English Act, the House of Lords decided a few years ago that glasshouses in or on a market garden, if buildings, must for the purpose of the English Act of 1896 be rated as "buildings" and not as "agricultural land," thereby losing the benefit of the Act. As many readers are doubtless already aware, the appellant in the case now under consideration was a market gardener and nurseryman occupying a piece of land rather more than four acres in extent, on which 57 glasshouses and greenhouses of various sizes were erected. The special case on which the appeal was founded stated that these houses were used for the purpose of growing Tomatos, Cucumbers, and Grapes, and, to a smaller extent, other vegetables, for the purpose of sale. The plants and crops grown therein were watered and heated by artificial means, were grown upon soil placed upon prepared beds inside the houses, and matured much earlier than in the open ground. The vines were planted inside the houses, and the roots ran partly in the soil under the houses and partly passed through the apertures in the walls into the soil outside. Fifty-one of the glasshouses were thus used for growing vines. In the Cucumber houses (which comprised six out of the 57 houses) there were, inside the houses, dwarf brick walls supporting corrugated iron sheets, upon which sheets earth taken from other parts of the nursery ground was placed. In this earth, so placed upon the iron sheets, the Cucumber plants were planted. Beneath the iron sheets, and between them and the ground, there were hot-water pipes. The area actually occupied by the 57 houses was rather more than two acres, and the rest (also rather more than 2 acres) consisted merely of vine borders paths, and the stoke-holes. The whole of the houses were built upon dwarf brick walls like an ordinary greenhouse. Under these circumstances, the Law Lords were unanimous in their opinion that, for the purpose of the English Act (a) buildings must be treated as distinct from land; (b) the greenhouses must be treated as buildings; and, accordingly (c) that the relief granted by the Act of 1896 to agricultural land could not be claimed in respect of such greenhouses.

It is, of course, important to bear in mind that there are certain other statutes giving relief to cultivated land which are worded quite differently to the Act of 1896, and in such cases, by reason of the manner in which they are worded, relief under these statutes may still be claimed in respect of such land, even though it be covered by greenhouses.

The Public Health Act, 1875, for instance, provided that the occupier of any land used as (amongst other purposes) market gardens, or nursery grounds, "shall be assessed in respect of the same in the proportion of one-fourth part only of the net annual value thereof." A good many years ago a market gardener claimed relief under this Act in respect of the occupation of a piece of land upon which were built 16 greenhouses or glasshouses, and these practically covered the surface of the land; they were built on brick foundations, and were used for the purpose of growing fruit or vegetables for sale in the ordinary course of business. In this particular case the grower was successful, as the Court of Appeal held that upon the wording of this particular statute a garden was none the less a garden because it was effectually protected by glass against the weather or by high walls against the wind.

It will be seen, therefore, that sometimes a greenhouse is in the legal sense "a building," and sometimes it is not, the matter turning upon the wording of the particular Act of Parliament which may be under consideration at the moment. We have, therefore, one more example of the urgent necessity for the codification of the law relating to this complicated subject. Enough has perhaps been said to show that because a grower in Scotland has succeeded in winning an assessment appeal, it by no means follows that his English brother would prove equally successful under somewhat similar circumstances, and so far as the case recently heard in Scotland is concerned, it is clear that English growers who are tempted to appeal against their own assessments on the strength of it, would probably find that they were throwing their money away without the least prospect of success. *H. Morgan Veitch.*

VEGETABLES.

A NEW EARLY TURNIP.

FOR many years the best and earliest variety of Turnip was the Early Milan, either the white or red variety, but Little Marvel is a great advance on these, both in regard to earliness and quality. Early Milan, though a good early Turnip, matures quickly and soon becomes dry and flavourless. The newer variety has a rounder root than Early Milan, is more solid, and is of excellent quality. It was raised by crossing the White Early Milan with the variety Jersey Lily: the last-named is a splendid root, and the new form has much of its good qualities with increased earliness. As a first crop variety in the early spring, Little Marvel is valuable, and I not only sowed it for the earliest crop out-of-doors, but also forced it in frames where it matured rapidly and yielded roots of splendid table quality. These quick-growing varieties are also valuable in other respects, for by sowing a small quantity of seed at short intervals, sweet roots of a size suitable for table purposes are always available. In some soils the Turnip does not remain sound after it is fully grown, it is therefore best to sow often, using a small quantity with [illegible] such as the one under a tree. I do not recommend the variety for storing, the roots should be used direct from the soil to [illegible].

CULTURAL MEMORANDA.

JASMINUM PRIMULINUM.

SOME three years ago I sent to the Editor of the *Gardeners' Chronicle* a few notes respecting Jasminums in general, including J. nudiflorum. A correspondent subsequently took exception to my statement that this species was hardy. I now may be permitted to say that a plant has withstood 19° degrees of frost this winter, and only the unripened tops of the leading growths have suffered any injury. It cannot, therefore, be tender, as the plant is growing against a wall facing due east. Another plant, being the first we purchased, was planted against a wall facing to the south, and therefore is sheltered. This specimen presented a mass of golden-coloured flowers on the 2nd of the present month, and all of them appear semi-double. This species forms a good succession to J. nudiflorum. Open walls are not too well furnished with flower subjects during the first four months of the year, and I would advise those who have not given J. primulinum a trial, to forthwith plant it in the warmest position they can give it. *J. Mayne, Bicton Gardens, Devonshire.* [The specimens received from our correspondent were very beautiful, and their appearance would have led us to suppose they were cultivated indoors.—ED.]

GUNNERAS.

THESE plants produce the finest leaves when their roots can reach the water. The crowns should therefore be planted on the margin of the stream. Plants in these conditions succeed well in these gardens. When the foliage is tied down early in winter, we cover each crown with the fading leaves. This affords some protection to the young leaves as they develop in spring. The flower-spikes should be removed as soon as they are observed, if the greatest size is required in the leaves. We seldom do this in our case, as the appearance of the inflorescence is appreciated. *J. Mayne, Bicton Gardens, Devonshire.*

The Week's Work.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq. Keir, Perthshire, N.P.

Achimenes.—The corms should be started into growth in successional batches, so as to provide a continuous supply of flowering plants for the warm conservatory. As soon as they have made shoots 2 to 3 inches high, they should be potted, placing them in pots, pans, or baskets, but in either case allowing each plant about one square inch of space. A suitable potting compost for these plants is one consisting of light sandy loam, leaf mould, peat and sand in equal proportions. Cultivate the plants in a stove temperature until the flowers appear, keeping them very near to the glass. They will require the support of neat stakes, which it will be necessary to hide from view as much as possible. When the plants are growing freely, they may be fed liberally with liquid manures. As soon as the flowers commence to open, remove the plants to a cooler atmosphere, turning them round once each week to prevent them getting one-sided. After they have finished flowering, gradually withhold water from the roots, and eventually place them in a dry position in the stove. When the foliage is quite past, the pots or pans may be placed on their sides for the winter.

Gardenias.—Plants that have set their flower-buds will require frequent applications of liquid manure at the roots, Gardenias being gross-feeding plants. A little artificial manure may also be scattered over the surface of the soil once a fortnight. Syringe the plants twice each day in favourable weather, keeping them in a stove temperature. Be careful to prevent mealy bug becoming common on the plants, or it will cause much injury. Gardenias thrive best when planted out in a bed over bottom heat, but before being planted out in this manner, it is necessary to satisfy oneself that they are perfectly free from bug, it being inconvenient to cleanse dirty plants after they have been planted, as the insecticide is apt to get down to the roots. Gardenias should be exposed to the full sunshine, except when they are in full bloom, at which time a little shading helps to prolong the season of the flowers. An abundance of moisture is necessary, both in the atmosphere and at the roots. Cuttings may be made of the young growths if it is wished to raise further plants. Such cuttings should be inserted in sandy soil and placed in a temperature 70° to 75° at night. They will make nice flowering plants by the month of March next year.

Ixoras.—These plants should be treated in much the same manner as Gardenias. Any repotting that is required may now be carried out. Unless the loam is of a light fibrous nature, it will be better to use peat and sand exclusively, mixing with the compost a small quantity of broken bricks and charcoal. Ixoras require an abundance of water in the season of growth; therefore the pots should be provided with ample means of drainage. They are not such gross-feeding plants as Gardenias, and care must therefore be exercised when affording manures that the applications are of medium strength only. Weakly diluted manure water from the farmyard is one of the safest stimulants for Ixoras. Like Gardenias, they are subject to attacks of mealy bug, and will require to be kept clean in the same manner. They should be fully exposed to the sunshine, and the atmospheric temperature should not fall lower than from 70° to 75° at night. When in full flower a little shade from sunshine is advantageous.

THE FLOWER GARDEN.

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

Pruning of Roses.—The pruning of Roses may be commenced at any time after this date, provided that favourable weather occurs. Pruning generally has the result of increasing the size of the flowers, but it is not advisable to prune strong-growing varieties severely, as this would tend to make the plants produce even stronger shoots and but few flowers. On bushes or dwarf plants the strongest and best ripened shoots of last season may be left 8 to 10 inches long. All weakly shoots from the centre of the plants should be removed, and growths of medium strength cut to the length of 1 or 2 inches, making the cut immediately above a well-developed bud, choosing one that points in the direction the shoot is desired to grow. In the case of standards, it will be necessary to prune more severely, in order to maintain the "heads" in a good form. If the plants are weakly, each shoot may be cut to two or three buds, but if vigorous, not more severely than to four or five buds. In the case of Hybrid Tea varieties, cultivated as bushes, it may be advisable to give more encouragement to the stronger shoots, as these are valuable in schemes of garden decoration. Cut out all weak shoots and shorten the more vigorous growths to half their length. Any plants of this type which are cultivated as climbers, may have their growths left almost their entire length.

Newly-planted Roses.—When the plants are seen to be growing from the base, these should be cut back to that point. If the beds were mulched with farmyard manure after planting, it will only be necessary now to lightly stir the surface of this mulching, but otherwise a dressing of rich soil or well decomposed manure would be beneficial.

Specimen plants in the flower garden.—Standards are among the most effective of trained specimens for use in bedding. For training in this fashion, such species as Fuchsias, Lantanas, Heliotropes, Daturas, Plumbago capensis, Streptosolen Jamesonii, Veronica Andersonii, Swainsonia alba, and Calceolaria amplexicaulis, &c., will be found useful. Plants intended for use in this manner should be pruned to induce them to form globular heads, excepting the last-named species. Place the plants for the present in moderate heat, and when they commence to show growth shake away a portion of the old soil from the roots, slightly trim the roots, and re-pot the plants into pots of the same size as those from which they were removed. For the potting, employ a moderately rich compost, and after the plants have become established in the new soil gradually accustom them to more ventilation and a lesser degree of fire-heat. If it is intended to cultivate standards from cuttings, the cuttings should be grown to the desired height, removing all side shoots. An exception is again made in respect to Calceolaria amplexicaulis, this species affording an excellent effect when 5 feet high and furnished with side shoots. In the cultivation of such a plant, the side shoots should be stopped at the first leaf until the plant has attained its desired height.

Early-flowering Chrysanthemums.—The stock of particular varieties of early-flowering Chrysanthemum may be increased by dividing the old stools and potting the divisions into small pots. These should afterwards be placed in unheated frames where they may remain until they have made roots. When the divisions have become well rooted, they may be removed to a sheltered position out-of-doors. The beds or borders in which it is intended to cultivate these plants should in the meantime be prepared for them by having the ground deeply dug, and by receiving an application of farmyard manure, which should be well mixed in the soil during the process of digging. The Chrysanthemums may be planted out into their permanent positions at the middle of May. Some of the newer varieties possess certain shades of colour which are as novel as they are beautiful.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Hoeing.—There is no more useful or important implement for use in the kitchen garden than the draw-hoe. Sufficient importance is not generally attached to the need that exists for the stirring of the surface soil. The hoe can be employed at no season of the year to better advantage than during the latter part of March and early in April; this applies equally to all localities and every kind of soil. But especially is this the case where the soil has been broken up to a good depth. Hoeing breaks the crust which has naturally been formed by the wintry rains and snow; it stimulates the growth of the vegetables, and at the same time does much towards keeping the ground free from weeds. Among such crops as Spring Cabbage, Winter Spinach, and autumn-sown Onions the surface soil should be stirred at least twice each week. The Dutch hoe is a very valuable tool for clearing the ground of weeds, but it is of little use on very heavy land at this time of year.

Carrots.—The principal sowing of Carrots may now be made on ground which has been well tilled but has not been freshly manured. Carrots are probably one of the most uncertain and unreliable crops cultivated in the kitchen garden, except in a few parts of the country where the soil specially suits them. In order to obtain specimen roots from many kinds of soil, special care has to be taken in preparing such soil. Wire-worm and the Carrot fly are two most troublesome pests. For the latter I have found the use of vaporite very beneficial. The land should also be thoroughly dressed before sowing the seed with fresh soot, lime and burnt garden refuse, the latter material being one of the finest stimulants that can be given to the soil of the kitchen garden. On very wet pasty soil it is a capital plan after drawing the drills to strew a little finely-sifted soil in them before sowing the seed and again afterwards. This will assist the young seedlings to make a good start. If extra fine specimens are required for any particular purpose, it will be necessary to bore deep holes with an iron bar and fill these in firmly with finely-sifted sandy soil to which may be added to every barrowful a 6-inch potful of bone meal and half a peck of wood ashes. Nothing is more suitable than old compost saved from the potting shed. New Intermediate and Prize-winner are among the finest types of long Carrots, and Model is an excellent stump-rooted kind adapted for cultivation on shallow soils. Early crops under glass should be thinned as they become ready, and sufficient air should be admitted to the structure to prevent them from becoming drawn. Fumigate with XL-All vaporiser if any signs of green fly appear.

Mint and Chervil.—Green Mint is always in great demand at Easter time. Fortunately, this herb may be forced easily, and a good batch of roots should now be lifted and either placed in boxes or planted out and forced in a gentle heat. Chervil should be treated in a similar manner.

Spinach.—Make a good sowing of Perpetual Spinach in any out-of-the-way place that is suitable for the purpose.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Fig trees in borders.—Trees bearing heavy crops of fruit and growing in borders already well filled with roots, need liberal supplies of nourishment. This nourishment may be applied in the form of top-dressings and waterings with liquid manure. Fig trees growing under such conditions require a large quantity of water at the roots, partly owing to the large transpiring surfaces presented in the leaves. Attend to the stopping of shoots, thinning them out as required, and training those which remain in such a manner that the trellis will be evenly covered, taking care to prevent overcrowding. The value of the second crop will depend upon the strength of the trees. The strongest shoots should be allowed to share amongst them the whole of the crop, even though three fruits have to be allowed upon a single shoot. To prevent red spider, attend to the ventilating of the house, and thoroughly syringe the trees twice a day in favourable weather. Trees for supplying late crops will need to be disbudded sufficiently to prevent their shoots becoming crowded, and the permanent shoots may be stopped at the sixth leaf. These shoots will present various stages of development, and therefore the supply of fruit will extend over a considerable season. For the latest crops, the variety of Negro Largo is valuable, especially if the trees are started into growth sufficiently early to enable them to ripen a second crop of fruits.

Mid-season Peaches.—The trees that will ripen fruits at mid-season have now flowered, and they may be afforded rather more heat as soon as the fruit commences to swell freely. If it is desirable, the maturing of the fruit may be advanced by making the best use of the sunshine, or, on the contrary, it may be retarded by allowing atmospheric temperature to be rather less than that usually recommended. Whether it is necessary to force or retard the crop will depend largely upon the collection of varieties in cultivation. Let disbudding be done gradually, in order that no severe check may be imposed upon the tree at any particular time, reserving those shoots which are most promising and in the best positions. The youngest growths can be usually removed by the fingers, but should any have been left until they are woody, it will be necessary to use a sharp knife. Commence to train the shoots whilst they are young and pliable, and continue the work as may be necessary.

Affording of water.—The construction of fruit borders varies so much that it is difficult to give definite directions in regard to the amount of water they may require, but the affording of water is a matter that requires great care. Readers are advised to procure one of Mr. Kirk's border testers (see fig. 22 in the issue for January 18), and after using this implement they will be fully convinced of the ease in determining accurately when a border is needing water with the assistance of some such means.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Odontoglossums.—During April and May O. crispum and other spring-flowering species and Odontoglossum hybrids may be expected to make a fine display. In the latter part of the past winter the plants suffered from insufficient sunlight, but the favourable climatic conditions that prevailed last autumn were certainly advantageous. If the specimens that will flower this season were exposed at that period to the full sunlight and were cultivated in a structure that was properly ventilated, the specimens will now be in course of developing strong flower-spikes. Plants already in full flower, or those just about to expand their buds, should be grouped together where they can be given a little extra shading, and where they will not be subjected to overhead spraying. Other plants that are only as yet developing the flower-spikes, may have the foliage syringed daily during favourable weather, and they should be shaded only during the middle hours of the day. A constant circulation of air must be maintained in the structure containing the Odontoglossums, and the atmosphere should be kept well charged with moisture. The plants themselves will need liberal supplies of water at the roots. Great care is necessary to preserve the flower-spikes and buds from the depredations of slugs and snails. Traps should be set for these pests, and they will need to be examined each night by the aid of a lamp. If a little cotton wool be placed around the base of each flower-spike, it will often prevent injury from slugs. In the case of a plant possessing more than ordinary value, the safest plan is to place it on an inverted pot, standing the inverted pot in a bucket filled with water. But even if this precaution is taken, constant care will be necessary, as small slugs and snails are often found hiding in the potting materials. Green and black fly and thrips are also troublesome at this season, and they must be prevented from getting upon the young growths and flower-spikes. On the first discovery of these insects the house should be vaporised, choosing a calm night for carrying out the operation. The foliage of the plant should be quite dry at the time of the operation, but the atmosphere may be moderately moist, as the fumes will be more effective under such conditions.

Repotting.—Although early autumn is generally considered to be the better time for overhauling these Odontoglossums, I do not hesitate to repot a plant that is not flowering, but is in need of new rooting materials. In these gardens we employ a similar potting compost to that I have advised for Miltonias, but some crushed crocks and charcoal may be added to that compost. It is essential that the pots should be well drained, and, therefore, they should be filled to one-third of their depth with clean crocks. Press the materials moderately firmly about the roots, and do not grow the plants in pots that are too large for them. After the potting has been done, exercise the usual care in regard to watering, paying special attention to the shading from sunshine, and to damping the surface between the pots. Spray the plants overhead occasionally in favourable weather, and encourage them to become re-established as quickly as possible.

Odontoglossum Edwardii.—The flowers of this species are somewhat small and less showy than many other Odontoglossums, but the colour is distinct, and the dull-branching scapes are attractive. The plants may be easily cultivated in the cool division. They are not free-flowering, but so far as small plants are concerned, this is an advantage, for they do not become exhausted by flowering before they are strong enough to do so without suffering injury. Any plants that require to be repotted may be given attention as soon as they have flowered, or the work may be done at the present time, if it can be seen that no flower-spikes will be produced. The roots of this species being large and more fleshy than those of most Odontoglossums, the rooting material provided for them should be made to contain a considerable quantity of roughly-broken crocks and charcoal. The plants will require pots rather larger in size than those employed for other species.

Odontoglossum Uro-Skinneri.—This species may be given the same treatment as Odontoglossum Edwardii, and will require attention at the present time in the matter of repotting or resurfacing, for new roots will soon commence to appear from the base of the partially-developed growths.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Fig trees.—It will now be safe to remove the protective material from the trees. If it is found that these latter have already commenced to produce shoots it will be necessary to remove such covering very gradually, that the growths may become inured to the influence of light and air. Some protection may, however, still be afforded at night time if there are signs of frost. If any pruning is necessary, treat the trees as I advised in the Calendar published in the issue for February 22. In the same Calendar directions were given for top-dressing trees growing in restricted borders, and for the making of new border and the planting of young trees.

Strawberries.—If preparations for making new beds have been carried out according to the directions published in the issue for February 8, the soil will have settled down sufficiently, and the process of planting may be commenced as soon as the weather is favourable and the soil is found to be in a suitable condition for being worked. Strawberry plants have suffered severely in the northern counties from frost and cold winds, and such plants should now be relieved of all damaged leaves.

Autumn-fruiting Strawberries.—These plants require a deep rooting medium and a rich soil. Such varieties of the perpetual fruiting type as St. Joseph and St. Antoine de Padoue are usually propagated from layers, and if planted under the shade of a north wall, are valuable late in the season. They may also be layered in July, and cultivated in pots, in which case the runners and flower-spikes should be picked off as they form, until the plants are required to produce fruit, when they should be placed in a cool house in order to ripen their fruits in October. Autumn-fruiting Strawberries may also be obtained from seed. Seedling plants are more vigorous than those raised from layers, especially if the layered plants have been allowed to remain too long in the same position. If propagation is effected from layers, then it is best to layer only the strongest runners early in the season and make fresh beds early each year, planting them at distances of 18 inches apart.

Alpine Strawberries are best grown from seed, and the present time is a suitable one for sowing seeds in boxes. Place the boxes in a moderate warmth and prick off the seedlings as soon as they are large enough to handle. Keep them in the same atmospheric temperature until the plants are established, then remove them to a cooler house or frame, and gradually harden them for planting out in May. Such varieties as Sutton's Large Red, Rouge Ameliare, and others may be seen fruiting most satisfactorily in September and October at Gunnersbury House Gardens, Acton.

Aphides or green fly.—These pests will soon occasion the fruit-grower considerable trouble. Apricot, Cherry, Peach, Nectarine, and Plum trees should be syringed with Quassia Extract, or some other approved insecticide, just before the flowers are about to open. The trees may then be expected to remain clean until the fruits have set, when it will be possible to renew the syringings.

THE APIARY.

By CHLORIS.

The Bee or Wax-moth.—Hives that are usually attacked by this pest are those containing weak colonies, or in which there are crevices, either under the frame-ends or between the various parts of the hive, through which a grub may creep and thus be out of the reach of the bees. Hives, too, that are not clean, but in which the floor is covered with the debris from the unsealing of the cells during winter and early spring are often infested with the larvæ of this moth. When an examination of the hive is made, particular note should be taken of the under sides of the quilts and the frame-ends, together with the groove in which the comb has been secured. When the weather permits, the body or brood chamber of the hive should be lifted from the floor board and the rubbish brushed off, killing every grub that is seen. Wherever webby tunnels exist in the combs there are these pests found, and as they move on they injure the brood, and many of the immature bees are killed. These dead larvæ are carried by the bees to the outside of the hive and may often be found on the alighting board. Their death may also be caused by a shortness of food, but if the hive contains a plentiful supply of stores, the trouble may be attributed to the wax-moth.

The Italian bees will quickly extirpate these wax-worms, and it is surprising how quickly they will clear infested combs of the pest. Much of the mischief arises, not only from weak colonies, but from careless storing of surplus combs during the late summer and early autumn, and especially is it noticeable in the case of comb containing pollen. It will be noticed that the grubs travel from comb to comb by means of a silky web, therefore the frames should be stored far apart, so that the grub cannot pass from one to another. Many bee-keepers are careless with spare pieces of comb, which are cast about in a haphazard manner in the vicinity of the hives. The female of the wax-moth finds in this a suitable place for depositing her eggs, and the grubs on hatching creep into the hives.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MARCH 21—
Meeting of the British Gardeners' Association at 7.30 p.m., at Carr's Restaurant, 261, Strand, London, for the purpose of establishing a London Branch. German Gard. Soc. meet.

WEDNESDAY, MARCH 25—
Roy. Bot. Soc. Exh. at Regent's Park.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—42·7°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, March 18* (6 P.M.): Max. 43°; Min. 35°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March 19* (10 A.M.): Bar. 29·8; Temp. 40°; *Weather*—Sunshine.
PROVINCES.—*Wednesday, March 18* (6 P.M.): Max. 45° Ireland S.W.; Min. 40° Liverpool.

SALES FOR THE ENSUING WEEK.

MONDAY—
Lilies, Border Plants, Bulbs, Azaleas, &c., at 12; Roses at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

TUESDAY, WEDNESDAY AND THURSDAY—
Important 3 days' sale of the whole of the Westfield Collection of Orchids, by order of Francis Wellesley, Esq., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
Herbaceous Plants, Hardy Bulbs, Liliums, &c., at 12; Roses at 1.30; Azaleas, Palms, &c., at 5, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

Maturation and Flowering. A comparatively new field of botanical investigation known as experimental morphology is gradually being opened up, and it is one which promises to yield results which will be valuable to the horticulturist. It is, of course, well known that many plants pass through a fairly definite life history which cannot be easily altered by outside influences. Thus, when a Mangold or a Carrot is sown, the first year of its life is generally devoted to storing up food in the swelling root, and during the next season the plant flowers and then dies. But yet in a field of Mangolds a larger or smaller number of individuals always "bolt," or run to flower during their first year, and this undesirable tendency is more apparent in some years than in others. It is obvious that the whole question of what causes a plant to direct its growth either towards vegetation storage, or towards flowering and fruiting, is one of considerable importance, for if we can explain what are the conditions that bring about the one or the other phase of the life history, we may succeed in gaining control over matters which it is at present beyond our power to influence.

It is gradually becoming clear that the production of flowers is due, in most cases at any rate, to the formation of certain definite substances in the plant, and that it is only when these are present that flowering becomes possible, provided, of course, that the physical conditions of heat, moisture, and the like are also favourable. Many carefully-conducted experiments have shown that the whole subject is intimately bound up with nutrition, but nutrition is a very wide term, and its course may be influenced by numerous external circumstances, such as light, temperature, &c. Many gardeners, for example, are fully aware of the disastrous effects that follow the application of raw manure to Roses at the wrong season, and during the winter that is now passing away, many of us have experienced the utmost disappointment owing to failures on the part of forced Hyacinth bulbs to produce blossoms. As to this latter example, there can be no doubt that the chief responsibility for the mischief rests with the cold, sunless periods that marred the summer of 1907, and interfered with the complex nutritive processes that ordinarily lead to the proper "ripening" of the bulb. Although we are not as yet in possession of all the facts which will one day enable us to say exactly what we really mean when we speak of ripening of bulbs, wood, &c., it is nevertheless becoming more and more obvious that the process depends on the accumulation of certain definite foodstuffs in, and probably also on the absence of others from, the plant. In other words, there are special substances, the preponderating influences of which act as the real agents in causing the plant, or parts of it, to pass from a vegetative to a floriferous phase of activity. Thus, it has been repeatedly proved by experiment that an excess of available nitrogen may delay the ripening of Mangolds, and we are perhaps justified in saying that the postponement in this and other similar cases is due to the accumulation of a certain class of food material which prejudicially affects the deposition of the substances essential to ripening. Probably, however, it would be more correct to say that the comparatively "raw" material continues to act as a stimulus to vegetative activity on the part of the plant which is unable to work it up into the appropriate chemical combinations at a sufficiently rapid rate. The stimulating effect which follows the excessive application of fertilisers usually makes itself apparent in the appropriate reawakening of vegetative activity appropriate because it is by means of its green-leaf mechanism that a plant is accustomed to deal with such substances.

It is possible in some cases to obtain a result in which the vegetative and reproductive aspects of the plant find a confused or mixed expression. This may happen if, for example, Roses are imprudently manured, for the raw foodstuffs serve to stimulate all parts of the plant to renewed vegetative activity at a time when the ends of the shoots have already been partly committed to development blossoms. An interesting experiment in this connection may be referred to. A certain Fern known as the Ostrich Fern, produces a number of green fronds arranged in a shuttlecock fashion, and these are followed later in the same year by an inner set of dwarf fertile leaves. But if the green leaves are removed as they unfold, those inner ones which should have been fertile are forced to grow as ordinary fronds, although they often exhibit intermediate stages between the forms of the barren and fertile fronds. In this experiment the balance of the plant is upset, and the substances which would have been diverted into the outer barren leaves have passed into the fertile ones, and have interfered in a corresponding manner with their development.

The process of "ripening off" is not the same for all plants, for some cannot be induced by any known modification of external conditions to deviate from their normal course of development, whether this lie in the production of leafy shoots on the one hand or of flowers on the other. Thus we may see that the matter is not a simple one, but it is one that is well worthy of close scientific investigation. Many plants are notoriously difficult to flower well. It may happen that in one locality the "conditions" are favourable, and no difficulty is experienced in obtaining blossoms. But why is this? Why is it that one despairing owner of evergreen masses of Gentians seeks in vain for the sheet of blue which comes with no trouble or credit to another? All that external conditions can do is to modify in a less, or, as unfortunately sometimes happens, in a greater degree, those nutritive processes which lead to the accumulation of the material that stimulates the flowering capacities, and, if allowed to form and to produce its full effect, determines the transformation of a vegetative to a flowering state.

It was not our intention to attempt to give a full explanation of the processes involved in ripening and maturation, for such an explanation still continues to elude the scientific investigator. Our endeavour has rather been to point out that in these matters certain definite problems are gradually formulating themselves, and that they are of interest, and perhaps also of importance, to the horticulturist, whilst from a still more general point of view it would be difficult to over-estimate their significance.

OUR SUPPLEMENTARY ILLUSTRATION.—The genus Cynorchis includes some 24 species, chiefly recorded from Africa, Madagascar, and the Mascarene Isles. Like many other tropical terrestrial Orchids, those species of Cynorchis which have been introduced to gardens have not been generally satisfactory, though, as in the case of many other reputedly difficult subjects, they grow with the greatest freedom in certain instances where their cultural requirements have been met. This may be said to be the case at the Royal Gardens, Kew, for Mr. W. WATSON, the Curator, not only succeeds in growing the showier species to perfection, but has even raised the handsomest Cynorchis × Kewensis from seeds obtained by crossing C. Lowiana and the species C. purpurascens, some of the plants so obtained flowering at Kew frequently with 18 spikes of flowers. Cynorchis purpurascens, from Madagascar, was illustrated from specimens obtained from Kew in the *Gardeners' Chronicle* for April 9, 1904, p. 227. In habit of growth it resembles C. Lowiana in being generally monophyllous. The inflorescence, however, bears from 15 to 30 rosy-mauve flowers, smaller in size than those of C. Lowiana. Cynorchis compacta is a South African species of much smaller growth than the others mentioned, but bearing profusely its spikes of white flowers. This species has often flowered at Kew, and in Baron SCHRODER's gardens at the Dell, Egham. Cynorchis villosa is a Madagascar species,

having erect racemes of very hairy, white and lilac-coloured flowers. C. Lowiana, which is figured in our Supplementary Illustration, is one of the prettiest of the Madagascan species. It has the small lateral sepals coloured light green, and the showy labellum bright rose-purple, the spur being clavate. It was the seed-bearing parent of C. × kewensis. Cynorchis grandiflora has slender green leaves, and usually produces one-flowered scapes, the labellum being of rose-purple colour, and the outer segments green, spotted with brown. It was illustrated in the *Gardeners' Chronicle* for February 18, 1893, p. 197. The experience at Kew proves that there is no reason why these pretty species of Cynorchis should not be successfully grown in gardens as ordinary warmhouse plants, provided their regular seasons of growth and rest are observed. At Kew the plants are rested from the end of December until the beginning of May, when they are turned out of their pots, the old compost carefully removed from the fleshy roots, and re-potted in a mixture of equal proportions of peat, chopped sphagnum-moss, and Orchid leaf-soil, with the addition of a little sand and charcoal. They are then placed in a moist atmosphere, having a temperature of 60° to 65° Fahr. by day and 55° at night. They are watered with rain water exclusively, and they produce bright green leaves and an abundance of flowers.

JOURNAL OF THE BRITISH GARDENERS' ASSOCIATION.—In the last issue of the quarterly series of this journal the principal articles include one from Mr. HENRY ED. HEATON, who considers gardeners' grievances, the reputation of gardeners, and other kindred subjects: a letter from "JUNIUS," which is an appeal to the horticultural trade to countenance the Association; several letters from Mr. R. LEWIS CASTLE and others on the conditions of employment at Kew; and an article by "W. W." on gardeners' discounts. With the next issue the journal will commence to appear at monthly intervals.

THE KEW GUILD JOURNAL.—It is always a pleasure to receive the annual journal published by the Kew Guild, for it contains a vast amount of information that, if specially relating to Kewites, is, nevertheless, interesting to all who are engaged in any branch of horticulture. The frontispiece to the present issue is an excellent portrait of Mr. R. IRWIN LYNCH, M.A., Curator of the Botanic Gardens at Cambridge, who left Kew in 1879 to take up the duties of his present position, having filled various responsible posts at Kew during the 12 years he spent in those gardens. Mr. LYNCH'S success at Cambridge, no less than his valuable contributions to botanical and horticultural literature, fully entitle him to receive the honour his fellow Kewites have thus conferred upon him. The list of appointments and retirements shows that Kew-trained men are deservedly sought after to fill some of the most responsible positions at home and abroad. The obituary notices include the names of ten men, all of whom have done useful work, although the lives of some of them were, unfortunately, of short duration. Among the younger men who have been lost through death are W. B. FRENCH, LEO FARMAR, and ALEXANDER AIKMAN. The wages question at Kew is discussed, and strong exception is taken to a statement made in the House of Commons by Sir E. STRACHEY to the effect that the gardeners during their employment at Kew are really apprentices, and that the salaries paid them is intended rather as subsistence money than as wages. The gardeners may have excellent reasons for complaining that the salaries paid to them are inadequate, but it is regrettable that they should have chosen to show their dissatisfaction by voluntarily absenting themselves from the courses of lectures provided in the gardens for their benefit. The policy of throwing away these advantages because they have so far failed to obtain their wishes in another direction appears to us unsound. We understand that these lectures, which were formerly delivered in the evenings, are now to be given during the working day. The letters from old Kew men resident in the Colonies and abroad are full of interest; but in some of them the complaint is made that there, as in England, a gardener's status is not equal to the responsible duties he is called upon to discharge.

MR. GEORGE NICHOLSON, A.L.S., V.M.H., we regret to say, is at present suffering a very serious illness. Mr. NICHOLSON is known personally or by repute to the vast majority of our readers as the former Curator of the Royal Botanic Gardens, Kew, and as author of the indispensable horticultural dictionary which bears his name. He is held in such respect by those who have been privileged to know him intimately, that we are sure our hopes that the illness will eventually be overcome, will find an echo in the minds of all who read these lines.

GARDENERS' CRICKET.—We understand that Mr. and Mrs. HARRY J. VEITCH have again issued invitations to the various committees of the Royal Horticultural Society to visit Burnham Beeches during the coming season for the purpose of engaging in a friendly cricket match.

TREATMENT OF LAWNS.—Messrs. SUTTON & SONS, Reading, have published a new edition of their useful brochure *Lawns*, and every one having the care of a greensward which has to be kept mown should obtain a copy. The little work treats of "Garden Lawns," "Tennis Lawns," "Bowling Greens," "Croquet Grounds," "Putting Greens," "Cricket Grounds," &c. Plans for laying out tennis and croquet lawns are often needed by gardeners, as is shown by enquiries received at this office. The information contained in *Lawns* is the outcome of repeated experience, and, therefore, it is trustworthy. The price of this edition is the same as previous ones, namely, one shilling.

RUBBER AREAS OF DIFFERENT COUNTRIES.—At a meeting held in Mexico City, of Mexican rubber planters, Dr. PEHR OLSSON-SEFFER is stated to have made the following statement in reference to the areas of planted rubber in Mexico and in other countries of the world:—From data at hand I would consider the world's area of rubber plantations to be 355,000 acres, distributed as follows: Mexico, 90,000 acres; Malay Peninsula, 92,000; Ceylon, 85,000; Africa, 30,000; Central America, 14,000; Java, 10,000; India, 8,200; Brazil, 6,000; Venezuela, 6,400; Ecuador, 3,000; Borneo, 2,000; Colombia, 1,800; and West Indies, 1,600.

* **PASTURES.**—The work of Mr. SUTTON on *Permanent and Temporary Pastures* is well known, and a new edition of the popular issue cannot but be welcome to everyone who has to manage grass, whether he is interested in it from the horticultural, i.e., the æsthetic, standpoint, or whether he regards it from the agricultural and economic point of view. The book will, of course, appeal more especially to the latter class of readers; the various grasses that occur in pastures are fully dealt with, and their fodder and other values are fully and plainly set forth. The various chapters on management and manuring of grass land add to the value of the book.

* *Permanent and Temporary Pastures*, by Martin J. Sutton. Popular edition, price 1s. Simpkin, Marshall, Hamilton, Kent & Co.: London. 1908.

A DESERT GARDEN IN EGYPT. We have received a copy of the *Egyptian Gazette* for February 19, containing a popular description by Mrs. IRENE HARVEY of an interesting garden at Al Hayat, Helouan, Egypt. This garden has been constructed by Baron KNOOP, and is remarkable for the fine features it contains, although situated in an arid desert fronting the Great Pyramids, but separated therefrom by many leagues of sand.

CO-OPERATION.—Co-operation among agriculturists has developed in France probably to a greater extent than in any other country. The farmers' organisation is said to possess 8,501,695 members, forming 7,089 societies. As a result of this universal co-operation, agriculturists are able to buy and sell on the most advantageous terms, and have secured cheap transport for their products.

COCOANUT BLEEDING DISEASE IN CEYLON.—Judging from reports in the Ceylon newspapers, this disease is the cause of considerable anxiety amongst the planters. It has shown itself at Kurunegala to such an extent as to have caused almost a panic there. The Government mycologist, Mr. T. PETCH, according to the *Ceylon Independent* of January 29, has succeeded in inoculating a number of healthy Cocoanut trees at Peradeniya with a culture of the spores of the fungus Thielaviopsis ethaceticus, which causes it. The exudations from the diseased tissue are of so gummy or sticky a nature that wind dispersal is out of the question. It is most likely that the disease is conveyed by the Cocoanut gatherers when they climb the trees or by small mammals, like squirrels or polecats, which swarm up the trunks at night. It will probably be best combated by treatment on similar lines to that employed for the Nectria disease. The official report of the mycologist on it was sent in to the Government in December. In the Ceylon Administration Report for 1906—Royal Botanic Gardens (Dr. J. C. WILLIS, director)—Mr. PETCH writes: "The disease is characterised by a flow from minute cracks on the stem of a liquid, which forms rusty-brown or black patches on the exterior. In many cases, especially on old trees, it causes merely a local injury, but on younger trees it may reduce the whole of the interior of the tree to a brown mass of humus. The symptoms have been known for many years, but it is only recently that it has shown signs of becoming a serious disease."

SCHOOL GARDENS.—On Tuesday last a question was put in the House of Commons by Sir FRANCIS CHANNING to the PRESIDENT of the Board of Education, asking if he would "state what is the present number of school gardens provided for elementary, secondary, and evening schools, respectively, in England and Wales; in how many of such school gardens are arrangements made for fruit cultivation as well as for gardening; and what is the number of detached demonstration or experimental fruit plots to which pupils of schools have access." Mr. MCKENNA answered that "the number of public elementary schools in England and Wales notified to the Board for the purpose of the grant for gardening is 1,138, each of which, of course, has ground specially devoted to the purposes of school gardening; but there are in addition a number of schools in which gardening is carried on more as a part of nature study than for the purpose of teaching gardening as such, and the gardens of these schools are not included in that number. Few secondary schools have school gardens intended to teach practical gardening to the scholars, but several schools in England (and one or two in Wales), the curricula of which are regarded by the

Board as having a distinctively agricultural character, have land for outdoor demonstration and experimental work in plant life; and a number of other secondary schools in England possess gardens which are utilised in connection with the biological teaching. The applications for recognition of evening school gardening classes for the current year have not yet all been received, but, assuming that the applications still to be received will correspond with last year, the number will amount to about 190 in England and Wales. It is impossible to say in how many of the elementary and evening school gardens arrangements are made for fruit cultivation, as few counties have any uniformity of practice in this respect, but it is probably about half. In only two of the secondary schools is provision made for the systematic teaching of fruit culture. As far as I am informed, to only one of the detached fruit stations in the country have the pupils of any public elementary, secondary, or evening schools regular access for practical instruction."

Publications Received. *Gardening for Women*, by the Hon. Francis Wolsley, published by Cassell & Co., Ltd.—*Heredity*, by J. Arthur Thomson, published by John Murray.—*The Townsman's Farm*, by "Home Counties," published by Cassell & Co.—*The Insect Book*, by W. Percival Westell, published by John Lane.—*Diet Difficulties, with Notes on Growing Vegetables*, by Mrs. C. W. Earle and Mrs. Hugh Bryan, published by Truslove & Hanson, Ltd.

MARKET GARDENING.

NOTES FROM THE "FRENCH" GARDEN.

We are now cutting Cabbage Lettuces. They have succeeded fairly well, but the weather has been rather too mild for them, and therefore the hearts are less close than they would have been in bright, frosty weather. All the Radishes have been removed from the earlier beds, and the space is now occupied by Lettuces and Carrots. We are completing the planting of the Cos Lettuces on the hot-beds. Our custom is to plant those Cos Lettuces that are put between the cloches—bell glasses—a week or ten days later than those which are put under cloches. The reason for doing this is to enable the plants under the bell-glass to obtain a good start over the others.

On February 15 we sowed seeds of Endive (La Rouennaise) on a brisk hot-bed, and the seedlings will be pricked off into another hot-bed at once. They will subsequently be planted in cold frames, putting 25 plants under each light, or three plants may be put under a bell-glass. This work will be done at the beginning of April. Endives require a considerable amount of artificial heat to get them to germinate satisfactorily during early spring. Experienced cultivators prefer to sow seeds two or three years old rather than new ones, as they believe the plants raised from the older seeds are less liable to run early to seed.

A batch of early Cabbage ("Ox Heart") raised from seeds sown on August 20 and pricked off on October 1 were planted in sheltered beds on November 15. They have withstood the winter well, and the surface soil around them has been stirred with the hoe during the present week. These Cabbages will be fit for consumption at the end of April or the beginning of May.

Melon plants are succeeding well in the hot-beds. They will be planted out permanently in the frames at the end of this present month.

Cauliflowers that were planted behind the first batch of Cos Lettuces, under the cloches, were raised from seeds sown on a hot-bed on February 15. They are planted directly under the cloches. Some growers use plants for this purpose, which they raise from seed sown in September, but by sowing a special batch for the cloches, we obtain a succession to the crop cultivated next to the Carrots in the frames.

It is necessary now to sow a batch of Cauliflowers for cultivation in the open garden, selecting the variety Lenormand and Driancourt. The former variety has a larger habit of growth than the latter, but it does not mature so early. The heads are very large in size, and are usually ready for consumption in August. We do not make a practice of pricking off Cauliflowers that are raised in the spring or summer, as the heads would appear earlier than desired, and the results be unsatisfactory. *Paul Aquatias, Maryland, Essex, March 11.*

FIG. 77.—PASSIFLORA CŒRULEA "CONSTANCE ELLIOTT": FLOWERS WHITE.

Fig. 78.—Passiflora vitifolia: flowers scarlet.

PASSION-FLOWERS AND THEIR CULTIVATION.

Our gardens would be poor indeed without the beautiful natural order of the Passifloraceæ, which, with one exception, P. arborea, are climbing plants. Many of them bear edible fruits, more or less oval in shape and of an olive-green colour; such are those of P. quadrangularis and P. macrocarpa, both large-fruited plants. The species may be divided for garden purposes into three divisions, so far as regards these islands, viz., the hardy species P. cœrulea and P. cœrulea var. Constance Elliott (see fig. 77); secondly, those which succeed in a greenhouse furnished with a heating apparatus for winter use; and, lastly, the hot-house or stove section, as P. edulis, P. kermesina, P. princeps, P. quadrangularis, P. vitifolia (see fig. 78), &c. There are certain essential points in the cultivation of Passion-flowers, the neglect of any of which is sure to result in a more or less flowerless condition of the plants. They are too often grown in much shaded and sparingly ventilated glasshouses, and this is more likely to occur when the plants are grown in borders, and therefore are not easy to remove. I would not advise this mode of growing the plants on account of the difficulty of affording the required rest in the winter season, the weak root system of the plants in general, and lastly the fact that they must endure the treatment afforded the other plants in the house, whether that happens to be suitable or otherwise. Passion-flowers can scarcely receive too much sunshine for good blooming, indeed shade is distinctly deleterious. The hybrid Impératrice Eugénie, if grown in a pot and shifted till it is in one of 10 inches in diameter in its third year, at which age it should flower freely, may be taken out of doors in June and grown against a wall having a due west aspect; in this position the plant will produce flowers the entire summer through. It should here be remarked that this hybrid, and others with large blooms, are not so free in flowering as the smaller-flowered species and hybrids. In all cases the growths of Passion flowers should be kept thinned out at short intervals of time, and the dead and weak growths must be removed during the summer as well as at the winter pruning, thus ensuring the thorough ripening of the remaining shoots. P. Raddiana (kermesina) and P. princeps (racemosa), stove species, are weaker growers than P. cœrulea and its varieties, and require smaller pots and they do not need so much space in which to grow; but they are, under good treatment, decidedly more floriferous than P. cœrulea. This last species is a hardy plant in this country south of the Humber, in the warm south-west of Scotland, the south of Ireland, and in the maritime parts of Wicklow, Down, and about Dublin.

Passion-flowers have been largely inter-crossed, the hardy species above mentioned being often employed as the female parent, as was the case with P. c. racemosa, the product of the cross being a beautiful flower; P. c. kermesina is supposed to be a cross with P. Raddiana; a white form named Constance Elliott, which has the hardiness of the mother species and is equally floriferous, was produced by an unknown cross. The species P. alata ♂ (see fig. 79) and P. racemosa ♀ when crossed, resulted in the fine variety P. amabilis. P. Belottii is supposed to be a cross of P. quadrangularis and P. cœrulea-racemosa; P. Buonapartea is supposed to be a cross between P. quadrangularis and P. alata, and there are many others, of which the parentage may only be surmised in some instances, although in others their origin is duly recorded.

A suitable soil for all the sections of Passion-flowers consists of fertile pasture loam, one half, decayed manure one quarter, moderately hard peat one quarter, and as much sand and crushed bones as the loam requires to afford free passage for the water. The potting should be firm, but a rammer should not be used; and the root system being rather scanty, only a small shift at each repotting is advisable. As aids to growth during the summer, decayed cow dung as a top dressing, and sheep or deer droppings as a liquid manure, are useful. The application of root moisture during the winter should be merely sufficient to prevent the withering and shrivelling of the growths and stems.

Propagation of the plants is easy by means of softwood cuttings with a slight heel of the older wood, and they should be taken when growth has started in the spring. Such cuttings may be

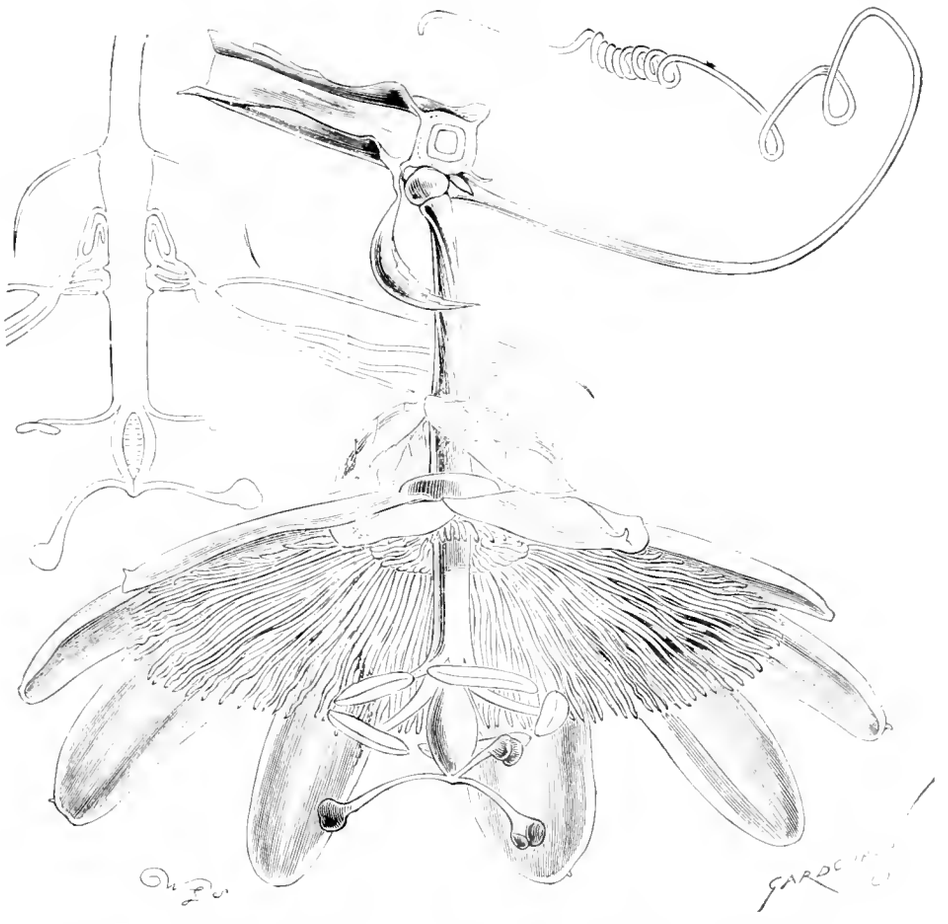

Fig. 79.—Passiflora alata: flowers crimson, with purple rays.

put into a sand bed in the propagating house, covering them with a bell glass or small hand glass. It is advisable to remove the condensed moisture from the inside of the glass every morning in order to avoid damping off. Failing a sand bed pots may be employed, three to five cuttings being placed in sandy soil quite near to the side in each. Cuttings also root quite readily in an ordinary dung bed frame. This last is a good method with varieties and species difficult to propagate from cuttings. *F. M.*

HOME CORRESPONDENCE.

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

THE GARDENERS AT KEW.—During a recent conversation with a well-known nurseryman, I was surprised to hear him remark that the gardeners at Kew spend a great part of their time walking about with a pocket lens and a note-book. I am sorry to say he does not stand alone in holding this opinion. Many gardeners and nurserymen, particularly nurserymen, seem to be unreasonably prejudiced against the Kew gardener, regarding him as a theoretical, scientific individual, with little ability or desire for practical work. Allow me, as one who can speak from experience, to correct this erroneous impression. Generally speaking, the work done by the young gardeners at Kew is quite as practical and as rough as that on the average market nursery. Hosing, scrubbing paint, glass, etc., washing and crocking pots, trenching beds and borders, wheeling manure, sweeping, pecking up and gravelling paths, cleaning out tanks, etc., are among their ordinary duties. The hours devoted to work are, with the exception of mid-winter, from 6 a.m. till 6 p.m. Of course, some of them do study more or less, but the majority are simply practical gardeners, following a practical gardener's career, and leave Kew with little better botanical or scientific knowledge than they entered. The gardeners do not grumble or object to their work, but they do protest against being unjustly labelled "theoretical," especially when this false impression acts as a hindrance, and often prevents them obtaining situations which they are quite competent to fill. *C. H. M.*

SEA SAND FOR BOWLING GREENS AND LAWNS.—The recent enquiry leads me to ask why does anyone lay down turf upon sand of any kind? I cannot see how a good root action is to be secured in the case of turves averaging not more than 2 to 3 inches in thickness and laid upon sand. I have seen many such lawns, but never one that could be called a success. Even during the abnormally wet season of last year, I witnessed several greens and lawns that were in an unsatisfactory condition, and these were laid upon sand. During hot weather there is no moisture in the sand, but this material being a hungry, absorbent element, soon causes the grass to turn a bad colour. I have used sea sand for potting purposes, for which it answers just as well as fresh water sand. I am about to prepare some new greens in connection with our new public park, and I have millions of tons of sea sand at my command, but it will be the very last thing I shall use. Some few years ago, whilst head gardener in Belfast, I made a large lawn, and the turves were laid on soil. At the same time a similar lawn was made by a neighbour, but he used sand from the shore, with the result that his grass had afterwards to be kept continually watered, whilst mine never required any water other than the rain. My friend declared afterwards that he would never lay turf upon sand again. *Victor H. Lucas, Gardener to Borough Council, Barrow-in-Furness.*

JUDGING VEGETABLES BY POINTS.—I consider the only proper and just method of judging vegetables is by points, and I see no reason why small collections as well as large ones should not be judged in this manner. The greatest possible care should be exercised with respect to the relative merits of the various kinds of vegetables, but no code, however well it may be compiled, can answer for all the seasons of the year. The more difficult it is to produce a certain vegetable in a certain season the higher should be the number of points awarded to it. I do not agree with the placing of all vegetables on an equal merit when pointing for a prize. For instance, an exhibitor may find that at the last moment the samples of one of his choicest vegetables, say Celery, Carrots, or Leeks, are not up to the highest exhibition standard, and that he will probably lose two or three points should he include them in his exhibit. He may, however, have perfect samples of Parsnips, Marrow, Cucumbers, or even Cabbage, and the judges can do no less than award them the maximum number of points if they consider them worthy. This is equivalent to awarding the same number of points to three perfect bunches of Black Alicante Grapes as to three equally perfectly finished bunches of Muscats. In all cases where judging is done by points, the numbers should be affixed to the competitors' cards both for the satisfaction of the exhibitor and for the information of the public. Good judges know the relative value of each kind of vegetable exhibited, the season at which they are exhibited, and the quality of the varieties staged. If a judge does not possess sufficient ability to adjudicate in a vegetable competition without the aid of a code by the wording of which he is bound, no amount of rules, however well they may be framed, will enable him to arrive at a fair decision. *E. Beckett.*

THE GRAFTING OF CLEMATIS.—In the issue of March 14, Mr. H. Evans questions the advisability of grafting hybrid Clematis. I did not touch on this point, because in my article (see p. 149) the remarks were confined to the process of grafting. It is true that failures are attributed to the fact that plants are not cultivated on their own roots, but I should like to ask, "Are plants that have once become established ever found to be other than on their own roots?" As far as I have been able to judge, every Clematis that is given a good soil of light texture will very quickly produce an abundance of roots above the graft. If the horizontal cut, as I recommended, is applied, the plants in their early stage become partly dependent on the roots they will form and eventually almost entirely so, because they will develop much more quickly than those of the stock (C. vitalba). I have noticed the stems of plants die off near the surface of the ground and shortly afterwards other shoots appear from below the surface; in such cases it seems improbable that grafting was to blame, as part of the plant above the union must have been left intact. Of course, these plants had formed roots of their own, but I am assuming that the seat of decay is supposed to be at the union of the stock and scion. I am not able to say whether these sudden failures are confined solely to plants that have been grafted or not. I see nothing to hinder one from raising any variety from layers, especially if a little aid is given in the form of peeling off a little of the bark from the stem which is to be pegged beneath the soil. Many sorts of Clematis can be propagated by means of cuttings, but to my mind neither of these latter methods are as sure to be successful as grafting; that is, where quantities of various hybrids are required. *W. B. Little.*

THE SPECIES OF PHORMIUM.—At the late Lord Battersea's garden at Overstrand, in Norfolk, we had a large number of these plants, the varieties being P. tenax, "Powerscourt variety," and P. variegata and Messrs. Veitch's variegated form. Particularly in regard to the latter two varieties, the position was very much on the dry side. They were planted in pockets under an avenue of trees in a compost of loam, leaf-soil, and peat. At the time of my employment there, the plants had become specimens some 7 to 8 feet in height, and had flowered very freely each year for five years. The year 1906 was very dry, yet few waterings were given them, and they all flowered at that season. In the early spring, we shifted two large clumps and placed them in pockets in an island in the water garden. The walls of the pond being of cement, and the bottom of the same material, the conditions were the same as planting in a border. Only occasional waterings were given them, yet they throve and are still thriving. The other varieties were given similar positions, and all succeeded well. They were never given any protection during winter, and yet remained uninjured. When Mr. Mallett visited the place he remarked how well they were doing. Here at Sutton Place, some plants of P. Cookianum were planted in a swamp, and very unhappy they looked. They have, however, in the course of some alterations, been transferred to a much drier position, and are at this early stage showing signs of improvement. *Donald Watson, Sutton Place Gardens, Guildford.*

SOCIETIES.

ROYAL HORTICULTURAL.

MARCH 17.—A beautiful display of flowers was seen at the meeting held on this date. The Orchids were good, especially the groups shown by Major HOLFORD and J. BRADSHAW, Esq. Forced trees and shrubs formed a considerable portion of the exhibition; there were also many good collections of hardy spring-flowering plants; of florists' flowers, including Cyclamen and Cinerarias, Roses, and bulbous flowers.

The FLORAL COMMITTEE made no award to a new plant, nor did the NARCISSUS or FRUIT AND VEGETABLE COMMITTEES have any subject worthy of award before them.

The ORCHID COMMITTEE'S awards to novelties included two First-Class Certificates, four Awards of Merit, and two Botanical Certificates.

At the afternoon meeting of the Fellows, 61 names were accepted for membership, and a lecture on "Beautiful Flowering Trees and Shrubs" was delivered by Mr. George Gordon, V.M.H.

Floral Committee

Present: W. Marshall, Esq. (chairman), and Messrs. Chas. T. Druery, Jno. Green, T. W. Turner, G. Reuthe, C. R. Fielder, Jas. Hudson, J. W. Barr, E. Bowles, W. Howe, J. Jennings, F. Page Roberts, Jas. Douglas, Chas. Dixon, Chas. E. Pearson, R. C. Notcutt, H. J. Cutbush, W. Cuthbertson, W. P. Thomson, Arthur Turner, E. H. Jenkins, W. J. James, Geo. Paul, Chas. E. Shea, J. F. McLeod, C. Blick, and R. Hooper Pearson.

A group of much excellence was exhibited by E. A. HAMBRO, Esq., Hayes Place, Kent (gr. Mr. J. Grandfield). The subjects were mostly showy-flowered plants, but there were many choice Alpine species. We noticed a magnificently-flowered pan of Saxifraga Boydii alba, and an almost equally meritorious plant of S. Boydii. The majority of the group was made up of Primulas, Anemones, Scillas, Narcissi, and other bulbous flowers, with flowering shrubs interspersed, the whole being arranged with artistic merit. (Silver-Gilt Banksian Medal.)

A pleasing display of Clematis and other greenhouse flowering plants was presented by Messrs. H. B. MAY & SONS, Upper Edmonton. There were many choice Ferns, including some of the newer varieties of Nephrolepis exaltata, intermingled in the group. Primula × kewensis appeared to advantage against the greenery of Azaleas and other plants. Pelargonium Clorinda was included in the exhibit, which also embraced many well-flowered plants of Cyclamen latifolium. Notable varieties of Clematis were Lord Wolseley, Mrs. Quilter, Lord Londonderry, and Nellie Moser. (Silver-Gilt Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, staged one of their usual displays of flowering plants of greenhouse species, with vases of Carnations. There were many of the choicer varieties of Azalea indica; Franciscea calycina, 25 varieties of Acacias, Lachenalias, Gerbera Jamesonii, &c. (Silver Flora Medal.)

Messrs. CANNELL & SONS, Swanley, Kent, provided a scene of brilliant colouring in their vases of Zonal Pelargoniums, in varieties representing most of the choicest kinds in cultivation. They also displayed "pips" of their strain of Primula sinensis. (Silver Banksian Medal.)

The space under the wall opposite the entrance was again filled with groups of forced trees and shrubs. Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, staged an effective group, in which a prominent position was afforded plants of the handsome-leafed Vitis Henryi; there was also a number of finely-flowered Lilacs, among which were the varieties President Grevy, Marie Legraye, Madame Lemoine, Souvenir de Louis Spath, the bright-red-

dish Michael Buchner; well-bloomed trees of Wistaria sinensis, Cytisus Laburnum vulgare Vossii, having longer and more lax and slender panicles than the type; Cerasus serrulata, a fine double-flowered white Cherry; Pyrus Malus Scheideckeri, Forsythia intermedia, a cross between F. suspensa and F. viridissima, of a more compact habit of growth than either parent; Kerria japonica fl. pl.; Staphylea colchica; many varieties of Rhododendrons, including Early Gem Handsworth, Early Red, Christmas Cheer, &c. Messrs. Veitch also staged a number of greenhouse flowering plants on one of the tables. We noticed many interesting and useful spring-flowering subjects, such as Strelitzia Kegmæ, Camellia reticulata, Streptosolen Jamesonii, Azalea amœna "Hexe," Primula × kewensis, and at one end of the exhibit tall plants of Rhododendron Veitchianum and R. Forsterianum. A batch of the florists' Cyclamen completed the display. (Gold Medal.)

Messrs. R. & G. Cuthbert, nurserymen, Southgate, Middlesex, contributed a large group consisting of many plants of finely-flowered Azalea, varieties of sinensis having rich and vivid tints. The more striking varieties were Consul Pecher, orange and red; Mrs. A. E. Endtz, clear yellow, with slight spotting on the upper segments; Florodora, of a rosy orange tint; and Elizabeth, rosy red. There were also Lilacs in variety, mostly in standard shape; Magnolia Soulangeana nigra, and species of Pyrus. (Silver-Gilt Banksian Medal.)

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, showed a group of forced shrubs, consisting of Lilacs, mostly white-flowered, Azalea mollis, Clematis indivisa lobata, Prunus triloba, &c. (Silver Flora Medal.)

A pretty group of forced shrubs, principally Cherries and Peaches, was shown by Messrs. W. Paul & Son, Waltham Cross, Herts. The exhibit was staged in the corner of the Hall near the annexé, a number of tall Dracænas being utilised as a background. The yellow Banksian Rose was included in the display, also a plant of the beautiful single yellow-flowered species, Rosa Hugonis. (Silver Banksian Medal.)

Messrs. Sutton & Sons, Reading, exhibited a number of plants of the florists' Cineraria, having flowers of pink and blue colours with intermediate shades. The plants were compact, and had healthy foliage, above which the spreading inflorescences appeared to advantage. The flowers were of the most approved form, and the trusses were compact, yet sufficiently spreading to display themselves. Some were of a deep shade of blue, and these were especially pleasing. At one end of the exhibit was a number of plants of the star or Stellata type, with inflorescences no taller than those of the florist's type. Messrs. Sutton also showed a number of hybrid Freezias.

Exhibits of Carnations were presented by Mr. H. Burnett, Guernsey (Silver Flora Medal); and Mr. W. H. Page, Tanglay Nurseries, Hampton; Mr. Page also exhibited large-flowered spécies of Lilium. (Silver Banksian Medal.)

Mrs. Barton, Birtley, Bramley, Guildford (gr. Mr. Streeter), showed very large plants of Cinerarias. (Bronze Flora Medal.)

Messrs. Jarman & Co., Chard, exhibited tall, lax-flowering Cinerarias with conv lute florets. From the habit of the plants, they appeared to have been derived from some tall-growing species crossed with the florists' type.

A collection of Cyclamen latifolium was exhibited by the St. George's Nursery Co., Harlington, Middlesex. This large exhibit embraced flowers of numerous shades, but the plants, although well grown, did not impress us as being up to the high standard of excellence seen from the same nursery in former years. (Bronze Flora Medal.)

A beautiful display of Roses was again presented by Mr. Geo. Mount, Canterbury, Kent. The new variety Joseph Lowe was given prominence, and found many admirers. There were also fresh and large blooms of Mrs. W. J. Grant, Richmond, Frau Karl Druschki, and Liberty. (Silver Flora Medal.)

Mr. Robert Sydenham, Tenby Street, Birmingham, displayed, as at the last meeting, vases of bulbous flowers, grown in moss fibre. (Bronze Banksian Medal.)

Messrs. W. Cutbush & Son, Highgate, London, N., showed an exhibit of hardy flowers, and on an opposite table, a large array of flowering shrubs. The Alpine and other hardy flowers were arranged in an imitation rockery, and the subjects were cleverly disposed. We noticed a fine form of Incarvillea Delavayi named grandiflora. There were also the usual spring-flowering subjects, such as Scillas, Crocuses, Hepaticas, Primulas, Irises, &c. The shrubs included Magnolias, Acacias, Rhododendrons, Ledum latifolium, Ericas, Azaleas, and many other species. (Silver-Gilt Banksian Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, displayed flowers of Narcissi, all of which had been grown under glass. Adjoining the Daffodils, the same firm staged a collection of hardy flowers, including many Alpine and rock-garden species. Boxes of Crocuses were very showy; there were also Anemones, Fritillarias, Scillas, Hellebores, Primulas, and other spring flowers in great variety. (Silver Banksian Medal.)

Messrs. John Peed & Son, West Norwood, Surrey, showed numerous hardy flowers, an assortment of small Cactaceous plants, and a batch of well-flowered plants of Primula obconica. Some fine spikes of Lachenalia Nelsonii were displayed in vases, the remainder of the exhibit being principally of rare and interesting species of Saxifragas, Primulas, and similar plants.

A small, but interesting exhibit of dwarf hardy plants was shown by Messrs. Heath & Son, Cheltenham. We noticed a finely-flowered pan of Saxifraga oppositifolia, and another of Primula frondosa in Messrs. Heath's collection.

A display of hardy plants was shown by the Guildford Hardy Plant Nursery, Guildford, Surrey. Many hardy Heaths were shown in this group, the species including Erica carnea, E. mediterranea hybrida, E. cupresa, &c. A pan of Pulmonaria saccharata was an attractive feature. There were also many rare Primulas, the dwarf-flowered Doronicum Columnæ, Iris reticulata, &c.

Messrs. T. S. Ware, Ltd., Ware's Nursery, Feltham, Middlesex, showed an exhibit of hardy flowers, many of which were suitable for the rock garden. A prominent position was afforded a group of Primula obconica of a larger flowered strain than the type. (Bronze Flora Medal.)

Messrs. Joseph Cheal & Sons, Crawley, Sussex, showed a few pans of Alpine plants, with dwarf-habited Conifers and shrubs suitable for planting in the rock-garden.

A realistic piece of rock-gardening was shown by Mr. H. C. Pulham, Elsenham, Essex, the stones being admirably disposed and the spaces planted with suitable subjects.

Mr. G. Reuthe, Hardy Plant Nursery, Keston, Kent, had numerous species of Crocus, Ericas, Anemones, Fritillarias, Hepaticas, Saxifragas, Primulas, &c., with showy trusses of Rhododendron arboreum, R. barbatum, and other early-flowering species. (Bronze Flora Medal.)

Messrs. Geo. Jackman & Son, Woking, Surrey, exhibited Alpine and other hardy flowers, amongst which we noticed a spike of the beautiful Watsonia Ardernei. There were also Scillas, Fritillarias, Tulips, Cyclamen, Anemones, and many other spring-flowering subjects.

The Misses E. & M. Kipping, Hutton, Essex, showed a small collection of Alpine plants in flower, amongst which were many pleasing varieties of Primrose, including red and other coloured varieties.

Miss Alice M. Smith, Barnham, Bognor, also showed coloured Primroses and other spring flowers.

Narcissus Committee.

Present: H. B. May, Esq. (Chairman); and Messrs. A. Kingsmill, G. H. Engleheart, J. T. Bennett Poe, Joseph Jacob, Jas. Walker, Alex. M. Wilson, W. T. Ware, R. W. Wallace, H. A. Denison, F. Herbert Chapman, P. Rudolph Barr, and C. T. Digby.

There were no novelties before this committee, and only one group was staged. This was exhibited by Messrs. Barr & Sons, King Street, Covent Garden, London, and was composed entirely of forced flowers. In this connection it is interesting to record that such diverse sections as incomparabilis, Leedsi, Ajax, Barrii, Johnstoni, Poeticus, and odorus were represented. Among the many varieties staged, the choicer were the double Sulphur Phœnix, Monarch, Victoria, Queen of Spain, White Lady, and Barrii conspicuus. (Silver Banksian Medal.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, W. Boxall, R. G. Thwaites, F. Sander, H. G. Alexander, J. Cypher, F. M. Ogilvie, J. Forster Alcock, W. Cobb, J. Charlesworth, W. P. Bound, A. Dye, W. H. White, H. A. Tracy, H. Ballantine, Gurney Wilson, W. Bolton, R. Brooman-White, C. J. Lucas, A. A. McBean, and Stuart Low.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), was awarded a Silver-Gilt Flora Medal for a fine group composed of specimen plants of fine varieties. Among the best in the group were the large-flowered, lilac-tinted Odontoglossum crispum Rosemary, which had already secured an award; the equally fine O. c. Egret, and O. c. Westonbirt variety, and another pretty form with blotches on the sepals, the plant bearing four spikes. O. Andersonianum, Westonbirt variety, was a fine form heavily marked with claret colour. Dendrobium Magda, D. Melpomene, and D. Perseus were represented by fine specimens, the D. Perseus aureum being one of the best of the yellow species. Other fine things were Lælio-Cattleya Earl Grey, rose-purple with claret lip; L.-C. Dorothy, a pretty, new, yellow hybrid; Brasso-Cattleya Digbyan-Mendelii, a pretty blush-white form; B. C. Madame Hye; the neat little Sophro-Lælio-Cattleya Danæ (Harrisoniæ × læta Orpetiana), and others. (See Awards.)

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), was awarded a Silver-Gilt Flora Medal for a very extensive and fine group, the centre of which was filled with white-flowered varieties of Cattleya Trianæ, the various forms bearing together, 60 blooms. C. T. Esmerelda had fine white flowers with a slight pink tint on the lip, C. T. alba, and C. T. a. "Mrs. Edward Sondheim" were wholly pure white; C. T. Prima Donna was of fine form, white, with a small purple feather on the lip; C. T. Thetis, silver-white, with lilac-tinted lip, and other distinct white forms were included. Of the coloured varieties, C. T. Exquisite, C. T. Endymion, and C. T. tricolor were magnificent varieties of the true original form. There were good forms of Lycaste Skinneri, both coloured and white, 19 blooms of the pure white appearing; also L. Balliæ, with reddish-crimson flowers; a very good selection of Odontoglossums, &c.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was voted a Silver Flora Medal for a pretty group, in which were the handsomely-blotched Odontoglossum crispum Lily Bourdas, which has greatly improved since it obtained an Award of Merit last year; a good selection of other varieties of O. crispum, O. Hallio-crispum, O. Vuylstekei, and several other pretty hybrids, two plants of the white and rose Miltonia Phalænopsis, Angræcum Sanderianum with three spikes, a magnificent yellow and claret-coloured form of Odontoglossum Wiganianum, &c.

Messrs. J. Cypher & Sons, Cheltenham, secured a Silver Flora Medal for an effective group of good varieties of Dendrobium, Odontoglossum crispum, and other Odontoglossums, including a showily-blotched form of O. ardentissimum, O. blandum, and others. Among the Cypripediums were C. Beekmannii, C. aureum Hyeanum, and a fine form of C. Mons. de Curte. The centre was of bright scarlet Sophronitis grandiflora, and Epiphronitis Veitchii.

Messrs. J. & A. A. McBean, Cooksbridge, were awarded a Silver Flora Medal for a fine group of Odontoglossums grown and flowered in the excellent manner usual with them. The group contained a selection of the typical white and rose-tinted type, and a good number of handsome, blotched kinds, including O. c. King Richard, O. c. Xanthotes, O. c. Oakfield Sunrise, and some unnamed varieties. One pretty specimen bore a branched spike of 52 flowers.

Mr. A. W. Jensen, Lindfield, Sussex, was awarded a Silver Flora Medal for a group of extraordinarily fine forms of Cattleya Schroderæ from his recent importation, the flowers being large and of fine form, very fragrant, and varying from blush-white with orange throat, to rose

with purple markings on the labellum. Some varieties of Odontoglossum crispum were shown, especially one handsomely-blotched form.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Flora Medal for a good group, in which Cattleya Schroderæ Enfieldiensis was a very fine rose form with violet-purple lip; C. Trianæ plumosa, a very handsome flower; and a blush-white petalled C. Percivaliana, with very dark lip, a distinct form. Among the Cypripediums, C. insigne, E. J. Seymour, C. i. McNabiana, and C. × Mrs. Wm. Mostyn were the best.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), staged a pretty group of well-grown Odontoglossum crispum, O. triumphans, O. Rolfeæ, O. Adrianæ, O. Wilckeanum, and others. Also a very fine variety of Cypripedium Bridger grandiflorum, together with its parents, C. Argus Moensii and C. Godseffianum; and other Cypripediums. (Silver Banksian Medal.)

Messrs. SANDER & SONS, St. Albans, staged an interesting group which included the rare blush-white Lælio-Cattleya Kerchoviæ, the pretty Odontioda Lairessiæ, and Odontoglossum Lairessiæ, Epidendrum Wallisii, and hybrids of it; some distinct forms of Cattleya Manæi and C. Schröderæ, Promenæa citrina, Cœlogyne Lawrenceana, Cypripedium Rothschildianum, and other Cypripediums; two forms of Lælio-Cattleya luminosa, the rose-coloured Cynorchis × kewensis, the white form of Epidendrum evectum, and several pretty species of Ophrys. (Silver Banksian Medal.)

Messrs. MOORE, LTD., Rawdon, Leeds, staged an interesting group in which were the singular and rare Dendrobium macrophyllum, with large greenish flowers spotted with purple and strongly hairy on the reverse side; D. fusiforme (see Awards), D. nobile virginale, and other varieties, the finest of which was D. Wiganiæ album; good Cattleya Schröderæ, &c. (Silver Banksian Medal.)

Messrs. HEATH & SON, Cheltenham, showed a group of Dendrobium Wardianum, D. nobile varieties, Epiphronitis Veitchii, Cœlogyne cristata alba, Cypripediums, &c.

Mons MERTENS, Mont St. Amand, Ghent, showed a small group of hybrid Odontoglossums and Cypripediums.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), staged an interesting selection of hybrid Dendrobiums, including nine very distinct and handsome forms of D. Thwaitesiæ, all raised from one lot of seed. Also D. Mrs. Alfred Rogers, a pretty light hybrid, and D. Rolfeæ, raised by seeds from D. Linawianum ×, and a plant of the singular Epidiacrum Colmanii (E. ciliare × D. bicornutum), with white flowers, the singular labellum having the side lobes fringed and the middle ones linear.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr Mr. Stables), showed three interesting and pretty hybrid Odontoglossums raised at Rosefield, viz., O. Waltoniense var. (Kegeljani × crispum, spotted variety); O. Carmen (crispum × Crawshayanum), and O. Electra (Andersonianum × triumphans).

Messrs. CHARLESWORTH & Co., Heaton, Bradford, showed a small group in which there were very fine specimens of Miltonia Warscewiczii, Odontioda Heatonensis, with elegant reddish-rose spotted flowers, the clear white Odontoglossum ardentissimum xanthotis, a fine flower with chrome-yellow markings on the lip, O. amabile, and others. (See Awards.)

FIRST-CLASS CERTIFICATES.

Vanda suavis pallida, from Mons. THEODORE PAUWELS, Ghent. A very fine albino with white flowers, the segments marked with pale green. It is probably identical with V. suavis Sanderæ.

Cattleya Suzanne Hye de Crom (Mossiæ Wageneri × Gaskelliana alba), from Mons. JULES HYE DE CROM, Coupure, Ghent (gr. Mr. Coen). Flowers large, pure white, with yellow disc to the lip. M. HYE DE CROM showed a quantity of cut flowers at the last meeting, and now sent a plant in bloom.

AWARD OF MERIT.

Cattleya Enid, Westonbirt variety (Warscewiczii × Mossiæ), from Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. Alexander). A noble variety with large rosy-mauve coloured flowers, the broad-fringed lip being ruby-crimson with a lilac margin.

Lælio-Cattleya luminosa, Westonbirt variety (L. tenebrosa × C. Dowiana aurea), from Major G. L. HOLFORD. The finest form of luminosa. The very large flowers had Indian yellow sepals and petals tinged with red, and very large claret-crimson lip.

Odontoglossum Gladys (O. cirrhosum × O. Harryanum), from Messrs. CHARLESWORTH & Co. An elegant hybrid with greenish-white sepals and petals blotched with dark purple. In form like O. elegans, but of larger size.

Lælio-Cattleya Elinor (L. Coronet × C. Schröderæ), from Messrs. CHARLESWORTH & Co. A very fine hybrid with the deep orange colour of L. Coronet (L. harpophylla × C. cinnabarina) on flowers of good size and shape.

BOTANICAL CERTIFICATE.

Pleione pogonioides, from Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea. A pretty dwarf species with rose-coloured flowers imported by Messrs. VEITCH from China.

Dendrobium fusiforme, from Messrs. MOORE, LTD., Rawdon, Leeds. A rare Australian species with fusiform pseudo-bulbs bearing three or four leaves on the upper part. The inflorescence bore many ivory-white flowers, with some purple markings on the lip. Illustrated in the *Gardeners' Chronicle*, May 25, 1907, p. 337.

CULTURAL COMMENDATION.

To Mr. H. G. Alexander, Orchid grower to Major G. L. HOLFORD, C.I.E., C.V.O., for Odontoglossum Adrianæ, var. Lady Wantage, in a 5-inch pot, and bearing an inflorescence 4 feet 6 inches long, with 13 branches, having a total of over 100 flowers; also for Cattleya Enid magnifica, Westonbirt variety, with a grand inflorescence of six flowers. To Mr. W. H. White, Orchid grower to Sir TREVOR LAWRENCE, Bart., for Brasso-Cattleya Lindleyana, with over 50 flowers.

Fruit and Vegetable Committee.

Present: Owen Thomas, Esq. (Chairman); and Messrs. W. Bates, G. Woodward, C. O. Walter, H. Markham, A. Dean, H. Parr, E. Beckett, G. Kelt, J. Davis, W. H. Divers, J. Vert, J. McIndoe, C. Foster, G. Wythes, C. G. A. Nix, H. Somers Rivers, and W. Poupart.

The chief exhibit before the committee was a collection of several varieties of Oranges, sweet and bitter, oval and round, and a Lemon. The fruits generally were large, but most of them had very thick skins. Those tasted by the committee were sweet and of excellent flavour. They were grown in Cyprus on standard trees, and were exhibited by Mr. ANSELL, of that island. (Silver Gilt Knightian Medal.)

Messrs. G. BUNYARD & SONS, Maidstone, sent for comparison by tasting with Nova Scotian Apples, 13 varieties of home-grown Apples, including Adam's Pearmain, Lane's Prince Albert, Striped Beefin, Wagener, Sturmer Pippin, Lord Hindlip, Lord Burghley, King of Tompkins' County, Beauty of Kent, Newton Wonder, Belle Tontoise, and others. The best flavoured fruits were those of Lord Hindlip, Lord Burghley, Wagener, and Newton Wonder. From the Nova Scotia Government came Baldwin, Nonpareil, Golden Russet, Starke, Fallwater, and King of Tompkins' County. None of these possessed much flavour.

Mr. A. DEAN, Kingston, Surrey, sent English fruits of Bramley's Seedling and Bismarck, and imported fruits of Fallwater and Newtown Pippin. The latter proved to have been frosted. The Committee, after tasting from every dish, decided that the English Apples were the better flavoured, and most crisp and juicy.

MELBOURNE (DERBYSHIRE) AND DISTRICT FRUIT GROWERS'.

MARCH 6.—This association was formed on the above date, Mr. W. H. Perry being appointed the secretary. A resolution was passed that the Board of Agriculture be asked to grant compensation for Gooseberry bushes destroyed under the new Act.

MARKETS.

COVENT GARDEN, March 18.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Acacia (Mimosa), dozen bunches	9 0	12 0
Anemones per doz. bunches	2 0	3 0
— double pink ...	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, per bunch	1 0	1 6
Calla æthiopica, p. dozen	2 6	3 6
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American various ...	2 0	3 0
— second size ...	1 6	2 0
— smaller, per doz bunches	9 0	12 0
— Malmaisons, p. doz. blooms ...	8 0	12 0
Cattleyas, per doz. blooms ...	8 0	10 0
Cœlogyne cristata, per dz. blooms	1 0	1 6
Cyclamen, per doz. bunches ...	6 0	8 0
Cypripediums, per dozen blooms..	2 0	2 6
Daffodils, various, p. doz. bunches	2 0	4 0
— double, per dozen	3 0	4 0
— Golden Spur per doz. ...	3 0	5 0
— H. Irving ...	3 0	4 0
— Princeps ...	2 0	3 0
— Sir Watkin ...	3 0	4 0
Eucharis grandiflora, per doz. blooms ...	3 0	4 0
Freesias, per dozen bunches ...	2 0	3 0
Gardenias, per doz. blooms... ...	2 0	4 0
Helleborus, per dz. blooms ...	0 6	1 0
Hyacinths, per doz. bunches ...	4 0	6 0
Lapagerias, per dz.	1 6	2 6
Lilac (French), per bunch	3 0	4 0
Lilium auratum ...	2 0	3 0
— longiflorum ...	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality ...	12 0	15 0
Marguerites, white, p. dz. bunches	4 0	6 0
— yellow, per dz. bunches ...	2 6	3 0
Myosotis, per doz. bunches ...	3 0	4 0
Narcissus, per doz. bunches ...	2 0	3 0
— Gloriosa ...	1 6	2 6
— poeticus ornatus	3 0	4 0
— Soleil d'Or, per dozen bunches	1 0	2 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per dcz. bunches ...	6 0	8 0
— Zonal, double scarlet... ...	5 0	8 0
Ranunculus, p. dz. bunches ...	6 0	9 0
Roses, 12 blooms, Niphetos ...	2 0	4 0
— Bridesmaid ...	3 0	6 0
— C. Testout ...	4 0	6 0
— General Jacquiminot ...	2 0	4 0
— Kaiserin A. Victoria, per dozen blooms..	3 0	5 0
— Madame Hoste	2 0	3 0
— C. Mermet ...	3 0	6 0
— Liberty ...	4 0	10 0
— Mad. Chatenay	3 0	6 0
Snowdrops, per dozen bunches	1 0	1 6
Spiræa, p. dz. bchs.	5 0	8 0
Stocks, double white, per doz. bunches ...	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms ...	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, p. dz. bchs.	5 0	9 0
— best doubles ...	12 0	18 0
Violets, p. dz. bchs.	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch ...	1 0	2 0
— Sprengeri ...	0 9	1 6
Berberis, per doz. bunches ...	1 6	2 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches ..	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches ...	1 0	3 0
Galax leaves, per doz. bunches...	2 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle... ...	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross ...	4 0	5 0
Myrtle (English), small-leaved, per dozen bunches ...	4 0	6 0
— French, per dz. bunches ...	1 0	1 6
Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri, per dz.	6 0	12 0
Araucaria excelsa, per dozen ...	12 0	30 0
Aspidistras, green, per dozen ...	15 0	24 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, dz.	8 0	10 0
— tenuissimus per dozen ...	9 0	12 0
Azalea indica ...	24 0	36 0
Begonia Gloire de Lorraine, p. dz.	9 0	12 0
Boronia megastigma, per dz.	24 0	—
Callas, per dozen..	10 0	12 0
Cinerarias, per dozen	5 0	9 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	9 0	12 0
Cyperus alternifolius, dozen ...	4 0	5 0
— laxus, per doz.	4 0	5 0
Daffodils, per doz. pots	5 0	6 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen ...	9 0	15 0
— melanthera ...	12 0	18 0
— persoluta alba	24 0	30 0
— Wilmoreana ...	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100... ...	8 0	12 0
— in small and large 60's ...	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*.

	s.d.	s.d.
Genistas, per doz.	6 0-	10 0
Hardy flower roots, per dozen ...	0 9-	2 0
Hyacinths, per dz. pots	6 0-	9 0
Hydrangeas, p. dz.	10 0-	18 0
Kentia Belmoreana, per dozen	18 0-	30 0
— Fosteriana, dz.	18 0-	30 0
Latania borbonica, per dozen ...	12 0-	18 0
Lilium longiflorum, p. doz.	21 0-	25 0
Lilium lancifolium, per doz.	18 0-	24 0
Lily of the Valley, per dozen ...	18 0-	30 0
Marguerites, white, per dozen ...	8 0-	10 0
Mignonette, per dozen	5 0-	8 0
Pelargoniums, Zonal, per doz.	6 0-	9 0
Selaginella, per dz.	4 0-	6 0
Spiræa japonica, p. dozen	9 0-	15 0

Fruit: Average Wholesale Prices.

	s.d	s.d.
Apples (English), per bushel:		
— Wellington ...	5 0-	9 0
— Newton Wonder	5 0-	7 0
— Bramley'sSeedling	5 0-	8 0
Nova Scotian, per barrel:		
— Baldwin ...	15 0-	16 0
— Russets ...	18 0-	20 0
Canadian, per barrel:		
— Northern Spy..	19 0-	21 0
— Baldwin ...	17 0-	20 0
— N. Greening...	21 0-	23 0
— Russets ..	20 0-	21 0
Californian:		
— Newtowns, per box	9 6-	10 6
— **"Oregon"** Newtowns, per box	13 0-	16 0
Bananas, bunch:		
— No. 2 Canary .	6 0	—
— No. 1 ,, ...	6 6-	7 6
— Extra ,, ...	8 6-	10 0
— Giants ,, ...	11 0-	15 0
— Jamaica ...	5 0-	5 6
— Loose, per dz.	0 9-	1 3
Cranberries, per case	9 0-	9 6
"Custard" Apple (Anona), per doz.	4 0-	9 0
Dates (Tums), doz. boxes	4 0-	4 3
Grape Fruit, case	15 0-	16 0
Grapes (English):		
— Alicante, per lb.	1 3-	3 0
— Gros Colmar, per lb.... ...	1 3-	3 0
— Belgian Gros Colmar, per lb.	0 10-	2 0
— (Cape), per box (small) ...	1 6-	3 0
— (large)	6 0-	10 0
Grapes (Almeria), per barrel ...	10 0-	20 0
Lemons:		
— Messina, case	8 0-	10 6
— Murcia, p box	6 0-	7 6
Lychees, per box...	0 10-	1 0
Mandarins, — (French) 100's per box ...	4 0	—
— (Palermo) 100's box	3 0-	3 3
Mangos (Jamaica), per dozen ...	9 0-	15 0
Nectarines (Cape), per box ...	6 0	10 0
Nuts, Cobs (English), per lb. ..	0 4	—
— Almonds, bag	45 0	—
— Brazils, new, per cwt. ...	57 0-	60 0
— Barcelona, per bag	30 0-	32 6
— Cocoa nuts, 100	11 0-	14 0
Chestnuts:		
— Italian, per bag	16 0-	17 0
Oranges (Valencia), per case ..	9 0-	15 0
— Denia, p. case	9 0-	18 0
— Jaffas, per box	10 6-	12 0
— Californian Navel, p. case	11 0-	13 0
— Seville Bitters, per box ...	4 0-	5 0
— Palermos, Blood, p. box	6 0-	6 6
— per box (100's)	5 0-	5 6
— per box (160's)	7 0-	8 6
Peaches (Cape), per box ...	5 0-	10 0
Pears (Cape), p. box	3 0-	6 0
— cases	8 0-	12 0
Pineapples, each ...	3 0-	4 6
Plums (Cape), box	5 0-	10 0
Strawberries (English), per lb. ..	3 0-	10 0

Vegetables : Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen ...	2 0-	3 0
Asparagus, Paris Green, bundle	4 0-	4 3
— Sprue, bundle	0 7-	0 8
— English ...	5 0-	6 6
— Spanish, per bundle... ...	1 4-	1 9
— Giant, per bundle	9 0-	15 0
Beans, French, per packet ..	0 10-	1 0
— Broad (French), per pad ...	4 0-	4 6
— Guernsey, p. lb.	1 3-	1 6
— English ..	1 4-	1 6
— Madeira, per basket	3 0-	4 6
Beetroot, per bushel	1 3-	1 6
Brussel Sprouts, per ½ sieve ...	1 3-	1 6
Cabbages, per doz.	0 6-	0 8
— Greens, p. bag	1 0-	1 3
— red, per dozen	2 0	—
— Savoys, per tally	4 0-	4 3
Carrots (English), — washed, p. bag	2 0-	2 6
— French (new), per pad ...	3 0-	3 6
— French (new), per bunch ...	0 6	—
Cauliflowers, p. dz.	1 6-	2 0
— per tally ...	7 0-	9 0
Celeriac (French), per dozen ...	2 0-	2 3
Celery, washed, per dozen	0 8-	0 10
Chicory, per lb. ...	0 2-	0 2½
Chow Chow (Sechium edule), p. dozen	3·0	—
Cucumbers, per dz.	3 0-	4 6
Endive, per dozen	1 6-	2 0
Horseradish, foreign, per doz. bundles ...	9 0-	10 0
Leeks, 12 bundles	1 0-	1 6
Lettuce (French), per dozen .	0 10-	1 3
— (French), Cos, per dozen ..	5 6-	6 0
Mint, doz. bunches	1 6-	2 0
Mushrooms (house) per lb.	0 8	—
— buttons, per lb.	0 7-	0 9
— "Broilers" p.lb.	0 6-	0 7
Mustard and Cress, per dozen pun.	1 0-	1 6
Onions (Spanish), per case ...	4 6-	5 0
— Dutch, per bag	2 0-	2 3
— pickling, per bushel... ...	2 0-	2 6
— Spring, per dz. bunches ...	2 0-	2 6
Parsley, 12 bunches	2 6-	3 0
— per ½ bushel. .	1 6-	2 0
Peas (French), per packet	0 5-	0 6
Potatos (Guernsey), per lb.	0 4-	0 5
— Teneriffe, cwt.	12 0-	14 0
— Algerian, cwt.	10 0-	12 0
Radishes (Guernsey), dozen ...	0 8-	1 0
Rhubarb (English), dozen bundles	1 0-	1 1
Salsafy, per dz. bds.	3 6	—
Seakale, per dozen punnets ...	10 0	12 0
Spinach, French, per crate ...	2 6	3 0
Tomatos (Teneriffe), p. bdle. of four boxes...	12 0-	16 0
Turnips (English), doz. bunches...	1 9-	2 6
— per bag ...	2 6	—
— French (new), per bunch ...	0 9	—
Watercress, per doz. bunches ..	0 4-	0 6

Remarks.—Large quantities of Oranges have been received from Valencia and Denia, and these fruits are much cheaper, with the exception of selected samples. The prices of fruit from Cape Colony remain about the same, but Plums are much dearer, especially fruits of the Kelsey variety. A few Mangos from Jamaica have arrived, and they have realised high prices. Spanish and Giant Asparagus are also in the market. The supply of Madeira Beans has been much smaller during the past week, and consequently they are dearer, especially as their quality is very good. There have been some fine samples of Strawberries sold this week. *P. L., Covent Garden, March 18, 1908.*

Potatos.

	s. s. per ton		s. s. per ton
Kents—		**Dunbars—**	
Up-to-Date	100-110	Maincrop (red soil)	— 125
British Queen ...	90-100	**Scotch—**	
Scottish Triumph ..	95-100	Up-to-Date (grey soil)	95-105
Lincolns—		Maincrop (grey soil)	95-105
Up-to-Date	100-115		
— (Blackland) ...	85- 90		s. d. s. d. per bag
British Queen ...	90-100	**German—**	
— (Blackland) ...	80- 90	Up-to Date ...	4 6-4 9
Maincrops	105-110	Magnum Bonum	4 0-4 3
Sir Jno. Llewelyn...	90-100	Imperator... ...	3 6-4 0
— (Blackland) ...	80- 85	**Belgium—**	
Royal Kidney ...	85- 95	Kidneys	— 4 0
— (Blackland) ..	80- 85	**Dutch—**	
Evergood	85- 95	Up-to-Date ...	4 0-4 3
— (Blackland) . .	80- 85	Magnum Bonum	3 9-4 0
Dunbars—		Imperator... ..	— 3 6
Up-to-Date (red soil)	— 120		

Remarks.—Business is firmer, but consignments are lighter, consequently prices are higher. *E. J. Newborn, Covent Garden and St. Pancras, March 19, 1908.*

COVENT GARDEN FLOWER MARKET.

The salesmen complain of dull trade during the past week, and growers report that there has been a great falling off in country orders. Business in cut flowers is very dull, there being but little sale for Liliums, Callas, and other good white flowers, which are generally in demand. West-end florists complain that there is a great falling off in business compared with former years.

Cut Flowers.

Carnations are very prominent, best quality flowers of Britannia, White Perfection, and all other leading varieties are plentiful at a late hour in the morning, and this is a good indication of the demand. "Malmaisons" may not be so profitable to the grower, as they produce fewer flowers compared with the American sorts, yet I find that best blooms make 12s. per dozen, and their prices have occasionally been 18s. per dozen blooms. Marmion makes about 15s. per dozen blooms, and always sells readily; blooms of Mrs. H. Burnett cannot be obtained except quite early in the mornings. Roses are now abundant and of the best quality. Mrs. J. Laing, Caroline Testout, Kaiserin Augusta Victoria, Richmond, Catherine Mermet, and Niphetos are all prominent. Best blooms of Madame Chatenay are cleared early. Sweet Peas are very good, especially white flowers, but at present there is little demand for them, and they lack perfume. Gardenias are more plentiful, and much larger supplies may be expected. Daffodils continue to be over-plentiful, but the best quality blooms are likely to become scarcer. Callas are abundant, and many are sold at very low prices. Liliums vary much both in quality and in price. Imported flowers are abundant. The Mimosa (Acacia) is now nearly over. Violets are remarkably good both home-grown and imported supplies.

Pot Plants.

Cinerarias are now a leading feature and are remarkably good in quality, but the cold weather has militated against their sale. Ericas consist chiefly of E. persoluta alba and E. Wilmoreana, which are both remarkably well flowered. Supplies of Azaleas are holding out well, but the flowers of some are rather far advanced, and these have to be cleared at low prices. Spiræas are very good. I noticed plants of the pink variety of S. japonica at Messrs. T. Rochford and Son's establishment this morning; they were sold for about 3s. 6d. each. Genistas are abundant and well flowered, Marguerites are also good. Solanums are now over for the season. Hyacinths, Tulips, Daffodils, Cyclamen, Mignonette, Boronias, and Acacias are all good. Of the last-named A. ovata is one of the prettiest. A few well-flowered plants of various deciduous shrubs are seen, but there seems to be little demand for them. In flower-roots, Primroses, Pansies, Polyanthus, Daisies, and Arabis are well flowered. All other hardy roots are plentiful, but the cold weather has been much against the trade for them. Rhododendrons in bud, Conifers, and other evergreens; Roses, climbers, &c., are all procurable. *A. H., Covent Garden, Wednesday, March 18, 1908.*

SCHEDULES RECEIVED.

Royal Ulster Agricultural Society's Flower Show, to be held at Balmoral, Belfast, on Thursday and Friday, July 23, 24, 1908.

Midland Carnation and Picotee Society's eighteenth annual exhibition, to be held on August 6, 7, 1908 (provisional).

Tonbridge Gardeners' and Amateurs' Society's Chrysanthemum and Fruit Show, to be held on Wednesday and Thursday, November 11, 12, 1908, in the Public Drill Halls, Tonbridge.

Chester Paxton Society's Fruit and Chrysanthemum Exhibition, to be held on November 11, 12, 1908, in the Town Hall, Chester.

CATALOGUES RECEIVED.

E. P. Dixon & Sons, Ltd., Hull Farm seeds.

Thomas Green & Son, Ltd., Smithfield Ironworks, Leeds —Lawn mowers and other garden requisites.

Ransomes, Sims & Jefferies, Ltd., Orwell Works, Ipswich —Lawn mowers.

Barr & Sons, King Street, Covent Garden, London—Hardy Perennials, Alpines, &c; Seeds.

James Dewsnap, Ltd., 10, St. James Street, Sheffield—Floral garden baskets.

ENQUIRIES AND REPLIES.

A Scottish Garden.—I have just taken a small "shooting" in Ayrshire, Scotland. The garden is about 1,100 feet above the sea, and is 40 yards by 25 yards. It is on the side of a small hill sheltered by woods, facing about S.S.E. or south. The soil is a dark, loamy, peaty earth, and though on the slope of a hill it is too damp even for Potatos to do well in. I am having it drained. I have a good deal of cow dung for manure. Will this suffice or should I add a chemical manure? If so, what kind? What household vegetables would you suggest planting, and what varieties of each kind? I shall want a supply of vegetables from August 1 to October 30. What would be the most satisfactory flowers to plant for cutting for house use? *Naval Officer.*

———You will have to proceed cautiously, as the nature of the soil, degree of exposure, and climate each have to be studied at first hand. The cow manure, if not fresh when used, will be excellent, and you might supplement it with ½-cwt. of superphosphate of lime (probable cost 2s. 6d.), 14 lbs. sulphate of ammonia (2s.), and 14 lbs. Bentley's slug powder. Grow enough Potatos for a supply during August, and perhaps half of September, purchasing field-grown tubers which will cost about 5s. per cwt., for the rest of the period. The varieties Southern Queen and Duke of York may suit your soil, and you will require two or three stones of seed for planting. Apply a layer 1 inch thick of rotted dung, and a mere sprinkling of superphosphate. Peas will require more space than any other vegetable, but the space can be economised by arranging for rows of other vegetables to be grown between the Peas. Apply a 2-inch layer of dung and dig the ground deeply. Sow seeds at the end of March, in the second week of April, first and third week of May, and first week of June, the last sowing to be the largest. Select Sharpe's Queen, using three quarts of seed. Of Beans, sow 1 pint of Green Windsor at the beginning of April. Of Beet, the Turnip-rooted, 1 ounce in mid April. Cabbage, purchase plants to set out in mid March, sow seeds same time to plant at the beginning of June—choose Vanack, ½-ounce. Dress the ground with 4 inches deep of manure, and with superphosphate later. For Carrots, select the Guerande variety, 1 ounce, and dress the ground with slug powder. Prepare the ground for Cauliflowers as for Cabbage. Sow Dwarf Erfurt, ¼ ounce, in the second week of April and the first week in June. Sow Mustard and Cress every ten days from the first week in July to first week in September, 1 pint each. For Lettuces, apply manure 2 inches thick. Sow seeds each fortnight from June until September. Select the variety "All the Year Round," and sow just a little at a time, transplanting the seedlings as soon as they can be handled. For Onions, apply 5 inches deep of manure and dress the ground with superphosphate before sowing. Sow the seeds as soon as possible, and thinly. Sow Bedfordshire Champion Parsley as soon as possible. Use slug powder. Radish, red or white Turnip-rooted, sow every week from June to September 1, half-pint. For Spinach, use 2 inches of manure and some superphosphate. Sow every fortnight from end of June to first week of August, 4 ounces Victoria or Viroflay. Sow Turnips, from June to August 1, every three weeks just a small sowing; use superphosphate. Choose Snowball and purchase 2 ounces. Scarlet Runners might succeed. These are more profitable than French Beans in so elevated a position. Sow seeds in the second week of May and pinch the shoots to keep the plants bushy; purchase half a pint of seed. Sulphate of ammonia is useful applied to green crops. When watering any crop, dissolve 1 ounce superphosphate in every four gallons of water, if this manure is required. This year you must depend largely on annuals for providing flowers. Give each plant plenty of space, none less than a foot. Sweet Peas might be dotted in single clumps along the side of the path, and would produce immense quantities of bloom. Purchase plants of Aster Comet, and sow early in May seeds of Quilled Asters. Sow early in April seeds of Centaurea Cyanus, Chrysanthemum coronarium, double lemon and white, C. Morning Star, C. segetum, Clarkia Salmon Queen, Eschscholtzia Mandarin, stock-flowered Larkspur (salmon, white, and blue), Malope grandiflora,

Giant Mignonette, and Salvia Horminum. In mid-April sow Sweet Peas. At the end of April or beginning of May Larkspur, Rocket (mixed), Nigella Miss Jekyll, Dwarf Nasturtiums, Shirley Poppy, Gypsophila rosea, and Ten-week Stocks. Give the ground for these annuals a dressing 2 inches thick of cow manure, and once the plants are well started a sprinkling of superphosphate may be hoed in. Gladiolus brenchleyensis may be planted very thickly in April, and Goff's hybrids at the same time. Galtonia candicans may be planted at 1 foot apart at the end of March and Lilium tigrinum splendens, 6 inches apart; plant Montbretias at 2 inches apart as soon as possible. All these appreciate superphosphate dissolved in water or used as a surface dressing. A few early-flowering Chrysanthemums, Polly, Maggie, Goacher's Crimson, White Masse, say six of each, will yield excellent flowers for cutting. For another year you must select and plant perennials. Regarding the labour required, it is impossible to give a satisfactory opinion; very much depends on the men, on their methods, and many other circumstances. *B.*

Obituary.

Jonathan Myers.—We regret to record the death of this gardener from heart failure following bronchitis. Deceased, who was 82 years of age, passed away on Tuesday, March 10, his remains being laid to rest on Saturday, March 14, in Watford Cemetery. He was for a period of 52 years in the service of the Rt. Hon. the Earl of Clarenden, at The Grove, Watford. Deceased commenced his gardening career in Dumfriesshire, about the year 1840, and, after serving at Taymouth Castle gardens, and elsewhere, came to The Grove, Watford, in July, 1856, where he saw service under four generations of the Clarendon family. The late Mr. Myers was a man of great energy: he possessed a thorough knowledge of gardening, and the gardens at The Grove are largely the result of his designs. He leaves two daughters and one son to mourn his loss. Eight of the old workmen at The Grove carried his remains to the grave, his funeral being attended by many friends. Lord Hyde had started to attend the funeral service, but was prevented from doing so through an accident when on his way to Euston.

Quintin Read.—This well-known horticulturist died on the 12th inst. and was buried at Teddington, near Tewkesbury, on Monday last. Many northern and midland gardeners will hear the news with regret. For a considerable time Mr. Read was head gardener at Pleasley Vale, near Mansfield, and later at Sir F. T. Mappin's residence, Sheffield, where he succeeded the late Mr. Woodcock. Subsequently, he became gardener to the late Mr. Craven, at Whilton Lodge, Daventry, and was next appointed assistant horticultural lecturer to Mr. James Udale, for the County of Worcestershire, in which post he remained with credit to himself until his retirement to Teddington a few years ago. Mr. Read was a good gardener, and at one time a frequent contributor to the horticultural Press. *C.*

Answers to Correspondents

Cattleyas with Pale-coloured Foliage: *A. B.* If you ventilate the house more freely, and damp the floors beneath the staging, as you suggest, it would probably improve the condition of the plants, and therefore the colour of the foliage. Be careful that the heat of the house at night is seven degrees or so less than in the day. Too high a night temperature would affect the plants in the manner you describe.

Chrysanthemum W. J. Crossley: *J. W.* Many thanks for the flowers you send of this richly-coloured late-flowering variety.

Chrysanthemums: *F. G.* There is no disease apparent on your plant.

Cinerarias Failing to Flower: *Matlock.* Blindness in these plants is to be attributed to some check received during their earlier stages of growth. If the plants are afforded too warm conditions while they are in a young state their energies are devoted to flowering, although the inflorescence may not be developed. Later in the season this effort of fructification is arrested, and the plant then develops its lateral shoots. The plant never afterwards recovers from the check given to it during its early stages, and the terminal flower shoot never develops.

Cypripedium Leaf: *W. G. D.* The leaf sent shows that the plant is affected with the Orchid disease known popularly as "spot." It is difficult to cure when it is so fixed as in this plant, whose leaves invariably become spotted when approaching maturity. You might try re-potting into fresh compost, in which a proportion of loam-fibre is added. Take away all the damaged leaves, and if possible remove the plant to another house, or give it a position nearer to the glass of the roof in the same house.

Destroying a Tree Trunk: *E. D.* As you do not mention the size of the "butts," we cannot specify the quantity of saltpetre you will require. Take 1 gallon of warm water and stir in sufficient saltpetre until the liquid will absorb no more. Make a hole in the top of the old trunk and pour in the saturated solution, and when this is absorbed, pour in more, and again until the whole of the stem is thoroughly saturated. Then, on a fine day, apply a match, when the whole will consume.

THE LATE JONATHAN MYERS.

Grafting Wax: *Wisbech.* There are several methods of making grafting wax, but wax prepared in the following manner is so easily made, and has proved so successful in application, that we recommend it in preference to others.—Boil 8 lb. of resin in an iron pot until melted, then add 3 lb. of Russian tallow, when this has likewise melted, add 3 lb. of red ochre, keep these materials well mixed and boil for one hour. When the whole has become thoroughly incorporated, add 1 lb. of Burgundy pitch; continue to keep the ingredients well mixed together, but exercise care when adding the pitch. It can best be done when boiling has ceased, otherwise it will easily boil up and over the sides of the pot, which is not only dangerous but wasteful. In order to keep the wax, the best plan is to grease a tub and pour it in; when cool it will become hard, and pieces may be broken off and warmed in the iron pot over a fire made close at hand, in which condition it should be applied to the grafts with a stiff brush. There is a liquid grafting wax made with resin, tallow, spirits of turpentine, and alcohol, but to the inexperienced the process is rather intricate and not always a success, as unless the right temperatures are properly gauged, the alcohol and spirit are liable to be lost through evaporation.

Loganberries: *Wisbech.* At the present time the best way to increase your Loganberries is to layer them. From a growth measuring several feet in length, three or four layers can be put down which will form roots quickly, and if severed from the parent plant when well rooted, will produce good fruiting growths for next year. The stock can also be increased by cuttings and prepared in a similar way as those taken from Currant bushes. These should be inserted in the ground next October.

Names of Plants: *J. H. W.* Arisæma ringens, occasionally met with in gardens under the name of A. præcox.—*W. McI.* Phillyræa decora.—*J. T. L.* 1, Saxifraga pseudo-sancta; 2, S. apiculata.—*A. M.* Crocosmia aurea.—*A. M.* 1, Pteris tremula; 2, Pteris cretica; 3, Adiantum capillus Veneris; 4, Selaginella umbrosa.—*T. I. R.* 1, Cochlioda sanguinea; 2, Odontoglossum blandum; 3, Dendrobium chlorops; 4, Dendrobium Pierardii; 5, Odontoglossum ramosissimum.—*C. B.* Centradenia inequalateralis (syn. C. rosea).—*J. M.* Cupressus Lawsoniana var. gracilis pendula.

Peach Buds Dropping: *W. C.* This injury is not the result of a disease, but is due to some cultural error that has caused a check to the tree. By many growers it is ascribed to keeping the roots too dry during the resting season, but it may also be caused by an excess of moisture at the roots, or by any other unsatisfactory condition at the root system.

Pear: *H. T.* We have no knowledge of the "chalk" Pear.

Roses: *C. Reader.* The Bordeaux mixture is an excellent fungicide if mixed and applied with care. We cannot find any fungi on the specimens of your Roses.

Seeds: *Constant Reader.* The seeds appear to be still alive. Allow them to remain a little longer, and they will probably germinate; failing this, remove them to a warmer house.

Strawberries Dying: *G. B.* We find no disease present in the leaves you send. The injury has been caused by some check to the plants. Have you applied an excessive quantity of some strong fertiliser?

Zonal Pelargoniums: *H. R. G.* All kinds of cuttings, especially those of Pelargoniums, are liable to fail in the way you describe. This blackening of the stem of Pelargonium is worse in some seasons, when it appears quite epidemically. It is caused by a fungus known as Botrytis cinerea. This fungus is capable of causing serious damage in cold and unfavourable seasons. Cavara, an Italian fungologist, has studied this disease on Pelargonium zonale, and has proved that it is always more prevalent in rather mild winters, when it will attack almost every plant in a cold or temperate house. The following treatment has proved successful:—When planting the cuttings, use soil that has not been used for any other purpose. Mix it with sand and put the compost into 5-inch pots. Make six holes with a pointed piece of wood about 3 inches deep, fill into each hole a little sand and insert the cuttings, pressing the soil firmly down. Apply a watering and place the cuttings in a well-ventilated house or frame, but taking care to prevent sudden changes of temperature. When the cuttings have rooted, keep the soil in the pots rather dry until the season is advanced, when they must be repotted, singly. The fungus, which lives on any kind of decaying vegetable matter, has been detected almost always in leaf-mould, and in soil used previously for pot plants. When the cuttings are once attacked with the fungus, nothing can be done to save them.

Communications Received.—J. Harvey (unsuitable for our columns)—V. Gardner—H. S.—W. T.—J. D. C.—Fungi—E. A. W.—C. S.—F. S.—E. F. T.—W. H. N.—H. D. C. P.—T. P.—C. S.—A. R. H. P.—T. Humphreys—W. Goldring—G. P. S.—W. W.—H. M.—A. P.—S. P.—T. S.—Fruit—V. B.—H. R. R.—P. & Co—Rev. C. B—Fairy Rings—E. S. S.—E. H. J.—F. W. C.—T. C.—F. M.—F. G. T.—J. D. G.—F. J.—J. O'B—G. B.—W. M.—W. G.—A. B. E.—M. G.—L. S.—Road—F. W. M.

Photograph by C. P. Raffill.

CYNORCHIS LOWIANA, A TERRESTRIAL SPECIES WITH WHITISH-GREEN FLOWERS.

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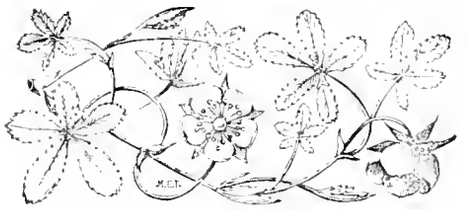

THE

Gardeners' Chronicle

No. 1,109.—SATURDAY, March 28, 1908.

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ILLUSTRATIONS.

THE RIVIERA FLOWER SEASON.

MANY English visitors to the French Riviera fail to see it at its best because they hurry away early in April, just when both the country and the flowers are developing their fullest beauty. The winter visitors have, however, much to be thankful for, since even during the unusually cold season of last year many curious shrubs and flowers were in bloom, much of the vegetation being of a sub-tropical character.

It is true that they see the Narcissi and the Violets and Anemones at their best, and also the Almond blossom and the "Mimosa" trees (Acacia) in March, followed quickly by the Cherry, the Peach, and still pinker Apricot. At the beginning of last April the pink blossom of the Apricot and Peach trees in the Hyères district lent quite a purplish haze to the landscape, the plain for miles being resplendent in its garb of pink mist, the blossom so soon afterwards followed by the delicate green of the young foliage which burst forth after the long-wished-for rain.

The Anemones of March are a joy in themselves, for what could be more beautiful than the large scarlet or purple flowers of Anemone coronaria, while the pink or mauve stars and silvery buds of Anemone stellata are everywhere to be seen, the plant being more widely spread than our smaller Wood Anemone at home.

A sight of the acres of Violets in the neighbourhood of Hyères is well worth seeing in itself, and the scene is made picturesque by the bright costumes and dark features of the Piedmontese women and girls who gather the flowers.

In March the marshes between Hyères and the coast are white with the blossoms of Narcissus Tazetta. The tall, cream-coloured and fragrant flowers with yellow centre are so beautiful that it is surprising this species is not more often cultivated, especially as it is also very hardy. Bulbous plants are a feature in the spring flora of the Riviera, and they comprise three very handsome wild Tulips. Tuberous-rooted plants, such as Orchids and Irises, are also much in evidence. In the Department of Var can be found more kinds of Orchids than are seen in the whole of the British Isles, many of them being abundant and striking. April and May are the best months for Orchids on the Mediterranean; indeed, the majority of the flowers bloom in one or both of those months.

If we take a walk at the end of April among the fields and foot-hills close to the ancient town of Hyeres, with its castle-crowned hill which forms so conspicuous an object in the landscape, on leaving the road we find the banks are blue with Borage, which has been flowering fitfully all the winter in common with the curious little Arum Arisarum, a southern plant, so common and attractive with its snake-like colouring and curious hood. In the dried-up bed of a stream skirting the path the white, nodding blossoms of a rare Garlic, Allium triquetrum, with its dagger-shaped stem and leaves, are in danger of being exterminated by an entanglement of Periwinkles with pale blue flowers. This species is Vinca media, and is intermediate between the V. major and V. minor which grow in England, but among the hills of Var the larger Periwinkle produces flowers of a size and colour quite unknown even in English gardens.

The bright Star of Bethlehem, Ornithogalum umbellatum, is another English garden plant often seen on the borders of field and vineyards. Among the weeds of cultivation is the rare Spiked Fumitory and the exquisite Oxalis cernua with its large lemon-yellow-coloured flowers which only open in bright sunshine. This is a Cape plant, which has established itself throughout the Mediterranean shores, and it is believed that it was introduced into Europe by two monks at Malta a century ago, for they transplanted two pots of the plant into their garden, whence it spread to Corsica and the shores of France. The leaves resemble those of Clover, just as do the leaves of our own Wood Sorrel, and for this reason it may have been seeded down as a very poor substitute for Clover in some of the public gardens on the Riviera, such as the Jardins Denis at Hyères.

As one leaves the cultivated fields and approaches the Olive groves and Cork-Oak woods with their undergrowth of Cistus and Lavender, we are impressed with the size of the Tree Heath (Erica arborea), whose white flowers have been trying to come out for so many weeks during the cold, early spring. Sometimes this Heath grows 12 or 15 feet high, and I measured one woody stem eight inches in diameter. The root is used in large quantities for the manufacture of so-called briar pipes,* and the whole plant is also burnt for fuel.

Everywhere among the hills a very beautiful wild Pea (a variety of Lathyrus Clymenum) cannot fail to arrest the attention of the passer-by. The standard or outer petal is of a rich red-purple tint, and the inner wings are of a delicate violet, while the keel is greenish pink; in fact, it reminds one of the old-fashioned Sweet Pea both in colour and habit, and although the flowers are smaller, it is quite as lovely an object. A wild Asparagus, A. acutifolius, grows in similar places and also in sandy ground nearer the sea. The young shoots are much sought after, for their flavour is better than that of the cultivated kind, and the graceful branches look charming when arranged with flowers, and, being wiry, they last many weeks.

There are three kinds of Cistus, all common about the hills of Hyères. The large, pink-flowered C. albidus† and two white-blossomed species, one, C. salviifolius, with flowers nearly as large as those of the former species; the other the smaller-flowered C. monspeliensis, which is very aromatic, and it is stated that Napoleon delighted in its scent when an exile in Elba. The plant (which takes its name from the ancient town of Montpellier), forms bushes which are sometimes higher than a man. These, and some half-dozen more kinds of Cistus, are very characteristic plants of the Mediterranean region, growing freely in several countries of Europe and North Africa.

A remarkable parasite grows upon the roots of at least two species of Cistus, both in the South of France and in Morocco. It is called Cytinus Hypocistis, and is a curious object in May, when it appears above the ground at the roots of the Cistus. At first it looks like some coral-red fungus, but as it develops the colour changes to a delicate yellow tinged with red. It grows to a height of four or five inches and is monœcious, the pistillate organs being in one flower and the staminate in another. This interesting parasite gives its name to the family Cytinaceæ, of which there are only about 30 species in the two hemispheres. This one abounds on the hills above La Croix (Var) upon Cistus monspeliensis, and I have seen it upon C. laurifolius in the Eastern Pyrenees. The host plant does not appear to suffer much from its ravages, which can hardly be said of certain other parasitical plants, such as Cuscuta or Dodder.

The Department of Var in Provence has the richest flora of any in France, and many of its plants are extremely rare. Some of these, including several discovered on the beautiful Isles of Hyères (the Stœchades of the ancient Greeks), have not yet been found elsewhere. A book on the flora of this interesting Department is being prepared by two competent French botanists who live there. *H. Stuart Thompson.*

* The term "briar" is a corruption of the French "bruyere," meaning Heath.

† Albia was the Roman name for Hyeres.

NEW OR NOTEWORTHY PLANTS.

NEW CONIFERS FROM FORMOSA.

In the Tokyo *Botanical Magazine*, Vol. xix., pp. 43-60, I endeavoured to enumerate all the species of Conifer known to be found in Formosa up to that date. The specimens I then determined were very poor ones, and some of them were entirely wanting in their cones. I have enjoyed no opportunity of examining them with perfect material until the recent exploration of Mt. Morrison by Mr. T. Kwakami and other gentlemen. In connection with this I was so fortunate as to secure several specimens of cones, which I proceeded to re-examine with the utmost care. As a result, I have found that, although they are very like the Japanese species in a sterile branch, there is no little difference between the Formosan and Japanese in the form of the cone. I find, however, that I must correct some of my former statements. The following are new species which are very near the Japanese species:—

* PINUS MASTERSIANA.

This Pinus very much resembles P. Armandii Franch., but differs from it by its reflexed squamae and larger cones.

† PINUS MORRISONICOLA.

THIS Pinus has been erroneously identified with the Japanese P. parviflora S. et Z. owing to the great resemblance in its sterile branches. But in the shape of the cone and seed it should be regarded as a new species different from P. parviflora. The scale of the cone is usually reflexed, and especially so in the scale of the basal part. The wing of the seed is much larger than that of P. parviflora.

‡ TSUGA FORMOSANA.

This Tsuga very much resembles T. diversifolia by the shape of the cone and of the bract, but differs from it by the seed having a longer wing and by the glabrous branchlets. It also resembles T. Sieboldii in the shape of the cone and seed, but is distinctly distinguished by the shape of the bract and by the shorter leaves. This new plant is, I think, just intermediate between T. Sieboldii and T. diversifolia.

* PINUS MASTERSIANA (*Hayata*), SP. NOV.—Rami teretes fusci, novelli glabri, cicatricibus perularum et foliorum notati. Folia in fasciculo quinque, aceroso-filiformia, acuta, dorso plana, in sectione triangularia, margine et in carina remote serrulata, 10 cm. longa. Strobili erecti, ovato-cylindrici, obtusi, 14 cm. longi, 7 cm. lati. Bracteae minutissimae. Squamae numerosae, orbiculares v. subrhombeae, acutae, sursum reflexae, basi breviter cuneatae, lignescentes, longitudinaliter rugosae, fuscae, dispermae. Semina obovata 12 mm. longa, 9 mm. lata, apice leviter apiculata, exalata, compressiuscula. Testa ossea, crassa, fusca, glabra; albumen crassum, oleosum. Embryo cotyledonibus 5, verticillatis.

Hab. in Monte Morrison, leg. G. Nakahara, anno 1905.

† PINUS MORRISONICOLA (*Hayata*), SP. NOV.—Rami teretes, perularum rudimentis notati, novelli pubescentes. Geminae ovatae, perulatae, perulis acutis, membranaceis, margine fractis. Folia in fasciculo quinque, fasciculis approximatis, acerosa, rigidula, 6-8 cm. longa, arcuata sed non torta, apice acuta, dorso plana, facie acute carinata, in sectione triangularia, margine et carina remote serrulata. Strobili erecti, ovato-elliptici, obtusi, squamis circ. 40 compositi, 7 cm. longi, 3 cm. lati, squamis ellipticis, basi cuneatis, sursum rotundatis, leviter reflexis, 3 cm. longis, 1·5 cm. latis, coriaceo-crassis, sublignescentibus, concavis, badio-fuscis, dispermis, sed interdum abortu monospermis. Bracteae brevissimae. Semen ovatum apice obtusum, 10 mm. longum, 6 mm. latum, testa coriacea pallide feruginea glabra, ala membranacea, tenui, cultriformi, 2 cm. longa, 8 mm. lata.

Hab. Shohakulin, leg. C. Owatari, anno 1898.

‡ TSUGA FORMOSANA (*Hayata*), SP. NOV.—Ramuli novelli tennes glabri, pallide fuscentes. Geminae perulatae, perulis obtusis integris. Folia approximata, distincte petiolata, petiolis brevibus semiteretibus, parum incurvis, linearia, 16 mm.–8 mm. longa, 2 mm.–1·5 mm. lata, apice obtusa vel emarginata, integerrima, glabra, coriacea. Strobili ovati, 20-23 mm. longi, 13 mm. lati, squamis circ. 20, imbricatis, coriaceis, basi truncatis, sursum suborbicularibus, integris, 15 mm. longis, 10 mm. latis, substriatis, pallide fuscentibus, bracteis brevissimis, rhomboideis, apice brevissime 2-lobatis, irregulariter dentatis. Semina parva, obovata, 4 mm. longa, vel longiora, ala membranacea tenui cultriformi, pallide feruginea, 7 mm. longa.

Hab. in Monte Morrison, leg. S. Nagasawa, anno 1905.

* JUNIPERUS MORRISONICOLA.

This species is erroneously identified with J chinensis. The habit of this new plant is very like J. chinensis, but is easily distinguished by its solitary ovule on a short branchlet, and by the shape of its cone. The leaves have a large single resin canal near the phloem. So far, the plant does not seem to have dimorphic leaves, all the specimens we have at present possessing but one kind of leaf.

† CUNNINGHAMIA KONISHII.

This interesting Cunninghamia was first collected by Mr. N. Konishi in Mt. Randai in the Island of Formosa, and was sent to me by Mr. T. Kawakami for investigation. He informed me that the habit of this new plant is an intermediate between those of Cunninghamia sinensis and Taiwania. On examining the specimen carefully I find that the cone of the plant has a secondary squama, and, therefore, this should be referred to Cunninghamia. The leaf of this plant has stomata on both surfaces, while the leaf of C. sinensis has no stoma on the upper surface, or at most but very few. This character of the leaf forms a kind of bridge over the gap which separates C. sinensis from C. Taiwania. This new Cunninghamia differs essentially from C. sinensis in the arrangement and shape of the leaves, in the smaller cone and its squamae which are depresso-globose. The timber is like other Conifers, the bark is reddish-brown, and in all respects closely resembles that of Chamaecyparis; but it has an odour peculiar to itself. The leaf of C. Konishii is more persistent than that of C. sinensis; the former lasts for eight years, the latter only lasting five years.

FIG. 81.—DENDROBIUM CRINIFERUM: COLOUR OF FLOWERS CREAMY-WHITE.

* JUNIPERUS MORRISONICOLA (*Hayata*), SP. NOV.—Rami teretes; ramuli novelli virides trigoni. Folia omnia lanceolata, apice acerosa, patentiuscula, 3-4 mm. longa, 1 mm. lata, supra concava, glaucescentia, subtus parum carinata. Flores masculi terminales in ramulis brevissimis, ovoidei, 4 mm. longi, 2 mm. lati, staminibus 8, squamis peltatis, suborbicularibus, 1·5 mm. in diametro, antherae loculis 3. Flores foeminei in ramulis brevissimis terminales, basi foliis squamiformibus bracteisque 6-9 oppositis suffulti, squamis intimis 3, ovatis acutis verticillatis patentibus. Ovulum solitarium terminale a squamis intimis 3 circumdatum, oblongum, apice attenuatum. Galbulus globosus 6 mm. diam. vel paues longior, in apice vestigiis squamarum intimarum suffultus, siccus nigricans glaber.

Hab. in Monte Morrison, leg. S. Nagasawa, anno 1905.

† CUNNINGHAMIA KONISHII (*Hayata*), SP. NOV.—Arbor ramis omnibus teretibus, glabris, foliorum spiraliter confertorum cicatricibus notatis, gemmis floriferis nudis, depresso-globosis, bracteis depresso-ovatis, brevissime aristato-acutis. Folia ramorum veterorum spiraliter conferta, adnato-decurrentia, anguste lineari-falcata, incurvo-erecta, acuta, dorso leviter carinata, ramulorum juvenum ascendento-patentia, longiora, anguste lineari-lanceolata, 15 mm. longa, 2·5 mm. lata, ad basin oblique torta, apice obtusiuscula, margine sub lente serrulata, rigida, coriacea, utrinque pagina glaucescentia, stomatibus multiseriatis instructa, octovum in annum virentia demum exarida sensim soluta. Strobili maturi ovato-globosi, 20 mm. longi, 15 mm. lati; squamae rotundatae, mucronatae, basi distincte unguiculatae, ungue brevi, lamina dilatata, cordata, late depresso-ovata, margine integra, lignescentes, sursum coriaceae, et marginem versus subundulatae, dorso apice leviter carinatae, glabrae; bracteae obsoletae, squamulae 3 in basi laminae squamae, distinctae, fimbriatae crenulatae. Semina 3 ad squamularum basin affixa, reversa, libera, ovato-elliptica, testa coriacea, duriuscula, ala angusta cincta; embryo ignotus.

Hab. in Monte Randaisan, Nanto, ad 7,000 ped. alt., leg. N. Konishi, anno 1907.

The habit of this new plant is very like J. chinensis, but is easily distinguished by its solitary ovule on a short branchlet, and by the shape of its cone. The leaves have a large single resin canal near the phloem. So far, the plant does not seem to have dimorphic leaves, all the specimens we have at present possessing but one kind of leaf.

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* CHAMAECYPARIS OBTUSA.

This Formosan Chamaecyparis is in all respects the same as the Japanese C. obtusa, but the cone is always much smaller than the Japanese one, and the seed is also smaller. Native botanists in the Island suggest to me to separate it from the Japanese species as a new variety. For the present I think, however, it would be better to regard it as a form of the typical one.

† KETELEERIA FORMOSANA.

This Keteleeria somewhat resembles K. Davidiana, but differs from it by its spathulate bract which is contracted a little above the middle portion. The cone is shorter and the wing of the seed is narrower. The leaf is acute or obtuse; but not truncate or emarginate as is the case with K. Davidiana. *B. Hayata, Japan.*

DENDROBIUM ACUMINATUM.

IN the *Gardeners' Chronicle* for July, 1907, was published an illustration and my description of Dendrobium acuminatum, Rolfe. I regret this, as Mr. Oakes Ames, in his forthcoming Volume II. on *Orchidaceæ*, will describe and picture it as a new species under the name of Dendrobium Lyonii. The very much larger flowers than those of D. acuminatum were noted at the time, but were attributed to the vigour and size of the plants collected. Although a congener, it turns out to be distinct in many particulars. Mr. Ames writes that with the possible exception of D. superbum, it is much the most attractive species yet recorded from the Philippines. *Wm. S. Lyon, Manila, February, 1908.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM CRINIFERUM.

OUR illustration, taken from a photograph by Mr. Raffill of a plant which flowered at Kew, represents this curious little Malayan species which formed the subject of some interesting remarks by Mr. H. N. Ridley in the *Journal of the Asiatic Society*. Mr. Ridley calls attention to the regularity with which the "Pigeon Orchid"—D. crumenatum—flowers in its native habitat, and the singular fact that D. criniferum invariably opens its flowers in Singapore the day before those of D. crumenatum expand. The point is that whereas some species open their first blooms at different times, others keep time with the season with remarkable regularity. D. criniferum is an interesting species requiring to be cultivated in a warm house.

* CHAMAECYPARIS OBTUSA (*Sieb. et Zucc.*), FORM. FORMOSANA.—Strobili ut typicae, sed multo minores, 8 mm. in diametro, seminibus minoribus, cum alis 2 mm. in diametro.

† KETELEERIA FORMOSANA (*Hayata*), SP. NOV.—Ramuli dense papilloso-puberuli. Folia laxe inserta, plana, linearilanceolata, 30 mm. longa vel longiora, 5 mm. lata, nervis prominentibus, margine parum deflexa, in utraque facie vermicea, subtus vix pallidiora, apice obtusa (ramuli hornotini aristato-acuta) basi in pedem brevem compressum demum contortum attenuata. Strobili erecti, cylindracei, obtusi, 9 cm. longi, 5 cm. lati; squamae coriaceae, ovato-rotundatae v. cordatae, superne sensim attenuatae, apice subreflexae, basi breve unguiculatae, extus longitudinaliter striatae, puberulae, margine tennes, irregulariter serrulatae; bracteae squamis duplo breviores, spathulatae, membranaceae, dorso fuscae, apice cuspidatae vel trifidae, irregulariter serrulatae, ad medium contractae. Semina pallide fulva, basi acuta, cum ala concolore cultriformi, squamis aequilonga. Semen cum ala 27 mm. longum.

Hab. Shinjuki, Shinkocho, leg. N. Konishi, anno 1902.

ORCHIDS AT GATTON PARK, REIGATE.

The collection of Sir Jeremiah Colman, Bart. (gr. Mr. W. P. Bound), contains a remarkable display of Dendrobiums, most of them hybrids raised at Gatton Park. A fine feature was made of these in the group which secured a Gold Medal at the Royal Horticultural Society's meeting on March 3. Many of the plants are still in bloom, the Gatton Park variety of D. Cybele, which was awarded a First-Class Certificate, being a fine, distinct, and perfect flower, and one of the handsomest of the genus. In a new batch of D. Thwaitesiæ (splendidissimum grandiflorum × Wiganiæ) some very remarkable varieties are in bloom, the difference between the flowers of the plants being very great. The largest and darkest flower resembles D. splendidissimum grandiflorum, but the flowers are larger and tinted of a deep magenta rose, the base of the lip being claret coloured, with an orange disc. The other extreme of the same cross is a charming cream-white flower, with a light violet centre; three others are very dissimilar from either of those already named.

The raising of hybrid Orchids has been attended with much success at Gatton Park, and a very large proportion of the plants in the collection are of that class. Cymbidium Lady Colman, C. gattonense, Dia Cattleya Colmaniæ, and the very beautiful yellow and ruby-red hybrid Spathoglottis, recently commented on in the *Gardeners' Chronicle*, are most of them still in bloom, and among the Spathoglottis are some remarkable crosses yet to flower. Several of the low span-roofed houses are filled with thousands of hybrid Cattleyas, Lælio-Cattleyas, and other showy kinds. Quantities of various crosses of Sophro-Cattleya, Sophro-Lælia, and Brasso-Cattleya are nearing the flowering stage; and the hybrids of Odontoglossum, Cochlioda Noezliana, and especially Odontoglossum Edwardii, which has been largely used on account of its rich purple colour, are to be seen in all stages, and in the most healthy condition. Various crosses of some of the prettier "botanical" species have also been made, and some interesting results are expected. At the end of one of the houses which contain seedlings is a small batch of albino Cypripediums, including C. bellatulum album, C. Lawrenceanum Hyeanum, C. callosum Sanderæ, and C. Maudiæ magnificum; and at the moist and warm end of the next house a good batch of Cœlogyne pandurata, which regularly produce their light Apple-green and black flowers. These plants have all been obtained, by division, from a plant with about eight pseudo-bulbs, purchased a few years ago. The main corridor range connecting the ends of the block of larger Orchid houses has many Dendrobiums in bloom; some Phaio-Calanthe Colmanii, which has both white and rose-tinted varieties, lasting a long time in flower; a nice lot of Cœlogyne cristata alba and lemoniana; a good collection of Lælia anceps, principally white varieties (not in bloom); and some very handsome plants of finely-pitchered Nepenthes, together with many specimens of rare and interesting species.

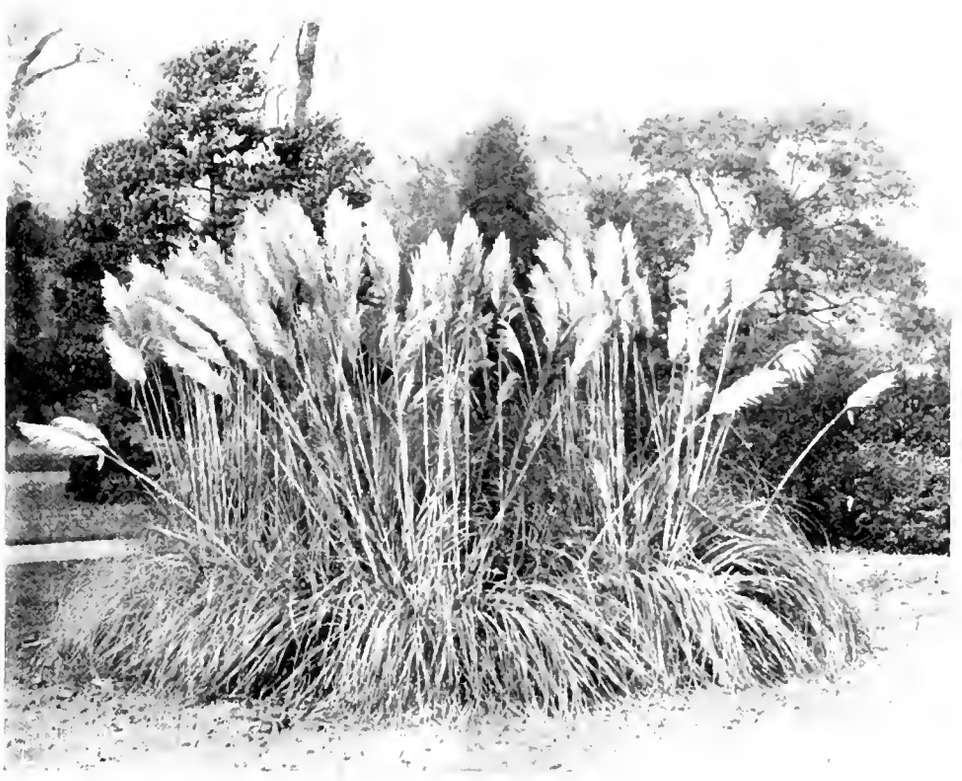
In the first house leading out of the corridor is a selection of plants belonging to the less showy species, including two species of the dwarf-growing Trias, a nice lot of Bulbophyllums and Cirrhopetalums, the rare and curious B. mandibulare, B. Pechei, C. refractum, and some others being in bloom. In other houses are a selection of Pleurothallis, Restrepias, Octomerias, and other small-growing species, among the prettiest in flower being Restrepia striata, and the densely-flowered, white, Angræcum hyaloides.

The Cattleya and Lælia houses contain many fine varieties of the showier species, a goodly number of pure white forms, and the most complete set in existence of albinos having a slight lavender or blue shade, or with white flowers, having lilac or blue colour on the labellum, that class being special favourites at Gatton Park. In flower in the Cattleya houses are some good varieties of Cattleya Trianæ, several hybrids, &c. The Odontoglossums are just commencing to flower, the plants throughout being well furnished with very stout flower-spikes.

In an intermediate house a number of hybrids of Epidendrum Boundii are in bloom, also E. × Boundii itself, which seems to remain superior to its descendants, the fine heads of yellow, orange, and red flowers being brighter than any of its class, and capable of lasting in bloom for a very long time.

Plants in flower in the other houses included several good Cypripediums; some fine examples of Cymbidium grandiflorum (Hookerianum), blooming among several other Cymbidiums; some pretty Masdevallias; the graceful Zygonisia Rolfeana; the violet-marked Zygocolax Veitchii Colman's variety, Saccolabium bellinum, Miltonia Warscewiczii, well-flowered, the orange-coloured Epidendrum aurantiacum, &c.

The smaller plants, and especially the store pans of seedling Odontoglossums, are suspended near to the roof glass, and the vigour of the Odontoglossums only 2 or 3 inches in height is pleasant to behold.



[Photograph by C. P. Raffill.

Fig. 82.—THE PAMPAS GRASS, CORTADERIA ARGENTEA.

Other very handsome Gatton Park hybrids are D. Chessingtonense Gatton Park variety, with yellow flowers and claret-coloured base to the lip; some very large and finely-coloured forms of D. Othello, and several new, light-coloured hybrids, one resulting from D. Wiganiæ × D. Wiganianum, being milk-white, with sulphur-coloured disc, and light purple base to the lip; D. Mrs. Alfred Rogers, a very floriferous kind, with delicate blush-white flowers, with soft green disc to the lip; and others of the class are in bloom, making quite a section of this delicately-tinted class.

Of species there are a good selection of D. nobile; the pure white D. Wardianum album, "Gatton Park variety," which has no other colour than the chrome yellow of the base of the lip; the fragrant pale yellow D. heterocarpum, D. signatum, and others. Dendrobium McCarthiæ, which does not succeed very well in most gardens, is grown most luxuriantly by Mr. Bound, who suspends it from the roof of a warm house near to the moist back wall of the structure.

THE PAMPAS GRASS.

(Cortaderia argentea.)

The Pampas Grass is amongst the noblest herbaceous plants in cultivation. Cortaderia argentea, illustrated at fig. 82, has few rivals for beautifying an open space such as a wide lawn or broad terrace. The plant is perfectly hardy in this country and increases in size with freedom; it may be readily propagated by division of the large thick tussocks. The species has been known under several names, succeeding botanists having conferred fresh titles, which in turn have been superseded. Thus it has been known as Arundo dioeca, A. Selloana, Gynerium argenteum, G. dioicum, and G. purpureum; this and much other information will be found in Dr. Otto Stapf's excellent monograph of the Pampas Grasses, published in the *Gardeners' Chronicle*, November 20, November 27, and December 4, 1897.

FRUIT REGISTER.

APPLE, HAMBLING'S SEEDLING.

This proves to be a most useful variety for March, an excellent cooker, and one that may also be used for dessert if ordinary dessert varieties are not available; the trees here are standards, planted in 1896, they have made good progress since that date, and will, I believe, eventually prove to be good bearers. The fruits are large, very even in outline, have the eye open, and the skin pale yellow; the flesh is firm and white. The general appearance of the fruit is very similar to that of the Duke of Gloucester, but this latter variety is ready for use in October. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

TREES AND SHRUBS.

STACHYURUS PRÆCOX.

ATTENTION is frequently directed to the various shrubs which open their flowers during February and March, but it rarely happens that the above-mentioned plant is included in the lists. This is doubtless due to the fact that it is a comparatively unknown shrub except in the botanical gardens, notwithstanding that it has been in the country for nearly 50 years, is of distinct appearance and extremely ornamental. Though widely different from the Actinidias, Stewartias, and Camellias, Stachyurus is allied to those genera, being included in the order Ternströmiaceæ. S. præcox is a native of China and Japan, and is reported as found in many parts of both empires, frequently occurring in mountainous regions. When mature it is met with as spreading specimens 10 feet or so high, but requires very many years to attain to that height. The leaves are from 4 to 6 inches long, ovate-lanceolate and deciduous. The flowers are borne freely in axillary, drooping racemes 3 to 4 inches long; they are pale yellow in colour, and from 15 to 20 are borne on each inflorescence. Buds are formed in autumn and they remain dormant until early in February, the first flowers commencing to expand towards the latter end of the month. At Kew a bush, 2½ to 3 feet high and 4 feet across, in the vicinity of King William's Temple, is now (March 21) covered with its pretty catkin-like inflorescences, which have a very good effect against the reddish bark of the branches. At Kew this species is found to succeed best on light soil into which a little peat has been dug, and in an open position rather than in shade. *W. D.*

PROPAGATION OF IVIES.

THE Ivy (Hedera Helix), in its numerous varieties, is one of the most useful of all garden plants, for it may be utilised for many purposes, such as carpeting the ground beneath trees, for training in festoons along the terrace, covering unsightly buildings, forming edges to walks, &c. There are many beautiful variegated varieties of the common Ivy, and these are suitable for planting against walls, arbours, or pillars, or for furnishing hanging baskets and vases.

Suitable plants for the latter purpose can be obtained in eight months by grafting, and undoubtedly this is the most satisfactory method of increasing all the variegated forms of this popular climber, for it is a much quicker method of propagation than raising them from cuttings. The stocks for grafting may be raised from cuttings of the commoner varieties. An ordinary warm greenhouse is required for the grafting process, and if a propagating case is available in this house it will be an advantage, but it is not essential, as the pots may be placed on the ordinary staging if the atmosphere and surroundings are kept moist and the plants covered for a fortnight with a layer of paper. Before potting the stock, the bud or buds which are found at the base of the stem should be removed, to prevent the formation of suckers, and the stocks may be either established in pots when they are worked, or be potted afterwards. The grafting may be performed any time between November and March. Two buds should be retained on the scion and the ordinary method of whip grafting be employed, care being taken to finish the cut with an acute angle, thus enabling the scion also to make roots. An ordinary potting compost is all that is necessary for a rooting medium.

The "tree" or arborescent forms of the common Ivy have all originated from branches "in the adult stage" of the climbing varieties. These tree Ivies are admirably adapted for planting on lawns or in shrubberies. These are also best raised by grafting, and if two-year-old stocks established in pots are available they will be found an advantage, because large heads or branches can be used as scions, and consequently good specimens are obtained in a comparatively short time. Their subsequent treatment should be the same as that advised for the climbing varieties. *W. B. Little.*

NUTTALIA CERASIFORMIS.

THIS pretty Californian shrub is not by any means tender, for it succeeds in gardens in the neighbourhood of London. It is remarkable for being the first of the deciduous shrubs to put forth its leaves, the foliage buds often appearing in the months of February. Before the leaves are fully expanded the white flowers appear, carried in drooping clusters on slender sprays, which they almost entirely cover. In

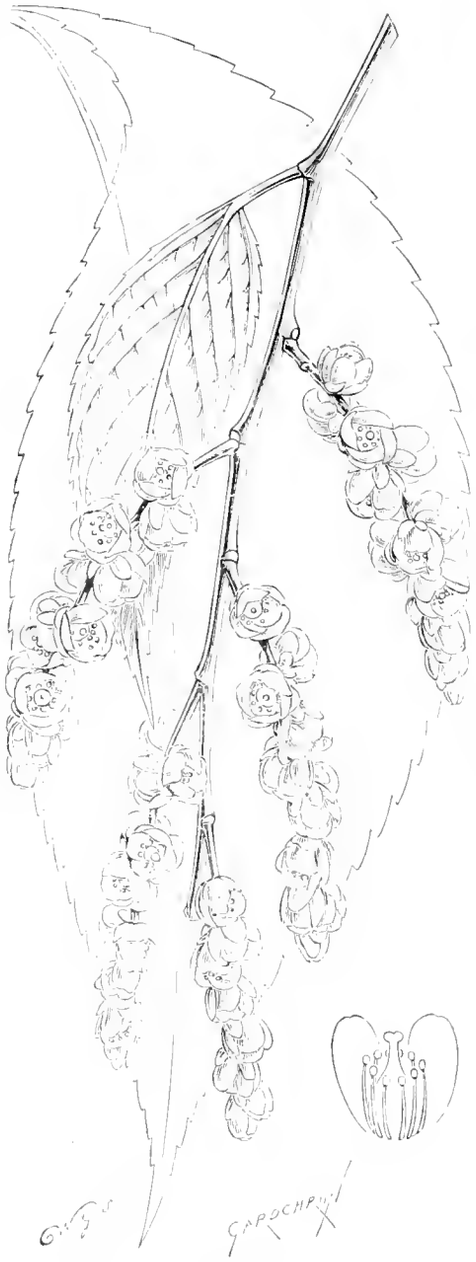


FIG. 83.—STACHYURUS PRÆCOX: FLOWERS PALE YELLOW.

their habit of growth they much resemble the far better known flowering Currant, Ribes sanguineum. In mild winters the flowers may sometimes be seen as early as the concluding days of January, but in ordinary winters they are fully three weeks later. A handsome specimen, over 8 feet in height and as much in diameter, growing in this neighbourhood, is always a pleasing sight in the early days of the year.

COCHLEARIA (IONOPSIDIUM) ACAULE.

THIS charming little annual is now a lovely sight in the garden, where it has propagated itself broadcast from self-sown seed. A sunny border where early bulbous Irises, such as I. alata, I. Danfordiæ, I. Histrio, I. histrioides, I. Rosenbachiana, I. Heldreichii or stenophylla, I. Tauri, I. orchioides, I. persica, I. Warleyensis, I. bucharica, and I. pavonia are growing, is now entirely covered with a veil of Lavender about 2 inches in height, out of which the arching leaves and flowers of the Irises appear. In another spot it has carpeted a colony of Chionodoxa sardensis, with its flowering growth and the deep blue glories of the snow look lovely spearing through the sheet of blossom. A single sowing suffices to establish this plant. In my garden some plants may be found in bloom in every month of the year. They spring up everywhere, flower and scatter their seed, and the seedlings soon come into bloom. The plant, being a very shallow rooting species, does no harm to anything, and, here, is never interfered with except to make room for fresh plants. A few years ago it unexpectedly appeared in another garden some distance away, where it had had never been sown. Possibly a seed or two may have been brought up with some bulb that was shifted. Its advent was welcomed with delight, and it has now spread all over the garden. It is particularly valuable, since it is in full flower during the months of January, February, and March, when the garden is rather bare of colour. It is a native of Portugal, and is sometimes known as the Diamond Cress. *S. W. Fitzherbert, Kingswear, Devon.*

NOTICES OF BOOKS.

* "THE GARDEN BEAUTIFUL: HOME WORDS AND HOME LANDSCAPE."

MR. W. ROBINSON is well known as an advocate for natural beauty in gardens, and this is the dominant note of his *Garden Beautiful*, though the gardens of which he is here thinking are rather the woodlands of his sub-title than gardens in the ordinary acceptation of the term. Many suggestive hints are given as to ways of planting the grounds for beautiful effects, treating the trees of the forest as really woodland plants and not merely as park specimens, but whatever one may think of this from the artistic point of view, we cannot always endorse his physiological reasoning. There is much vigorous writing against the rather vulgar prejudice in favour of variegated trees for the waterside, but perhaps all his readers will not agree with him in banishing the Copper Beech from such positions, however much they may admit the desirability of Willows for the actual water's edge. Some of the hints as to the woodland garden strike us as a little "inclusive" perhaps, having regard to the different requirements of Box and Gaultheria, for example, in the matter of soil.

Many readers would be glad to be able to agree with the author in his belief that London smoke will be overcome and banished before many years are passed, but it is difficult to feel sanguine as to the success of a park at Richmond to be devoted to evergreen forest trees. Unfortunately, the zone of evergreen luxuriance is rapidly shifting outward from the suburbs at the present time, and the prospect of its closing in, or even ceasing to retreat, seems a remote one. But whatever we may think of these things, those who read Mr. Robinson's book will certainly derive both instruction and enjoyment. It is impossible to end this brief notice without mentioning the beautiful wood-cut plates which form a most attractive feature of the book.

† "GARDEN LIFE" PICTORIAL GUIDE TO GARDENING."

UNDER the above title, the editor of *Garden Life* has brought out a useful work, interspersed with 220 illustrations. The very lucid manner in which the propagation of flowers, vegetables, shrubs, &c., are treated, as well as the errors in planting, &c., that are to be avoided, should make it especially attractive to amateurs. The moderate price at which the book is published places it within the reach of all.

* By W. Robinson. Illustrated with engravings on wood. London: John Murray: 1907. Price, 7s. 6d.

† Published by the Cable Publishing Co., Ltd. Price 1s. nett.

RHODODENDRON COUNTESS OF HADDINGTON.

This hybrid, although one of the oldest, is amongst the most beautiful of the greenhouse Rhododendrons. As far back as March 19, 1862, the Floral Committee of the Royal Horticultural Society awarded a First Class Certificate to this plant, the exhibitor being Mr. Parker, of Tooting. The Society's *Journal*, 1861-2, describes the plant as "a vigorous-habited variety, evidently bred from R. Dalhousiæ. It has rather small, stout, dark-green, convex, ciliated leaves, and large long-tubed flowers of great substance, somewhat drooping and of a delicate blush-white colour." R. Countess of Haddington is of doubtful parentage, but is generally supposed to be the result of a cross between R. Dalhousiæ and R. Gibsonii. The plant represented in our illustration at fig. 84 is growing in one of the borders in the Temperate House at Kew, where one of the wings is largely devoted to the planting of these Rhododendrons. At this season of the year nothing more floriferous can be imagined than the view presented by these large specimens of Rhododendrons flowering in the huge building, with a setting of other handsome subjects around them. The visitor will find it difficult to determine which is more worthy of appreciation amongst such plants as Rhododendron Countess of Haddington, R. Veitchii, R. Veitchii lævigata, R. Fosterianum, R. Duchess of Edinburgh, R. Gibsonii, R. Princess Alice, and R. Lady Alice Fitzwilliam.

A plant of R. Countess of Haddington grown in Mr. J. Cypher's nursery, and measuring 6 feet by 6 feet, formed the subject of the Supplementary Illustration to our issue for May 19, 1888.

The section of greenhouse Rhododendrons which includes "Countess of Haddington" is of very easy cultivation in pots, tubs, or in the border of a greenhouse. They need a peaty compost containing plenty of coarse sand. Unless it is wished to raise seedlings, the seed pods should be prevented from forming, as these would otherwise impose a considerable strain upon the plants.

[Photograph by C. P. Raffill.

Fig. 84.—Greenhouse Rhododendron "Countess of Haddington": flowers blush-white.

FOREIGN CORRESPONDENCE.

PHILODENDRON HYBRIDS.

I am much interested in the remarks applying to Philodendron × Corsinianum, published on pp. 25 and 69. Aroids still claim an important position among decorative stove plants, and admirers of them have a desire to know more about them than their habit and mode of growth. The statement of Mr. Watson, originally appended to the description of the plant in the *Bot. Mag.*, t. 8, 172, as being "the only hybrid Philodendron that has been raised," brought to my mind several other examples of hybrid origin in cultivation. One of them was distributed from the Cambridge Botanic Gardens, being P. gloriosum × Andreanum. Two others exist probably only in the Berlin Botanic Garden at Dahlem. These are: P. pinnatifidum × (?) Melinonii (or (?) Simsii) and P. pinnatifidum × Wendlandii. There is no reason to suspect that the latter two crosses exist in nature, as their habitats differ widely. P. pinnatifidum comes from Venezuela, P. Melinonii from French Guiana. P. Simsii occurs far more west, being a native of British Guiana, P. Wendlandii was found by Wendland in Costa Rica. P. gloriosum and P. Andreanum, however, are both growing in Columbia. Are these Philodendron hybrids but little known, or are they regarded as of natural production? There is no doubt of the Philodendron Lindenii, given by Dr. Ragionieri as one of the parents of P. × Corsinianum, to be P. Lindenii, Hort., which is a synonym of verrucosum Mathieu (like daguense Lind. et André, and Carderi Hort.), but what is meant by P. lucidum? *E. B. B., Berlin.*

— —The editor has kindly allowed me to read *E. B. B.*'s note. I had never heard of the Cambridge hybrid he mentions, and on enquiry I learn from Mr. Lynch that no Philodendron hybrid has ever been raised in the Botanic Gardens there, nor has one been cultivated there, so far as he knows. Mr. N. E. Brown, whose knowledge of Aroideæ is exceptional, is unacquainted with any hybrid Philodendron other than P. × Corsinianum. The two hybrids in the Berlin Botanic Garden have not, so far as I know, been previously recorded. *E. B. B.* does not state that they were artificially raised there. I know nothing of a Philodendron lucidum. *W. W.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Deciduous Dendrobiums. The species and hybrids of this section flower late in winter and early in spring. Many of these plants will have now ceased flowering, and new growths may be seen pushing forth from the last made pseudo-bulbs. If such plants require to be repotted or top-dressed, the work may now be carried out. Young plants in vigorous health may be shifted into larger pots, taking care not to disturb the roots more than is necessary. Others that have sufficient rooting space and are well established in sweet material should not be disturbed more than is necessary in taking away a little of the surface material in order to apply a fresh top-dressing. Specimens which show signs of exhaustion from the strain of flowering should be turned out of their receptacles, and have all the old material shaken from their roots. Divide the plants and cut away all old and therefore useless pseudo-bulbs and dead roots, then pot up the divided plants into smaller pots to become re-established in cultivation again under ordinary conditions. For the purpose of re-potting employ a compost consisting in equal parts of Osmunda or Polypodium fibre and sphagnum-moss. The moss should be carefully cleaned and chopped before use. A fair quantity of rough sand and finely-broken crocks may be mixed with the compost. Ensure good drainage by filling the pots two-thirds of their depth with clean crocks and lumps of charcoal. Pot the plants moderately firm, keeping the base of each plant a little below the rim of the pot, and apply a thin layer of sphagnum-moss on the surface. These Dendrobiums require a strong heat, and moist but buoyant atmosphere during the season of growth, and exposure to sunlight, excepting that period when the growths are very young, or when more re-potting has taken place, when shading is necessary. During the early stages of growth only sufficient water should be given round the edge of the pot to keep the rooting medium just moist, as young growths are often shrivelled through allowing an excess of moisture. Later, when growth is more advanced, and the roots are extending freely in the compost, the quantity of water afforded may be gradually increased. Small plants should be

cultivated in receptacles that may be suspended from the roof rafters, while the larger ones can be best accommodated on an open trellis staging. Success in the cultivation of deciduous Dendrobiums depends largely on the plants being kept clean from insect pests. The plants are liable to attacks from almost every species that is known to infest Orchids.

Propagation.—It is a good practice to maintain a stock of young plants by propagating a certain number each year. This may be done by cutting off some well-ripened back pseudo-bulbs, choosing, as far as possible, those that have not bloomed. Cut these into short lengths and insert them as ordinary cuttings in pots filled with chopped sphagnum-moss and sand, or lay them on a bed of moss. They may then be placed in a warm, moist propagating case, when they will soon develop new growth. When the new roots make their appearance they can be potted off separately in the usual way.

Thunias.—When the young growths are about 2 inches long they will produce new roots freely. Re-potting is necessary every year, and it should be done before the new roots commence to grow. Shake all the old material from their roots, which, being dead, must be cut away, but not so severely that nothing is left to hold the pseudo-bulbs firmly when re-potted. These latter may be potted singly, or made up into specimens by putting five pseudo-bulbs in a 24-size pot, securing them to neat stakes. As abundance of water is needed when the plants are in full growth, good drainage is essential. The rooting medium may consist of two-fifths lumpy peat, two-fifths lumpy loam, and one-fifth chopped sphagnum-moss, adding plenty of crushed crocks and silver sand to keep the compost porous. Pot firmly, and let the surface be about one-half inch below the rim of the pot. Until new roots are made, the plants will not require much water. These plants may be grown in any plant stove where they can be exposed to full sunshine and be frequently syringed.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Potatos.—Preparations ought now to be made for planting the principal crop of Potatos, especially by those who will plant them on high situations, or who reside in the southern and western counties. The earlier the tubers can be placed in the ground with safety the better it will be for the crop, as it prevents waste and the crop will more quickly mature. If a crop can be lifted early in the season, it is more likely to escape serious attacks of disease. All the tubers intended for planting should be carefully examined for the purpose of rejecting any which do not show signs of making strong sprouts. Large tubers may safely be cut a week or ten days before planting, at the same time dipping the cut parts into fresh lime. The cultivator should take out proper trenches, as this system is much to be preferred to that of planting the tubers in holes made by a dibber. A little "London" or stable manure should be placed in the trenches both before and after planting. This is especially necessary on heavy, retentive soils. I have also found Messrs. Wood & Son's Potato manure of much value in assisting the growth if applied both at the time of planting and again during the season of growth. If there are wireworms in the soil, apply a dressing of vaporite. In order to obtain specially good tubers some decayed leaf-soil may be mixed freely in the soil.

Asparagus.—The permanent beds should be neatly raked down, removing the roughest of the material, which should be retained in the trenches. Strictly avoid growing any other crops on the beds, but when space is a consideration a crop of Cauliflowers, Lettuce, Onions, or Radishes may quite safely be cultivated in the alleys, and in this case the beds themselves will afford shelter to such crops. Newly-formed beds should be planted not later than the first week in April.

Seakale.—Cuttings which were properly prepared at the time of lifting the crowns in the autumn should now be fit for planting out on land which has been deeply trenched and well manured in an open position in the garden. The rows should be placed at 18 inches apart, and distances of 1 foot should be allowed from set to set. It is a capital plan to cover the centres well over with finely-sifted cinder ashes, a sure preventive against the ravages of slugs. The cuttings should be dibbed in and made very firm. Established crowns in the permanent beds will now only need to have the air and light excluded to ensure perfect blanching, as the slower growth is made the finer will the produce be. All fermenting materials and the pots should be cleared away from plants which, having been forced, have yielded their produce; the crowns should be covered with fine cinder ashes and the ground between them neatly forked over.

Rhubarb.—This may be brought forward with the greatest of ease by placing pots or tubs over the permanent crowns, and as with the Seakale so with Rhubarb; immediately a fair quantity of stems have been taken from the crowns remove the coverings and expose them so that there may be plenty of time for the plants to make a good growth before the autumn.

Peas.—Make yet another sowing of the large podded varieties in boxes for subsequent planting out. Sow the seeds thinly and raise the seedlings in a cool house or unheated frame. A sowing should also be made in the open on land which has been deeply tilled and well enriched with good farmyard manure.

THE FLOWER GARDEN.

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

Hardy annuals.—I have recently prepared a border for hardy annuals. It is about 100 yards long and from 4 to 12 feet wide, of crescent shape, dotted at irregular intervals with bushes of Lavender, Rosemary, and occasional clumps of Lilium candidum, and has a background of shrubs. The ground has been deeply dug and enriched with manure. This work was done some time since, but we have recently forked over the surface soil and prepared it for receiving seeds. Many of these being very small, the soil should be made as fine as possible. Before sowing the seeds it will be necessary to consider the height and colours of the various species and varieties. We shall avoid formality as much as possible. At the back of the border the plants will consist chiefly of Sweet Peas of various colours, and planted in groups of various shapes and sizes, and corresponding, in a measure, with the irregular outline of the shrubs. There will also be occasional groups of such varieties as Mrs. George Higginson, Countess Spencer, King Edward, Dorothy Eckford, Evelyn Byatt, and Miss Willmott. There will be further groups of Lavatera rosea splendens, Lupinus Hartwegii, Linum grandiflorum, Nigella, "Miss Jekyll," Love Lies Bleeding (Amaranthus caudatus), Coreopsis (crimson varieties), Clarkia (Salmon Queen and double pink varieties), Chrysanthemums in variety, Cyanus, Candytuft (White Spiral, Carmine Empress, and Pigmy), Eschscholtzias, and Godetias in variety, Shirley Poppies, Bartonia aurea, Phacelia viscaria (cardinalis and dwarf carmine). The sorts already mentioned will be sown on the border, but the following species will be sown in heat, and the plants will have to be transplanted to the border at the end of May. These include Cosmus (useful for sitting-room and dinner-table decoration), Delphiniums Queen of the Blues, Nemesias, Phlox Drummondii, Kochia trichophila, Salpiglossis, Scabious, Marigold (Legion of Honour), Ricinus Gibsonii, Verbenas, Asters, and Stocks in variety. Wherever the seed is sown the soil should first be made fine and pressed moderately firm, either by treading, or, if the seeds are sown indoors, by the hands. Owing to the diversity of seed, they cannot all be treated in the same manner with regard to the depth of covering. The Sweet Peas, for example, should be planted from 2 to 3 inches deep; but Shirley Poppies are best when sown on the surface. As a general rule, seeds of every description are sown too thickly, and the plants afterwards become weakly through overcrowding. Very small seeds should be mixed with some finely-sifted dry sand, and they should be sown thinly. It may afterwards be necessary to thin out the seedlings as soon as they are large enough to be handled, thus providing space for each plant to develop to the greatest dimensions possible. The work of thinning should be done at a time when the ground is in a moist condition.

Pricking out.—Most of the seeds which are sown indoors will require to be pricked out as soon as they are large enough to be handled. Such plants include Antirrhinums, Dianthus, Petunias, Pyrethrums, Lobelias, &c. They should be pricked out into unheated frames, where they can be given protection from frost, if necessary, and ventilation can be employed to keep the growth as sturdy as possible. Other plants, such as Anchusa italica, Hollyhocks, Centaureas, Alonsoa gracilis, Nicotianas, Salvias, Carnations, etc., should be potted singly into small pots in a compost consisting of leaf-mould, loam, and sand. If the atmosphere is kept close for a few days afterwards, the plants will be encouraged to form fibrous roots quickly.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Mid-season Grapes.—Vines that are intended to crop in mid-season, although at present in various stages of growth, require similar cultural conditions. Shoots that were left at the time of disbudding should now be stopped at two or three leaves beyond the inflorescence, according as the spaces between the rods are large or small. Let the shoots be trained down to the wires gradually. If it is attempted to draw them down at one operation, many of them will be liable to break off. Remove a considerable number of the bunches (or inflorescences) before the flowers open, leaving the final thinning to be done after the fruit is set, when a selection can be made of the most perfect and best placed bunches. The atmospheric temperature at night during the time the vines are in flower should be at about 60 to 65 degrees, this being enough for the free-setting varieties, but 70 degrees may be allowed for varieties of Muscat. These temperatures, however, should be permitted to fall a few degrees on very cold nights. The heat during the day-time may rise 5, or even 10 degrees above the temperatures already enumerated. When it has to be determined what bunches of fruit shall be left for the crop, it should be borne in mind that overcrowding of the vines would result in the production of fruits of poor quality, and, in extreme cases, shanking would be likely to follow. Until the flowers expand, the vines should be syringed with tepid soft water early in the morning, and again in the afternoon when closing the house, provided the weather is bright, but the syringing must be discontinued as soon as the blooms have opened. Damp the available surfaces in the house with water to promote moisture in the atmosphere, and pay strict attention to ventilation. During the actual flowering period, the atmosphere will need to be somewhat dry, and sufficient ventilation should be employed to cause the atmosphere to circulate freely. Artificial pollination should be carried out during the warmest part of the day, using the pollen from free-setting varieties upon the flowers of varieties that do not set so freely. Soon after the fruits upon free-setting varieties commence to swell, it can be seen whether the berries have been properly fertilised or not, and any that have failed in this respect should be cut out. A longer period, however, is necessary to determine these berries in the case of Muscat and other varieties that set their fruits with difficulty.

Melons.—The comparative absence of sunshine has not been favourable to the growth of Melons. Ventilate the structure with great care. Maintain the atmosphere moderately dry, and pay frequent attention to the pollination of the flowers and the stopping of shoots at one leaf beyond the fruit. If the fruits have commenced to swell, three of the most promising specimens upon each plant (if grown as cordons) should be chosen for the crop, and made secure to the trellis, removing all the remaining fruits. After this stage of growth the fruits will swell quickly, and liberal supplies of manure water or other suitable artifical manures and top-dressings will be necessary. The atmospheric temperature at night should be 70 degrees, allowing this to rise 10 degrees or more during the day if the weather is favourable. Close the ventilators early in the afternoon, and syringe the plants and damp all the surfaces in the house with tepid water. Attend to the sowing of seeds and transplanting of young plants for successional crops.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Grafting.—If the trees were "headed" or cut down, as advised in a previous calendar, the preparations for grafting may now be commenced, and as soon as the sap begins to circulate in the stem the actual process of inserting the scions may be carried out. The time for doing this will depend upon the season and the locality. In order to graft with success it is necessary to exercise the greatest care, and to use dormant scions which have been heeled-in under the shade of a north wall since December last. If the stocks to be grafted and the scions are of about the same size, the process of inserting the scions is simplified, and the method known as whip or tongue grafting is most suitable. Remove a portion of the top from the stock at the joint where it was cut, then make a slit in the bark of the stock in an upward direction. This slit must be made of the same size as the scion so that they will fit perfectly. Make a slit, or tongue, about half way down the cut surface of the stock in a downward direction, and a corresponding slit on the scion, and fit the scion into the stock. Bind the graft round with matting, firmly, but not too tightly. Afterwards apply clay or grafting wax over the matting to exclude moisture. The selected scions should possess from four to six buds each, the middle portion of a shoot being generally best. If much grafting has to be carried out, grafting wax may be purchased in tins from most of the nurserymen. If a limited number of trees are to be grafted, however, some clay, if worked into a pliable state, free from grit, with a little cow manure added, will do very well. [Directions for making a good form of grafting wax were also printed on p. 192 of the last issue. —Ed.] The clay should be covered with moss to prevent it cracking. It is necessary to exclude air until a union has taken place. Dwarf stocks may be earthed-up with soil, which will serve to keep the clay moist.

Fig. 85.—Whip or tongue grafting.

Cleft grafting (see fig. 86).—The method known as cleft grafting is useful for larger trees, being frequently employed in cider districts for the grafting of orchard trees. The unions resulting from cleft grafting are very seldom broken by strong winds. Choose short-jointed, well-ripened shoots for forming the scions, each having about four buds, and one of these should be near to the base. Cut the scion to the shape of a wedge, and open the stock with a mallet and chisel, inserting the scion before the chisel is removed. Two, four, or six grafts may be inserted by cleft or crown grafting in one stock, if the stock is a very large size.

Crown grafting (see fig. 87).—This process is similar to cleft grafting, and is preferred for use upon large branches. Remove a portion of the stock until a part is obtained which is smooth, and therefore in the best position for receiving the grafts. Make the ends smooth with a sharp knife, and cut the rind about 3 inches down the stock. Remove a portion of the scion for a similar length, leaving a small shoulder projecting that will rest on the top of the stock. It is necessary that the end bark should be made to join perfectly on both sides in order that a successful union may take place.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Dracæna Sanderiana.—This ornamental foliage plant forms a better specimen if several plants are placed together in the same pot or pan. At the commencement six or seven may be placed in a pot having a diameter of 8 inches. The compost should consist exclusively of peat and sand, and in the process of potting, this compost should be pressed moderately firmly. When the plant has established itself and has filled the pot with roots, an occasional application of an artificial manure containing iron may be given by sprinkling a little on the surface of the soil. This species should never be given liquid from the farmyard, as this form of manure causes the plant to lose its colour. When the shoots have grown to a height of 2 or 3 feet, they may be cut down to within 6 inches of the rim of the pot. This will cause the plants to produce young shoots from the base, and when these have become sufficiently long they may be staked out to form an effective bush-like plant. The ordinary temperature of the stove suits this species perfectly.

Helicenia illustris.—This species is also suitable for forming large specimens. It may be easily grown in the stove, but will not succeed if cultivated in a cooler atmosphere, exposing to cold for two days being sufficient to cause damage to the roots. The present is a good time to repot the plants. For furnishing a compost, mix together some rough pieces of light loam, peat, sand, charcoal, and broken bricks, with a liberal supply of chopped sphagnum-moss. The pots need to be provided with an extra amount of drainage material, as it is necessary to afford the plants a great amount of water during the season of growth. Shake the old soil away from the roots, and, in the potting process, carefully mix the fresh compost amongst the roots, and press them together moderately firmly. After the re-potting has been done, the plants will need to be syringed three or four times each day in bright weather. Maintain a high degree of heat, but do not apply water to the roots for some time after the re-potting has been done, for the water afforded by the syringings will be sufficient. Manure of the same nature as that recommended for Dracæna Sanderiana will suit this plant, which needs very liberal treatment when growing freely in order that the colour may develop well and the leaves grow to as large a size as possible.

Hoffmannia (Camptolobotrys) refulgens is another plant possessing fine foliage and suitable for forming large specimens. It may be started in the same manner as Dracæna Sanderiana, affording it a compost of loam, leaf-mould, peat, and sand in equal parts. Press this material firmly together, as the roots are of a fine nature. When the flower-spikes appear they should be removed, and, by liberal feeding with liquid manure obtained from the farmyard, the plants should be encouraged to make growth. When the shoots begin to hang over the sides of the pot it will be necessary to place two stakes flat on the pot, each of them 6 or 8 inches longer than the diameter of the top of the pot. Tie a hoop to each of the four corners. A good hoop may be formed of a piece of wire run through a piece of old half-inch garden hose. The shoots should be trained regularly over the hoop, and a plant may thus be grown until it measures 3 feet or more in every direction, making a most attractive specimen when suspended from the roof of a house. This species requires the temperature of a stove, and should be shaded from bright sunshine.

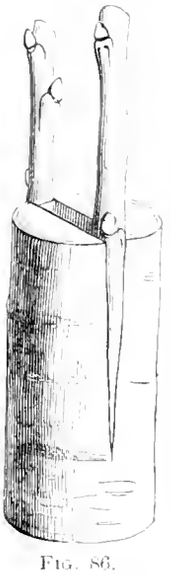


Fig. 86. Cleft grafting.

PUBLIC PARKS AND GARDENS.

By James Whitton, Superintendent of the Parks and Open Spaces in the City of Glasgow.

The provision of music.—In the month of March it is necessary to make preparations for providing musical performances in the parks and open spaces during the coming season. It is the custom in some towns to appoint a musical expert or director to assist the parks Committee in this matter; but in others, as in Glasgow, all the arrangements have to be carried out under the supervision of the park Superintendent. He submits his proposals to a sub-committee. It frequently happens that members of this committee possess a knowledge of music. The proposals, however, have to be drawn up with extreme care, because, in some cases, the amount of money that can be spent for this purpose is definitely specified by an Act of Parliament. The committee, when considering the arrangements for the season, have sometimes to refuse requests made by more or less influential bodies to have higher-class bands, as well as a greater number of performances in the districts they happen to be interested in. The employment of local bands is another matter demanding some tact and discrimination. In addition to high-class bands that are usually to be found in large industrial centres, there are always some who, being less efficient, are none the less energetic in their claims for recognition by the municipality. The committee may be anxious to encourage local talent, but it is commonly a waste of money to employ such bands, as the public would not be likely to listen to them. The public is fearless in its criticism of weak musical performances, and there should therefore be no hesitation in maintaining a high standard. In practice we give the lesser-known bands an opportunity to prove themselves by first employing them in the smaller parks and open spaces, and by their performances there it can be seen whether their services will be suitable for filling more important engagements. Another point meriting careful consideration is that of placing the bands. Our present system has been in force for some years with marked success, and it was inaugurated by the convener of the music committee. This system is to have a series of high-class bands playing in some park daily throughout the season. The bands are given weekly or fortnightly engagements, and appear in succession in the various parks. If a band is engaged from a distance, it gives two performances daily in different parks, thus affording residents in various districts an opportunity of hearing them. In the principal parks musical performances are given twice a week, and in secondary parks once a week, the performances in the smaller ones being at longer intervals. The desire that exists in a particular district for the band is judged by the attendances at the local performances. The actual music season commences in Glasgow about the middle of May, and extends to the second week of August. Performances are usually given between the hours of 7 and 9 p.m., except in cases where the bands have been brought from a distance, when they play during the afternoon in residential districts. In the selection of bands it is good policy, no matter how excellent the local bands may be, to employ a few high-class ones from a distance. Such an arrangement fosters a spirit of emulation, which is the mainspring of improvement in every profession. We have had such companies as Besses o' the Barn, Black Dike Mills, Wingate Temperance, Yorkshire Dragoons, Newcastle Artillery, Northumberland Hussars, and others, and occasionally one of the leading military bands from London, and, at still rarer intervals, one from the Continent. In regard to the composition of the bands, the military and brass bands are the best for outdoor performances. It having been found that, for the full enjoyment of orchestral music, shelter and perfect quietness are necessary, and these requisite conditions are rarely to be found in the vicinity of a bandstand in the public park.

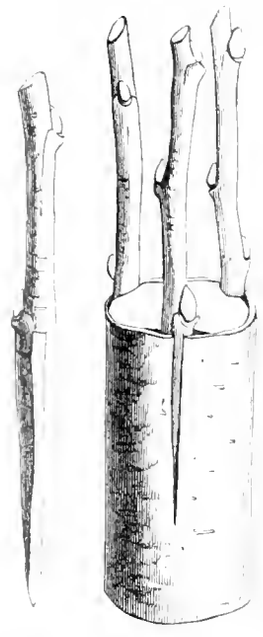


Fig. 87.—Crown or rind grafting.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS.

TUESDAY, MARCH 31—
Roy. Hort Soc. Coms. meet at Hort. Hall. (Prizes are offered for Hyacinths).

WEDNESDAY, APRIL 1—
Winter-flowering Carnation Soc. Spring Sh. at Hort. Hall, Westminster.

THURSDAY, APRIL 2—Linnean Soc. meet.

SATURDAY, APRIL 4—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

TUESDAY, APRIL 7—
Brighton Spring Fl. Sh. (2 days). Cornwall Daffodil and Spring Fl. Soc. Exh. at Truro (2 days). Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, APRIL 8—
Liverpool Hort. Assoc. Spring Fl. Sh. (2 days).

FRIDAY, APRIL 10—Exeter Daffodil and Spring Fl. Sh.

MONDAY, APRIL 13—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, APRIL 14—
Royal Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet. Nat. Rose Soc. Com. meet.

WEDNESDAY, APRIL 15
Roy. Caledonian Hort. Soc.'s Spring Sh., in Waverley Market, Edinburgh (2 days). Kent, Surrey and Sussex Daffodil and Spring Fl. Soc. Sh. at Tunbridge Wells.

FRIDAY, APRIL 17 *Good Friday.*

MONDAY, APRIL 20—*Easter Monday.* Bank Holiday.

TUESDAY, APRIL 21—
Huntingdonshire Daffodil and Spring Fl. Soc. Sh. at Huntingdon. Devon Daffodil and Spring Fl. Sh. at Plymouth (2 days).

WEDNESDAY, APRIL 22—
Roy. Bot. Soc. Exh. at Regent's Park.

THURSDAY, APRIL 23—
Midland Daffodil Soc. Sh. at Bot. Gardens, Birmingham (2 days).

SATURDAY, APRIL 25—
Quinquennial Exh. of the Soc. Roy. d'Agri. et de Botanique de Gand at Ghent, Belgium, lasting until May 2.

TUESDAY, APRIL 28—
Roy. Hort. Soc. Coms. meet, and Nat. Auricula Soc. combined show at Hort. Hall, Westminster. Shropshire Hort. Soc.'s Spring Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 42·7°.

ACTUAL TEMPERATURES—
LONDON. *Wednesday, March 25* (6 P.M.): Max. 53°; Min. 44°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, March 26* (10 A.M.): Bar. 29·7; Temp. 45°; *Weather*—Slight rain.
PROVINCES.—*Wednesday, March 25* (6 P.M.): Max. 48° Cornwall and Ireland S.; Min 30° Scotland S.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

WEDNESDAY—
Lilies, Border Plants and Bulbs at 11.30; Roses and Fruit Trees at 1.30; Azaleas, Palms, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—
Herbaceous and Border Plants, Lily and other Bulbs at 12; Roses at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
A selection of 300 lots of Hybrid Orchids from the Chessington Collection at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Value of Records in Arboriculture.

At the commencement of the nineteenth century there was a considerable movement among the owners of estates in Great Britain in the direction of laying-out and planting of arboretums. It seems to have been the fashion at that date to make pleasure grounds and plant them with the new and rare trees and shrubs which were then being so largely brought from abroad; for a greater number of new species were introduced between 1800 and 1830 than had ever been brought into this country up to that time. Immense sums of money were spent on carrying out various schemes of landscape gardening and the grounds so laid out were all planted with various trees and shrubs. At about the height of the fashion, or perhaps when it was just on the wane, Loudon published his *Arboretum et Fruticetum Britannicum*, and one would have thought that the appearance of this book would have tended to keep up the interest in the subject of arboriculture, at any rate among the owners of arboretums, the trees in which had been referred to by Loudon in the statistics which he gives at the end of the description of each species.

Unfortunately for the cause of arboriculture, Loudon's mention of these specimens, giving their age, height, and girth, seems to have been, in most cases at any rate, labour thrown away; for except in the rarest instances is it now possible to identify with any degree of certainty the particular specimen at any given place that was mentioned. The loss to arboriculture in consequence is very great, for we are unable to learn anything from the life history of these trees. We do not know whether the tree which cannot now be traced was cut down, or whether it died from other causes. We do not know if it grew well or badly, whether the soil of the particular place suited it or not. Did some gale blow it down, or was some winter too cold? Why has it disappeared? What was the cause of its death? We cannot say. A century of experiment has thus been lost to us.

If the trees that Loudon mentions could have been periodically visited and their growth recorded at varying intervals, the reasons why they died or were cut down, and the quality of the timber stated, together with notes on the soil and situation, relating any exceptional gales and frosts which caused damage to the trees, an enormous amount of interesting matter could have been amassed, which would now be of incalculable service to those who are interested in the subject. The loss of this knowledge affects not only the arboriculturist, but in some degree the sylviculturist also; the former has, as a rule, the first chance of dealing with a new tree and judging of its characteristics and constitution. A tree is probably fairly well known in the arboretum before the forester attempts to deal with it. A new tree cannot as a rule be planted out on a large scale when it is first introduced into this country, for the difficulty of obtaining it in sufficient quantities is a bar to this, not to mention the loss which might be incurred by the owners of estates, who, though brave enough to experiment, should find out afterwards that the tree on which they had spent their money was not, after all, suited to this country, or that the local climate or soil did not favour its growth. In consequence, then, it is the arboriculturist who ought first to obtain useful knowledge with regard to a new tree, and he can pass on this knowledge to guide the forester in the choice of trees that he can plant with any expectation of success. The former plants chiefly for pleasure, the latter for profit; but the information the former could collect for the benefit of the forester is so great that it seems a pity the arboriculturist should not take more trouble to study each tree after it has once been planted.

It must be admitted that few people take an interest in both branches of tree-growing, and so the knowledge that might be obtained by one section is lost to the other. If one glances at the nurseryman's catalogues of some years ago one realises that some trees must have been distributed throughout the country in great quantities, but where are the specimens now? They have all presumably died, and so we naturally draw the conclusion that they will not thrive here. In regard to others, it might well be wrong to infer that they are not suited to any soils or any climate in the British Isles because they do not now exist; we cannot jump to the conclusion that because a tree may not be a success on one estate, it would be a failure on another where the conditions may be different. If only, as we have said above, Loudon's recorded trees could have been watched up to their death, much valuable information which has now been lost to us could have been obtained, and those of us who may be interested in this subject would not find it necessary to traverse the same grounds over which our predecessors have gone before us.

At the present time a good deal of interest seems to be arising again among many landowners in the planting of their parks and pleasure grounds with new and rare trees and shrubs. Some are fortunate enough to possess places where trees have already been planted, and they are now busy in planting either newly-introduced species or such sorts which, though introduced many years ago, are not already included in their garden. They may wonder why a certain tree is not to be found in their collection; they may think it curious that all the other trees introduced at the date when their collection was started are there, but not this or that particular one. The possession of properly kept records in such a case might have obviated further disappointment, as well as expense, by showing that failure had already attended the attempt to acclimatise it. Others who are not so fortunate as to own an arboretum are beginning for themselves to plant where no trees before existed, but it is to be hoped for the benefit of posterity that all who take up the planting of trees will keep some record of what they are doing and of the species that they are planting.

There are, of course, obvious difficulties to be met; human lives are so short, compared with the life of a tree, and it may take three or four generations before it is possible to form an estimate of the value of an introduced species. In some cases a man may take an interest in the trees that he has

planted, but when he dies his son may not; his son's son may however again take an interest in the subject, but if his grandfather has left no record of his successes and failures, he may have to experiment all over again, and in any event will lose much interesting information.

In other cases estates where trees have been planted are cut up for building purposes. Many trees are cut down, and are lost for ever, but if a record of them had been kept many details of permanent interest would have been preserved.

It is to be hoped that future planters will endeavour, even though in a small way, to keep some sort of log book of what they are doing. The difficulty in all cases is the identification of the particular tree which it is desired to study; it is necessary that it should have some sort of label attached to it to distinguish it, and it may be urged that the expense of this and the trouble of keeping them in repair is too great. In order to keep trees labelled as they are at Kew, for instance, it would necessitate great expense and labour, but such a method as this is not necessary for the requirements of the case. All that is absolutely necessary is to keep a log book of the trees planted; in this book should be stated the origin of the tree, stating either where the seed was obtained or where the young tree was procured, its pedigree, if any, and the date when it was planted; its dimensions could be added from time to time without much trouble. The tree could have a number assigned to it in the planting book, and this number could be affixed to the tree when it was planted out. At a very little cost (12s. per gross) numbers can be obtained stamped on metal, which would last indefinitely; a hole should be bored at the top of the label, through which a piece of copper wire can be passed, and the labels can be either suspended on the young trees or nailed on to the older ones. This would enable each tree to be identified for future reference.

Any note of interest could be added in the planting book as years went by; when it bore fertile seed, if at all; when it was mentioned in any book on the subject, and so on; then the difficulty of identifying that tree again would be enormously reduced. We should know what had happened to the tree in question, whether it had a constitution that could withstand frost or wind, whether the drought of a certain summer was too much for it; whether we were wise in planting that tree on a large scale or whether it would be unfitted for planting for purposes of profit. As each was cut down, its timber could be examined to see how it compares with that obtained from abroad, and a note of this could be added in the book. In this manner the arboriculturist could materially help the sylviculturist in his selection of trees, and the former, although he may be pursuing his hobby for his own pleasure, would nevertheless have the satisfaction of knowing that he was at the same time contributing to the general stock of useful knowledge, and of adding materially to the value of his collection.

Our Supplementary Illustration affords a view of the Pagoda in the Royal Botanic Gardens, Kew, a building which forms a conspicuous feature of the landscape, whether seen from the neighbouring towns or from the banks of the Thames, which forms the boundary of the gardens on the Middlesex side of the river. This Pagoda was built in 1761-2, at which period such architectural structures

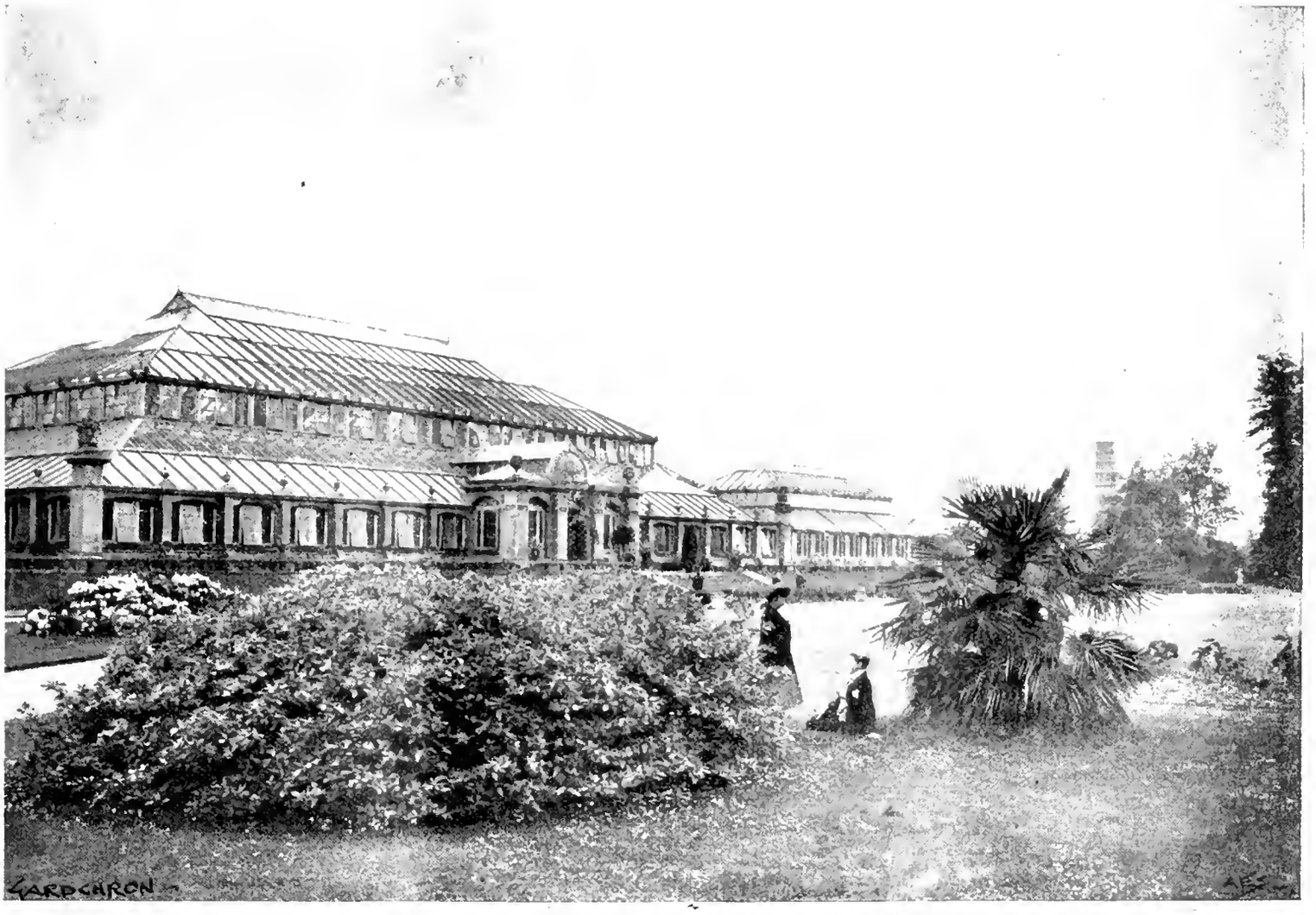


Fig. 88.—View of the Temperate House, Royal Gardens, Kew, with the Pagoda in the distance.

were considered fitting complements to garden scenery although they have long since fallen out of fashion. The substantial Orangery, which is now utilised as a museum, was erected at the same date as the Pagoda, and another building, known as the Mosque, which stood near to the Pagoda, was built in 1761. Sir William Chambers, the architect of Somerset House, and of the Kew Pagoda, erected a number of these buildings, many of which were built of fragile materials, and most of them have long since disappeared. The Pagoda is situated not far from the great Temperate House, of which we publish an illustration at fig. 88, and close to the town of Richmond. When the Pagoda was first erected, all the angles of the roof were orna-

mented with large dragons, 80 in number, covered with a kind of thin glass of various colours, but these have long since been removed. The building is not now open to the general public, although in former years visitors were permitted to ascend the winding staircase and view the gardens around. In the vicinity of the Pagoda is the arboretum, containing the rich collection of trees and shrubs for which Kew is famed, and the pretty sunken Rose-garden, which is so beautiful a spot in summer time. The building forms a fine setting at the far end of the broad vista which leads from a point near the great Palm House, past the still larger Temperate House. It is 49 feet in diameter at the base, and rises to a height of 163 feet. The circumference at the base is 87 feet 4 inches. The first storey opens on to a verandah, which extends to a distance of 15 feet from the building on all sides. Altogether there are nine storeys, and these are reached by a central staircase, consisting of 253 steps in nine flights. On each floor, except the bottom one, are four windows, their place on the ground floor being taken by doors, that alternate with recesses in which are seats. The windows in each instance open on to balconies, which are protected from the storey above by overhanging slate roofs. The building terminates in a tall staff that is surrounded with eight hoops and a cap.

THE TEMPERATE HOUSE, KEW.—We have on several former occasions given illustrations of the interior of this large plant-house. At fig. 88 a view is shown of the exterior of the main building and one of the wings, which latter is largely planted with Rhododendrons of the type shown at fig. 84. The building consists of five distinct portions, connected with each other, and were designed by DECIMUS BURTON. The extreme length is 628 feet, the central and largest section being 216 feet long, 140 feet wide, and 60 feet high, inside measurements. The two wings are connected with this main portion by octagon-shaped buildings, leading through lobbies, each 12 feet long and 7 feet wide. Each wing is 116 feet long, 64 feet wide, and 38 feet high. The front and back entrances to the main building include porches, each 12 feet long and 8 feet wide; the greatest width is therefore 164 feet, if these are taken into consideration. The octagons were built in 1861, the central portion was completed in 1862, the south wing was added in 1896, and the north wing in 1898-9. The total cost for the whole building was about £43,000. The hot-water system is heated by eight boilers, which are placed in crypts beneath the octagons. The whole building covers an area of nearly 2 acres, and stands on a raised terrace. A gallery runs around the central section at 30 feet above the ground. Further particulars will be found in an article published in the *Gardeners' Chronicle*, July 23, 1904, p. 55.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, March 31, at the Vincent Square Hall, Westminster. In the afternoon a lecture will be delivered by the Rev. Prof. G. HENSLOW, V.M.H., on "The History of the Cabbage Tribe."

LINNEAN SOCIETY.—A meeting will be held on Thursday, April 2, at 8 p.m., when the following papers will be read: Dr. HANS GADOW, F.R.S., "Altitude and Distribution of Plants in Southern Mexico"; Miss WINIFRED SMITH, B.Sc., F.L.S., "The Anatomy of some Sapotaceous Seedlings"; Dr. N. ANNANDALE, B.Sc., F.L.S., "Notes on some Sponges recently collected in Scotland."

HORTICULTURAL CLUB.—The next house dinner of the Club will take place on Tuesday, March 31, at the Hotel Windsor, when the Rev. JOSEPH JACOB will lecture on "Tulips."

THE GHENT QUINQUENNIAL.—The list of judges who have accepted invitations to officiate at the forthcoming exhibition has been published. There are 240 members, including representatives from Britain, Germany, America, Austria, Belgium, Brazil, Egypt, France, Spain, Denmark, Holland, Italy, Russia, Grand Duchy of Luxembourg, Sweden, Switzerland, &c. The English jurors are expected to include Messrs. JAMES BACKHOUSE, THOMAS BEVAN, H. GILLARD COVE, CHAS. H. CURTIS, HERBERT J. CUTBUSH, DE BARRI CRAWSHAY, — FINDLAY, J. GURNEY FOWLER, GEORGE GORDON, JAMES GUTTRIDGE, Major G. S. HOLFORD, R. W. KER, STUART H. LOW, W. H. MASSIE, JOHN MCMECKIN, F. W. MOORE, J. S. MOSS, GEORGE NICHOLSON, JAS. O'BRIEN, CHAS. E. PEARSON, R. HOOPER PEARSON, H. T. PITT, Col. PRAIN, Lord REDESDALE, JOHN ROBSON, THOMAS ROCHFORD, R. ALLEN ROLFE, F. SANDER, HARRY J. VEITCH, W. WATSON, JNO. WEATHERS, and BRIAN WYNNE. The jury will assemble on Friday morning, April 24, at 9 o'clock in the reception hall at the exhibition, and judging will commence shortly afterwards. They will meet again at 2 p.m., when luncheon will be served. At 5 p.m. there will be a botanical lecture by Professor NOEL BERNARD. At 8 p.m. members of the jury are invited to attend a performance in the Theatre Royal, which has been arranged by the society "l'Avenir Horticole." The exhibition will be formally opened by King LEOPOLD on Saturday morning, April 25, at 11 o'clock. At 8 p.m. on the same day there will be a reception at the Town Hall. On Sunday, April 26, at 11 o'clock, the monument erected to the memory of the late President of the Society, Comte DE KERCHOVE DE DENTERGHEM will be officially unveiled. At 1 p.m. the members of the jury are invited by the Chambre Syndicale des Horticulteurs Belges to attend a "Raoût," and at five o'clock the usual grand banquet will take place in the Theatre Royal.

THE YORKSHIRE GALA.—The council of the Grand Yorkshire Gala propose to send a deputation to the centenary show of the Société Royale d'Agriculture et de Botanique, which will be held at Ghent from April 25 to May 2. The members will leave Dover at 4.30 p.m. on April 23 for Ostend, and will subsequently proceed to the Grand Hotel Mengelle at Brussels, which will be their headquarters during the stay in Belgium. A visit will be made to the Ghent show on Saturday, April 24, and the party will return to England on the following Wednesday.

THE VEITCH MEMORIAL TRUSTEES.—We are informed that the trustees will offer the following prizes for competition at the shows of the Royal Horticultural Society. At the fruit show to be held on October 15 and 16 next:—A first prize of £10 and a Silver Medal, a second prize of £5 and a Bronze Medal, and a third prize of a Bronze Medal, for the best collections of five distinct varieties of Grapes, three bunches of each, to include two distinct white varieties, grown by the exhibitors only. At the meeting to be held on December 8 next, and at the first meeting in April, 1909:—One medal and £5 on each occasion for the best group of winter and spring-flowering Carnations, either in pots, or as cut flowers, or a combination of both, to occupy a space of 100 square feet, and grown by the exhibitors only. All these prizes will be open to competition by amateurs only.

HARDY TREES AND SHRUBS.—We are informed that Messrs. SMITH, ELDER & Co. will shortly publish a third and revised edition of Mr. A. D. WEBSTER'S work on *Hardy Ornamental Flowering Trees and Shrubs.*

THE NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—The Spring Show will be held from May 22 to 29 next, in the large greenhouses, Cours la Reine, Paris. The schedule comprises 389 classes, divided into 18 sections. Those who cannot attend the Ghent Quinquennial will have an excellent opportunity of seeing a fine Continental flower show by visiting this one in Paris. A conference dealing with various subjects relating to horticulture will be held in conjunction with this show.

EARLY WORK ON THE CHRYSANTHEMUM.—The last three issues of *Le Jardin* have contained some interesting articles on the first book on the Chrysanthemum. It was published in Vienna in 1833 by Mr. J. P. RUPPRECHT. M. RENE MOMMEJA has made a translation from the German of the chronological and literary portion of the work, which, as Mr. HARMAN PAYNE points out in the current issue of *Le Jardin*, were not the result of original research on the part of RUPPRECHT, but largely borrowed from the writings of JOSEPH SABINE, Secretary to the Horticultural Society of London (now the Royal Horticultural Society).

THE FRENCH NATIONAL CHRYSANTHEMUM SOCIETY.—*Le Chrysanthème*, the official journal of the French National Chrysanthemum Society, has now reached its 101st number. We notice the Society now numbers 774 members, including 58 affiliated societies. Its next annual conference and exhibition will be held at Tours. Among other interesting articles we notice "Chrysanthemum Sports Exhibited and Certificated by the National Horticultural Society of France during 1907," and the text of one of the papers read at the Toulouse Conference by M. PERAGULLO last November.

THE GERMAN BOTANICAL SOCIETY celebrated the twenty-fifth year of its existence at Dresden on September 12 and 13, 1907, on which occasion eight honorary members and 26 corresponding members were added to the previously small number enjoying the distinction. Prof. BOWER, of Glasgow, and Colonel PRAIN, of Kew, are among the new honorary members, and Mr. W. BOTTING HEMSLEY, Kew; Mr. H. N. RIDLEY, Singapore; Dr. O. STAPF, Kew; and Dr. J. C. WILLIS, Ceylon, were elected corresponding members. In allusion to this selection, Dr. SCHWENDENER, the distinguished president, says the *Berichte der Deutschen Botanischen Gesellschaft*, stated that in selecting foreign members into its body, the society was animated by the sincere desire of showing its appreciation of the scientific work of the elected, and he trusted that the honour thus bestowed would be received in the same spirit. In the name of the society he sent greetings to the newly-elected members.

THE SOCIETY OF AMERICAN FLORISTS AND ORNAMENTAL HORTICULTURISTS will hold its first national flower show at Chicago on November 6 to 15 next. The society, in making this effort, will have the active co-operation of the American Carnation Society, the American Rose Society, the Chrysanthemum Society of America, the Illinois State Florists' Association, the Horticultural Society of Chicago, and the Chicago Florists' Club. An executive committee has been formed, consisting of nine chairmen of sub-committees. The general secretary is Mr. J. H. BURDETT, 1,411, First National Bank Buildings, Chicago, Ill.

Fig. 59.—View in the gardens at Compton Place, Eastbourne, one of the residences of the late Duke of Devonshire. (See p. 204.)

THE DUKE OF DEVONSHIRE. The lamented death of the Duke of DEVONSHIRE induces us to publish the view in the gardens at Compton Place, Eastbourne, shown at fig. 89, which has been prepared from a photograph taken by Mr. KING during last September. The deceased Duke was a liberal patron of horticulture, and the gardens at Chatsworth, Derbyshire (see fig. 90), which were formed by his predecessors, and which at one time were in the care of Sir JOSEPH PAXTON, have a world-wide reputation. The illustration of the gardens at Compton Place show a particularly pleasing portion of the pleasure grounds, known as the "Round" Garden, where the brilliant effects afforded by the beds of flowering plants are relieved by the presence of standard trees of ornamental species, and by other interesting features. It was at Compton Place that the late Duke carried out a considerable part of the entertaining for which he and the Duchess were celebrated. Fellows of the Royal Horticultural Society will remember that the site on which the old Chiswick Gardens were formed belonged to the dukedom of DEVONSHIRE, and that the Society eventually surrendered to the Duke their interest in the unexpired lease.

SALE OF "WESTFIELD" ORCHIDS.—The results of the first day's sale of the collection of Orchids belonging to FRANCIS WELLESLEY, Esq., Westfield, Woking, by Messrs. PROTHEROE & MORRIS, on Tuesday, March 24, tended to confirm the fact that, while there is a depreciation in the value of the commoner sorts, choice and distinct Orchids may be sold for higher prices even than formerly. A plant of Cypripedium insigne "Francis Wellesley" realised 100 guineas, and a small one of the same variety 32 guineas; Cypripedium Thalia giganteum, 66 guineas; C. Thalia Mrs. Francis Wellesley, 125 guineas; the very fine C. Æson giganteum, raised by Messrs. JAS. VEITCH & SONS some years ago, 220 guineas; C. Germaine Opoix Westfield variety, 280 guineas. The total receipts on the first day exceeded £1,700. The receipts on Wednesday, the second day, amounted to about £1,200.

THE FLOWERING OF THE ALMOND.—The first flowers on an Almond tree in a favourable position in Wandsworth, situated five miles south-west of London, expanded fully on Monday last, March 23, as against March 20 last year, February 28 in 1906, March 7 in 1905, and March 21 in 1904.

TREES AND SHRUBS AT THE ARNOLD ARBORETUM.—We have received the first part of the second volume of Professor SARGENT'S work on *Trees and Shrubs*, the material for which was mainly derived from the collection at the Arnold Arboretum. Amongst the species figured are several Chinese Viburnums, *e.g.*, V. cinnamomifolium, described by A. REHDER. This forms a shrub or small tree, with dark, reddish-brown branches. Its handsome evergreen foliage makes it a valuable decorative plant for the grounds in temperate regions. Unfortunately, the flowers do not, from the horticultural standpoint, compare favourably with many of the other species of the genus. Several new species of Lonicera, collected by E. H. WILSON from Central and Western China, are also described. The price of the volume will be $5 net.

DEPARTMENT OF HORTICULTURE IN BELGIUM.—Replying to questions addressed to him on March 18 in the Belgian House of Representatives, the Minister of Agriculture, M. HELLEPUTTE, announced that the Government would reorganise the Board of Agriculture by creating a special department for horticulture, to be presided over by a separate council. We congratulate M. LOUIS GENTIL, the energetic and capable editor of the *Tribune Horticole*, and all who have worked in the cause, upon the perfect success which has rewarded their efforts.

NOTES FROM THE "FRENCH" GARDEN.

ALL arrangements in the French garden are now based upon the Melon crop. The making of the hot beds for the planting of Lettuces and Carrots is so arranged that the frames and lights may be available when the Melons are ready for planting in them.

Under certain circumstances frames and lights are specially reserved for the planting of Melons, and this system has been followed this season. The first batch will be planted this week. The hot beds were prepared on the 21st inst. Trenches 3 feet wide and 1 foot deep were dug, the soil of the first trench being placed in the path next to the last bed. A mixture of two-thirds fresh manure and one-third old, dry manure was employed, and this was trodden firmly, the top being formed 3 inches above the level of the path. The frames were next placed in position and filled with the soil removed from the next trench; in the centre of each light was placed half a barrowfull of well-decayed manure. The Melons were planted when the heat of the bed was 70° F. Previous to the making of the beds the young plants were cut back to two eyes, cutting the plants across the third node. The cotyledons or seed leaves were also cut close to the stem for the purpose of destroying the buds at this spot.

The planting of Cauliflowers amongst the Carrots on hot-beds has been commenced. The Cauliflowers were sown on the 15th of September, and pricked off during the first week of October in frames. The winter having been very mild has necessitated their being transplanted a second time in December, to check their growth and to induce greater development of the roots. The variety preferred for this batch is "Drianc urt." The crop will be ready for consumption in June.

The weather of last week has militated against the growth of the Lettuces and Carrots under the lights and cloches. Twelve degrees of frost were experienced on Thursday, March 19, and, although the cold has not been very severe since, the sky has always been overcast. Fortunately, we had taken the precaution of spreading mats over the lights and cloches at night-time, yet this protection has been insufficient on two occasions. The mats were allowed to remain on the glass till 10 or 11 a.m., by which time they lose their stiffness. *Paul Aquatias, Mayland, Essex, March 21.*

HOME CORRESPONDENCE.

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

THE FLORIST'S ART.—I was pleased to note the generally appreciative remarks of your correspondent *E. M.* on the subject of florists' exhibitions in the issue of the *Gardeners' Chronicle* for February 29. Exhibitions of the florist's art are required in many centres, and Schedule framers should apportion prizes, medals, money, &c., at every big show. If competent florists could be induced to go round and discuss the merits, or the reverse, of the devices placed on view, it would effect great improvements in the art of displaying table and other kinds of floral decoration in the dwelling. So far, the methods now employed by the exhibitors of Chrysanthemums, winter-flowering Tree Carnations, Roses, Narcissus, Tulips, Sweet Peas, &c., are worthy of imitation in certain directions, and these are greatly superior to the older ones once so generally in vogue. Gardeners, like the rest of mankind, are copyists. There is no offence in this statement. But the models should be good ones, showing restraint in the matter of the species of flowers chosen; their colours, whether harmony or contrasts be required; and whether for effect in daylight or artificial light. There are incongruities in the choice of flowers and foliage which must be avoided by the decorator of the table, the jardinière, and the flower-stand. For example, the flowers of Orchids associated with overpowering out-of-doors subjects such as Rhododendrons, Azalea sinensis, Dahlias, and Chrysanthemums would certainly be unpleasing to most persons. Orchids afford the best effects when employed by themselves, although a mixture may be made with some of the more delicately-tinted Roses of the type of Niphetos or Devoniensis—to name Roses everyone knows—or even with some of the flowering Crab blossoms, which are just as fair. They might "go" well with Wistaria sinensis, with Forsythias and Irises. Among Roses there is great choice of varieties, especially in the so-called 'garden" Roses, as distinguished from the exhibition varieties. In the "garden" Roses it is the individual form that pleases, even more than the colour; then many of them have the charm of old acquaintance and of memory. The young gardener cannot know anything of these points in the Rose. It may come to him, too, if he chance to live long; but to those advanced in life it is a rare pleasure to behold these old favourites. I am not sure that a simple low bowl of one or two varieties of the Rose cut with quite short stalks is not more pleasing to most persons than the flamboyant blooms with stalks of 2 feet in length, stuck into those most prodigious cylinders of glass in which they are shown at exhibitions. These American Roses and pretentious methods of display may not perfectly suit the average Briton, and I anticipate a return to the use of the older short-stalked Rose and its accompanying buds. *F. M.*

———The decoration of dwelling rooms, and especially of tables, is not always, as some persons imagine, an expensive luxury, for the hedgerows and ditches of almost every neighbourhood contain many beautiful flowers and foliage plants that are admirably adapted for this kind of decoration. There we may find flowers, grasses, Ferns, fruits, mosses, and beautiful leaves at almost every season of the year, and yet how seldom are these wildlings utilised for floral decoration indoors. Exotic plants, including Orchids, may be considered by some critics more ornamental, yet they lack the light, natural appearance of these plants of our hedgerows. Orchids, in common with all other flowers used for table decorations, should be arranged in a light and graceful manner, and their receptacles need carefully selecting. More prominence should be given to this branch of the gardener's art by the framers of exhibition schedules, who will find that the public interest in their displays is not likely to diminish, even if table decorations largely occupy the place at present held by groups of plants. *W. Fyfe.*

SUNSHINE AT VENTNOR.—To-day we have had nine hours' sunshine, and although the wind is from the east the weather is very warm. The past winter, like the two preceding winters, has been rather severe. Many people had planted Ivy-leaved Pelargoniums to grow up the walls under verandahs, and had covered them with mats, but the frosts have in most places killed them. In one garden the frosts during February have killed a fine plant of the Golden Aloe, which passed safely through the winter of 1906-07. Calceolarias that usually live out of doors from year to year have all been killed. Violets are very backward this year, but many other plants are in full bloom, such as Veronicas, Polyanthus, Double Daffodils, Primroses, white and blue Aubrietias, Tritomas, Wallflowers, Ribes, &c. People who have lived at Ventnor for some years say the winter climate is changing considerably, getting colder and more severe. *T. P., Ventnor, March 20.*

LILIUM GIGANTEUM. The finest specimen of Lilium giganteum I have grown in my garden produced six or seven offsets, of which the largest took fully five years to build up its immense flowering bulb. I think Sir Herbert Maxwell (see p. 172) is right in his affirmation that this great Lily usually succeeds well in fibrous loam impregnated with pulverised peat; but as I have already indicated, it also (unlike most other Lilies) grows admirably in a strongly fertilised soil. This indeed I feel sure is requisite in most situations for the attainment of its greatest possible height and strength. Extra nourishment is essential for a giant like this. *David R. Williamson.*

The Gardeners at Kew.—I should have taken no notice of such a letter as that signed *C. H. M.* if it had not been for the concluding remark, which implies that the fact of a man having been at Kew is a hindrance to his obtaining a good situation, and the assumption that a man who uses a lens and a notebook is not usually a practical gardener. I have seen the work of Kew gardeners in many places, and can say that several of the best and hardest-working head-gardeners I know, including my own, came from Kew; and they have told me that a good deal of their knowledge was gained there. It is a libel on the excellent staff at Kew to say that the majority leave there without little better scientific knowledge than they had when they went. The writer of this letter, like a good many so-called practical gardeners, does not seem to know what is meant by scientific knowledge, and if he can tell us of any garden at home or abroad where the general cultivation of all kinds of plants, together with neatness and order, is so well maintained as at Kew, I can only say that I have not yet to visit it. *H. J. Elwes, Colesborne.*

Leaf Curl of the Peach and Nectarine.—A wall tree of Peach Condor in these gardens is usually badly damaged by this affection, but last season scarcely a leaf was injured. In addition to a usual winter dressing with a fungicide and insecticide, I dressed the border in which the tree was growing with a mixture of superphosphates of lime, potash, and sulphate of iron, and possibly the sulphate of iron may have been partly responsible for the absence of "blister." My experience has proved that some varieties of Peaches are more susceptible to an attack of blister than are others, whilst a few are entirely immune from the disease. The neighbouring tree to the specimen of Condor referred to is of the variety Dymond, and whilst the former has always been more or less affected with blister, the disease has never been present in the leaves of the latter, although the branches of the two trees meet when tied out during the growing season. The Peach and Nectarine trees in these gardens are protected from frost and cold winds with shutters that are 2 feet wide and are hinged on to a skeleton frame, one side of which is fastened to the wall, the other side being supported by poles inserted in the border. When the weather is fine these shutters are turned back to the top of the wall to admit all the light. The front of the trees are covered with double-width "cheese-cloth" during the presence of frost or cold winds, and this protection is afforded from the time the buds commence to swell until all fear of danger from frost is over. *W. W., Doddington.*

The Species of Phormium.—Hitherto all the species and forms of the genus were considered to be perfectly hardy throughout Cornwall, but since the disastrous frosts of the beginning of January last this opinion has undergone modification. Except in the mildest parts of the county one hears the same tale of woe: "How are your species of Phormium? Mine are lying flat on the ground." As a rule, in Cornwall Phormiums are planted in moist situations, which, as Mr. A. J. Bliss shows in his interesting note, nearly approximates to the conditions under which they grow in New Zealand. They thrive amazingly under these circumstances, and unless the plants are copiously watered during the season of growth, it is the only way to realise to the full the beauties of the species. At the same time my experience agrees with that of Mr. Mallett, and I have found them to be far hardier when grown in "dry, well-drained soil," although even then they are not absolutely hardy. Mr. Bliss suggests that plants grown under drier conditions than those natural to them results "in a lack of vigour which renders it (them) less able to withstand a low temperature." This is quite contrary to my experience with half-hardy plants and trees. When grown under drier conditions, the growth made is usually harder, well ripened in short, and is better calculated to withstand a low temperature. For this same reason, when permanently planting any plants of a tender nature, I put them in a comparatively poor soil, planting them as firmly as is consistent with the well-being of the subject. The fact that the species of Phormium grow naturally in water is valuable, and may account for the hardiness of these plants, as observed by Mr. Bliss. It is generally known that the Arum Lily (Richardia aethiopica) is capable of withstanding over 20° of frost when growing in water, while a few degrees is often fatal to plants growing in soil in the open garden. I hope shortly to plant Phormiums in water. Contrary

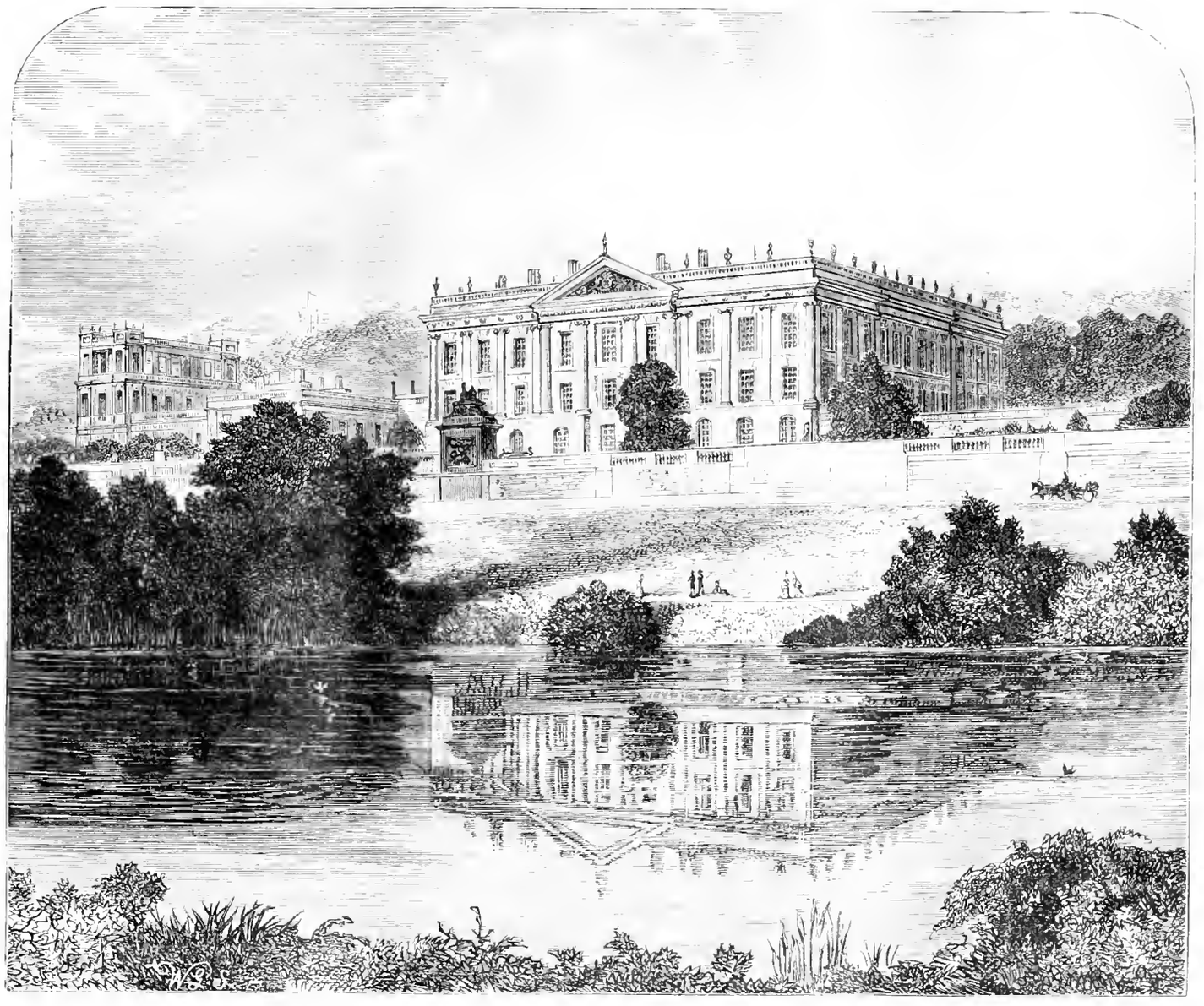


Fig. 90.—Chatsworth House, as seen from the River Derwent. (See p. 204.)

to Mr. Mallett's experience, I find that severed plants transplant most successfully provided it is done just as growth commences. As Mr. Mallett notes, seedlings of the variegated forms do not reproduce themselves. As a rule, they produce plants having leaves of the same shape as the parents, but without the colouring. Does not this failure to come true from seed disqualify them from being classed as varieties? [It shows that they are not species.—ED.] *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

ARTIFICIAL MANURES.—I read an article recently in *The Country Gentleman's Estate Book* which stated it was much better to dig in artificial manures than to rake or harrow them in. The writer even asserted that it had been proved by experience that sulphate of ammonia and nitrate of soda gave immensely better results if dug in 7 inches deep. Is this the experience of any readers of the *Gardeners' Chronicle*? *W. C.*

MEALY BUG ON VINES.—Is there any preparation that will destroy this pest by means of fumigation or vaporising? I know there are many preparations that will destroy it by actual contact. For instance, paraffin, or mixtures containing paraffin. I had the impression that the XL-All vaporising compound was effective, but having given it four trials, my opinion is modified. The two last trials were made in a small, newly-constructed Cucumber house, and plants affected with mealy bug were placed on a temporary shelf near to the glass. A sheet of paper was put under them to catch any of the bugs that might drop, but I did not find one bug upon the paper afterwards. We remove the rough bark from our vines each year (though I do not like doing this), and I soak the rods with paraffin and soapy water, but mealy bug still makes its appearance each season. I am convinced that the pest is not in the border nor the woodwork, for the whole of the interior of the house is syringed more than once with a mixture of paraffin, and the border is covered with a thick layer of littery horse manure freshly obtained from the stables. I cultivate a few pot vines, and in consequence of the necessary reconstruction of the house last year, they were put to ripen in a structure which contained mealy bug. Before starting these vines in the following season, they were washed with a mixture of paraffin and soapy water, and on every bright day from the time shoots were 6 inches in length until the fruit had set, a few bugs were found, some of them fully developed, showing how rapidly they must grow and increase under the bark. It is only by frequent inspection and the use of a small brush and paraffin that we can keep this pest from gaining access to the bunches of fruit on our permanent vines. Red spider gives me little or no trouble, and thrip we seldom or never see. Mealy bug appears to be carried from one place to another in buckets and watering cans, and I have seen it on the men's garments after they have syringed houses containing overhead creepers. Until we get some kind of fumigation to destroy this pest, it appears we shall always be pestered with it. *W. P. R.* [Has our correspondent tried fumigation with hydrocyanic acid gas?—ED.]

CHALK PEAR (see p. 192).—This is a small Pear usually eaten by children; it ripens early in summer. The tree grows to a great size. It is common in Kent. *W. Roupell, Harvey Lodge, Roupell Park.*

SOCIETIES.

BRITISH GARDENERS' ASSOCIATION.

MARCH 21.—A meeting of this society was held at Carr's Restaurant, Strand, W.C., on the above date, for the purpose of establishing a London branch, as resolved at the meeting held on March 7. Mr. George Gordon, V.M.H., occupied the chair. The attendance included about 60 persons.

The Chairman, in his introductory remarks, stated that the formation of the proposed branch was very desirable, and that as many meetings as could be arranged to suit the convenience of members should be held, especially during the autumn, winter, and spring months.

Mr. E. F. Hawes moved that a London branch of the British Gardeners' Association be established for mutual improvement, and this was duly seconded and supported by several speakers, including Mr. Frogbrook, who pointed out the desirability of public bodies adopting some guide, such as the membership of the B.G.A. afforded, in selecting men for working in public parks and gardens. He stated that on a register of unemployed men with which he had to deal, 50 applicants were entered as gardeners, but they had no claim whatever to the title. Mr. C. Harding and Mr. George Hemming spoke in favour of the motion. The chairman then put the proposition to the meeting and it was carried.

It was next resolved that the name of the branch be the London Branch of the B.G.A., and that the affairs be managed by a committee of 12 members, with chairman, vice-chairman, and secretary. Considerable discussion followed relative to the election of the committee and officers, but ultimately the following were appointed:—Messrs. R. Lewis Castle, Cyril Harding, Thomas Winter, Thomas Lewis, Cresswell, Hill, Brien, Wood, Barnes, Parrott, Goreham, and Gibson, with Mr. E. F. Hawes, of the Royal Botanic Gardens, Regent's Park, as chairman; Mr. R. J. Frogbrook, of the Public Parks, Leyton, as vice-chairman, and Mr. Alfred James Hartless as secretary. It was decided that the meetings should be held at 7.30 p.m. in Carr's Restaurant, Strand, on the second Thursday in each month, the first to take place in April next. Each meeting will be open not only to members of the B.G.A., but to all gardeners who may wish to attend. The opening address will be given by Mr. E. F. Hawes on "The Present Opportunities of Improving Gardeners' Education."

——— At the last meeting of the executive council held on March 17, 25 new members were elected, bringing the total up to 1,188.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 5.—*Committee present:* Messrs. E. Ashworth (Chairman), R. Ashworth, Ward, Warburton, Cowan, Cypher, Sander, Keeling, Shill, Ashton, Lœmann, Parker, Walmsley, and Weathers (hon. sec.).

The committee have decided to hold a special exhibition in St. James's Hall, Manchester, on April 1 and 2, and provision was made for a guarantee fund sufficient to cover all expenses. A good display of plants was seen at the meeting.

Messrs. CYPHER & SONS, Cheltenham, were awarded a Silver-Gilt Medal for a group of choice plants, in which were forms of Cattleya Schroderæ, several good examples of Dendrobiums, Brassavola Digbyana, Epiphronitis Veitchii, &c.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish) was awarded a Silver-Gilt Medal in the "Thompson" Competition, and a Silver Medal in the "Sander" Competition, for Cypripediums. Both groups contained well-grown specimens.

J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), obtained a Silver Medal in the "Low" Competition, and a similar award in the "Thompson" Competition.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), obtained a Silver Medal for a choice group of plants, five of which received Awards of Merit (see below).

Z. A. WARD, Esq., Northenden (gr. Mr. Wetherby), staged a good group of Odontoglossums, which included a beautiful form of Odontoglossum Pescatorei called "Ward's variety."

Messrs. HUGH LOW & Co., Enfield, Middlesex, staged some well-flowered plants of Dendrobiums. The group contained some of the best forms of both species and hybrids, including D. × splendidissimum. (Silver Medal.)

A. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan) received a Silver Medal in the "Sander" Competition for Cypripediums.

W. BOLTON, Esq., Warrington, staged a group of Cattleyas and Odontoglossums. The most prominent plant in this collection was one of Cattleya Schroderæ—labelled C. S. var. Boltonii; the flowers possess as deep a colouring as those of the best type of Cattleya Warneri, and although the plant was not in a robust condition, the Committee awarded it a First-Class Certificate.

Mr. WEBSTER, Shackleton, Bradford, was voted a Bronze Medal for an interesting group of Orchids.

Mr. J. ROBSON, A'trincham, exhibited Cypripedium × Victor.

FIRST-CLASS CERTIFICATES were awarded to Cattleya Schroderæ var. Boltonii, shown by WM. BOLTON, Esq.; and Odontoglossum Pescatorei, "Ward's variety," exhibited by Z. A. WARD, Esq.

AWARDS OF MERIT were conferred on Cattleya Schroderæ var. splendidissima, and C. S. "Heys House variety," both shown by J. MCCARTNEY, Esq.; Brasso-Cattleya Thorntonii variety magnificum, Cypripedium × Orion variety aureum, C. × Lady Wimborne variety Crippsii, C. × exquisitum, Dendrobium × Wiganianum, Gratrix's variety, and Odontoglossum Wiganianum, West Point variety—these six were from the gardens of S. GRATRIX, Esq.; Cypripedium × aureum, Ward's variety, shown by Z. A. WARD, Esq.; C. × Leeanum, Warburton's variety, C. × Duchess variety Sappho, and C. × Euryades variety Mikado, these three were exhibited by A. WARBURTON, Esq.; and C. villosum variety colossus, shown by J. H. CRAVEN, Esq. *P. W.*

DUTCH BULB GROWERS' SOCIETY.

SINCE January last fortnightly meetings have been held by this society at Haarlem. Up to the present date the following awards have been made:—

First-class Certificate for single early Tulip Brilliant Star, orange-scarlet with black base; for Tulipa Fosteriana, a species with large scarlet flowers with yellow or black base; and for Hippeastrum procerum, a scarce, mauve-coloured species.

Awards of Merit for single early Tulip La Reine des Reines, a lovely shade of pink; and for the single early Tulip Hermann Schlegel or Primrose Queen, a sport from the well-known variety La Reine; the flowers are of light sulphur-colour, shaded white.

GARDENING APPOINTMENTS.

Mr. GEORGE PATERSON, of Messrs. LAIRD'S Nurseries, Edinburgh, as Gardener to W. H. ASKEW, Esq., Pallinsburn, Cornhill-on-Tweed, Northumberland.

Mr. F. LOVELESS, for the past 2½ years Gardener to P. H. STOTHERT, Esq., Woolley Grange, Bradford-on-Avon, Wilts, as Gardener to Col. MALLOCK, J.P., Friarmayne, Dorchester.

Mr. F. W. WISE, for the past 8 years Gardener at St. Catherine's House, Guildford, as Gardener to Miss M. H. DODGE, Loseley Park, Guildford.

Mr. WILLIAM R. BAILEY, late Gardener at Birlingham House, Pershore, Worcester, as Gardener to SAMUEL BAYLISS, Esq., The Wood House, Tettenhall, Wolverhampton.

Mr. H. MARTIN, for the past 3½ years Foreman at Beech House, Christchurch, as Gardener to C. A. HOGG, Esq., Alltrees, Coolham, Sussex. (Thanks for 1s. 3d. as a contribution to the R.G.O.F. box.)

Mr. T. HARRISON, for the past 6 months Gardener to Mrs. LANGFORD BROOK, at Mere Hall, Knutsford, as Gardener to J. W. PROCTOR, Esq., at the same address. (Your contribution has been placed in the R.G.O.F. box.)

Mr. JOHN GILLIES, Foreman at Warter Priory, previously employed at Frogmore and Sandringham Gardens, as Gardener to Mrs. GERARD LEIGH, Lees Court, Faversham, Kent.

Mr. FREDK. STREETER, for the past 2 years and 4 months Gardener to the late Mrs. B. F. BARTON, Birtley, Bramley, Guildford, as Gardener and Bailiff to H. S. BARTON, Esq., Hewshott House, Liphook, Hants.

Mr. JOHN BURROWS, for 4 years Gardener to the Rev. D. F. WRIGHT, at Langar, and previously 22 years in the Herbaceous Garden at Shipley Hall, Derby, as Gardener to H. FITZHERBERT WRIGHT, Esq., West Hallam Hall, near Derby.

Mr. H. WHITE, for the past 6 years Gardener to the Hon. Mrs. GUY SCOTT, Money Hill, Rickmansworth, Herts, as Gardener to R. SLONE STANLEY, Esq., Bay House, Alverstoke, Hants. (Your contribution of 2s. has been placed in the R.G.O.F. box.)

Mr. HARRY WADEY, for the past 6 years Gardener to Sir BOURCHIER WREY, Bart., Tawstock Court, Barnstaple, Devon, as Gardener to E. POWELL, Esq., Lenton Hall, Nottingham.

Mr. G. W. LUCAS, for the past 2 years Gardener to W. GRAZEBROOK, Esq., Thenford House, Banbury, as Gardener to Mrs. J. LOCKER LAMPSON, Rowfant, Crawley, Sussex.

Mr. W. TEE, for the past 8½ years Gardener to H. STEVENS, Esq., Addlestone Lodge, Addlestone, Surrey, as Gardener to ARTHUR GIBBS, Esq., Birtley House, Bramley, near Guildford, Surrey.

Mr. DAVID MASON, for the past 4 years Foreman at Ford Manor Gardens, Lingfield, Surrey, as Gardener to J. S. BEALE, Esq., Standen, East Grinstead, Sussex.

MARKETS.

COVENT GARDEN, March 25.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Acacia (Mimosa), dozen bunches	9 0	12 0
Anemones per doz. bunches	2 0	3 0
— double pink	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, per bunch	1 0	1 6
Calla æthiopica, p. dozen	2 6	3 6
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American varions	2 0	3 0
— second size	1 6	2 0
— smaller, per doz bunches	9 0	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0	10 0
Cœlogyne cristata, per dz. blooms	1 0	1 6
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	2 0	4 0
— double, per dozen	3 0	4 0
— Golden Spur per doz.	3 0	5 0
— H. Irving	3 0	4 0
— Princeps	2 0	3 0
— Sir Watkin	3 0	4 0
Eucharis grandiflora, per doz. blooms	3 0	4 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz. blooms	2 0	4 0
Hyacinths, per doz. bunches	4 0	6 0
Lapagerias, per dz.	1 6	2 6
Lilac (French), per bunch	3 0	4 0
Lilium auratum	2 0	3 0
— longiflorum	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
Lily of the Valley, extra quality	12 0	15 0
Marguerites, white, p. dz bunches	4 0	6 0
— yellow, per dz. bunches	2 6	3 0
Mignonette, per dozen bunches	1 0	6 0
Myosotis, per doz. bunches	2 0	3 0
Narcissus, per doz. bunches	2 0	3 0
— Glorosa	1 6	2 6
— poeticus ornatus	3 0	4 0
— Soleil d'Or, per dozen bunches	1 0	2 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per dez. bunches	6 0	8 0
— Zonal, double scarlet	5 0	8 0
Ranunculus, p. dz. bunches	5 0	8 0
Roses, 12 blooms, Niphetos	2 0	4 0
— Bridesmaid	3 0	6 0
— C. Testout	4 0	6 0
— General Jacqueminot	2 0	4 0
— Kaiserin A. Victoria, per dozen blooms	3 0	5 0
— Madame Hoste	2 0	3 0
— C. Mermet	3 0	6 0
— Liberty	4 0	10 0
— Mad. Chatenay	3 0	6 0
Snowdrops, per dozen bunches	1 0	1 6
Spiræa, p. dz. bchs.	5 0	8 0
Stocks, double white, per doz. bunches	3 0	1 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, p. dz. bchs.	5 0	9 0
— best doubles	12 0	18 0
Violets, p. dz. bchs.	2 0	3 0
— special quality	3 0	4 0
— Parmas, p. bch.	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 9	1 6
Berberis, per doz. bunches	1 6	2 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle (English), small-leaved, per dozen bunches	4 0	6 0
— French, per dz. bunches	1 0	1 6
Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldi, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri, per dz.	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	15 0	24 0
— variegated, per dozen	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, dz.	8 0	10 0
— tenuissimus per dozen	9 0	12 0
Azalea indica	24 0	36 0
Begonia Gloire de Lorraine, p. dz.	9 0	12 0
Boronia megastigma, per dz.	24 0	—
Callas, per dozen	10 0	12 0
Cinerarias, per dozen	5 0	9 0
Clematis, per doz	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	9 0	12 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Daffodils, per doz. pots	5 0	6 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen	9 0	15 0
— melanthera	12 0	18 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	8 0	12 0
— in small and large 60's	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Genistas, per doz.	6 0	10 0
Hardy flower roots, per dozen	0 9	2 0
Hyacinths, per dz. pots	6 0	9 0
Hydrangeas, p. dz.	10 0	18 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, p. doz	21 0	25 0
Lilium lancifolium, per doz.	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	8 0	10 0
Mignonette, per dozen	6 0	10 0
Pelargoniums, Zonal, per doz.	6 0	9 0
Selaginella, per dz.	4 0	6 0
Spiræa japonica, p. dozen	9 0	15 0

Fruit: Average Wholesale Prices.

	s.d	s.d
Apples (**English**), per bushel:		
— Wellington	5 0	9 0
— Newton Wonder	5 0	7 0
— Bramley's Seedling	5 0	8 0
Nova Scotian, per barrel:		
— Fallawaters	18 0	19 0
— Nonpareils	12 0	13 0
— Spys	17 0	19 0
— Baldwin	14 0	15 0
— Russets	18 0	20 0
Canadian, per barrel:		
— Northern Spy	19 0	21 0
— Baldwin	17 0	20 0
— N. Greening	21 0	23 0
— Russets	19 0	20 0
Californian, per barrel:		
— Newtowns (U. States)	30 0	33 0
— Newtowns, per box	9 6	10 6
— **"Oregon"** Newtowns, per box	13 0	16 0
Bananas, bunch:		
— No. 2 Canary	6 0	—
— No. 1 ,,	6 6	7 6
— Extra ,,	8 6	10 0
— Giants ,,	11 0	15 0
— Jamaica	5 0	5 6
— Loose, per dz.	0 9	1 3
Cranberries, per case	9 0	9 6
"Custard" Apple (Anona), per doz.	4 0	9 0
Dates (Tunis), doz. boxes	4 0	4 3
Figs (Guernsey), each	0 6	2 0
Grape Fruit, case	10 0	14 0
Grapes (English):		
— Alicante, per lb.	1 3	3 0
— Gros Colmar, per lb.	1 3	3 0
Grapes (Belgian) Gros Colmar, per lb.	0 10	2 0
— (Cape), per box (small)	1 6	4 0
— (large)	6 0	12 0
— (Almeria), per barrel	10 0	20 0
Lemons:		
— Messina, case	6 0	10 0
— Murcia, p box	5 0	6 6
Lychees, per box	0 8	0 10
Mandarins, — (French) 100's per box	3 3	3 6
— (Palermo) 100's box	2 9	3 0
Mangos (Jamaica), per dozen	9 0	15 0
Nuts, Cobs (English), per lb.	0 4	—
— Almonds, bag	45 0	—
— Brazils, new, per cwt.	57 0	60 0
— Barcelona, per bag	30 0	32 6
— Cocoanuts	100 11 0	14 0
Chestnuts:		
— Italian, per bag	16 0	17 0
Oranges (Valencia), per case	9 0	15 0
— Denia, p. case	9 0	18 0
— Jaffas, per box	10 6	12 0
— Californian Navel, p. case	11 0	13 0
— Seville Bitters, per box	4 0	5 0
— Palermos, Blood:		
— per box (100's)	5 0	5 6
— per box (160's)	7 0	8 6
Peaches (Cape), per box	5 0	10 0
Pears (Cape), p. box	3 0	6 0
— cases	8 0	12 0
Pineapples, each	2 6	4 6
Plums (Cape), box	8 0	12 0
Strawberries (English), per lb.	2 0	6 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	2 0	3 0
Asparagus, Paris Green, bundle	4 0	4 3
— Sprue, bundle	0 7	0 8
— English	4 0	5 6
— Spanish, per bundle	1 4	1 9
— Giant, per bundle	9 0	15 0
— Broad (French), per pad	4 0	4 6
— Guernsey, p. lb.	0 9	1 0
— English	0 10	1 1
— Madeira, per basket	3 0	4 6
Beetroot, per bushel	1 3	1 6
Brussel Sprouts, per ½ sieve	1 3	1 6
Cabbages, per doz.	0 6	0 8
— Greens, p. bag	1 0	1 3
— red, per dozen	2 0	—
— Savoys, per tally	4 0	4 3
Carrots (English), — washed, p. bag	2 0	2 6
— French (new), per pad	3 0	3 3
— French (new), per bunch	0 6	—
Cauliflowers, p. dz. — per tally	1 6 7 0	2 0 9 0
Celeriac (French), per dozen	2 0	2 3
Celery, washed, per dozen	0 8	0 10
Chicory, per lb.	0 2	0 2½
Chow Chow (Seechium edule), p. dozen	3 0	—
Cucumbers, per dz.	3 0	4 0
Endive, per dozen	1 6	2 0
Horseradish, foreign, per doz. bundles	9 0	10 0
Leeks, 12 bundles	1 0	1 6
Lettuce (French), per dozen	0 10	1 3
Lettuce (French), Cos, per dozen	5 6	6 0
Mint, doz. bunches	1 6	2 0
Mushrooms (house) per lb.	0 8	—
— buttons, per lb.	0 7	0 9
— "Broilers" p. lb.	0 6	0 7
Mustard and Cress, per dozen pun.	1 0	1 6
Onions (Spanish), per case	4 6	5 0
— Dutch, per bag	2 0	2 6
— pickling, per bushel	2 0	2 6
— Spring, per dz. bunches	1 6	2 0
Parsley, 12 bunches	2 6	3 0
— per ½ bushel	1 6	2 0
Peas (French), per packet	0 6	0 8
— (French), per pad	4 0	4 6
Potatos (Guernsey), per lb.	0 4	0 5
— Teneriffe, cwt.	11 6	13 0
— Algerian, cwt.	10 0	12 0
Radishes (Guernsey), dozen	0 6	0 9
Rhubarb (English), dozen bundles (forced)	1 0	1 2
— (Natural), per dozen bundles	3 0	3 6
Salsafy, per dz. bds.	3 6	—
Seakale, per dozen punnets	10 0	12 0
Spinach, French, per crate	2 6	3 0
Tomatos (Teneriffe), p. bdle. of four boxes	10 0	14 0
Turnips (English), doz. bunches	1 9	2 6
— per bag	2 6	—
— French (new), per bunch	0 9	—
Watercress, per doz. bunches	0 4	0 6

Remarks.—The first arrival of Black Hamburgh Grapes from Guernsey for this season has been received, but at present the fruit is unsold, and until the supplies of English Gros Colmars are exhausted they will not be likely to sell well. Cucumbers are cheaper owing to the increased quantities received. Cape fruit is not quite so plentiful and prices are higher. Rhubarb is dearer. Large consignments of Lemons are arriving, and the fruits are slightly cheaper. Barrel Apples are selling freely, especially the varieties Fallawater, Newtown Pippin, and varieties of the Russet type. Home-grown Beans are cheaper. The trade for vegetables remains good. *P. L., Covent Garden, Wednesday, March 25, 1908.*

Potatos.

	s. s. per ton	
Kents—		
Up-to-Date	100	110
British Queen	90	100
Scottish Triumph	95	100
Lincolns—		
Up-to-Date	100	115
— (Blackland)	90	95
British Queen	90	100
— (Blackland)	80	90
Maincrops	105	110
Sir Jno. Llewelyn	90	100
— (Blackland)	80	85
Royal Kidney	90	100
— (Blackland)	85	90
Evergood	85	95
— (Blackland)	80	85
Dunbars—		
Up-to-Date (red soil)	120	125
Dunbars—		
Maincrop (red soil)	125	130
Scotch—		
Up-to-Date (grey soil)	95	105
Maincrop (grey soil)	95	105

	s. d. per bag	s. d.
German—		
Up-to-Date	4 6	4 9
Magnum Bonum	4 0	4 3
Imperator	3 6	4 0
Belgium—		
Kidneys	4 0	4 3
Dutch—		
Up-to-Date	4 0	4 3
Magnum Bonum	3 9	4 0
Imperator	3 6	

Remarks.—The volume of trade is about the same as that of last week; the demand is good and the stock in London is small. *E. J. Newborn, Covent Garden and St. Pancras, March 25, 1908.*

COVENT GARDEN FLOWER MARKET.

Business has shown a slight improvement during the past week, but the cold weather has militated against the trade in hardy flower roots. Pansies of the best quality are seen with their first flowers expanded. There are few other hardy plants which sell so readily as these: boxes containing two dozen plants realise from 2s. 6d. to 3s. 6d. per box. These figures are wholesale prices, as are those given in the preceding columns, and of course retail prices are higher. Gardenias, which a few weeks ago were difficult to procure at prices ranging from 4s. to 8s. per dozen, can be purchased for 1s. 6d. to 2s. 6d. per dozen. Daffodils grown under glass are nearly over, and owing to the cold weather those from the open will not be in flower in time to succeed them. Roses are very prominent in the market: best quality blooms of Kaiserin A. Victoria, Mrs. J. Laing, Caroline Testout, Capt. Hayward, Madame A. Chatenay, Richmond, Liberty, and General Jacqueminot are plentiful. Carnations are abundant. Best quality blooms of the "Malmaison" varieties are the most valuable; the winter flowering varieties can be purchased at about half the price they realised a few years ago. Liliums are of uncertain value, some of the best blooms of L. longiflorum find buyers at 4s. per bunch, but many of lesser quality are sold at from 2s. to 3s. per bunch. L. auratum and L. lancifolium are both of good quality. Callas are very cheap. Daffodils have not advanced in value, though supplies are shorter.

Pot Plants.

There is little variation in this department. Mignonette is of better quality, and for best plants of the Machet variety 10s. per dozen is asked. Boronia heterophylla is obtainable: B. megastigma has not quite so large flowers as is usual, but good prices are maintained owing to a scarcity. Erica Wilmoreana is still very good, also E. persoluta alba. E. Cavendishii will soon be ready for marketing. Cinerarias are remarkably good. Indian Azaleas are becoming scarcer. Marguerites, Tulips, Hyacinths, Daffodils, Arums, Genistas, and Hydrangeas are all plentiful. There is no change to record in Palms, Ferns, and other foliage plants. *A. H., Covent Garden, Wednesday, March 25, 1908.*

CATALOGUES RECEIVED.

Thos. Bros., 133, London Road, Brighton—Farm seeds.

S. Mortimer, Rowledge, Farnham, Surrey—Carnations, Dahlias, &c.

Amos Perry, Hardy Plant Farm, Enfield, Middlesex—Water Plants.

William J. Smith, 41-43, North Street, Brighton—Books (second-hand).

Georg Egger, Jaffa, Palestine—Flower bulbs and roots from Palestine, Syria, and Asia Minor.

Barr & Sons, 11, 12, 13, King Street, Covent Garden, London, W.C.—Hardy Perennials, Alpines, Aquatics, &c.

SCHEDULES RECEIVED.

Darlington Horticultural Society's spring flower show, to be held in the Drill Hall, Darlington, on Wednesday, April 29, 1908. Hon. sec., Mr. A. H. Harrow, Priestgate House, Darlington.

Hemel Hempstead Horticultural Society's 49th annual exhibition and floral fete, to be held on Wednesday, August 19, 1908, in the Bury Grounds, Hemel Hempstead. Hon. sec., Mr. Geo. Burrows, Shendish Gardens, Hemel Hempstead.

National Dahlia Society's exhibition, at the Royal Horticultural Hall, Vincent Square, London, on Tuesday, September 3, 1908.

Sandiway and District Horticultural Society's third exhibition, to be held at Sandiway, on Saturday, August 15, 1908.

DEBATING SOCIETIES.

BECKENHAM HORTICULTURAL. At the meeting of this society, held on March 13, Mr. A. Dean, V.M.H., gave a lecture on "Annuals." The lecturer stated that for obtaining a display of these flowers in spring the seed should be sown in pots in autumn, and the plants be wintered in frames. If seeds of about a dozen varieties of annuals be mixed together, sown on a bed broadcast, and the plants be afterwards well thinned, an effective display of flowers will result. The lecturer gave a list of the best varieties for planting, including climbing varieties. *T. Cary.*

CARDIFF GARDENERS'.—The 22nd annual general meeting of this society took place at the Philharmonic Restaurant on March 17th, Mr. H. K. Farmer presiding. The hon. treasurer presented the balance sheet for the past year, and this was considered satisfactory. The hon. secretary's report stated that successful meetings had been held during the session 1907-8, and the society was making good progress. J. J. Neale, Esq., J.P., was asked to again officiate as president. Mr. H. K. Farmer was re-elected chairman. Messrs. T. Malpass and R. T. Weut were re-elected hon. treasurer and secretary respectively. The members of the committee were all re-elected, and three additional members appointed. *R. T. W.*

CROYDON & DISTRICT HORTICULTURAL.—A meeting of this society was held on Tuesday, March 17, under the presidency of Mr. F. Oxtoby. The lecture was delivered by Mr. W. Lintott, Marden Park Gardens, his subject being "The Cultivation of the Grape Vine." Mr. Lintott stated that the vine borders at Marden Park Gardens are formed of ordinary garden soil, but they are enriched frequently by top-dressings of decomposed organic matter, wood ashes, and mortar rubble, and this is well forked into the border before starting the vines into growth.

LOUGHBOROUGH GARDENERS'.—"Holiday Notes" was the subject of a lecture delivered, on March 17, by Mr. D. Roberts, Prestwold Gardens, who gave an interesting description of his rambles through the principal London parks, Kew Gardens, Hampton Court Palace, and some wholesale seed warehouses. The essayist gave a select list of the different kinds of plants used for bedding in the parks he visited.

READING AND DISTRICT GARDENERS'.—A meeting of this association was held in the Abbey Hall on Monday, March 2. The subject for the evening was "Violets," the lecturer being Mr. F. C. Loader, Holme Grange Gardens, Wokingham. Full cultural details were given under the following headings: Position of frames, time to commence operations, situation, preparation of soil, propagation, planting, early summer treatment, preparing winter quarters, lifting and planting, ventilation, watering, &c. At the meeting held on the 16th inst. the subject was "Some Insectarian Reflections," and was introduced by Professor Cole, of the Reading University College. At the outset the lecturer stated that he should treat the subject from a scientific rather than from a practical point of view. The various parts of an insect were dealt with, special reference being given to the organs of sight, smell, and flight. A description of the life history of the green fly brought a very interesting discourse to a close.

REDHILL AND REIGATE GARDENERS'.—The members of this association held their usual fortnightly meeting on March 17, Mr. Seaman presiding. Mr. D. Watson, a representative of the Guildford Gardeners' Association, gave a paper on "Wild Gardening." *G. P. S.*

WARGRAVE AND DISTRICT GARDENERS'.—The last two meetings of this association have been well attended. At the one held on March 4, Mr. T. Tunbridge, of the Gardens, The Three Elms, Remenham, read a paper on "Winter and Spring Bedding." He spoke of the preparation of the beds in the autumn, and gave a list of suitable plants, and stated how to combine them for best effect. Rockeries and wild gardens were also referred to by the lecturer. The meeting on March 18 was addressed by Mr. W. Pope, of The Willows Gardens, Wargrave, his subject being "Caladiums." The paper was short but practical. He described the attention necessary to ensure success, and dwelt on the kind of soil best suited to the strong and weak growing kinds respectively, shifting, watering, dividing the tubers, syringing, and general care during the growing season, as well as during the period when the plants are dormant.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending March 25.

A sudden change to warmer weather.—After 10 days of cold weather a change took place on the 23rd to warmer conditions. During the cold period in question there did not occur a single unseasonably warm day or night, and on the five coldest nights the exposed thermometer indicated from 13° to 16° of frost. On the coldest day during the past week the temperature in the thermometer screen never rose higher than 42°, whereas on the warmest day the highest reading was 57°—which is higher than any reading previously recorded here this year. At the present time the ground is at about an average temperature at 1 foot deep, but 1° colder than is seasonable at 2 feet deep. In the last three days the temperature at 1 foot deep has risen as much as 5°. Rain fell on three days, but to the total depth of less than ¼ inch. At the time of writing light rain has been falling without intermission for the last 21 hours. No measurable rain has come through the percolation gauge on which short grass is growing, and only small quantities through the bare soil gauge. The sun shone on an average for 3½ hours a day, which is half an hour a day short of the average for the time of year. The atmosphere was mostly calm, but on one day the mean velocity for the windiest hour amounted to 19 miles—direction S.S.E. The average amount of moisture in the air at 3 p.m. was 5 per cent. in excess of a seasonable quantity for that hour. An Early Rivers Peach tree growing on a south wall in my garden came first into blossom on the 21th, or two days later than its average date for the previous 22 years, and 3 days later than last year. *E. M., Berkhamsted, March 25, 1908.*

Obituary.

OTTO BALLIF.—The death is announced of M. Otto Ballif at the age of 50 years. M. Ballif was an authority on Orchids and a journalist of repute, having been for many years a member of the staff of the *Moniteur d'Horticulture*. If we are not mistaken, M. Ballif was of Swiss nationality, and resided for a short period in England.

Answers to Correspondents

CARNATION: *Fungi.* The plant is affected with the fungus Helminthosporium echinulatum. Pick off and burn every diseased leaf and continue to do this as long as the disease shows itself. Spray the plants occasionally with potassium sulphide, made by dissolving 1 oz. of potassium sulphide in a quart of hot water, afterwards making it up to 2½ gallons with cold water.

CASE OR BOX OF ORANGES AND LEMONS: *Fruit.* Oranges are packed in boxes containing 420 or 714 fruits; the Mandarin Orange is sent to the market in small boxes each containing 25 fruits. Lemons from Messina are sent in boxes of either 300 or 360 fruits; a box of Murcia Lemons contains 200 fruits. A box or case of Pomelo or Grape Fruit—Citrus decumana—may contain 54, 64, 80, or 96 fruits, according to the size of the box.

CHRYSANTHEMUM LEAF MINER: *F. B.* The eggs, from which the grubs are hatched, were deposited in the interior of the leaf by the perfect insect. As the miners are below the epidermis, or skin of the leaf, you cannot kill them by applications of poisonous compounds on the surface, and nothing will destroy them except picking off the affected foliage and burning it, or piercing the grubs with a large needle. The parent insect may be prevented from alighting on the foliage and depositing her eggs there by syringing the plants with some distasteful substance, such as quassia extract, or by dusting the leaves with Hellebore powder. Once the eggs are laid in the leaf the mischief is commenced. As the female insect is not present at this season of the year, the small dots on the other leaves you send are not concerned with the leaf miner. The insect that lays the eggs is developed from the grub which is burrowing in the leaves.

CORRECTION: In the report of the R.H.S. meeting in our last issue, Cypripedium Bridgei grandiflorum and other Cypripediums referred to on p. 190 as shown by F. Menteith Ogilvie, Esq., were exhibited by G. F. Moore, Esq., Chardwar, Bourton-on-the-Water, Glos.

CUCUMBERS FAILING: *E. F. T.* We find no disease present on the plants you send. The injury appears to have been caused by some external condition, such as burning by sunshine or by excessive heat from the hot-water pipes.

FAIRY RINGS IN GRASS: *Fairy Rings.* Remove the affected turf and burn it. Next take out the old soil to a depth of 1½ feet and bury it deeply in some distant part of the garden. Replace with fresh soil and sow the ground with grass seeds or lay turves. Treat the grass and soil in the neighbourhood of the infected area with a solution of permanganate of potash, made rather stronger than rose-red.

FRUIT SALESMAN: *Dorset.* You have not enclosed your name and address, according to the conditions on p. 200. Apply to Mr. H. Rides, Central Avenue, Covent Garden Market, London, W.C.

GARDENING IN INDIA: *S. P.* Firminger's *Manual of Gardening for Bengal and Upper India*, or Marshall Woodrow's *Gardening in India*, may be found suitable for your purpose. The former may be had from our publishing department, price 15s. 9d., and the latter for 7s. 6d. post free.

HIPPEASTRUM FLOWER. *H. S.* The portion of the inflorescence you send is injured by the Eucharis-bulb mite, of which plenty were found on examination. In all probability the bulb of that particular plant will be found to be badly infested with this pest, and if this is so, your best plan is to destroy the bulb by burning, and any others similarly affected.

HYDRANGEA FLOWERS: *A. P.* The plants can be made to produce blue flowers by watering the roots with a solution of alum water. There are many other contributory causes for the development of blue colour, as may be seen from the correspondence on this subject published in *Gardeners' Chronicle*, February 2, 9, 16, 23, and March 2, 1907.

MUSHROOM SPAWN: *H. D. C. P.* This is the name given to the mycelium or fungal threads of the Mushroom plant, and is usually sold in this country, ramifying in a mixture of manure and clay. These white cotton-like growths are equivalent to the plant proper, the Mushroom being really the fructifying organ only. In order to prepare Mushroom spawn, a mixture of manure and clay is moulded in the form of an oblong (the bricks, as they are termed), and whilst the soil is moist, a portion of an older brick containing some of the living mycelium is inserted in two or three places, and the new brick is placed in a warm, moist atmosphere. The fungus grows and permeates the brick, after which further growth is arrested by drying all the moisture from the cake of soil. The fungal threads will remain in a dormant condition in this hard, dry soil, to start into growth again when they are inserted in a suitable warm and moist medium. A bed of manure surfaced with a layer of soil is prepared in a dark, warm shed, and portions of the brick containing the living plant are inserted at intervals. This is termed spawning. In time the mycelium ramifies through the decaying vegetable matter, or manure, and at length produces its reproductive organs which, as we have already said, are known as Mushrooms.

NAMES OF FRUITS: *W. S., Cardiff.* The fruits are over-ripe. Send specimens earlier next season.

NAMES OF PLANTS: *J. H.* Cattleya labiata.—*F. S.* Eupatorium trapezoideum (syn. E. adenophorum).—*R. J. F.* 1, Cypripedium callosum; 2, Cypripedium Leeanum; 3, and 4, Dendrobium Pierardii.—*J. H.* Dendrobium Wardianum.—*A. F.* 1, is a poor variety of Cypripedium Leeanum, or a secondary cross of that hybrid; 2, this specimen is scarcely worth naming; 3, is a very distinct variety of Cypripedium nitens.—*J. K.* Velthemia viridifolia.—*W. G. S.* Odontoglossum loochristiense.—*W. P.* 1, Pelargonium quercifolium; 2, P. ardens; 3, P. betulæfolium; 4, P. crispum minor; 5, P. Radula major; 6, not recognised. You should have sent a shoot, rather than a single leaf only of each variety.

TOMATO PLANTS: *C. S.*—The plants are attacked by the "damping off" fungus—Pythium de Baryanum. Afford more ventilation and less moisture to the plants, and spread them well apart on the stage. If they are attacked when in the seed-pan dust the affected area with sulphur and lime.

VALUE OF IMPORTS OF PLANTS, BULBS, &C.: *M. C.* You will find particulars in the *Annual Statement of the Trade of the United Kingdom*, Vol. 1, 1906, published at 6s. 8d. This work deals with the subject up to the year 1906, and gives comparisons with the imports of previous years. A smaller publication dealing with 1907 only is *Accounts Relating to Trade and Navigation of the United Kingdom, 1907*, published at 1s. 2d. Another work which also contains information on the subject is *Agricultural Statistics*, Vol. xli., part iii., price 8½d. For these works apply to Messrs. Wyman and Co., Breams Buildings, Chancery Lane, London, E.C.

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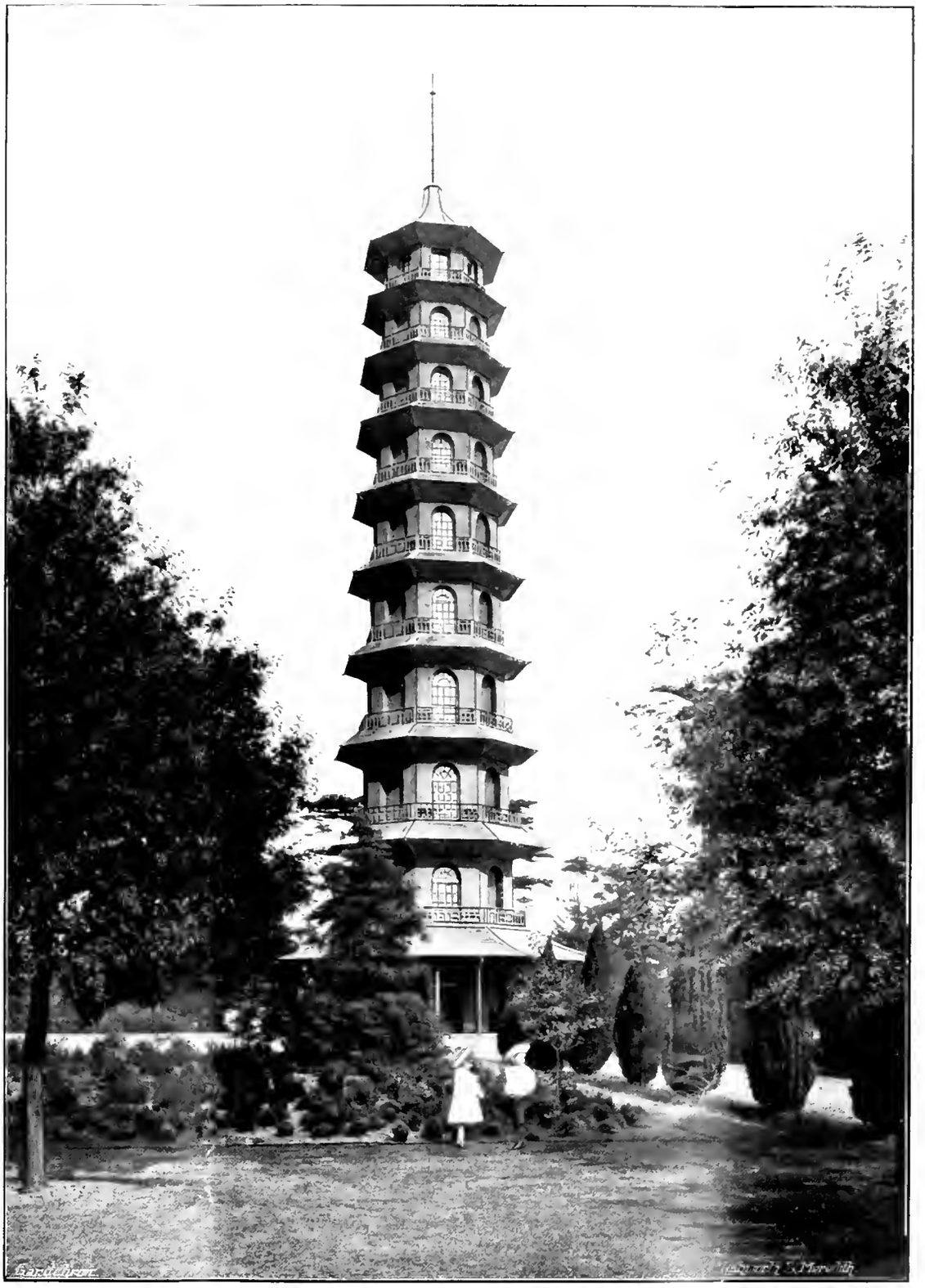

THE PAGODA, ROYAL GARDENS, KEW.

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CONTENTS.

ILLUSTRATIONS.

A NEW CHERRY DISEASE.

DURING the early summer of 1907 a fungus disease, affecting cultivated sweet Cherries, which does not seem to have been hitherto recorded from this country, was sent in to the College by several fruit-growers in Kent.

The first specimens were sent to me in June last from Ash, near Sandwich. The grower remarked that he had noticed it only on one tree during the season of 1906, but that by the next year it had spread "all over the orchard"; he concluded by remarking, "I am afraid I shall lose the trees altogether unless I can find a remedy."

The disease was again sent in during June by Mr. L. Levy, of Borden Hall, by Sittingbourne. Mr. Levy wrote that his fruit-foreman spoke of the disease as "red rust," and that he had observed it appear regularly on certain trees year after year, also that it had spread considerably during the last season or two, with the result that a large number of fresh trees were now affected.

I then received the disease from Mr. A. O. Walker, F.L.S., of Ulcombe Place, near Maidstone. A note accompanied it stating that only one branch of the tree was affected, but that that "looked very bad."

The disease was also brought to me from the Horticultural College, at Swanley, where it had appeared on a number of young trees recently planted. In this case the disease was having a decidedly injurious effect upon the growth of the young trees, and if it had

FIG. 91.—TWIG OF CHERRY WITH LEAVES (X) AFFECTED BY EXOASCUS MINOR.

not been attended to the disease would undoubtedly have spoilt their growth.

I have also seen the disease in a number of Cherry orchards in the neighbourhood of Pluckley and Charing.

The general appearance of the affected branches can be seen in fig. 91. The disease causes the leaves of the Cherry to curl, as shown at X, and at this stage they become pinkish-red in colour. Soon a delicate whitish bloom is visible spreading over the greater part of the under-surface of the leaf; then the affected leaves turn brown, and very

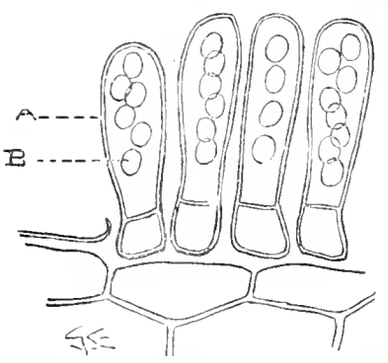


FIG. 92.—THE FRUCTIFICATION OF THE FUNGUS, EXOASCUS MINOR, BURSTING THE CUTICLE OF THE EPIDERMIS OF THE AFFECTED LEAF.

A, a spore-sac or ascus; B, an ascospore.

soon blacken and decay and rot off. Frequently only a single leaf on a branch will show the disease, in other cases two or three leaves scattered here and there will be affected, while, in rare cases, most of the leaves on a branch will be attacked.

If a section is cut of a diseased leaf at the time when the whitish superficial "bloom" is visible, and placed under the microscope, we shall find, projecting from the under surface of the leaf, myriads of very minute sacs (asci), each containing four, six, or eight spores (ascospores). (See fig. 92.) These little sacs are packed closely side by side, and extend continuously over the surface of the diseased part of the leaf, giving it the appearance of being covered with a delicate "bloom." When ripe, the ascospores escape from the sacs into the air, and are borne by the wind or insects to the leaves of other healthy branches, or to those of neighbouring trees, and are able at once to infect them, and so spread the disease.

The name of the fungus causing this disease is Exoascus minor Sadebeck. It is closely allied to E. deformans Fckl., which causes the "Leaf Curl" or "Blister" of the Peach, and also to E. Cerasi, the cause of the "Witches' Brooms" of the Cherry, a disease which will be described below.

As Sadebeck noted,* when first describing E. minor, the rapid decay and rotting away of the affected leaves are due to a large extent to the fact that various saprophytic "moulds" and other organisms are able to obtain free entrance into the inner tissues of the leaf after the cuticle has been destroyed by the serried ranks of asci breaking through it.

The spawn (mycelium) of the present fungus hibernates, that is, passes the winter, in the buds of the Cherry, and then in the spring grows forth into the young leaves, causing them to curl and become more or less wrinkled. Sadebeck notes that these leaves have an odour of cumarin, the scent of new-mown hay. The fungus then forms its fructification, consisting of asci and ascospores, on the under surface of the leaf, as described above, while the spawn grows along in the wood and into the new buds as they are formed, there to wait until, in the following season, the buds open out into the new leaves, which will then in their turn be attacked.

In large old Cherry trees it is seldom that more than a few branches are attacked, and the damage done is not often serious. But in the case of young trees, where it is necessary that all the wood formed should be healthy in order to produce a well-shaped tree, the present disease may become a serious pest. A badly-attacked young tree, if not attended to, will be permanently ruined, through the annual appearance of shoots bearing a number of diseased leaves which soon drop off and so cause the growth of the shoot to be arrested.

The disease can be cured by pruning. As the spawn of the fungus is perennial, living on from year to year in the buds and young wood, it is absolutely necessary to cut off each affected branch well below the last diseased leaf. The spawn does not extend backwards, or downwards, into the lower main branches or the stem, consequently the pruning will completely remove the disease. It is well, however, to spray during the first season with Bordeaux mixture using 4 lbs. copper sulphate, 4 lbs. quicklime, 50 gallons

* *Kritische Untersuch. ueber die durch Exoascus-Arten hervorgebrachten Baumkrankh.* (Jahrb. Hamburgisch. Wissenschaftl. Anstalt. viii., 24 (1890).)

water) at the time when the leaves are just expanded. Severe pruning on these lines, and spraying as directed, will restore to complete health in a single season Cherry trees which have been long suffering from the present disease.

As mentioned above, it does not appear that the present disease has been recorded hitherto as occurring in this country. Possibly it has been confused with the "Witches' Broom" disease caused by E. Cerasi, since in both cases the leaves on the affected shoots turn a pinkish—or carmine—red colour. E. minor is distinguished from E. Cerasi by the fact that it attacks only the leaves, never irritating the shoots so as to cause the formation of a "Witches' Broom." In this respect E. minor is similar to E. deformans, which causes Peach "Leaf curl." Further, the asci of E. minor are smaller, being 30-35u. long, and 6-8u. wide; they contain larger, oval ascospores, 6-7u. by 5u. E. Cerasi causes the production of large "Witches' Brooms," and forms longer and narrower asci, 35-50u. long, and only 5-7u. wide; the ascospores are smaller, and roundish, measuring 3-5u.

E. minor was first described by Sadebeck in 1890 as attacking "single shoots or shoot systems of Prunus Chamaecerasus Jacq.," near Hamburg, Germany. It does not hitherto seem to have been recorded from elsewhere. Tubeuf* states that it has been found on P. Cerasus.

We will turn now to the disease produced by E. Cerasi. This is what is known as the "Witches' Broom" of the Cherry, and occurs not uncommonly in Cherry orchards in England. In some parts of Kent I have heard it called "Bull wood," or "Bull branch." In France it is called "Balai du Sorcière," and in Germany "Hexenbesen."

The Cherry tree when attacked exhibits a curious malformation among the branches, so that at a distance it looks somewhat as though a bunch of Mistletoe were growing there. At the place attacked a number of long branches, close together, develop, growing out in a tufted manner from a single point, as it were, and thus forming a "broom"-like growth among the branches in the middle, or towards the outside, of the tree. The branches of the "broom" are frequently four to five times as thick as the surrounding healthy ones. This abnormal thickness is due to the irritation caused by the fungus-spawn living in the wood. The whole of the abnormal growth, resulting in the formation of a "Witches' Broom," is due to the attacks of the fungus E. Cerasi. The shoots composing the "broom" remain completely barren, never producing any flowers. The disease is most apparent in the spring, at the time of the blossoming of the Cherry, because then the diseased branches forming the "broom" break out precociously into leaf, as is shown in fig. 93, while the rest of the branches are covered with blossom. The "brooms" in a tree become consequently very conspicuous, appearing as little green bushes, as it were, in the midst of the white blossom-covered branches.

As the leaves on the diseased branches unfold, they turn to a carmine-red colour. If at this stage a branch is cut off, it exhales after a little time a sweet smell like that of woodruff, due to the presence of cumarin. Normal healthy shoots do not behave thus. Soon a whitish "bloom" begins to spread over the under surface of the leaves on the diseased branches. This "bloom" is in reality composed of a serried mass of naked asci breaking through the cuticle and projecting from the under surface of the leaf, exactly as in the case of the fructification of E. minor described above. By the time the "bloom" appears, the leaves on the surrounding healthy shoots are just expanding, and are thus exposed to infection by the ascospores as these escape from the asci on the leaves on the diseased shoots. We see, then, the reason for the precocious unfolding of the buds on the shoots of the "broom," and the important part it plays in the life-history of the fungus.

Fig. 93.—A branch of Cherry badly affected with Exoascus Cerasi, which has caused the branch to assume the character of a "Witches' Broom"

The ascospores on reaching a healthy leaf infect it at once, and the resulting spawn grows down the leaf-stalk, and penetrates into the wood. The spawn continues to grow forward into the young wood, which, as a result of being attacked, becomes abnormally thickened and lengthened, and further develops no fruit-buds—in other words, becomes the starting-place of a new "broom."

There are usually several "brooms" formed in a diseased tree, and the disease invariably appears on these year after year, even if the "brooms" do not increase in number. The damage done is appreciable; in the first place the mass of branches forming the "broom" is so much absolutely barren wood; in the second place, the "brooms" in their vigorous growth use up a good deal of food-material which should go to the making or ripening of healthy wood.

Now, the spawn of this fungus does not extend backwards (downwards) into the tree; consequently if all the "brooms" are completely cut out of a Cherry, that tree stands completely healthy again. If, however, there are trees with "Witches' Brooms" in the neighbourhood, then it is necessary to spray with Bordeaux mixture (as described above) at the time when the leaves are just unfolding, as otherwise they will be liable to be infected by the air- or insect-borne ascospores.

This disease, like the Cherry Leaf Scorch, is one for which the co-operation of fruit-growers is required before it can be entirely exterminated throughout a district. I have repeatedly seen a number of good Cherry orchards situated close together, all suffering from this disease, the various owners not having thought it worth while to cut out the "brooms," which have in consequence increased from year to year. Indeed, many growers seem to look upon the malformed growth of the branches forming the "broom" as something inevitably connected with the age, or nature, of the tree, attributing it often to the action of "physiological" causes due to some fault of soil or cultivation. Whereas it is entirely a fungus disease, and one which can easily be cured. The "brooms" are best cut out in the winter, at any time between October and February. They should always be removed and burnt before the fructification of the fungus appears. *E. S. Salmon, F.L.S., Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

* Tubeuf, *Diseases of Plants*, p. 161 (English translation).

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BURFORD, DORKING.

The collection of Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), contains such an enormous quantity of pretty species as well as a fine representative collection of showy varieties and hybrids, that it provides an interesting display of flowers all the year round.

At the present time the greatest show is made by the Dendrobiums, the large house in which they are staged when in bloom having a charming bank of them literally covered with bloom, representing no fewer than 58 kinds, made up of species and hybrids, many of them in several distinct varieties. Among the hybrids it is interesting to note that some of the earlier introductions, when well grown, are as beautiful as those more recently raised. Good examples of this are D. euosmum virginale, D. euosmum leucopterum, and the very handsome D. micans. Several handsome forms of D. Clio, a select set of D. Wiganiæ, including a fine example of the yellow variety xanthocheilum; some of the best forms of D. nobile; several plants of D. Ainsworthii varieties, amongst which intertextum and other cream-white and yellow-tinted varieties predominate; the yellow D. Melpomene, and variety inversum; and the finer yellow Dendrobe raised at Burford out of D. signatum aureum, a good specimen of which is also in bloom. D. Kenneth (Bensoniæ × McCarthiæ), one of Mr. Cookson's hybrids has a very distinct and pretty flower; and the charming forms of D. melanodiscus, including chrysodiscus, Luna, Hebe pallens, and Rainbow, raised at Burford some years ago and frequently shown at the meetings of the Royal Horticultural Society, are still among the best of their class. Interesting and pretty species are represented by finely-flowered plants of D. Wardianum, D. crassinode, D. fimbriatum, and others of the showier kinds, with some specimens of D.

primulinum and D. cucullatum giganteum, which are often confused as one species, although the latter, as seen here, is slender, like D. Pierardii, and with a much larger pale primrose labellum than in D. primulinum. D. æmulum, D. Kingianum, and others of the smaller species are in bloom, together with the yellow and fragrant D. heterocarpum, and its variety album. In D. specioso-Kingianum, also in bloom, we have a link with the past, the plant having been raised, it is said, between D. speciosum and D. Kingianum by the late Mr. Spyers when Orchid grower at Burford many years ago.

These pleasant reminders of the earlier days of Orchid growing are not infrequent at Burford, where some of the specimens of Vanda suavis and V. tricolor have been in the collection about 30 years; some of the grand specimens of Phalænopsis now in bloom for nearly as long a period; while in the case of some of the curious species the specimens are the type plants. One grand specimen of Phalænopsis amabilis (grandiflora), with many large leaves, bears a branched inflorescence bearing more than 90 blooms; a large, old plant of the pink-tinted P. Sanderiana has 32 flowers, and there is a good show of bloom on P. Aphrodite, and other species, the fine white P. amabilis Rimestadtiana being one of the freest in growth and blossoming. In the same house, among other species in flower, are Angræcum bilobum Kirkii, with sprays of pretty white flowers; A. odoratissimum, the white Eria laxiflora, E. stricta, and Tainia penangiana. The Phalænopsis house is maintained as nearly as possible at an uniformly warm and comfortable temperature throughout the year. There are two critical times with these plants, viz., the middle of a hot summer, and the latter half of a dull, protracted winter, and much care is needed to tide the plants over these trying periods. Excessive heat in winter, especially at night, is the more dangerous by reason of its being attained by artificial means.

A long, cool, intermediate house has many Cœlogyne cristata, alba, and C. c. Lemoniana in bloom, together with other pretty species, and a most interesting set of the smaller habited species, among which was noticed the elegant cream-white Maxillaria arachnites, having scores of blooms, M. pumila, the rare M. Houttenana, with reddish-scarlet and white flowers resembling those of M. tenuifolia, but larger, and on a plant of very different habit; M. variabilis unipunctata, and several of the small-habited species, the allied Camaridium Lawrenceanum, of trailing habit, and bearing pretty purple-spotted flowers, &c. Oncidium graminifolium, O. barbatum, and O. chrysomorphum are yellow-flowered species rarely seen in gardens; Cochlioda sanguinea has branched sprays of rose-pink flowers, which open first from the extremity of the inflorescence, and in succession back towards the plant. A pleasing contrast of colour is seen in a grouping of white Odontoglossum pulchellum majus and orange-scarlet Ada aurantiaca and its variety maculata, which is spotted with chocolate purple. A grand example of floral beauty is the large pink and purple Cymbidium insigne Sanderi superbum, which gained a First-Class Certificate at the Royal Horticultural Society, March 3, this year.

In the large Cattleya house are some good varieties of Cattleya Schroderæ and C. Trianæ in bloom; also a fine dark form of C. Luedemanniana, several brightly-coloured Lælio-Cattleyas, three distinct forms of L.-C. Myra, showing great variation in colour, one of them being wholly canary yellow. There were also a fine specimen of an extraordinary variety of Lælia harpophylla, much stronger in growth and larger in the size of its orange-coloured flowers, of which it bears four spikes; two good Oncidium Cavendishianum, and a wonderful specimen of the natural hybrid Brasso-Cattleya Lindleyana, with over 50 white and rose flowers, and some masses of the scarlet Epiphronitis Veitchii, a foot across. All these enumerated are fine examples of good culture. Epiphronitis are rarely seen so fine as those now in flower at Burford, and the good quality of the plants is attributed to their being grown in teak baskets, and suspended in the shady part of an intermediate house, near to the glass of the roof.

A glance through the many other commodious structures devoted to Orchids reveals a very remarkable number of rare species in bloom. In one house is the most complete collection of Cirrhopetalums in any private garden in Europe, some of them being in bloom, including the little feather-lipped Bulbophyllum tremulum. With these is a very fine batch of rare Catasetums, which Mr. White grows most successfully by giving them similar treatment to that afforded deciduous Dendrobiums. They have thus a distinct dry resting season, and a correspondingly moist season of growth, the plants being all suspended. Mormodes and Cycnoches are treated in a similar manner.

In the large intermediate house, in which the Sobralias and taller Epidendrums are grown, the specimens of Miltonia vexillaria are in admirable condition, together with M. Bleuana and M. Phalænopsis. Here the oft-noted specimens of Platyclinis are well furnished with spikes, the largest specimen of P. glumacea having about 100 inflorescences. A brilliant batch of scarlet and yellow Sophro-Cattleyas and Sophro-Lælias give bright colour; pans of two forms of Epidendrum polybulbon were well furnished with bloom, Masdevallia tovarensis, Spiranthes colorata, Epidendrum variegatum, E. Ellisii, E. xanthinum, E. evectum, E. Wallisii, E. Endresio-Wallisii, a fine example of the rose-purple and white Zygopetalum Ballii, Zygo.-Colax Wiganianus, and many others are in bloom, including Cymbidium Woodhamsianum, whose large ivory-white flowers, with some purple markings on the lip, constitute it one of the very finest hybrid Cymbidiums. The Odontoglossums are in splendid condition, some of the good forms being in bloom, including O. crispum, with a few O. Edwardii, the grandly-coloured O. Vuylstekeæ Lawrenceana, and other hybrids. Colour is given by some bright scarlet Sophronitis grandiflora, the chrome-yellow variety of Lælia Cowanii, and rose-coloured Pinguicula caudata. The Masdevallia house has a few plants in flower, and the many forms of M. Harryana are commencing their show of mauve, purple, and scarlet flowers. Two pretty, dwarf-growing, cool-house species here are the white Odontoglossum Oerstedii majus and Sarcochilus Hartmannii. Some showy Cypripediums are also in bloom, a very fine specimen of Lælia rubescens, with many spikes, and various interesting Pleurothallis, Stelis, and other curious species. The raising of hybrids at Burford is restricted to reasonable limits, but there are a large number of hybrid Dendrobiums, Lælio-Cattleyas, Odontoglossums, &c., and already some of these plants have bloomed. *J. O'B.*

ODONTOGLOSSUM ARDENTISSIMUM PEETERSII.

I have received a bloom of this magnificent variety of Odontoglossum ardentissimum from M. F. Peeters. It is a seedling now blooming for the first time, having been raised from the capsule out of which the variety Robsoniæ was obtained. It will be remembered that the variety Robsoniæ bloomed in 1907, and was much admired at the Temple Show held in that year. The photograph of O. a. Robsoniæ, published in the *Orchid Review* for August, 1907, p. 241, will almost serve as an illustration for our present subject if the following details are added:—It is almost identical in form, but is, perhaps, a little less round; this, however, I am not able to perfectly determine, as the bloom was slightly bruised at the margins. O. a. Peetersii is far superior in colour, the intensity of the "port-wine" purple being almost matchless. Two-thirds of the surface of the sepals are covered with this rich colour upon a rosy base, the latter due to the almost entire reverse being violet-purple. The petals are similarly coloured, and in common with the sepals have a pure white margin. The lip and column are similar to those of O. a. Robsoniæ. The bloom has great substance, although developed from a small plant, and partakes much of the characteristic of the crispum parent. This variety will be one of the greatest value for hybridising purposes. It is one of the finest hybrid Odontoglossums, which goes far to prove that the raising of gorgeous garden hybrids is only in its infancy. *de B. Crawshay.*

LÆLIA ANCEPS ROEBLINGIANA.

Mr. Roebling, of Trenton, N.J., U.S.A., has sent me a pressed flower of this variety for description in England. The only reference yet published appears to be one by Mr. Rolfe in the *Orchid Review* for 1898, page 40, and it will therefore be well to describe this remarkable peloriate variety in detail. It must be pointed out, however, that the dimensions have been obtained from a pressed flower, therefore they may be less than those of the actual size, owing to shrinkage of the nerves. The sepals are 2⅜ inches by ½ inch. The colour is pale rose. The petals are 2¼ inches by 1¼ inch at the broadest part, and the lip is 1¾ inch long. The true lip has the usual bright yellow throat and purple nerves. The keel is normal in form and colour. Around its apex is a small, light coloured area, but the rest of the three lobes and margins to the tube are entirely of rich deep purple, similar to that in Lælia anceps as distinguished from the purple of L. Schroderæ.

The two petals flattened out by pressing are indisputably imperfect lips. The lower half instead of being yellow and having a purple margin is of pale rose colour, and, like the sepals, contains numerous nerves, radiating, as in a true lip, to the median distances, some extending to the apex, the central ones being a strong, richly-coloured purple, the remainder being intermittently coloured. At the base there are yellow marks on each side. Where the keel in a true lip usually extends into the purple there is a yellowish white area of exactly the same form, the outer halves of the petals being almost as deep purple as the true lip. It is a very remarkable variety—so far as I know the only case of peloria in L. anceps, and I hope Mr. Roebling will send us a photograph at a future time. *de B. Crawshay.*

NEW OR NOTEWORTHY PLANTS.

ODONTIODA KEIGHLEYENSE

(Cochlioda Noetzliana × Odontoglossum cirrhosum).

Five blooms of this bigeneric hybrid have been sent me by Messrs. J. Charlesworth & Co., Heaton, Bradford. In form the flowers are very similar to those of Odontioda Bohnhoffiæ, they also have a suffusion of mauve in the lower half of both sepals and petals. The influence of the spotting, which is characteristic of O. cirrhosum, is evident as in Odontioda heatonense, but it is less marked, though there is a distinct arrangement of spotting, if I may term it so, by the red being deeper where the spots would ordinarily be found. The intensity of the two shades is unusual, each shining through the other. When the flowers were quite fresh they must have been very beautiful. The lip is almost wholly orange red, having broad side lobes and a narrow apiculate median lobe, which bears a darker blotch at its centre. The four keels are similarly coloured. The column is of the same form as O. cirrhosum, and the stigmas are similar to those of Cochlioda. It is a very small plant, but the flowers possess extremely good colour. *de B. Crawshay.*

THE ROSARY.

CULTURAL NOTES FOR APRIL.

THE heavy rainfalls of last month and the comparatively mild weather that has prevailed since have caused an early growth in all classes of Roses. It is advisable notwithstanding early growth in any year to extend the pruning over several weeks and to delay the final pruning of the Tea and Noisette varieties until last. The pruning of the H.P.s and hardy summer blooming varieties will have been completed by now, and the next to be dealt with are the Tea scented and other tender varieties. A light pruning is preferable to a severe cutting, but all weakly, unripened, and dead wood must be removed, and if the shoots are crowded leave only the strongest of the best ripened shoots, and shorten these back a few inches at their points according to their length. This year the latest pruned bushes will probably give the best results, as the lower buds are only just beginning to swell. Pot plants of Tea and Noisette varieties with long shoots should be carefully turned out of the pots and be planted in the beds with a view to pegging down the growths. All weak, exhausted, and unripe wood should be cut out After well mulching the bed with short manure, a short pointed peg should be secured by tar twine to the point of each shoot. Carefully bend down the growths to within a few inches of the ground and drive in the peg securely. Dispose the shoots equally all over the bed. The following varieties are adapted to this method of training: Duke of Edinburgh, Star of Waltham, Mdlle. Eugene Verdier, Senateur Naisse, Ulrich Brunner, and Mrs. John Laing. Short standard plants growing in central positions or in groups are also very effective when treated in this manner. The best varieties for the purpose are Gloire de Dijon, W. A. Richardson, Carmine Pillar, and Mme. Bérard. Attend to cuttings inserted during the autumn, tread the soil well about them, apply a good soaking of water and a mulch if the weather continues dry. This advice applies to all newly-planted Roses. All earthing or covering up for protection should now be promptly removed, and any damaged shoots be cut back to sound living wood.

Seeds of the seedling Briar should be sown; the hips that were stored in sand or leaf-mould will now be well decayed and the seed is in a suitable condition for sowing. The seed bed should be fairly dry and have been trenched some time in advance of sowing. Draw drills 3 inches deep and 1 foot apart between the rows. After sowing the seed cover up the trenches and make the soil quite firm. It is probable that a portion of the seed only will germinate this year, and it will be a second year before the majority of the plants are well through the ground. The health and vigour of the Rose depends greatly on the character and nature of the soil, and the kind of stock it is worked upon. A good deep sandy loam is most suitable for its cultivation, and where light or sandy soils have to be dealt with, plenty of good stiff loam should be incorporated with it some weeks in advance of the planting season. The Hybrid Perpetual varieties succeed best on the Manetti and Briar stocks; strong growing climbing varieties of the Tea and Noisette sections do best on the De la Grifferie stock. The weaker growing varieties of Teas should be worked on the seedling Briar, whilst the medium and stronger growing varieties succeed on their own roots.

Some of the cuttings of Roses referred to in my last note will now be well rooted, and during this month should be ready for potting. Another hot-bed should be first prepared as directed last month, and when a steady atmospheric temperature of 70° is attained, the best rooted plants should be repotted into 4½-inch pots and be transferred to the newly-made frame where they should be plunged in a thin layer of fibre or fine ashes. If there is an excess of vapour from the fermenting materials, open the back of the frame slightly. Water with tepid water and shade the plants as required. Increase the amount of ventilation as the season advances. Pinch back the longest growths to keep the plants compact and bushy. The first hot-bed should be re-made; this will be used for the remainder of the plants as they are repotted.

The last batch of the forced Roses will now be growing freely, and with the advancing season more ventilation and increased moisture should be given. Care must be taken to prevent cold draughts. Keep the plants well syringed and vaporise the house occasionally to keep down attacks of insects; guard against mildew by painting the hot-water pipes with a solution of soft soap and sulphur. Before the plants have completed their growth and before the flower buds appear, alternate the waterings with weak manure and soot water. Put an equal quantity of manure and soot into a sack and sink the bag in a tub of water a few days before the stimulant is required; add it to half its bulk of clear water before using it.

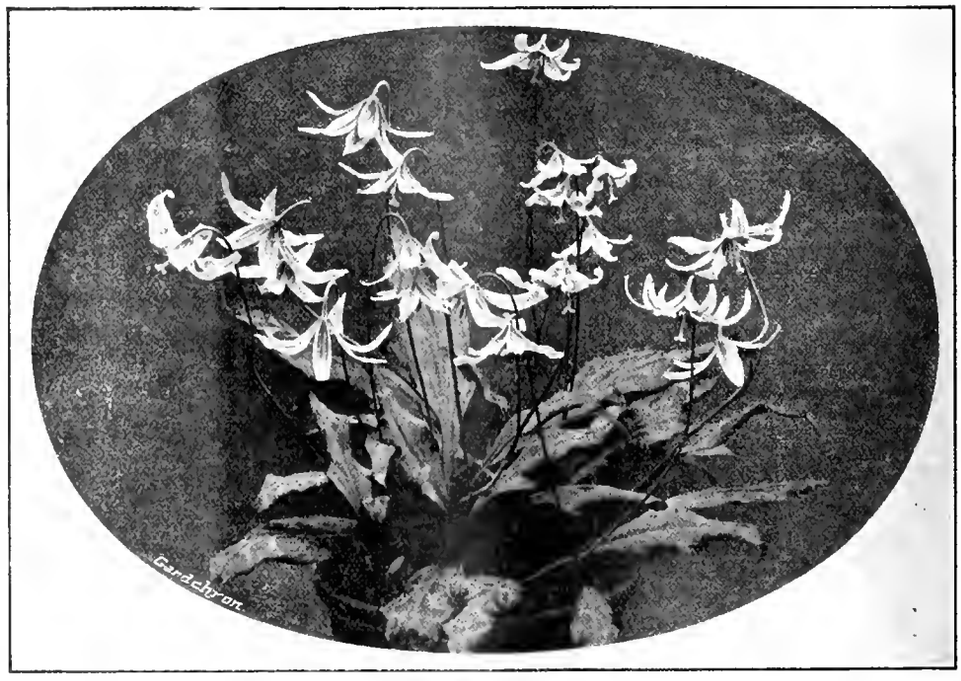
As the grafted plants are repotted they should be placed in a light, well-ventilated house. Afford them a little artificial heat during April and give more ventilation as they become established. These plants are best kept growing under glass till well into May, after which they may be plunged out-of-doors, where they can remain during the summer and autumn months.

Roses cultivated in borders under glass should be given an abundance of water at their roots and mulchings of manure to maintain a vigorous growth. Keep the soil of the borders well stirred and give an occasional light sprinkling of soot and lime to keep the borders sweet and free from insects. An abundance of ventilation should be given on all favourable occasions, leaving the ventilators open slightly at night-time. About the end of April budded plants of last year's raising will require attention at the stocks. All suckers and growths below the scion must be removed, but one or two may be permitted above the dormant bud, to be removed later. Any of the inserted buds that are unduly forward should be carefully secured by a tie. Light hazel sticks may be tied to the stock to prevent the buds becoming broken or damaged by wind. *J. D. G.*

ERYTHRONIUMS.

THE Erythroniums—"Dog's-tooth Violets"—are delightful, spring flowering, bulbous plants, possessing delicately tinted flowers and beautiful foliage. They are easily cultivated and are quite hardy in this country when given the requisite conditions. Erythroniums are naturally woodland plants and they need a certain amount of shade, such as is found in the shady parts of the rock garden, or they may be naturalised on the margins of woodland paths. The most suitable species for planting as wildlings is E. Dens-canis, of which there are many beautiful garden varieties, having flowers of white and purple and many intermediate shades of colour. The Erythronium succeeds best in a deep, rich soil that is composed of leaf-mould and loam; they may, however, be grown with success on comparatively dry, shady banks. The bulbs should be planted deeply and left undisturbed. The plant represented in fig. 94 was cultivated in a pan and was potted in a compost of loam, leaf-soil, and sand. The pans should be placed in a cool, shaded frame and be plunged in ashes to their rim.

With the exception of E. Dens-canis and its variety from Siberia, all the Erythroniums are native of various parts of North America. The genus contains many beautiful and distinct species with intermediate forms, of which the following may be considered amongst the best for garden purposes:—



[Photograph by C. P. Raffill.

FIG. 94.—ERYTHRONIUM GIGANTEUM, AT KEW: FLOWERS LIGHT YELLOW, WITH DARKER CENTRE.

E. GIGANTEUM (fig. 94).—This plant was for a long time known in gardens as E. grandiflorum, but it is distinguished from that species by its leaves, which are mottled with white and brown. It is one of the most robust growing of the genus, excelling all others in height, as well as in the number of flowers it produces. When well cultivated, a single plant often produces eight or ten flowers. These are light yellow in colour, with a darker centre, and sometimes they are margined with brown. E. giganteum is a native of California, and may be planted in suitable situations with every chance of success.

E. GRANDIFLORUM.—This species is one of the most widely distributed of the Erythroniums, being found over the greater portion of North-western America. It has light green leaves that

are quite destitute of mottling, and bears richly coloured yellow flowers. It is rather more difficult of culture than the last-named species, and requires a more shaded position.

E. Hartwegii.—This Californian plant is closely allied to E. giganteum, differing only in its earlier season of flowering and in bearing all its flowers on single stems. The flowers are light yellow in colour with an orange centre; the leaves are richly mottled (see fig. 96).

E. Hendersonii.—This species comes from Southern Oregon, and is one of the most beautiful of all the Erythroniums. It has very handsome foliage and beautiful recurved, light purple-coloured flowers, the petals having a yellow zone or ring near their bases; the centre is of a purple-black colour (see fig. 95).

E. revolutum. This species is widely scattered over the whole of North-western America. There are several well-marked forms, and these include some of the most elegant in the whole family. The type has broad mottled leaves and stout scapes that often attain to a foot in height, bearing light purple flowers. The variety Bolanderi has white flowers tipped with purple. E. r. albiflorum has white flowers with a greenish tinge. One of the most beautiful is E. var. Johnsonii, which has broad leaves mottled with white, while the flower is of a delicate reddish tint with an orange centre.

Besides these there are several other species worthy of a place in the garden, including E. americanum, with mottled leaves and yellow flowers; E. citrinum, resembling E. giganteum, but with an undivided style; and E. montanum, with small pale-coloured flowers. E. Dens-canis var. sibiricum is a handsome variety, with broad foliage and richly coloured flowers. *W. J.*

The Week's Work.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire

Tuberous-rooted Begonias.—For purposes of bedding out, single-flowering varieties are to be preferred, and the tubers should be but one year old. The tubers need to be started in a little heat, and care must be taken at this stage not to over-water the soil on which they are placed. When the tubers have made growth 1 inch in length, the plants will succeed best if placed in partly-decayed leaf-soil in unheated frames. From this material they can be transplanted with good balls of soil adhering to the roots, thus little check will be experienced on their transference to the flower beds. Seedlings should be pricked out into pans or boxes filled with sandy soil, and from these boxes they will need to be again transferred to larger boxes or frames, placing the seedlings at about 4 inches distance from each other in each direction.

Lily-of-the-Valley.—Crowns may be lifted and the roots divided at the present time. If they become overcrowded in a bed, they produce but few flower-spikes of small size. The plant succeeds best in well-drained loam, which is moderately rich and contains plenty of sand. An application of farmyard manure and partly-decayed leaves may be dug into the soil before re-planting. A suitable site is one under the shade of a north or west wall. If the re-planted crowns are expected to flower the first season afterwards, then well-ripened crowns alone should be planted, allowing each crown a space of 3 or 4 inches from each other in every direction. A mulching of fine leaf-mould may be placed over the surface of the ground after planting. During the season of growth, liquid manure may be applied when it is considered necessary. In order to have the flowers pure white, and the inflorescence longer than usual, frames may be placed over the plants a short time before the flowering period commences.

Primroses.—In the pleasure grounds there are always certain positions suitable for Primroses. If Primroses are common in the neighbourhood they may be transplanted into such positions at the present time, or, failing this, seeds may be sown by which excellent plants may be obtained for planting next season. Seeds of Polyanthus should now be sown in boxes, in which case the seedlings will need to be transplanted, or they may be sown in the open borders in drills drawn at 12 inches apart and 1 inch deep. A site under the shade of a north or west wall is suitable. Transplant the seedlings as soon as they are large enough to be handled.

Hardy Ferns.—All species of hardy Ferns may be transplanted at the present time if it is necessary to place them in fresh positions. The common Hart's-tongue Fern (Scolopendrium vulgare), if not too shaded by trees, furnishes excellent fronds of bright shining green, but the plants should be afforded moisture at the roots during periods of drought. The creeping species, such as Blechnum spicant, thrive best when planted in contact with stones, stems of the Oak, and in damp, shaded positions. Polypodiums and Osmundas grow vigorously in a compost of sandy loam, peat, and leaf-mould.

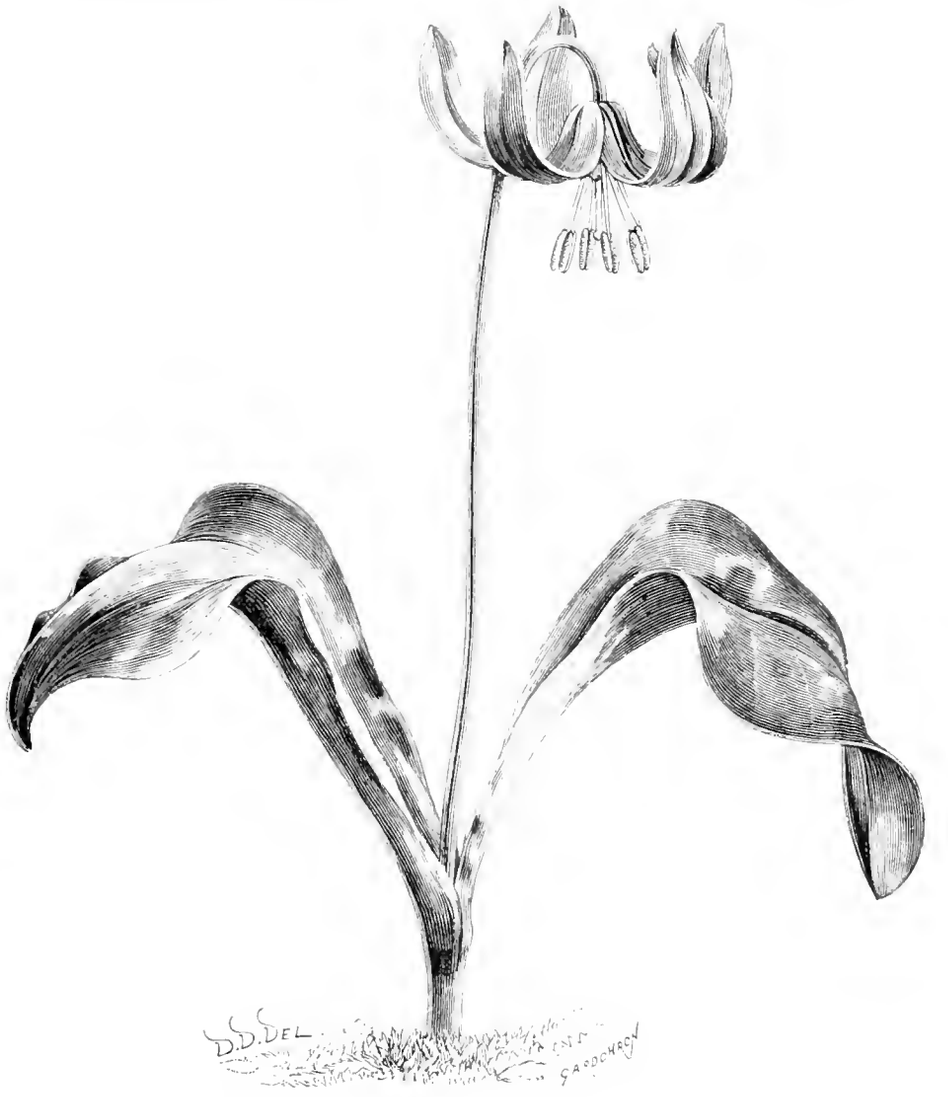


Fig. 95.—Erythronium Hendersonii: colour of flowers light purple, with yellow zone.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Newburgh Holme, Warter Priory, Yorkshire.

Pruning young trees.—Much difference of opinion exists as to when is the best time to prune young fruit trees. Trees that were planted sufficiently early in the autumn to enable them to make young roots before winter are now in a proper condition to support a certain amount of foliage; delay in pruning these would therefore mean a loss of energy by allowing the leading shoots to expand their leaves. The pruning should be done as soon as the sap begins to rise. Shorten any of the leading shoots to about one-third of their length, varying according to the length of the shoot, and otherwise endeavour to shape the tree by removing any shoots that cross each other, being careful always to prune to a point immediately above a bud which points in the direction it is wished the shoot should take. In the case of young trees, six or seven of the best placed branches should be left to form the framework of the trees, cutting back other shoots more or less according to their strength. If the trees are carefully pruned during the first few years, they will not require to be severely pruned afterwards. The centre of the trees should be kept open, and any shoots that form in the centre of the tree after the pruning has been done may be rubbed off. Trees that are not planted until very late in autumn are often left unpruned until the succeeding autumn. This is necessary, because such trees have not had any opportunity of making new roots. Several good waterings should be given to the trees before they show any signs of suffering from drought, as it is sometimes difficult to save them if they are allowed to get into that condition before water is afforded them. Standard and pyramidal Pear trees require almost the same treatment as Apple trees. Plum and Cherry trees need very little pruning, and this only during the first year or two after they are planted.

General work.—Examine all recently-planted trees, and tread the soil firmly around any that may have been loosened by the recent gales. See also that the stakes and ties are in a proper condition and not likely to cause injury to the trees. Lightly fork over the surface ground in the fruit plantations, taking the greatest care not to injure the roots. Lightly prick up with a fork the alleys under the fruit walls, and do not plant any crops within a distance of 3 feet from the wall. The earliest blossoms, such as those of Apricot and Peach, are somewhat late in opening this season, but great care will now be needed to afford protection to the expanding blossoms, especially of Cherries and Pears, in order that they may not be injured by early morning frosts.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Zonal Pelargoniums for flowering in winter.—The plants that have flowered during the past winter should now be cut back, and the cuttings may be inserted for the purpose of raising plants to bloom next autumn and winter. If it is wished to keep the old plants, the roots must be kept moderately dry until new shoots are formed of about 2 inches in length. At that stage the roots should be shaken out of the old soil and repotted, using for this purpose a compost of loam, leaf-mould, and sand, with a liberal sprinkling of bone meal. In potting, the soil should be firmly rammed round the sides of the pot, for if this is done the plants will be likely to make short-jointed growths that will flower freely. Pelargoniums should never be shaded from the sunshine, except when the plants are in flower. When pinching or stopping the shoots, it should be done immediately above a bud, but care should be taken to see that this is not a flower bud. Pinch off all flower buds that appear during the summer, and until such time as the plants are desired to bloom. Freely ventilate the structure containing the plants, as it is essential the shoots should mature well and harden. Do not apply liquid manures until the plants have well filled the pots with roots. They cannot be given a better place during summer than is afforded by an unheated frame.

Fuchsias.—Plants that have started into growth need very similar treatment to that I have described for Pelargoniums, but they should not be potted so firmly; they will need to be shaded from bright sunshine, and should be given a moist atmosphere. If cuttings are inserted at the present time, they will form roots quickly, and make useful plants for flowering in September in pots 6 inches in diameter. Aged plants are not injured by severe pruning, and these should be placed in a warm house in successional batches, in order that a long season of flowering may be obtained. Keep a sharp look-out for thrips and green fly, and on the first appearance of either of these pests, let the house be fumigated. Pinch off all the flowers whilst the plants are growing, and when it is found the pots have become well filled with roots, apply liquid manure somewhat frequently.

Campanula isophylla.—This plant and the variety alba should now be divided, and the divisions potted up into small pots, when they will be useful for draping the side stages in the greenhouse and conservatory. The plants are likewise very suitable for cultivation in baskets for suspending from the roof of the plant house. They need a rooting medium of loam, leaf-soil, sand, and lime rubble, and during their season of growth should be cultivated in a house of intermediate heat. As soon as the flowers appear, remove the plants to the conservatory or greenhouse. If cuttings are inserted at the present time in a moderate degree of heat, they will soon form roots.

Swainsonia galegifolia.—This species, and the varieties purpurea and alba, are useful plants for training up the sides of a section of the greenhouse. They can be grown quickly, and will cover a large space, although the roots are confined in pots of moderate size. Afford them a compost of loam, leaf-soil, and sand, and apply liquid manure when the pots have become filled with roots. Cuttings made from the young growths will root freely at the present time if inserted in sandy soil on a gentle hot-bed.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Early Peaches.—Until the trees have passed the stage at which the "stones" are formed within the fruits, extra care is needed in the matters of ventilation and heating, that there may not occur fluctuations of temperature. Another factor that might cause the fruits to drop during this critical period might exist if the roots were allowed to suffer either from drought or from an excess of water. Overcropping might have an equally bad effect, but until the fruits commence to swell for the second time, it is advisable to retain upon the trees rather more fruits than will be necessary to constitute the crop. As soon as it is seen that the "stoning" stage is past, take measures to expose the fruits to the sun, using, where necessary, pieces of lath-wood to place underneath the shoots. Continue to syringe the trees on bright days. Such trees as will ripen heavy crops of fruit should be given applications of weak liquid manure, or top-dressings of some quickly-acting fertiliser each time they require to be watered. Train in the shoots and stop such as require to be stopped. If it is found that the shoots have been laid in too closely together, thin out any that are not required. The atmospheric temperature after the "stoning" stage is passed should not be allowed to exceed 65° at night and 70° by day, rising with sun heat (and during the time the houses are freely ventilated) to 85° or even 90°. Close the house early in the afternoon and damp the ground surface to cause abundance of atmospheric moisture.

Strawberries.—Sufficient air may now be admitted to the forcing house to improve the colour and flavour of the fruits without danger of causing any ill-effects. Successional batches of plants should be forced to meet the demands there will be for ripe fruit. To ensure the blossoms becoming perfectly fertilised, even at this season, it will be well to pass a Pampas grass plume or something of the kind over the flowers at mid-day to distribute the pollen. When the fruit has set, thin out the least promising and remove any late blossoms when sufficient fruits have been obtained for producing a satisfactory crop. On no account allow the roots to suffer from want of water, but apply liquid manures at every alternate watering during the time the fruits are swelling, discontinuing such manures immediately the fruit commences to colour. Syringe the plants every day, except when they are in flower or are carrying ripe fruits, and if mildew is feared let the water-pipes be heated unusually hot and painted with a mixture of soft water and flowers of sulphur; or spray the plants with a mildew specific. Plants which still remain in the open should be top-dressed with a rich compost, and be watered as often as necessary.

Early Vines.—As soon as the fruit of such varieties of Grapes as Black Hamburgh, Madresfield Court, and Foster's Seedling, commence to change colour, they may be given an atmospheric temperature of 60° to 65° at night and 70° by day, which may rise with sun heat to 90°. These directions apply to vines cultivated in pots or in borders. By careful ventilation, maintain a freely-circulating, moderately-dry atmosphere during the day and in a less degree by night. Excessive heat would be detrimental to the perfect colouring of the fruit, and much atmospheric moisture in an ill-ventilated structure would probably cause the fruit to split, especially in the case of the variety Madresfield Court. Examine the borders, and if water is required, apply enough liquid manure to wet the soil throughout. If red spider is noticed on the foliage, let the leaves be sponged with soapy water.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Temperatures.—The heat of the houses may now be raised a few degrees, owing to the lengthening days, the increasing solar heat and the greater tendency of many plants to make growth. As a general guide the following figures will suffice, observing the higher ones when the weather is mild, and the lower ones when the weather is cold and dull:—**Stove or East Indian House,** by day, 70° to 75°; by night, 65° to 70°. **Cattleya House,** by day, 65° to 70°; by night, 60° to 65°. **Intermediate House,** by day, 60° to 65°; by night, 55° to 60°. **Cool or Odontoglossum House,** by day, 55° to 60°; by night, 50° to 55°. The day temperature, as a matter of course, will vary considerably, and especially in the warmest division the thermometer will now frequently indicate a rise of 10° to 15° on bright, clear days. During such period the fires must be kept well in hand, but the pipes should always be kept slightly warm, so that sufficient ventilation may be given the plants.

Air and moisture.—With the increased heat more moisture may be kept up in the atmosphere, and, therefore, it will be necessary to damp the various surfaces in the houses more frequently. Strict attention should also be paid to ventilation, fresh air being one of the most important factors in the cultivation of Orchids. This should be admitted during the middle hours of the day, by opening the roof ventilators if the outside conditions are favourable, so that most of the moisture of the house may evaporate. The general character of the growth in Orchids which are treated in this manner, that is, if they are kept in a moisture-charged atmosphere during the time the house is closed, and for a few hours after the ventilators are partially opened, is far superior to that which is obtained by admitting a small volume of air to the structure continuously. This daily drying process has the effect of solidifying the growth during its development, and plants so treated invariably make pseudo-bulbs and leaves of a robust and enduring character and have a disposition to flower. The top and bottom ventilators should never be used simultaneously, except under very favourable conditions during the summer months. Admit air through the laths by night on all suitable occasions, and also by day if the climatic conditions prevent the use of the roof ventilators.

Calanthes.—The early flowering kinds will need immediate attention as to repotting. This operation is best carried out as soon as the young growths have attained to a height of about 2 inches. Pot each pseudo-bulb separately, using pots 5 inches and 6 inches in diameter for the strongest bulbs, and smaller sizes for the weaker ones. The pots should be quite clean, and each should be provided with good drainage. Success in the cultivation of these plants largely depends on a proper selection of a rooting medium. The compost that gives the best results is one largely composed of good fibrous loam, two parts, and partly decayed Oak leaves, or chopped sphagnum-moss, one part. A liberal addition of sharp silver sand and broken charcoal will serve to keep the whole porous when the loam is of a heavy character. Let this compost be warmed before it is used, and when repotting keep the base of the pseudo-bulb ½ inch below the rim of the pot. By leaving about 1 inch or so of old roots at the base of the bulb, and pressing the potting material firmly around them, they may be kept firmly in their place until the new roots get a good hold of the soil. Whilst making growth these plants should be given a very light position in the hottest house. No water will be required for some time after the potting has been done, frequent damping between the pots being sufficient until the roots have obtained a good hold upon the compost, when water in small quantities may be applied through a rose can. It is during the early stages of growth that the greater discretion is needed in watering, as a wet soil often has the effect of turning the young growths black.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

General conditions.—Each day the work in this department will become more pressing, and the gardener will have to be guided by circumstances rather than work by rule of thumb. The nature of the soil, situation, and the condition of the weather, all have important influences. In our case, for instance, after an inch of rain which fell during Wednesday and the early morning of Thursday in last week, we can do little with our soil for at least a week, and yet in other cases where the land is light and porous the soil can be worked on the following day. The most important work, however, is to see that all the crops which have been wintered in frames for planting out, as well as those sown in heat and nursed along under glass, do not become spoilt; at the earliest possible moment after being sufficiently hardened these should be planted out in their permanent quarters. Every care should be taken to keep up a regular supply of the more important vegetables by making frequent small sowings of suitable varieties.

Broad Beans.—As soon as these attain to a height of about 3 inches, they should be planted from the boxes in which they have been raised. Broad Beans require land which has been deeply stirred and well enriched with good manure; on poor, shallow soil, trenches should be prepared much in the same way as for

Fig. 96.—Erythronium Hartwegii: flowers light yellow, with orange-coloured centre.

(See p. 213.)

Celery, and double rows planted in each trench, allowing plenty of room both between the plants and the trenches. Make small sowings in the open garden at intervals of ten days during the next six weeks or so. The long-podded varieties should not be sown later than April, as the Broad Windsors, both green and white, are more suitable for affording late supplies. Plants growing in pots should be kept elevated as close to the glass and ventilators as possible, and when in flower, as they soon ought to be, air must be admitted to the structure by night and day. The points should be pinched off the leading growths after a reasonable number of flowers are showing.

Peas.—These should be planted from the boxes as they become ready. Plant thinly and firmly; apply stakes at the time of planting, and protect the plants against birds. Make a sowing weekly, selecting for this purpose the large-podded and best flavoured varieties.

Onions.—Plants raised in heat that have been pricked off into boxes or pots should now be placed in cold frames to thoroughly harden, and the earlier these can be planted during the present month, provided the conditions are favourable, the better. The Onion is an extremely hardy plant, and if the plants have been kept for a time in cold frames, the weather after this date is not likely to injure them. It is assumed that the land was properly treated during the winter months. Choose a dry day and prick over the surface soil, at the same time giving a good dressing of soot and lime. After two or three days have elapsed, rake down finely, mark out the beds and plant in rows from 15 to 18 inches apart, allowing a distance of one foot from plant to plant.

Seeds.—Sow small quantities of seeds of Brussels Sprouts, Broccoli, Cauliflower, and Borecole. The main sowings should not be made until ten days or so later.

THE APIARY.

By Chloris.

Feeding.—There are many points to be taken into account in determining when feeding should commence. There is the weather and the supply of pollen (the natural supply, I mean), for it is not safe to commence stimulative feeding until the bees are carrying home good loads of pollen. In many cases it is not necessary to feed, but most beginners will feed, whether it is necessary or not. If the bees have sufficient food to supply all their wants, bruise some of the cappings if you like, but give no syrup.

Queenless Hives.—It will not be safe to assume that, because a stock has no brood, therefore it is queenless, for the weather has been so cold at night, and in the day, too, many times of late. When a colony has been discovered to be queenless, and is worth caring for, remove it gradually to another stock headed by a queen. Move both hives towards each other about 1 yard a day (counting days only when bees are on the wing). When the hives are side by side, smoke both lots and give them an opportunity to gorge themselves; remove all combs not covered with bees and replace by frames covered with bees. If a very little warm syrup be poured on the combs, it may assist in bringing about a peaceful union.

Manipulation.—At this season of the year, every time we open the hives a great amount of heat escapes, which must be regained, and this retards breeding and chills much brood. No matter what the outside temperature, that inside must be between 90° and 100°. Even when the outside temperature is not low, the hives ought not to be opened unnecessarily.

Bee dress.—Beyond a veil nothing else is necessary. Some wear gloves, but it is not wise, for they lead to clumsy handling of the frames when replacing, and the jarring thus caused irritates the bees and stinging soon commences. The scent of the poison is retained by the gloves, and this seems to anger the bees very much. If you like you may wear a pair of elastic bands on the wrists to hold down the coat sleeves. If one's movements are not hurried, and the smoker used, but not abused, then there is small likelihood of being stung. I have known men at work among bees for hours and there has not been the slightest disturbance in the apiary nor has the operator suffered from stings.

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Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, APRIL 4—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

TUESDAY, APRIL 7
Brighton Spring Fl. Sh. (2 days). Cornwall Daffodil and Spring Fl. Soc. Fl. Sh. at Truro (2 days). Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, APRIL 8—
Liverpool Hort. Assoc. Spring Fl. Sh. (2 days).

FRIDAY, APRIL 10—Exeter Daffodil and Spring Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 46·1°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, April 1* (6 P.M.): Max. 53°; Min. 38°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April 2* (10 A.M.): Bar. 29·9; Temp. 52°; *Weather*—Overcast.
PROVINCES.—*Wednesday, April 1* (6 P.M.): Max. 52° Cornwall and Ireland S.; Min 44° Lancaster.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Sale of Bulbs, &c., at Stevens' Rooms, King Street, Covent Garden, W.C.

MONDAY AND FRIDAY—
Hardy Plants and Bulbs, Perennials, &c., at 12; Roses at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Border and Herbaceous Plants, Bulbs, Lilies, &c., at 11.30; Roses and Fruit Trees at 1.30, Palms, Azaleas, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—
214 cases Japanese Liliums, received direct, and thousands of Hardy Bulbs, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY AND FRIDAY—
The "Vine House" collection of Orchids. Sale of selected plants at Vine House, Hashingden, Lancs., by order of A. Warburton, Esq., by Protheroe & Morris, at 12.30.

FRIDAY—
Imported and Established Orchids in variety at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Political Recognition of Horticulture.

The year 1908 will long be remembered as marking an epoch in the annals of horticulture in Belgium. Even the approaching quinquennial show to be held at Ghent, important as it is rightly considered to be, must be regarded as outranged by another event of lasting and truly national significance. It has just been decided by the Chamber of Representatives to widen the Department of Agriculture by the establishment within it of a special Sub-Department of Horticulture, thus securing for horticulture that recognition which it so thoroughly deserves as one of the great industries of the country. The claims for State recognition are the stronger the more closely they are examined, for not only is horticulture a source of profit to the community, but its influence on national life is more far-reaching than might be supposed at first sight.

No form of occupation of land yields so large a return per unit of area. Under the modern methods of intensive cultivation it is claimed that a hectare of land (about 2½ acres) is capable of supporting no fewer than ten persons. In order to obtain such a result, of course a certain amount of capital is required to meet the cost of glass, as well as the ordinary expenses of cultivation, but even if we adopt a considerably lower estimate of the return, so as to approximate to average conditions, it would still mean that, from the point of view of the nation, a very large value was being got out of the land. It is also most important to remember that this profit to the community is almost all of the nature of revenue, not a trenching on capital. Coal and iron, when once dug out and used up, represent so much capital actually spent. The supply is not inexhaustible although we often shut our eyes to this patent and highly disagreeable fact. But the value that is to be extracted from agricultural or horticultural land is practically inexhaustible, for it owes its origin almost solely to the incoming energy of the sun's rays. This energy is constantly pouring in during daylight, and it is the business of the horticulturist and agriculturist to turn it to useful account by fixing it in the form of marketable vegetables, flowers, or fruit. The effect of such an operation is definitely to add to the wealth already existing in the country.

The grazier does the same thing in another way when he grows mutton or beef. For an ox, from the point of view we are now considering, merely represents a further stage of the same process, inasmuch as when the animal builds up his tissues out of the vegetable produce, he is only concentrating still further the energy which the plant has already extracted from the sun during the course of its own growth. But it is obvious that the farmer cannot work so economically as the gardener, for the latter is able to raise a great deal more valuable produce from a limited area than the former could hope to do.

There is another side to the subject, and one of no less interest from the point of view of the public welfare. Horticulture can, nay must, employ a relatively large number of people on the land actually occupied. This circumstance at once causes the industry to assume an aspect of importance in countries such as Belgium or Britain, where on all sides complaints are heard of rural depopulation and the overcrowding of urban districts. The high prices obtained for well-grown or early vegetables and fruit ought to mean, if the producer gets his fair share of the profits, a flowing back of capital to the country, thus rendering its intensive cultivation still more attractive because more remunerative. In this way the wealth accumulated in the city should play its part in encouraging the further development of a rural population. Whether or not such a result is actually achieved, depends largely upon whether the producer is getting a fair proportion of the profits of his skilled labour. One of the important administrative duties that must lie before a Department of Horticulture is to see that the grower is not left in the lurch, confronted by avoidable obstacles that have been interposed between himself and the consumer.

On grounds of political, as well as on those of rural economy, the Belgian Government is to be congratulated on having been the first to take the important step of inaugurating a department, the business of which is to promote these important interests. The needs of horticulture are by no means always covered by, or identical with, those of agriculture. They require independent and expert attention, and we may feel assured that the enlightened spirit which has led to its formation, will see to it that the officers of the new Department are selected for their special capacity and aptitude for dealing with the numerous scientific, economic, and administrative problems that affect the industry in question.

The Government of the United States has already afforded a splendid example of an energetic department that, by its untiring activity, has rendered, and continues to render, services of incalculable value to the landed industries of America. It may be that some day we shall ourselves endeavour to follow the lead of those countries that have realised, more fully than we do, the paramount importance of fostering rural industries, not only on the grounds of their cash value, but also for the sake of their bearing on the welfare of the nation. We continually hear a great deal of talk about rural depopulation, but many people still fail to recognise that, in these days of international competition, when the means of transit have become so easy, so rapid, and, under certain circumstances, so cheap, the problem has ceased to be one depending solely on mere local conditions.

In order that the producer may reap the reward of his skill, and find inducement to make still further efforts, he should be assured of the prospect of getting a reasonable return for his labour. The diffusion of useful information and knowledge, and the rendering of the best scientific assistance, must be further supplemented by the removal of unfair obstacles of all kinds. For these tend in effect to raise the cost of production, and it must be remembered that in a competitive market it is not the consumer nor the middleman, but it is almost always the producer, who is saddled with the unfavourable difference.

We import every year an enormous and increasing quantity of vegetables and fruit. Some of this produce could perhaps never be advantageously raised at home, but it is due to causes which are at least in part preventable that much of the remainder can still be more cheaply bought from abroad.

Manna.

The name of Manna is given to so many different plant exudations, mostly of a similar nature, that it is difficult to define what is really intended when using the common name only. It is well known, however, that the source of commercial Manna is the Manna Ash (Fraxinus Ornus), a native of Sicily and Southern Italy, and not unknown in this country as one of the most graceful and beautiful cultivated trees, especially when in flower. The late Daniel Hanbury, a great pharmaceutical botanist, paid considerable attention to the history and sources of Manna, visiting the plantations in

Calabria and Palermo. In one of his published papers on the subject he gave the following recapitulation of points in the history of the substance, gathered from his own researches, namely, that the Manna known in Europe in very early times was probably all of Oriental origin, and that the Manna of the Ash (Fraxinus Ornus) began to be collected in Calabria in the first half of the fifteenth century; further, that the practice of making incisions in the tree in order to promote the exudation was not commenced until about the middle of the sixteenth century, previous to which period the only Manna obtained was that which exuded spontaneously. Hanbury also states that although the existence in Sicily of a mountain called by the Arabic name Gibil-manna, or Manna Mountain, would seem to indicate that Manna was collected during the period of Mussulman rule in that island (A.D. 827 to A.D. 1070), evidence has not been produced to prove the fact; but that, on the contrary, it appears that Manna was gathered in Calabria long before its collection in Sicily.

Though Manna at the present time does not hold an official position in the Pharmacopœia, it is still used as a mild laxative medicine, and as such the cultivation of the tree in Southern Italy has recently attracted some special attention, and the following interesting details on the mode of collection and preparation for the market have recently appeared. At the age of ten years the tree yields its first crop and continues to give a supply for ten or fifteen years in succession. It is then pruned and left to rest for six or seven years, when it is again tapped and continues to give a further annual supply for another ten or fifteen years, and this system is continued till the tree attains the age of from 80 years to 100 years. The method of collecting the Manna is by making incisions horizontally through the bark of the trunk and lower part of the branches. The Manna flows slowly from these cuts and solidifies by exposure, after which it is carefully removed, and these first exudations are considered the best and purest Manna. A second quality is obtained by a further exudation, which is scraped off when it solidifies, and so it often contains small portions of bark and other impurities. In order to obtain what is known as "tear" Manna, the incisions are made in a slanting direction, into which pieces of straw are placed, and down which the juice trickles and becomes incrusted. Another form of collecting the sweet juice is shown by some exhibits in Museum No. 1 of the Royal Gardens, Kew, in which a leaflet of the tree itself is stuck into the slit in the trunk, and below it is placed a joint of an Opuntia, which forms a kind of basin into which the flowing juice is conveyed by the Ash leaflet. In Southern Italy "tear" Manna of the best quality is said to realise as much as £4 per kilogram, and inferior qualities £2 and £1 respectively. About 4,500 trees occupying a hectare of ground will produce 90 kilograms of Manna, giving a net return of £80.

A large proportion of Italy's export of Manna is said to be converted into Mannite, the process of manufacture of which is reported to have become very much cheapened of late, and in this form much of it is returned to Italy.

Our Supplementary Illustration.—The varieties of Lælia anceps play a most important part in the display of flowers in the springtime in the collection of Major G. L. Holford, C.I.E., C.V.O., at Westonbirt, Tetbury, so well cultivated by Mr. H. G. Alexander, who is writing the weekly article on Orchid culture in these pages. The variety Sanderiana, which has pure white flowers, with some rose-crimson coloured markings on the lip, is found by Major Holford to be the most satisfactory of the white forms by reason of the profuse manner in which it may be made to produce its flowers, provided the specimens be kept in a vigorous condition. Our Supplementary Illustration shows a good example of Lælia anceps Sanderiana, and it may be seen from the illustration that Mr. Alexander's object has been to cause the plant to make the greatest possible number of leading growths, which, when well grown, produce a proportionately large number of flower-spikes. To bring this about, the rhizomes of the back pseudo-bulbs are severed behind each two or three leading bulbs, causing them to produce new growths from the back pseudo-bulbs, and thus in time double or treble the flowering capabilities of the plants compared with those which are allowed to grow on continually from the leading growths alone. The plants are grown in teak-wood baskets, in an intermediate house, and are either suspended from the roof or elevated well up to the light. Lælia anceps Sanderiana was imported from Mexico about 21 years ago by Messrs. Sander, and its introduction was an important event, as its class was only represented by the then rare L. a. Dawsonii. Messrs. Sander's importation also included a quantity of L. a. Stella, a white variety with only a faint tinge of rose on the lip. This, which may be regarded as a form of Sanderiana, is also very beautiful at Westonbirt, where a general collection of the best-named varieties is also grown, the best white forms, besides the above named, being alba, Schroderiana, and Waddonensis. Very handsome coloured forms are Chambe lamiana, which is the largest variety of typical L. anceps; Amesiana, Schroderæ, and Veitchii.

The Royal Gardeners' Orphan Fund.—The festival dinner of this Fund, which will take place on May 12, at the Hotel Cecil, being the "Coming of Age" Festival, it is hoped that all will do their best to raise as large a sum of money as possible. Like all similar institutions the Royal Gardeners' Orphan Fund obtains its principal support from the money raised in connection with its annual festivals, and although it is highly desirable that every effort should be made to increase the number of annual subscriptions in view of present circumstances, it is the bounden duty of every one to make the coming festival an unprecedented success. The entire cost of management is more than defrayed by the dividends from investments, and therefore every penny that is contributed is available for assisting gardeners' widows and orphans. The Duke of Bedford, K.G., who is president of the Fund, will preside at the festival, and the following gentlemen have consented to act as stewards and will be glad to receive subscriptions for the chairman's list:—W. Alderson, Hersham Road, Walton-on-Thames; W. Y. Baker, Thames Bank Iron Co., Upper Ground Street, S.E.; George H. Barr, 11, 12, 13, King Street, W.C.; W. Bates, Cross Deep, Twickenham; William Bull, 536, King's Road, Chelsea, S.W.; G. Caselton, Garden Superintendent, Crystal Palace, S.E.; H. J. Clayton, Wharfe Bank House, Ulleskelf, York; Geo. H. Cuthbert, The Nurseries, Southgate, N.; W. H. Cutbush, The Nurseries, Barnet, Herts.; C. Dixon, Holland House Gardens, Kensington, W.; W. Howe, Park Hill Gardens, Streatham Common, S.W.; D. Ingamells, 27, Catherine Street, Covent Garden, W.C.; John Lyne, Foxbury Gardens, Chislehurst; H. B. May, Dyson's Lane Nursery, Upper Edmonton; J. F. McLeod, Dover House Gardens, Roehampton, S.W.; J. W. Moorman, Superintendent, Victoria Park, E.; Whitpaine Nutting, 106, Southwark Street, S.E.; Edward Parsons, Fruit Market, Covent Garden; R. Hooper Pearson, 40, Brocklebank Road, Wandsworth, S.W., and *Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, W.C.; W. Poupart, Marsh Farm, Twickenham; W. Roupell, Harvey Lodge, Roupell Park, S.W.; G. Reynolds, Gunnersbury Park Gardens, Acton, W.; T. W. Sanders, 124, Embleton Road, Lewisham, S.E.; Edward Sherwood, 152, Houndsditch, E., *Treasurer*; David W. Thomson, 113, George Street, Edinburgh; W. P. Thomson, 25, Pollo Lane, Chiswick, W.; Harry J. Veitch, V.M.H., Royal Exotic Nursery, Chelsea, S.W.; and J. H. Witty, St. James's Villa, Swain's Lane, Highgate, N. Those who feel thankful for the wonderful success that has attended the Fund during the past 21 years cannot show their appreciation in a better manner than by sending donations or subscriptions to any of the above-mentioned stewards, or to the Secretary, Mr. Brian Wynne, 30, Wellington Street, Strand, W.C.

Flowers in Season.—We have received from Mr. F. Stokes, of Cokethorpe Park Gardens, Witney, Violets of extraordinary quality. Accompanying the flowers were several photographs showing the plants growing in frames and in pots, but as these were similar to those we published from Mr. Stokes in our issue for January 12, 1907, pp. 28-29, we do not reproduce them. However, they demonstrated how successful a cultivator of these flowers is Mr. Stokes, and the beautiful bunches we received were further evidence of his skill in this direction. Mr. Stokes writes: "I am sending you a few blooms of six varieties of Violets. I should be glad to know if you have any record of finer blooms. The photographs were taken on March 9. The white Comte de Brazza does well in these gardens, although some persons find it difficult to cultivate, as it does not always develop such good flowering crowns as do most other varieties. The colours of the old Neapolitan and Lady Hume Campbell are much alike: they both do well here, and I experience very little trouble with damping during the dull, short days. The varieties Marie Louise, J. J. Astor, and Coolcronan are the most liable to suffer from damping. The pot plants shown in the photograph are growing in 6-inch pots, the varieties being Neapolitan and Lady Hume Campbell. These pot plants have been continuously in bloom since the end of October last."

Strength of Timber as Influenced by Moisture.—Some interesting information dealing with the influence of moisture upon the strength of different kinds of timber, says the *Agricultural News*, is contained in a pamphlet recently issued by the Forest Service, U.S. Department of Agriculture. From a consideration of the particulars given it is at once evident how very different degrees of strength may be given to two boards of the same piece of timber by different methods of seasoning. One of the first results of the seasoning of wood is the evaporation of the moisture contained in the interior of the individual cells. This naturally lessens the weight of timber, but it is not until the moisture in the substance of the cell-walls themselves begins to evaporate that the strength of the timber is affected. When the cell content of water has evaporated, but the moisture in the substance of the cell-walls is still present, the wood is at what is known as "fibre saturation point," and from this stage to

absolute dryness there is a remarkable gain of strength in the wood. Exposure to atmospheric conditions may bring about a re-absorption of moisture, but still if proper seasoning has taken place, most woods remain from 50 to 150 per cent. as strong as when in the green condition. The importance of care in seasoning timber is therefore at once evident.

STUDIES OF KEW GARDENS, &c.—Many people having expressed a wish to see the portraits of native princes of Central India, which are destined for the Daly College, Indore, the Grafton Galleries, Grafton Street, Bond Street, has been taken for their exhibition from Monday, April 6, to Wednesday, April 15, hours 10 a.m. to 6 p.m. At the same time there will be shown a collection of studies of Kew Gardens, together with some Italian landscapes and other works, also by HERBERT A. OLIVIER.

FLORA OF NEW SOUTH WALES.—We have received the first part of *The Illustrations of New South Wales Plants*, by J. H. MAIDEN, the indefatigable Director of the Botanic Gardens, Sydney. Eleven plants belonging to various natural orders are figured and described, and notes of the distribution of the species, so far as it is known, are also incorporated. Sometimes these are rather humorous, *e.g.*, it is said of Sprengelia ponceletia, an epacrid, that its known range will be extended by careful search, "especially as swamp-loving plants are often avoided by those botanists who are afraid of getting their feet wet." The illustrations are good, and in addition to a figure of a characteristic branch, with the flowers, dissections of the flower and fruit are also depicted.

A CLIMBING ACONITE (A. volubile latisectum) has been introduced from China by Messrs. VILMORIN, ANDRIEUX ET CIE, Paris. The foliage is deep green, and the blue flowers continue to be produced until the autumn frosts. The plant climbs to a height of from 6 to 7 feet, and is suitable for a trellis.

A SCENTED DAHLIA.—Herr T. C. SCHMIDT, of Erfurt, has introduced a Dahlia, which is characterised by a sweet scent recalling that of honey. The plant originated from Mexico, and is said to be of good habit. Planted out in May, it flowers in July and August, the blooms being of a shade of orange-scarlet, and borne on long stems, thus rendering them very suitable for use as cut flowers. The plant reaches a height of 4 or 5 feet.

SUNFLOWER SEEDS.—The Sunflower is grown in many parts of the world for the sake of the oil in its seeds. The yield of seed varies a good deal according to variety, soil, and climate, but about 1,500 lbs. per acre seems to be a fair average return, and in South Africa as much as 3,250 lbs. per acre has been recorded. About 15 to 20 per cent. of oil can be obtained from the seed, and it is used for many purposes, the better qualities being sometimes employed in cookery. The seeds themselves, when stripped of the fruit husk, are eaten as food after being parched, in some regions—for example in Russia—and they are also used both in the fresh state, and after the oil has been expressed from them, as food for poultry.

* **"THE PRACTICAL GREENKEEPER."**—Mr. REGINALD BEALE is the manager of Messrs. CARTER'S golf department, and the hints he gives in this little booklet cannot but be useful to those who are responsible for maintaining turf in good condition, whether in the garden or on the links. Excellent instructions are given as to the treatment of different classes of soils, and also as to the choice and mode of application of manures. Copies can be obtained gratis from the publishers.

* Published by James Carter & Co.

EXTERMINATION OF LOCUSTS AND DODDER.—An interesting method of exterminating locust swarms is given by a writer in a recent number of the *Agricultural Journal of the Cape of Good Hope*. Young grass was cut up and soaked in 5 gallons of water containing 1 lb. of sodium arsenite and 4 lbs. of sugar in solution. If the locusts are fully grown, a stronger solution is used. The poisoned grass is scattered thinly about the bushes on which the locusts were resting during the night. It is stated that the insects at once feed on the sweetened grass, and are soon entirely destroyed. Arsenite of soda, 1½ lb. to 5 gallons of water, is also said to afford one of the best means of killing dodder on Lucerne. It is sprayed on the plants, and seems in no way to injure the Lucerne.

Publications Received.—*A Practical Guide to School, Cottage, and Allotment Gardening*, by J. Weathers. Published by Longmans, Green & Co.—*Twenty-fifth Annual Report of the Metropolitan Public Gardens Association*, being the report for the year 1907. Published at 83, Lancaster Gate, London, W.—*The Law of Master and Servant*, by James Walter Smith, LL.D., revised by George Frederick Emery, LL.M. This volume is one in the series of "Wilson's Legal Handy Books," and is published by Effingham Wilson, 54, Threadneedle Street, London, E.C.—*The Wild Rabbit* or *Rabbit Warrens*, combined with Poultry Farming and Fruit Culture (3rd edition). By J. Simpson, published by Messrs. Pawson & Brailsford, Sheffield.

THE ALPINE GARDEN.

SHORTIA UNIFLORA.

AMONGST the many interesting plants at present in flower at Kew is the beautiful Shortia uniflora (see figs. 97 and 98). Rare in gardens till recently, it was considered by some to be identical with the better-known S. galacifolia from North Carolina. The Japanese species, however, is quite distinct, although the foliage of the larger forms is very similar to that of the North American one. During the last year or two it has been more freely imported from Yokohama, and has now become more plentiful in cultivation. There are now two distinct forms in flower, one with small leaves somewhat resembling those of Schizocodon soldanelloides, and pale-coloured flowers; while another, recently received under the name of Shortia uniflora var. grandiflora, has much larger foliage, like Shortia galacifolia, and deep rose-coloured flowers with a paler centre. While capable of thriving outside in a peaty bed, with a northern aspect, in the rock garden, it is not seen with such advantage as when grown in pans in a shady frame and shown in the cold greenhouse when in flower. The Japanese species may be readily distinguished from the North American representative of the genus by its flowers, which, when fully expanded, are nearly flat, compared with the funnel-shaped flowers of S. galacifolia. It is also some two or three weeks earlier in coming into flower. A native of Japan, it is usually found growing in dense forests of Coniferæ, at an elevation of about 2,000 feet. An evergreen creeping plant, the persistent leaves are toothed, and assume in the autumn the rich tints that are so attractive in the other better-known member of this genus, as well as in Schizocodon. *W. J.*

HOME CORRESPONDENCE.

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

THE CULTIVATION OF THE CLEMATIS.—Mr. Harold Evans, in the issue for March 14, p. 173, solicits information regarding the successful culture of the Clematis, and particularly of the hybrid varieties. I have propagated and cultivated many thousands of these plants, had many failures, and made many diverse experiments. The principal causes of the failure of these plants when young, are in faulty potting, planting out, and cultivation, and not, as is generally supposed, in their grafting. When the graft has started into growth, the portion of the stem where the stock and the scion are joined should not be imbedded in the soil, and when shifting the plants into larger pots this junction should be raised 2 or even 3 inches out of the soil to fully expose the union of the graft, that it may become hardened, and thus form a woody texture. The practice should be the same in this respect, whether the graft be made of one-year-old wood or of new growth of the current season. Upon receipt of the plants from the nurserymen, it will be seen whether they are potted deeply, and if so the surface soil should be immediately removed in order to harden the graft. No roots will be found in the upper part of the pot, for the Clematis never forms surface roots, but they descend deeply into the ground, and this is clearly seen on removing a plant from a pot, it will then be found that the majority of the roots are in the drainage materials. After the hardening process is complete, and this usually occupies three or four months, the plant will be ready for transplanting to its permanent quarters, or to be potted and grown as a specimen plant. Deep cultivation is essential in the case of ground intended for the reception of these plants. The soil in the border or bed must be stirred to a depth of 3 feet, and have incorporated with it leaf-mould or well-decayed manure from a spent Cucumber bed, sand or fine gravel, and a goodly proportion of finely-broken, soft, red brick. Care should be taken that lime or mortar rubble in the smallest quantity is not present in the soil, as this constituent is most harmful. Allow a few days to elapse in order that the soil may settle down before planting, which should be done as near to the surface of the ground as is possible: at least 3 inches of the stock should be seen above the surface of the soil. A piece of zinc or tin 2 or 3 inches wide should be placed around the stem of the plant, but not close to it; a space should be allowed as far from the stock as the rim of a 5 or 6-inch pot would be if the plant were placed in a pot of this size. The metal band will prevent soil from the border working up around the plant and burying the union of stock and graft. I have proved by experience that the principal cause of failure with the Clematis is deep planting, instead of deep cultivation. With reference to plants already in position, and not in a thriving condition, I recommend that the soil be removed from around their stems in the form of a basin. Place a piece of zinc around the stem to keep it exposed, and top-dress the border with decayed manure. Specimen plants growing in pots must not be potted deeply; the stock should be exposed at least 2 inches. Deep pots of the "Long Tom" pattern should be used, and each season the plants should be given a top-dressing of some good soil, containing broken soft, red brick, with a little Ichthemic guano. Watering is an important matter, and Clematis planted in borders against dwelling-houses often become dry at their roots They should be attended to regularly, and be sometimes fed with weak liquid manure. *John Smith, Messrs. Keynes, Williams & Co., Nurseries, Salisbury, Wilts.*

RHODODENDRON COUNTESS OF HADDINGTON.—I have always understood that this fine Rhododendron was raised by the late Mr. Lees when gardener to the Earl of Haddington, at Tyninghame, East Lothian, and that it was the result of a cross between R. Dalhousiæ and R. ciliatum. There are probably many still alive who can confirm this statement. But whether Mr. Lees was, or was not, the raiser, there is no doubt at all regarding the parentage of this plant. It is R. Dalhousiæ × R. ciliatum, and not as stated on p. 197: "It is generally supposed to be R. Dalhousiæ × R. Gibsonii." This latter cross produces a very different plant from R. Countess of Haddington. *R. Lindsay.*

MEALY BUGS ON VINES.—Referring to *P. R.'s* query on page 206, I would like him to write to Mr. Dobson, Gardener, Stapleton Park, Pontefract, who, I think, will be able to help him in his difficulty. I know he has done this with others by the use of what you mention at foot of his note, viz., fumigation with hydrocyanic acid gas. Mr. Dobson has more than an elementary knowledge and experience in chemistry in connection with horticulture in general. *Yorkshire Gardener.* [A contribution from Mr. Dobson on this subject was published in the *Gardeners' Chronicle*, February 10, 1906, p. 85.]

Elementary School Gardens.—According to Mr. McKenna's statement (see p. 185) there existed last year 1,138 groups of school-gardens in England and Wales. It is, therefore, not unfair to assume that, taking an average number of 15 boys under tuition in each centre, there were upwards of 17,000 pupils receiving instruction in elementary gardening. In the county of Surrey, with its 80 groups of gardens, the total number of separate plots and scholars was last year 1,295, or an average of about 16 plots per group. But the number of plots vary from as low as 9 in a small school to 42 in a large one. This Surrey return, however, does not include gardens in certain areas where the Education authorities are other than the Surrey Education Committee. In the Borough of Kingston-on-Thames there has been for two years one centre of 28 gardens, and a group of the same number has just been created as a second school. Head teachers of all the elementary boys' schools in this town greatly desire to have such gardens also, but their desire is hindered by lack of ground and by the inertness of their managers. That the movement will extend is certain. Necessarily the instruction given is of a very elementary kind and is largely limited to vegetable culture. Where sufficient ground is available, fruit, flower, and special practice or experimental plots are also included, but generally vegetables constitute the staple products cultivated. When the gardens range from half a rod to a rod in area only, it is obvious that the range of products grown must be limited also. The instruction is either given by the school teachers, many of whom are enthusiastic gardeners, or by professional instructors, and includes trenching, digging, hoeing, manuring, marking out plots in mathematical order, drawing drills, sowing seeds, thinning crops, planting Potatos, staking Peas and Beans, and generally maintaining each plot in a high degree of neatness. Necessarily these operations include instruction in the proper handling and use of tools, including the spade, fork, hoe, dibber, &c. The work also furnishes the pupils with a practical knowledge of the discipline of labour. The Education Department makes a grant of 4s. per head where the work of instruction is well done, and these sums naturally help to recoup the outlay incurred in providing tools, manures, and seeds, as well as the fees of professional instructors; hence the expense incurred by the local authorities is light. In some cases the boys are given the crops they produce, or they are charged a small sum for them, and thus they are induced to work well to secure the best possible value. It is unwise to assume, as has been hastily done, that the boys thus instructed will ultimately enter the ranks of professional gardening. Should a few do so, they would doubtless prove to be much more useful in gardens at the outset than would lads who have had no garden training. There are many fields open to these youths as they grow up, to develop their gardening knowledge. As amateur gardeners, cottagers, allotment holders, or possibly as tenants or owners of small holdings, they may, in their manhood, find their school experience and tuition of great value. Few things would be more advantageous to horticulture than that the amateur and cottage gardener should be increased by tens of thousands. There is ample room for them. Millions of acres of good land now producing comparatively limited crops under agriculture, could be made trebly productive under garden culture. But, it may be asked, if all this is being done for boys in elementary schools, why is not something equally useful provided for girls? School authorities so far have limited girls' garden activities to what is described as Nature study. That is very pretty work, and is very interesting, but it lays the basis of no future vocation for girls, as gardening does for boys. Would girls take to gardening? If we are to judge of what is being done by young women at Swanley, Reading, Studley Castle, and at other horticultural colleges or centres, their claims cannot be ignored. Why should not girls have their plots also, and be allowed to commence with the growing of flowers? The girls in our country schools are sturdy, robust, and strong enough. They have the same capacity to dig and delve, to sow and cultivate gardens as have boys. Therefore, why not gardens for girls? If they want to fight the battle of life in their own way, let them have equal opportunities to the boys. Let us hear no rubbish about gardening unwomaning woman. It is nonsense. Whatever a woman can do well, she has the fullest right to do; hence, if she wishes to garden, let her have her chance by all means. *A. D.*

The Black Currant Mite.—Four years ago this pest was first found in these gardens, fortunately on young plants that were isolated from the majority of our Black Currant bushes. Two rows had been planted with separate varieties. Only one row was attacked at first, and in a very mild form. All affected portions of the bushes were cut off and burned, and the bushes were sprayed with an insecticide. The following season the plants were not entirely free of the pest, and they were therefore dug up and destroyed by burning. To my surprise the next season No. 2 row showed signs of "big bud" again in a mild form. This time I cut all the affected growths back to one bud and thoroughly examined the remaining growths to make sure they were quite free of the mite, and again the bushes were sprayed. This spring these bushes were covered with affected buds, and they were also destroyed by fire. It may be interesting to state that there are Black Currant bushes, both old and young, planted in other quarters of these gardens that are quite free of "big bud." I am convinced that where this pest shows itself, there is only one course to adopt, and that is to burn the bushes. I am of opinion that spraying with any insecticide that can be applied without injury to the bushes is useless. *Wm. Johnson, Broxmouth Park Gardens.*

Species of Phormium.—There are now many plants of Phormium tenax in Scottish gardens, and the hardiness of this species in a great part of the country has now been so well proved that it might be much more freely planted. Nor should I trouble myself much about the moisture in the soil. A good deal naturally depends upon the rainfall of the district, and in wet parts of the country a less moist position is called for than is necessary in those which have a smaller rainfall. The plants in the Edinburgh Royal Botanic Gardens have been cited as supporting the case for moisture at the roots from their being on the banks of the pond. They do not form, however, a proof that such a situation is the best for P. tenax, as there are much finer plants elsewhere in Scotland than those in Edinburgh, and some that I know well are on dryish soil and with a dry subsoil, and beyond the reach of any special supply of water at the roots. I think, too, that such plants flower more freely than those in a moister position. I have in my own garden a plant which has surprised me by its rapid growth on a dry soil, in what is, indeed, if not the driest almost the driest part of the garden. It is not essential that a Phormium should have access to moisture, but if planted well above it, in a warm and dry position, and their roots can reach the water if required, they flourish well. The plant withstands a wet winter wonderfully well, and I know of some which passed successfully through the most severe and trying winters we have had north of the Tweed within the last thirty years. *S. Arnott.*

Arboricultural Records.—On reading the leading article (p. 200), I am prompted to send you dimensions of what was at that time—1866—a very fine specimen of Abies Douglassi growing in the finely-timbered grounds at Hackwood Park in Hampshire. I went there as gardener that year, and had the measurements carefully taken. Its height was 82 feet, girth at 40 feet from the ground 4 feet, girth at 2 feet from the ground 9 feet 3 inches. The circumference of the branches at the ground level was 123 feet. At that time, and for the six following years, it was a magnificent tree. Not very far from this specimen was a very nice specimen of the Weeping Turkey Oak (Quercus cerris pendula), which is mentioned in Loudon's work. At the time named there were more than one man employed on the estate who remembered the Abies Douglassii being planted, which, I think, was about the year 1824. Perhaps Mr. Bowerman will tell us what condition the tree is in at the present time. In the year 1870, the present owner of Hackwood, Lord Bolton, took some small self-sown seedlings of the Abies to Bolton Hall in Yorkshire. *H. J. Clayton, Ulleskelf, York.*

The Florist's Art.—Once more the time has arrived for Committees of flower shows to frame their schedules for the coming summer. There are many persons, including myself, who when judging cut flowers are in doubt as to some being annuals or perennials; for instance, Gladiolus are sometimes shown in the class for perennials. [Why not?—Ed.] I would like to see greater encouragement given to the cut flower classes, as they are a fine feature at all exhibitions. I would suggest that the prizes be offered under the heading, "Outdoor Flowers," for by this wording an exhibitor can put in any flower so long as it is grown in the open. In the large shows special prizes could still be offered for such special flowers as Phloxes, Montbretias, Pentstemons, Godetias, Michaelmas Daisies, &c. *A. J. Long, Wyfold Court Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

March 31.—There was a bright display of flowers at the exhibition held on Tuesday last. Groups of Orchids were not so extensive as at recent meetings, but there were many novelties submitted to the consideration of the Orchid Committee, for they awarded four First-Class Certificates and four Awards of Merit.

The Floral Committee made four Awards of Merit to novelties. The hall was gay with many exhibits of Carnations, which were intended to be shown also at the Carnation Exhibition held in the same building on the following day. There were handsome groups of forced shrubs and trees, displays of Roses, greenhouse flowering plants, Clematis, Rhododendrons, and a wealth of other spring-flowering subjects.

The Fruit and Vegetable Committee recommended an Award of Merit to a variety of Orange.

At the 3 o'clock meeting of the Fellows a lecture was delivered by the Rev. Prof. George Henslow on "The History of the Cabbage Tribe."

Floral Committee.

Present: W. Marshall, Esq. (chairman); and Messrs. Chas. T. Druery, John Green, W. A. Bilney, T. W. Turner, R. C. Notcutt, C. J. Salter, W. Howe, John Jennings, Arthur Turner, Chas. Dixon, Chas. E. Pearson, Wm. Cuthbertson, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, Wm. J. James, George Paul, Herbert J. Cutbush, G. Reuthe, Chas Blick, J. F. M'Leod, and James Ffudson.

Mr. Russell, Richmond Nurseries, Surrey, showed a very handsome group of forced shrubs and trees. The plants were well-flowered, and included Lilacs, Azaleas, Laburnums, Wistaria, Cherries, Apples, Weigelas, including the dark crimson-flowered Eva Rathke and the white candida varieties. The group was completed with an edging formed of small plants of Clematis in flower and the ornamental-leaved Euonymus latifolius. (Silver-Gilt Flora Medal.)

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, filled the table they usually occupy, with showy flowering plants, principally of greenhouse species, and at one end of the table was arranged a display of Carnations. The greenhouse plants included a wealth of showy-flowered species. Streptosolen Jamesonii had flowers of a remarkably rich colour, the plants being in small pots. The new Coreopsis Grantii showed to advantage against a background of the pink-flowered Crowea angustifolia. Clianthus puniceus was intermingled with Boronias. Malvastrum grossulariifolium, Primula × kewensis, Rhododendron amœna, R. Veitchianum (magnificently flowered), Primula obconica of an improved strain, and Eupatorium probum are other subjects worthy of mention. The same firm exhibited a group of forced flowering trees and shrubs, with species of ornamental-leaved Vitis. (Silver-Gilt Flora Medal.)

Flowering sprays of several interesting shrubs were shown by Mary Countess of Ilchester, Abbotsbury Castle, Dorchester (gr. Mr. Kempshall). The beautiful rose-coloured Magnolia Campbellii was represented by half-a-dozen magnificent blooms. There were also Aloe ciliaris, Kennedya macrophylla, Acacia verticillata with leaves in whorls, A. trinervis, and Fuchsia serrata.

Messrs. PAUL & SONS, Cheshunt, showed dwarf shrubs and trees, including a golden form of the Scots Fir. They also exhibited flowering sprays of interesting and uncommon subjects, amongst which we noticed Lonicera fuchsioides, Ribes speciosa, Petasites palmata, Astilbe (Spiræa) "Peach Blossom," Cytisus incarnatus, &c. Rose Tausendschon was in company with a new Rose named Amber; the buds of this latter variety are copper-coloured, but the petals are almost white in the expanded flowers.

Winter-flowering Carnations were shown by most of the prominent cultivators of this popular flower. Mr. H. BURNETT, Guernsey, displayed Carnations of a very high quality, including many varieties of his own raising, a prominent positon being afforded the beautiful pink flower named after Mrs. Burnett. Enchantress, Mikado, Winsor, Fiancée, Britannia, Mrs. Lawson, and many others were shown in first-class condition. The arrangement of the flowers left little to be desired. (Silver-Gilt Flora Medal.)

A display of choice Carnations was presented by Messrs. BELL & SHELDON, Castel Nurseries, Guernsey. They were all of well-known varieties such as Enchantress, Aristocrat (cerise pink), Harlowarden (dark crimson), Lady Bountiful (white), Mrs. Lawson (pink), Robert Craig (scarlet), Britannia (scarlet), &c. A groundwork of small ferns with sprays of Asparagus Sprengeri and Smilax gave a pleasing finish to the display. (Silver-Gilt Banksian Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, made a very attractive exhibit with Carnations of the winter-flowering section; pot Roses of the rambler and dwarf polyantha types; Gerbera Jamesonii, and Metrosideros floribunda. The Carnations were displayed in tall receptacles, with shorter vases interspersed, and with suitable greenery. The variety Aristocrat (cerise pink) was noteworthy. There were also fine vases of Mrs. Burnett (salmon pink), Lady Bountiful (white), Enchantress (pink), Victory (scarlet), Britannia (scarlet), &c. (Silver Flora Medal.)

Mr. A. F. DUTTON, Iver Nurseries, Bucks, displayed excellent Carnations in very tall, glass vases. The beautiful rose-pink Enchantress, Beacon (scarlet), Robert Craig, Winsor, and other standard varieties were all well shown. (Bronze Flora Medal.)

Mr. W. H. PAGE, Tangley Nurseries, Hampton, showed vases of well-grown Carnations, arranged on a groundwork of Adiantum Ferns. One of the best varieties in this exhibit was the white "My Maryland." Large vases of Lilium longiflorum were arranged at the back of the exhibit. (Silver Banksian Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, showed Clematis, Cinerarias, Pelargoniums, Roses, and Ferns. The pretty pink, single Rose "Princess Ena" was shown in pots; the large trusses of flowers are remarkable for their longevity. There was also a batch of the dwarf-habited Mme. N. Levavasseur Rose. The Clematis were plentifully flowered, although in small pots; the variety Nellie Moser was especially pleasing. Cinerarias of the ordinary florist's type made a very bright display. The Ferns included many varieties and species of a decorative character; they were interspersed amongst the flowering plants. (Silver Banksian Medal.)

Messrs. SUTTON & SONS, Reading, showed batches of Italian Hyacinths, a type admirably adapted for decorative purposes or for supplying cut blooms. Their season is intermediate between those of the Roman and Dutch strains. They are useful for interspersing amongst other plants in a greenhouse. At one end of the exhibit was a number of Cinerarias, the whole being relieved with Ferns and small Palms.

Messrs. RICHARD SMITH & Co., Worcester, set up a group of Clematis, of which flower this firm makes a specialty. The plants were mostly "balloon" trained; some at the back were supported on neat stakes of bamboo. The edging to the group was very pretty, having as its components Hyacinths, Veronica Hendersonii, Anthurium Scherzerianum, Cytisus, small Acers, and other ornamental-leaved and flowering plants. The varieties of Clematis included Sir Garnet Wolseley (heliotrope, with purple central striping), Mrs. Geo. Jackman (white), the beautiful Nellie Moser, The Queen, President (a finely-formed blue flower), Mrs. Quilter (white), Edouard Desposse, Miss Bateman, C. montana rubens, &c. (Silver-Gilt Flora Medal.)

Messrs. FRANK CANT & Co., Braiswick Rose Gardens, Colchester, showed Roses, both plants and cut blooms. Wichuraiana varieties were staged at the back of the display with Richmond, Mrs. David McKee, Mme. Constant Soupert, Lady Roberts, Gustave Grünerwald, and other well-known varieties in the foreground. (Bronze Flora Medal.)

Very large Roses were shown as cut blooms by Mr. GEORGE MOUNT, The Nurseries, Canterbury. The exhibit was similar to the displays by the same exhibitor at the two preceding meetings. La France, Richmond (red), Frau Karl Druschki (magnificent specimens), and Joseph Low were the varieties shown on this occasion. (Silver Flora Medal.)

Excellent Roses were also shown by Mr. R. FELTON, Hanover Square, London, W., the varieties being Mme. A. Chatenay, Richmond, and Kaiserin A. Victoria. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, made another pleasing display with brightly-coloured trusses of Zonal Pelargoniums. The largest-flowered variety was St. Louis; the colour is scarlet flushed with crimson. Others of special merit are Caledonia (pink), Arabic (scarlet), Mauretania (pale colour), Cymric (purple), and Lucania (orange). In this exhibit was a pure white decorative Pelargonium named alba fimbriata. (Silver Banksian Medal.)

Rhododendron flowers in great variety were shown by Mr. R. GILL, Tremough, Penryn, Cornwall. They were principally varieties of R. arboreum, and were all gathered from plants growing in the open. A plant of R. ciliatum was covered with its delicate blush flowers. (Bronze Flora Medal.)

Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester, showed interesting and rare Alpine plants with bunches of Tulips and small shrubs at the back. There were Hepaticas in several colours, Anemones, Irises, Saxifragas, and similar subjects in great variety. (Bronze Flora Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged a pleasing exhibit of Alpine and rock-garden plants, with many flowering shrubs. The exhibit was arranged with considerable skill, a free use of virgin-cork being employed so as to imitate a portion of a natural rock-garden. The shrubs, which included Rhododendrons, Magnolias, Staphylea colchica, Spiræas, Amlanchier canadensis, and similar subjects, were arranged as a background to the display. The Alpines included Viola pedata, Arnebia echioides, Tulipa Kaufmanniana, Primula rosea, P. Sieboldii, Trillium erectum, T. sessile "Snow Queen," Ledum latifolium compactum, &c. Messrs. CUTBUSH also exhibited Carnations of the winter-flowering type. (Silver Flora Medal.)

Messrs. JOHN LEED & SON, West Norwood, London, in addition to a collection of seasonable hardy flowers, showed Carnations, Caladiums and small succulent plants. (Bronze Flora Medal.)

Mr. G. REUTHE, Keston, Kent, showed a selection of seasonable hardy plants and trusses of Rhododendrons. (Bronze Flora Medal.)

Mr. A. R. UPTON, Hardy Plant Nurseries, Guildford, contributed a display of seasonable hardy flowers. Primula rosea was especially well shown; we also noticed some good plants of Omphalodes verna with its pretty blue flowers, Soldanella alpina, and a specimen of the shrubby Andromeda calyculata, the small flowers being solitary in each axil, but forming collectively long racemes.

Messrs. T. S. WARE, LTD., Feltham, Middlesex, showed rock-garden and other hardy-flowering plants in variety. We noticed a fine pan of

FIG. 97.—SHORTIA UNIFLORA, A SPECIES WHICH GAINED AN AWARD OF MERIT AT THE R.H.S. MEETING ON TUESDAY LAST.

Narcissus Bulbocodium, the flowers being richly coloured; Veltheimia viridifolia; Melanthium junceum, Hepatica triloba alba, Primula verticillata, Sisyrinchium grandiflorum, with Aubrietias, Hepaticas, Anemones, &c. In the centre of the exhibit were plants of coloured varieties of Nicotianas. (Bronze Flora Medal.)

Messrs. HEATH & SON, Cheltenham, showed rock-garden plants and a collection of scented-leaved Pelargoniums. Amongst the Alpine plants were Corydalis Wilsoniæ, a fine pan of Primula frondosa, and Physochlaina orientalis.

The Misses HOPKINS, "Mere" Gardens, Shepperton-on-Thames, displayed a collection of coloured Primroses and other Alpine plants in a setting of stone and virgin-cork. (Bronze Banksian Medal.)

Mr. H. C. PULHAM, Elsenham, Essex, showed pots and pans of Alpine plants, with small Conifers and dwarf shrubs.

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, showed Lily-of-the-Valley and bulbous plants grown in moss-fibre in receptacles without provision for drainage.

Messrs. G. & A. CLARK, LTD., The Nurseries, Dover, showed Primroses, Lachenalias, Hepa-

ticas, Irises, Anemones and other spring flowers.

A small exhibit of Alpine plants was staged by the Misses E. & M. Kipping, Hutton, Essex.

Messrs. R. & G. Cuthbert, Southgate Nurseries, Southgate, Middlesex, filled a very long table with Hyacinths in pots. (Silver Banksian Medal.)

AWARDS.

Awards of Merit.

Iris Sind-pur Amethyst.—This charming variety is the result of the inter-crossing of I. sindjarensis and I. persica purpurea, the seedling partaking largely of the habit and freedom of flowering of the first-named parent, I. sindjarensis. The pervading tone of colour is violet, in deep and light shades, the style branches and the lower portions of the blades of the fall being of the deeper colour tone. The whitened character of the upper portion of the blade renders this part of the flower the more conspicuous. From C. G. Van Tubergen, Haarlem, Holland.

Shortia uniflora.—This Japanese species, as shown by Messrs. Wallace & Co., was awarded an Award of Merit. The flowers are rose-coloured, and vary in shade; they are 1½ inch in diameter. The illustration at fig. 97 shows

Fig. 98.—Shortia uniflora, flowering in a rockery at Colchester.
(From a photograph sent us by Mr. Kelley.)

a plant cultivated in Mr. Hinchmarch's garden at Alnwick, and at fig. 98 we have reproduced a photograph kindly sent us by Mr. Kelley, which depicts a colony of the plant growing in his rockery at Ivydene, Colchester.

Rhododendron Purity.—A magnificent greenhouse Rhododendron, of the same type as the variety Countess of Haddington, figured in our last issue, was shown by Mr. C. Turner, Royal Nurseries, Slough. The flowers were of very large size, unusual substance, very fragrant, and (excepting the merest suspicion of lemon-yellow on the upper segment) pure white. In form they were most regular. The parentage was not recorded.

Viola gracilis. — This very free-flowering purple Viola was shown by Messrs. Wallace & Co. It is an Oriental species, has oblong leaves narrowed at the base, later ones being linear-lanceolate; the flowers are of large size

Narcissus Committee.

Present: H. B. May, Esq. (chairman), and Messrs. J. T. Bennett Poe, P. R. Barr, J. D. Pearson, J. Pope, G. H. Englehart, Alex. M. Wilson, F. H. Chapman, A. Kingsmill, R. W. Wallace, E. M. Crosfield, A. R. Goodwin, H. A. Denison, W. W. Fowler, Chas. T. Digby, Joseph Jacob, W. Goldring, E. Willmott, P. D. Williams, E. A. Bowles, R. Sydenham, Jas. Walker, Walter T. Ware, G. W. Leak, Chas. Dawson, and Chas. H. Curtis (hon. secretary).

Messrs. Barr & Sons, King Street, Covent Garden, London, contributed a varied group of Daffodils representative of most of the sections of this flower. The best varieties were Lucifer, Sensation, Peter Barr (very fine), Monarch, Royal Star, Weardale Perfection, M. J. Berkeley, Grandis, Queen of Spain, &c. A large number of Darwin Tulips in excellent condition was staged by the same firm.

Mr. Chas. Dawson, Rosemorran, Gulval, Penzance, displayed a choice assortment of the newer kinds of Narcissus, including Estelle, a flower of the Sir Watkin type, with a fine orange scarlet rim to the crown. Other good varieties were Petticoat, a flower of the Ajax type, with frilled, expanded crown of lemon colour: Homespun, of uniform lemon shade, a shapely and refined bloom; Nora, sulphur and white; Chough, a variety with flattish, orange scarlet-coloured corona, and a nearly white perianth; and Althæa, with a pure white perianth and finely-crimped crown.

Messrs. Cartwright & Goodwin, Blakebrook, Kidderminster, staged a group of Daffodils, in which we noticed many novelties, the flowers being displayed with judgment and skill. Notable sorts were Mervyn (Emperor × obvallaris), with stiff, overlapping segments, a shapely and substantial flower; Evangeline; a lovely new Leedsii with a lemon-coloured cup; Glory of Noordwijck; Felicity, a charming flower of a uniform yellow shade, and said to be one of the earliest of Narcissus to bloom; also a fine bicolor seedling which promises to eclipse Glory or Noordwijck; Glitter, Mme. de Graaff, White Lady, and Citron. Many pots of finely-grown Daffodils contributed to the interest of this display. (Silver Banksian Medal.)

Mr. G. Reuthe, Keston, Kent, exhibited a few choice Daffodils in variety, chiefly of well-known varieties.

Messrs. R. H. Bath, The Floral Farm, Wisbech, contributed Tulips in many kinds, mostly early-flowering sorts, including Prince de Ligne, Parisian (white), Sarah Bernhardt (yellow), Prince, with variegated foliage, &c. Chionodoxas shown by this firm were of exceptional merit.

Miss F. W. Currey, Lismore, Ireland, displayed a representative exhibit of Narcissus, in which were seen such well-known kinds as Golden Spur, Mrs. Walter Ware, Santa Maria, Maximus, the handsome King Alfred, Cabeceiras (a flower with a finely-coloured trumpet), Mme. de Graaff, N. tridymus, &c.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, de B. Crawshay, R. Brooman-White, W. Bolton, C. J. Lucas, Stuart Low, F. Sander, G. F. Moore, H. G. Alexander, A. A. McBean, W. P. Bound, A. Dye, W. Cobb, J. Charlesworth, F. J. Thorne, H. A. Tracy, W. H. White, H. Ballantine, Gurney Wilson, F. J. Hanbury, and N. C. Cookson.

H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), was awarded a Silver Banksian Medal for an effective group, in which were about a dozen plants of the white-flowered Cattleya intermedia nivea; some good varieties of Odontoglossum crispum, and several hybrids; a showy variety of Cypripedium Countess of Carnarvon, with claret-coloured dorsal sepal having the upper third white, and other Cypripediums, &c.

Mr. A. W. Jensen, Lindfield, Sussex, secured a Silver Banksian Medal for a selection of fine forms of Cattleya Schroderæ similar to those shown by him at the last meeting, and including the variety alba. With them were a very handsome new form of Odontoglossum crispum of the punctatissimum class, with rose flowers margined white, the petals bearing clusters of small spots, and the sepals some large ones. Also two other spotted Odontoglossums.

F. Mentieth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed Odontoglossum crispum Alexandrovitch, a finely-formed flower, showily blotched with purple; Dendrobium Wardianum, The Shrubbery variety, resembling album but with pink tips to the segments; the beautiful orange-coloured D. Thwaitesiæ, Veitch's variety, &c.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed Odontoglossum Judith (sceptrum × loochristense), yellow-blotched with brown, and with the fringed lip of O. sceptrum; Cymbidium J. Gurney Fowler, with white flowers, having a purple mark on the lip; and Odontoglossum percultum "J. R. Roberts." (See Awards.)

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Odontoglossum Astarte Harryanum × tripudians), resembling a very dark O. Harryanum, the sepals being almost entirely of a dark chocolate colour; and O. Andalusia (Andersonianum × loochristense), a very distinct pale yellow flower, prettily marked with purple-brown.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a small group, in which were the fine purplish-rose Phalænopsis, Sanderiana Wigan's variety, which gained a First-Class Certificate in 1902; a finely-spotted form of Odontoglossum Fascinator, with a spike of 27 flowers, &c.

J. Wilson Potter, Esq., Elmwood, East Croydon, sent the handsomely-blotched Odontoglossum crispum Rossendale, and Empress of India.

Mons. Jules Hye de Crom, Ghent, showed the new seedling Odontoglossum Bingleyense, Jules Chenu (illustris × augustum), a finely-blotched variety, closely resembling Mr. Goodson's O. crispum Lily Bourdas.

W. James, Esq., Chichester (gr. Mr. W. H. Smith), showed two exceptionally fine forms of Cattleya Schroderæ.

J. Forster Alcock, Esq., Exhims, Northchurch, showed Cypripedium Bingleyense, Exhims variety, a very dark form with deep rose-purple dorsal sepal.

J. Braushaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), sent Cattleya Schroderæ "W. Duckham," a very fine pale lilac flower with purple-blotch on the lip; and C. s. The Kaiser, white with orange disc to the lip.

G. F. Taylor, Esq., Margery Hall, Reigate (gr. Mr. Seaman), sent Cymbidium Lowianum, Margery Hall variety, with pale yellow-green sepals and petals, and white lip with pale brown mark in front.

Messrs. WM. BALL & SONS, Chelsea, showed a small plant of a very finely-blotched seedling Odontoglossum crispum, flowered in three years from the sowing of the seed.

Messrs. HEATH & SON, Cheltenham, showed a selection of Cypripediums, including the fine C. Mrs. Wm. Mostyn; Dendrobiums, Epiphronitis Veitchii, &c.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed a very distinct form of Cypripedium Fairrieanum.

C. J. LUCAS, Esq., Warnham Court (gr. Mr. Duncan), sent Lælio-Cattleya Apollo with apricot-yellow flowers slightly tinged with rose.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. Chapman), sent Phaio-Calanthe delicata, having two spikes of cream-white flowers tinged with rose.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium Helen II., Westonbirt variety (insigne Harefield Hall × bellatulum), from Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander). A grand Cypripedium displaying in a great degree the markings, fine size and other features of C. insigne Harefield Hall, with the wax-like substance and dwarf habit of C. bellatulum. The showy flowers are cream-white, the dorsal sepal bearing large rose-purple blotches, and the petals smaller spots of the same colour.

Phaius Clive (Norman × tuberculosus), from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman). One of the finest of Mr. COOKSON'S many good hybrid Phaius, the habit being compact, flowers large, and of very rich colour. Sepals and petals rosy-lilac with a cream-white band up the middle; lip broad, mottled with claret on the basal half, the front being rose coloured with purple markings, the crest yellow and red.

Brasso-Cattleya Digbyano-Schroderæ superba, from Messrs. CHARLESWORTH & Co., Heaton, Bradford. A finely-formed white flower of good substance; the front of the lip is fringed and slightly tinged with pink.

Cattleya Suzanne Hye de Crom var. Jungfrau, from Mons. JULES HYE DE CROM, Ghent (gr. Mr. Coene). A larger variety of the white Cattleya for which a First-Class Certificate was given on March 17, and with a deep yellow throat on the lip.

AWARD OF MERIT.

Dendrobium Thwaitesiæ, Bound's variety (splendidissimum grandiflorum × Wiganiæ), from Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound). A very distinct variety having yellowish buff flowers with purple disc to the lip, and measuring 4 inches across.

Odontoglossum percultum var. J. R. Roberts (Rolfeæ × ardentissimum), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). A most charming and delicately-tinted hybrid. The broad and flatly-displayed sepals and petals are blush-pink, with a broad white margin, and with dense small purple spotting on the inner parts of the segments; lip large, white with rose-purple markings on the basal half. The plant bore a very fine spike of many large flowers.

Cattleya Schroderæ Queen Alexandra, from Messrs. SANDER & SONS, St. Albans. One of the largest and most distinctive forms yet shown, all the parts being very broad, and the colouring effective. Sepals and petals blush-white, the broad-fringed lip having a reddish-orange throat with a rose-purple band in front.

Cypripedium Berkleyana (Boxallii bellatulum), from J. FORSTER ALCOCK, Esq., Exhims, Northchurch, Berkhamsted. A pretty hybrid showing C. bellatulum strongly, the rich claret-purple markings nearly covering the cream-white ground. Mr. ALCOCK'S C. bellatulum, Exhims variety, the best-known form, was used as a parent, and the colour is much finer than others of the same cross.

CULTURAL COMMENDATION.

To Mr. H. G. Alexander (Orchid grower to Major G. L. HOLFORD, C.I.E., C.V.O.), for a grand specimen of Ada aurantiaca with 51 spikes of orange-scarlet flowers.

To Mr. H. TYSOE (gr. to Miss FITZPATRICK) for a large specimen of the fine old Cyrtopodium punctatum with five very stout, many-flowered spikes.

Fruit and Vegetable Committee.

Present: A. Dean, Esq. (chairman), and Messrs. W. Bates, J. Willard, H. Markham, H. Parr, E. Beckett, J. A. Davis, J. Lyne, W. Jeffries, P. D. Tuckett, T. Arnold, C. Foster, J. McIndoe, J. Harrison, G. Wythes, and C. P. A. Nix.

One of the principal exhibits before this committee was a collection of home-grown Oranges, sent by Messrs. T. RIVERS & SONS, Sawbridgeworth. At the back were trees in flower; dishes contained fruits of St. Michael, Egg, Large Round, Achilles, Dom Louise, and Navel Oranges. There were also large white Lemons, and a handsome fruit of Citron of Paradise. (Silver Knightian Medal.) Fruits of Dom Louise, Navel, and Achilles were presented for tasting. The first-named variety was scarcely ripe, and it was requested that it be sent again. The variety Navel was next considered. This Orange has a thin rind, and the flesh is soft and sweet. An Award of Merit was unanimously granted the variety.

C. RAPHAEL, Esq., Porter's Park, Shenley, Herts (gr. Mr. A. Grubb), showed 20 pot-plants of Royal Sovereign Strawberry, each plant carrying from four to six ripe fruits. Also five dishes of ripe fruits of the same variety. Many of the berries were of the flat or wedge-shaped type. (Silver Knightian Medal.)

Miss E. M. DIXON, Elmcroft Nursery, Chichester (gr. Miss Eve), showed a dish of Royal Sovereign Strawberry labelled "Improved," but no improvement was seen in the berries displayed.

Mr. T. LYNE, Chislehurst, exhibited Strawberry plants that had been placed in pots out-of-doors early in January, but not plunged. The roots were, in consequence, frozen hard, with the result that leaves and flower-stems were stunted and the latter "blind." It was the opinion of the Committee that Strawberry plants for forcing should be either plunged in the ground or be placed in frames during the winter.

HYACINTH COMPETITION.

The Royal Dutch Bulb Growers' Society at Haarlem offered prizes at this meeting for forced Hyacinths. The conditions required that each bulb must be grown in a separate pot, and must have been forced entirely in this country. The classes were divided into two divisions, one for amateurs and gentlemen's gardeners, the other for nurserymen. The response was poor; there were only 11 entries in the whole competition, including one from a nursery firm. The quality of the exhibits was of a low standard throughout; indeed, we failed to find a single truss that might be correctly described as distinctly good. This may be partly attributed to the bad quality of the bulbs this year, owing to last autumn being unfavourable for their ripening.

In the nurserymen's classes, as stated, only one firm competed. This was Messrs. R. & G. CUTHBERT, Southgate, London, N., and they showed in one class only, viz., that for 24 plants. The best varieties in the collection were Electra, Koh-i-Noor, Felix Faure, Garibaldi, Lady Derby, and Masterpiece.

In the amateurs' division, the class for 18 plants brought three exhibits, and of these two were placed equal as winners of the 1st prize. The exhibitors were Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), and L. NOVLETT, Esq., High Street, Wavertree, Liverpool (gr. Mr. R. T. Bushell). Mr. GIBBS' best examples were City of Haarlem (cream-yellow), King of Blues, Cardinal Wiseman (pink, with darker centre), Lady Derby (pink), Electra, and Mary (dark blue). Mr. NOVLETT showed King of Blues, Roi des Belges (red), Electra, Marie, &c.

There were four contestants in a class for 12 Hyacinths, the 1st prize being won by Lord HOWARD DE WALDEN, Audley End, Saffron Walden (gr. Mr. James Vert); 2nd, Hon. WHITELAW REID, Wrest Park, Ampthill, Beds. (gr. Mr. G. Mackinlay).

The best exhibit in a class for six plants was shown by J. A. BEVAN, Esq., Trent Park, New Barnet (gr. Mr. H. Parr).

Scientific Committee.

MARCH 17.—*Present:* E. A. Bowles, Esq., M.A., F.L.S. (in the chair); Dr. M. C. Cooke, Messrs. C. E. Shea, R. H. Curtis, W. B. Hemsley, W. Hales, H. J. Elwes, J. T. Bennett-Poë, A. Worsley, L. de B. Crawshay, E. M. Holmes, W. C. Worsdell, G. S. Saunders, H. T. Güssow, and F. J. Chittenden (secretary).

Inosculation in Hornbeam.—Messrs. JAMES VEITCH & SONS sent branches of Hornbeam (Betulus carpinus), taken from a garden hedge, in which a very perfect junction had occurred between the two by a sort of natural inarching or inosculation, as it is more properly called. Mr. ELWES drew attention to the fact that if young Hornbeams are planted so as to form a lattice, as time goes on, inosculation occurs wherever two stems come in contact, and finally an impenetrable hedge is formed.

Tubers of Sechium edule.—Large tuberous roots of this plant, grown from a plant in a pot in the Melon house at Wisley, about the beginning of September, were shown by Mr. CHITTENDEN. The plant had produced several large tubers, and these are said to be very palatable when cooked, and greatly resemble Yams in appearance. The plant had been received under the name "Chrystophine," and is also called "Choco." The plants had not fruited at Wisley.

Crosses of Albino Orchids.—In reference to Mr. HURST'S communication to the last meeting upon this point, Mr. ROLFE wrote: "Paphiopedilum insigne Sanderæ × P. bellatulum album does not yield an albino hybrid (see *Orchid Review*, 1908, p. 72), as should have been the case according to the theory mentioned by Mr. HURST at the last meeting. It has very numerous minute purple dots on both the petals and dorsal sepal, though the ground colour is whiter, and the spots fewer and very much smaller than when the ordinary forms of the species are crossed. P. bellatulum album 'selfed' would, I have little doubt, come true, and P. insigne Sanderæ × P. Lawrenceanum Hyeanum I should expect to give coloured hybrids, because it is a precisely parallel cross to P. insigne Sanderæ × P. callosum Sanderæ, and combines the same quite distinct sections of the genus. P. callosum and P. Lawrenceanum (with, of course, their albino forms) are very intimately allied. The mysterious 'factor' supposed to be involved, I believe to be simply the opportunity for reversion which is afforded by crosses between such diverse species. The two combinations last mentioned should certainly be attempted."

Dwarf form of Rhododendron triflorum.—From E. I. P. MAGOR, Esq., of St. Tudy, Cornwall, came a specimen of the dwarf form of Rhododendron triflorum, raised at the Royal Gardens, Kew, from seed sent there by Mr. PETER BARR. The plant is not a foot high, and flowers in Cornwall in the open from a month to ten weeks earlier than the type, the earliest date being the last week in February, 1905.

Seeds germinating in fruit.—From Mr. CAVE, of The Gardens, Holker Hall, Cark-in-Cartmel, came a fruit of Tomato in which several of the seeds had germinated, some of the seedlings having thrust their way out through the wall of the fruit and become green. The phenomenon is not very uncommon, and examples may at times be found in Oranges, Lemons, Melons, and some other fruits, while in some plants, such as the Mangrove, it normally happens that the seed germinates while the fruit containing it is still hanging on the plant, and the same thing has been recorded as occurring in Sechium edule.

Dominance and reversion in Dendrobium crosses.—GURNEY WILSON, Esq., of Glenthorne, Haywards Heath, showed pseudo-bulbs of a cross-bred Dendrobium, and of its parents, D. nobile Ballianum ♀ × D. nobile Murrhinianum ♂. The pseudo-bulb of D. nobile Ballianum is straight, while that of the other parent is zig-zag in growth, owing to the presence of a very marked projection at the nodes on each side of the pseudo-bulb alternately. Of 150 seedlings of this cross all showed in a marked manner in their pseudo-bulbs the zig-zag character of the pseudo-bulb of D. nobile Murrhinianum. In both parents the flowers are white, but have a faint purplish spot in the centre of the throat. In all the 150 cross-bred plants the flower has

reverted to the typical coloration of the species, the spot in the centre of the throat being dark, and the other perianth pieces being marked with purple.

WINTER-FLOWERING CARNATION.

April 1.—This society held its spring show at the Royal Horticultural Society's Hall, Vincent Square, Westminster, on this date. The building was fairly well filled, for the reason that many exhibits remained from the meeting on the previous day of the Royal Horticultural Society.

The Carnation Society is to be congratulated upon the success attending its efforts to establish a spring show of Carnations, a matter difficult to realise before the advent of the American varieties. The opening class in the schedule was one for varieties new to commerce. The only one of merit was Burrswood Scarlet, a regular-formed flower, with smooth edged petals and of regular outline. The judges desired to see it again in the winter.

Colour Classes.

White.—In the class for 36 blooms of a white variety, the 1st prize was won by Mr. W. H. Lancashire, Guernsey, with exceptionally fine blooms of White Perfection. 2nd, Mr. W. E. Wallace, Eaton, Bray, with the variety Lady Bountiful, which has deeply serrated petals, by some persons considered an added attraction. 3rd, Mr. G. Lange, Hampton, Middlesex, with White Perfection.

For 18 white blooms the 1st prize was taken by Messrs. Bell & Sheldon, of Guernsey, with Lady Bountiful. 2nd, Mr. W. E. Wallace, with White Perfection, the flowers being extremely large and loose. 3rd, Messrs. Morres & Co., with White Perfection, having neater blooms than the foregoing.

Blush.—For 36 blooms of this colour, Mr. W. H. Page, Hampton, Middlesex, took the premier prize with Enchantress. 2nd, Mr. W. H. Lancashire, with the same variety. The exhibit of this variety by Messrs. Morres & Co., Guernsey, was very highly commended, but no other awards were made. There were five exhibits in this class.

For 18 blush-coloured blooms, Messrs. Bell & Sheldon were placed 1st with Enchantress, which were probably the best examples of the variety in the hall. 2nd, Messrs. B. & V. Haig, Maidenhead, with Enchantress. 3rd, Mr. C. Engelmann, with the smaller-flowered, light pink Lawson (Melody), a variety whose tint is slightly more intense than that of Enchantress.

Pink.—For 36 blooms of a light pink-coloured variety only two exhibitors contested, and only one award was made, that of a 2nd prize to Mr. C. Engelmann, of Saffron Walden, for Fiancee, a much-fringed, rose-pink coloured variety.

For 36 blooms of a deep pink variety the 1st prize was won by Mr. W. H. Lancashire, Guernsey, for fresh blooms of Mrs. T. W. Lawson. 2nd, Mr. W. H. Page, Hampton, with the same variety.

For 18 blooms of a light pink variety.—1st, Mr. A. F. Dutton, Iver, Bucks., with Winsor, full, and very pleasing in tint and shape. 2nd, Messrs. Bell & Sheldon, with Winsor. 3rd, Mr. C. Engelmann, with Mrs. H. Burnett.

For 18 flowers of a deep pink-coloured variety.—1st, Mr. W. E. Wallace, with Nelson Fisher, a fine richly-coloured flower, lacking strength in the stem, so that unless supported the bloom turns its face downwards. 2nd, Messrs. Bell & Sheldon, with Mrs. Lawson. 3rd, Mr. S. Mortimer, with the same variety.

Crimson.—For 36 blooms of a crimson variety Mr. W. H. Lancashire was 1st with Harlowarden. 2nd, Mr. C. Engelmann, with the same variety.

In the class for 18 blooms of a crimson variety the 1st prize was awarded to Messrs. Bell & Sheldon, who showed the variety President, all the flowers being perfect, with stems supporting the blooms erect. 2nd, Messrs. Morres & Co., with Harry Fenn, the colour of which is more refulgent than that of Harlowarden. 3rd, Messrs. B. & V. Haig, with Harlowarden.

Scarlet.—In the class for 36 blooms of a scarlet variety, the 1st and a Special Prize in the vase class were taken by Mr. W. H. Lancashire with the variety Robert Craig. 2nd, Mr. C. Engelmann.

For 18 blooms of a scarlet variety Mr. A. F. Dutton was placed 1st with Beacon. 2nd, Messrs. Morres & Co. with Robert Craig. 3rd, Mr. E. H. Sams, Worthing, with blooms of Robert Craig.

Fancy varieties.—For 36 blooms of a fancy Carnation, Mr. C. Engelmann was awarded the 1st prize, with Jessica, a white, flamed scarlet.

In the smaller class for 18 blooms of a fancy variety, the 1st prize was won by Mr. C. Engelmann with Imperial, a flower with a pink ground, having scarlet flaking and a dentate edging to the petals.

Mr. W. H. Lancashire was awarded the 1st prize for 18 blooms of a variety not in commerce: Ivanhoe, a flower of deep rose tint, full, and, as shown, not of a large size.

For blooms of the variety Mrs. H. Burnett, a single variety class, Mr. W. H. Lancashire won the 1st prize with 25 blooms, the perfection of form and condition.

For 25 blooms of Britannia, the 1st prize fell to Mr. E. Wallace.

Mr. W. H. Lancashire was awarded a 1st prize for a vase of the variety Mrs. H. Burnett.

Mr. A. F. Paskett, Gloucbridge, secured a 1st prize for a basket of Carnations.

Bouquets were few. A 1st prize was taken by Mr. Hayward, of Kingston-on-Thames.

Honorary Exhibits.

Mr. H. Burnett, Guernsey, received the society's Award of Merit for Carnation Mikado, a sombre-coloured variety having cupped, inward-turning petals, and fairly double; also a First-Class Certificate for Marmion as a new break, it being a scarlet-flaked flower, with broad edges of white to the petals. Mr. Burnett was also the recipient of a Gold Medal.

Gold Medals were awarded to Mr. W. H. Page, Hampton; Mr. C. F. Waters, Balcombe, Sussex; and Messrs. Hugh Low and Co., Enfield, for displays of Carnations.

Silver-Gilt Medals were awarded to Messrs. Morres and Co., Guernsey; Mr. A. F. Dutton, Iver, Bucks; and Messrs. Bell and Sheldon.

Silver Medals were gained by Mr. C. Engelmann, Saffron Walden; and Mr. G. Lange, Hampton.

LINNEAN SOCIETY.

March 19.—At a meeting held on this date, the following exhibitions were shown by permission of the Director, Royal Botanic Gardens, Kew:—

(1) Mr. W. Botting Hemsley, F.R.S., F.L.S., sent for exhibition a second specimen of Platanthera chlorantha with three spurs, which was described in his absence by Mr. C. H. Wright, A.L.S. The plant now shown came from the Rev. E. A. Woodruffe-Peacock, F.L.S., to whom it had been sent by Miss Susan Allett, of Bath, and exhibited a spike, each flower of which had the three petals spurred, a case of true peloria, whereas the specimen shown on January 17, 1907, had the three sepals spurred, a case of false peloria.

In consequence of the publication of the latter specimen in the Society's *Journal* (Botany, Vol. xxxviii. (1907) p. 3), Cav. Sommier has drawn attention to the occurrence of true and false peloria in P. bifolia in the neighbourhood of Florence.

(2) Mr. T. A. Sprague, F.L.S., showed female flowers and fruits of Sterculia Alexandri, Harv., an extremely rare tree from Uitenhage, the only locality known for it, where it was first found in January, 1848, by Dr. R. C. Alexander, F.L.S. (afterwards Prior). The specimens shown had been collected by Dr. S. Schonland, F.L.S., who reported that the seeds were of pleasant taste resembling a chestnut, and were greedily sought after and devoured by the baboons.

(3) Mr. C. H. Wright, A.L.S., showed specimens of (a) Sphærothylax algiformis, Bisch., a rare South African Podostemaceous plant, and spoke of the outward resemblances of some plants of this family to certain cryptograms, showing side by side examples of Hydrostachys imbricata, A. Juss., and H. nana, Engl., as resembling the alga Caulerpa cupressoides, and Fristicha hypnoides, Spreng., with the form of a moss; also (b) Archangiopteris Henryi, Christ and Gilsenh., a Chinese genus of Marattiaceæ, of which a better supply of material had been recently obtained.

A paper, by Mr. T. F. Chipp, was communicated by Mr. W. Botting Hemsley, F.R.S., F.L.S., and entitled "A Revision of the genus Codonopsis," was introduced by the author, who explained that the recent accession of new material through Mr. A. Henry and Mr. E. H. Wilson had necessitated this revision. He included the genus Glosocomia of D. Don, and other species which could not well be assigned to either. The genus was divided into four sections dependent upon the attachment and insertion of the corolla and calyx. Finally the distribution of this genus along the mountain ranges of Asia was described and illustrated by a map on the screen.

Obituary.

Wilhelm Kelhofer.—The death is announced of W. Kelhofer, professor in the horticultural school, and head of the chemistry section of the experiment station for fruit, wine, and horticulture in general at Wädenswill, Switzerland, which occurred on March 7, at the age of 46 years. The deceased was a hard worker, and he had accumulated much valuable knowledge; to him it was due that the Wadenswill institution, more particularly in agricultural circles, was held in high estimation in Switzerland. His researches in the clarification of fruit wines—a matter of great importance in southern Germany and Switzerland, which had previously been undertaken with but little satisfactory results—met with great success, and proved of great advantage to the Swiss fruit cultivators and others. It was Kelhofer who insisted on the use of sugar in the preparation of the Bordeaux Mixture, in order to keep it effective for long periods of time. He published accounts of his experiments with various substances for the destruction of fungous and animal parasites of field and garden plants in the horticultural and agricultural Press; and his *Leitfaden* (guide) for chemistry in the agricultural schools, with special reference to fruit, wine, and nurseries, is a very useful book.

Thomas Pike Turner.—The death of this nurseryman occurred on March 19, at Hammersmith, in the 65th year of his age, after a long and painful illness. The late Mr. Turner carried on business for some years as a nurseryman at King Street, and latterly at Bridge Road, Hammersmith. He was born at Andover, Hants, where his father was engaged in horticultural pursuits, and was apprenticed to Mr. Charles Turner, of Slough. He served as under gardener at Bowood Park, Calne, and in the late Lady Waldegrave's gardens at Strawberry Hill, Twickenham. Subsequently he went to Wakefield (Yorkshire), and afterwards came to London as gardener to the late Mr. T. V. Morgan, of Beaufort Lodge, Chelsea. Mr. Turner also served as gardener to the late Earl and Countess of Meath, Kilruddery Castle, near Bray, Ireland, which position he held for five years. He filled for the next five years the office of gardener to Col. and Mrs. Alcock Stawell, of Kilbrittain Castle, Co Cork. On his return to this country he was with the late Mr. J. Lamis, of Merton, for some time. The late Mr. Turner will be chiefly remembered as a successful florist at Hampshire House Nursery, Hammersmith, now the Hampshire House Club. In his younger days deceased was a contributor to our columns. The funeral took place at the Hammersmith Cemetery on Monday, March 23.

CATALOGUES RECEIVED.

Clibran's, Altrincham, Manchester, and Bramhall—Indoor plants.

E. Justus, 48A, Charing Cross Road, London, W.C.—Books on Natural History (second-hand).

DEBATING SOCIETY.

SALISBURY AND DISTRICT GARDENERS'.

At a recent meeting of this society, held under the presidency of Mr. T. Challis, a lecture on "Cyclamen" was given by Mr. Goatly, of the Guildford Gardeners' Association, and a delegate from the Royal Horticultural Society, W. Y.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending April 1.

A continuous fall of rain for 36 hours.—This was a week of about average temperature. During the last six days the highest temperatures in the thermometer screen ranged only between 49° and 52°, and on the coldest night the exposed thermometer showed only 4° of frost. The ground is now at about a seasonable warmth, both at 1 and 2 feet deep. Rain fell on four days, to the total depth of 1¼ inch. The continuous rainfall mentioned in the last report came to an end at 9 a.m. on the 26th, having lasted without intermission for 36 hours—the aggregate measurement, however, amounted to scarcely an inch. There occurred a sharp thunder shower of rain and hail, accompanied by high wind, shortly before 2 a.m. on March 31st. During the week five gallons of rain water came through the bare soil percolation gauge, and four gallons through that in ground on which short grass is growing. The sun shone on an average for 4¼ hours a day, or for a quarter-of-an-hour a day longer than is usual at the end of March. The last three days of March were very windy, and in the windiest hour the mean velocity amounted to 21 miles—direction west. The average amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by 2 per cent.

MARCH.

Very cold and wet, with an average record of sunshine.—This was the coldest March for seven years. In the middle of the month there occurred a very cold period lasting 10 days, during which there was not a single unseasonably warm day or night, and on the coldest night, which was also the coldest of the month, the exposed thermometer registered 16° of frost, which is about the average extreme minimum for March. On the warmest day the temperature in the thermometer screen rose to 57°, which is an exceptionally low extreme maximum for the time of year. Rain, hail, or snow fell on 19 days, to the aggregate depth of 3¾ inches, or 1½ inch above the March average. Snow fell on six days, and on the 2nd and 3rd the ground was covered to the mean depth of 1½ inches. The sun shone on an average for 3½ hours a day, which is about an average record for March. This was on the whole rather a calm month, owing principally to 10 very calm days in the middle of it. In the windiest hour the mean velocity rose to 21 miles—direction W. For only 153 hours, or about six days, was the direction of the wind any point between N. and E. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 3 per cent. *E. M., Berkhamsted, April 1, 1908.*

ENQUIRIES AND REPLIES.

ARTIFICIAL MANURES.—In reply to the enquiry of *W. C.* on page 206, it may be stated that probably more artificial manure is used at the Rothamsted Experimental Station than at any other place in the country, and has been so employed for the past 60 years. The experience gained at Rothamsted shows that very much depends on the character of the soil, the crop grown, and upon the season, as to whether nitrate of soda and sulphate of ammonia should be dug or ploughed in, or sown as top-dressings only. Nitrate of soda, which is much more easily washed into the sub-soil and out of root-range than sulphate of ammonia, should certainly be top-dressed only on the lighter descriptions of soil, and dug or ploughed in very shallow on the heavy clay soils; the depth should not exceed 3 or 4 inches. As an example of the ease with which nitrate of soda is washed away, it may be mentioned that a few years ago a field of winter Oats at Rothamsted was being top-dressed with nitrate of soda. The sowing drill had gone once across the field when an exceedingly heavy thunderstorm came on and the work had to be stopped for some days, when the remainder of the field was sown. Throughout the whole season the one strip sown before the storm could be distinguished, and at harvest the crop was but little better than that obtained from unmanured land, while the portion which received the nitrate of soda after the heavy rain had fallen, yielded an excellent crop. Sulphate of ammonia, on the other hand, is not so readily soluble nor so liable to be washed away by heavy rains. But even this manure should not be ploughed or dug in deeper than 4 inches, and for most crops it is better applied as a top-dressing. *J. J. Willis, Hampshire.*

VALUE OF MOTOR LAWN MOWERS.—I should be grateful if readers would state their recent experience with motor lawn mowers. So far as I know the latest statements contained in the *Gardeners' Chronicle*, June 23, 1906, p. 415 were not favourable, and the remarks in the issue for July 7, 1906, p. 20, refer to new experience, and are not altogether in favour of the motor. Many of the lawns here have a somewhat steep slope. *H. H. Maiden, Director of the Botanic Gardens, Sydney.*—[An illustrated article was published on this subject in our issue for March 7 last, but the experience of actual users of these machines would be valuable.—ED.]

ANSWERS TO CORRESPONDENTS.

BAMBOO: *S. A. T.* The Bamboo you send in flower is Phyllostachys nigra var. punctata. We do not think there is any hope of your saving the plant. We have seen scores that have flowered, but not one of them has survived. It is said that there is hope of saving a plant if it is cut down to the ground immediately any evidence of flowering appears, but we very much doubt if this would be effective.

BROCCOLI: *W. H. N.* There is no insect or fungus present in the specimens received.

CATTLEYAS WITH YELLOW LEAVES, &c.: *W. H.* All damaged or very old pseudo-bulbs should be cut off close to the rhizome and any damaged leaves removed. If you keep the atmospheric heat at 60° Fahr. at night it will be high enough. In any case, provide that the temperature shall be 7° or 8° at least below the temperature which obtains during the day-time.

CROCUS: *J. K. M.* The Tulips and Crocuses are attacked by Sclerotinia parasitica. The Hyacinth bulb is badly infested with Bacterium hyacinthi. Both these pests remain in the soil from year to year, and attack fresh plants of the same kind. The soil should be treated with quicklime. The other plants mentioned might be planted in the gaps, as they are not liable to be attacked by either of the parasites.

FUNGUS: *H. D. W. W.* Tremella albida.

INSECTS: *J. B. C.* The larger of the two kinds of grubs are those of a fly belonging to the genus Bibio, they are very probably those of the St. Mark's fly, which is very common; it derives its name from the fact that the perfect flies usually appear about St. Mark's day, (April 25). The se flies and other species belonging to the same genus may often then be found flying about in large numbers; they do not fly well but go from one shrub or plant to another, often in couples; they are black, with comparatively slender bodies, and are about ⅜ths of an inch in length; the grubs probably feed on the roots of plants. The smaller white grubs are also the grubs of a fly. Both may be killed by working "vaporite" into the soil round the plants that they are attacking; liquid insecticides are of little or no use, as they lose their strength on passing through the soil.

LILIUM: *Nemo.* There is no trace of fungus disease or insect pest. We cannot form an opinion upon the cause of the flower buds failing to develop.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FRUITS: *W. G.* Baxter's Pearmain.—*J. H.* 1, Lady Henniker; 2, Smart's Prince Arthur; 3, Gascoyne's Scarlet Seedling.

PLANTS: *A. J. B.* 1 and 2, Helleborus orientalis; 3, H. o. variety rosea.—*W. A. C.* Cupressus obtusa var. filicoides (Retinospora filicoides).—*D. M. K.* Dendrobium moschatum.—*W. E. H.* Dendrobium fimbriatum.—*A. R.* 1, Odontoglossum pulchellum; 2, Oncidium platextum; 3, Stelis ophioglossoides; 4, Aida aurantiaca.—*W. H.* Begonia fagifolia.—*T. W.* 1, Odontoglossum cordatum; 2, Odontoglossum luteo-purpureum; 3, Epidendrum elongatum; 4, Odontoglossum cirrhosum; 5, Laelia Cowanii (yellow forms); 6, Oncidium luridum.—*Nobile Orchid.* Dendrobium nobile Cooksonianum.—*H. J. P.* 1, Iris japonica, often called Iris fimbriata in gardens; 2, Chorizema cordatum; 3, Strelitzia Reginae.—*C. J. Ellis.* Your plant is known in gardens as Farfugium grande, but the correct name is Senecio Kaempferi.

NECTARINES FAILING TO SWELL: *Correspondent.* If you cut open the smaller fruits, you will find that the embryos are shrivelled and brown, which shows that they have not been properly fertilised. If the fruits are not fertile, they are certain to drop at what is known as the "stoning" period.

PUBLIC PARKS: *Calanthe.* Read the articles on p. 23 and 39 of the *Gardeners' Chronicle* for January 11, 18. It will be necessary for you to gain practical experience in park work by obtaining employment yourself in one of the parks.

RATS: *W. G.* Have you tried "Ratin," a virus sold for killing these rodents?

RHODODENDRON BUDS EATEN: *Constant Reader.* The buds have the appearance of being damaged by some animal or bird, probably by pheasants.

TOMATO LEAVES DISEASED: *C. B.* The plants are badly attacked with the disease known as Cladosporium fulvum. Burn the diseased plants and spray those not affected with the Bordeaux mixture. Do not grow Tomatos in the same house again until the structure has been thoroughly cleansed, using a weak solution of carbolic acid for the woodwork, &c. You have afforded the plants too much moisture and not sufficient ventilation.

TUBEROUS BEGONIAS: *A. P., Stockport.* Many of the older varieties may be readily propagated from cuttings, but the more modern sorts having thick, fleshy stems are difficult to increase in this manner. At the same time if there are any side shoots or more than one growth from the base, even if the cuttings are thick and fleshy, they may be induced to make roots. They must be cut off quite close below a leaf, and in the case of short cuttings the basal leaf may be left on, but if removed it should be taken off quite close to the stem, care being taken not to damage the bud in the axil. Insert the cuttings in light sandy soil and place them in a close frame with bottom heat, but do not apply much moisture. It would be doubtful if plants suitable for bedding out the same season could be grown from cuttings, except those of the older type, which are more nearly allied to B. boliviensis. There are several of these, and also others of a smaller habit of growth which make numerous thin shoots which root freely and soon form useful plants. The safest method to insure a good stock of Begonias for bedding is to sow seed in the previous year. The young plants may be grown in a comparatively small space; the colours can then be sorted out and useful tubers secured, which should be dried off in the autumn, cleaned, and kept in a dry place where the heat will not fail below 40° Fahr. If such tubers are started into growth in March, or even April, they will develop rapidly. Your seedlings ought to have made a good start by this time. Probably the roots are not in a suitable medium, and you would save time if you pricked them off again, taking care to provide good drainage and a compost consisting of good loam, leaf-mould, and sand. Place them in a warm house or frame where the sun will not shine fully upon them. If it is necessary to provide shade, see that it is removed each day as soon as the bright rays of the sun will no longer reach the plants. Begonias do not need a great amount of heat, but they require careful and regular attention, good soil, and plenty of sunlight without being fully exposed to its rays.

WAGES DURING ILLNESS: *C. B.* If the circumstances are as you appear to describe them, your employer should have paid the wages until the expiration of the fortnight's notice.

COMMUNICATIONS RECEIVED.—C. B. & Sons—A. R. H. S. (Several systems of distributing the cotton have been described in these pages.)—E. R.—A. B. E.—J. S.—L. H.—G. H. H.—J. D.—H. P.—H. M. W.—W. S.—J. C.—Ed. W. & S.—Interested—H. A. O.—H. J.—J. J.—D. C.—T. A. A.—C. F. M., Jr.—W. S.—A. E. T.—E. W.—A. J. Keen—J. H. S.—A. D. R.—Philanthos—M. G.—N. M.—P. A.—Bulbs—Road—H. R. G.—A. J. B.—Dr. B.—Rev. C. B.—S. A.—W. D. H. K.—A. O.—C. I.—F. E. Stokes—A. C. B.—C. H. M.—H. W.—T. C.—F. S.—W. K.—H. M. V.—T. L.—J. M. W.—E. B.—F. J.—S. A.—G. W.—F. J. C.—A. G. T.—W. S.

For Market Reports see page xiv.

LÆLIA ANCEPS SANDERIANA, BEARING FIFTY-FOUR FLOWERS, FROM MAJOR HOLFORD'S COLLECTION AT WESTONBIRT, GLOUCESTERSHIRE. FLOWERS WHITE WITH CRIMSON MARKINGS ON LIP

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ILLUSTRATIONS.

FLOWER GARDENING.

THOUGH a hardier class of plants is being generally employed in the embellishment of the flower garden than was usual not so many years ago, flower gardening has not by any means been simplified, but has rather been rendered more difficult. Quite as strong colours are used as formerly, but in conjunction with them and to a still greater extent, soft shades are being more and more called for, which cause not a little trouble to group satisfactorily. The effect of using plants of vigorous growth having colours of a wider range is often good, though seldom free from imperfections, resulting from placing colours which clash with each other in juxtaposition. Some of the compositions' one sees are as crude in colouring as anything that prevailed in the old "bedding" days; at the same time there is now greater individuality, and though there is still copying enough, there is nothing like the stereotyped arrangements at one time common in almost all gardens.

The flower gardener of the present day is happy in being able to select material from a wider and more varied range of plants than his predecessor, nothing coming amiss that can be effectively employed. There is, however, a danger of departing from that pleasing simplicity which is generally admired, and of adopting meretricious graces which repel. Probably white is more capricious than any colour, and by trusting unguardedly to the neutrality of its tone a bad result may follow its use instead of that enhanced effect for which white is so useful. The yellow-white of Snapdragon (Antirrhinum) gives a totally different effect from the green-white of varieties of Larkspur. Brown, not commonly admitted to the garden, is warmed by the former, and robbed of all its charm by the latter. I remarked last year a very pleasing grouping of grey and yellow-whites, the charm of which was dissipated by the intrusion of a few plants of Gladiolus brenchleyensis. Nor do I admire the frequent composition of the latter with Galtonia candicans, bordering, as it does, on the crude. Blue flowers are in general difficult to deal with. Nothing in blue can surely surpass the beauty of Salvia patens, yet how seldom is it suitably matched! A Fuchsia of Madame Cornelisson type goes well with it. Some contrast it with yellow, which, if of lemon or citron strength only, is passably good, but even that may be spoiled by adding white. The pinky-apricot of Golden Chamois Snapdragon is preferable to yellow, and, possibly, nothing matches better with it than the grey of the Phalaris arundinacea variegata, of Cerastium tomentosum, or of Cineraria ragusina. Pentstemon heterophyllum affords another example of a plant the colouring of which is difficult to match. It is lovely when properly treated, and I think that nothing suits it quite so well as dotting the plants on a groundwork of the yellow-leaved Mesembryanthemum cordifolium. I tried it last year in conjunction with Celsia arcturus, a gracious plant for the flower garden, but the grey-green of its leaves detracted considerably from its effectiveness. Lobelia tenuoir gives a brilliant effect along with Monsoa Warscewiczii, both used in blocks of colour, and A. Mutisii may also be recommended for its unique colouring.

Of Calceolaria, the only species I now grow is C. amplexicaulis, the yellow of which no one can truthfully aver to have the slightest touch of commonness, and it is remarkable what a variety of plants can be effectively arranged with it. I mention only crimson Pentstemons; Verbena Miss Willmott (deep orange); Nemesia; salmon, rose, and deep blue Larkspurs; almost all the tall Snapdragons; Rose Queen Hollyhocks; Orange King Marigold, and Xeranthemum annuum.

Geum chilense, along with Goacher's Crimson Chrysanthemum, was much liked last year, though, personally, I do not care much for the former plant. Rhodanthe Manglesii and R. maculata alba are particularly dainty subjects, which seem to have been hitherto overlooked. Both have a good effect if dotted among the new double Lobelia. They may be raised apart from the flower garden, but they will also succeed if sown in the position where they are to bloom. Perhaps of all flowers, tall Snapdragons are the most dependable and capable of affording the greatest pleasure. Provided the colours are aptly chosen, they are splendid when planted in large groups. At the same time, there are colours among them that should not be admitted to the flower garden. I had a very pleasing bed last year composed of irregular groups, that in the central part was tall crimson, and was surrounded by tall rose, tall carmine pink, Golden Chamois, and tall yellow-flushed crimson. The portions not occupied by these were filled with Rosy Morn, intermediate Carmine Pink and intermediate Orange King. Yellow and white were deliberately excluded. Snapdragons possess much adaptability and group well with a great variety of plants. A lovely combination is produced with Rose Queen Hollyhock, then dark blue Larkspur, then Snapdragon Golden Chamois, then Nigella Miss Jekyll, and Celsia arcturus, all in considerable quantities, but by increasing or diminishing any one of these the effect is altered.

A rather pleasing grouping consisted of tall crimson and white-throated Antirrhinum, many of the inflorescences shooting up to 6 feet in height, among which were single-stemmed plants of an early grey-flowered Aster, which was topped during summer. Larkspurs of all kinds are invaluable for summer and autumn. The earliest to flower are those of the Rocket section, and it is worth while to sow seeds of this a month later than seeds of the other annual sorts. There are lovely shades of light blue, pink, and rose which are well worth keeping separate. These were very pretty in a border of Stocks, along with Tropæolum peregrinum. Emperor Larkspurs are to be had in a few desirable colours, and should be arranged in fairly large masses. A good result is obtained with azure-blue sorts dotted here and there with a rose, and here and there with a white variety. These produce an effect altogether distinct from that of any other flower. Stock-flowered Larkspurs are a taller selection and equally valuable. Last season, early-raised seedlings of perennial light blue Delphiniums, with the lower leaves removed and set among Lobelias, gave a pretty, but too short-lived effect. Perhaps the best of the perennial section is Queen of the Blues, which has to be raised quite early in the year, and planted about 6 inches apart. The common blue branching Larkspur mixes nicely with this, and if a Begonia of the right shade of red is selected, a glorious and glowing combination results. But if the shade is wrong ——! A series of borders furnished jumble fashion, with a variety of plants ranging from white to brown-red, were much liked by some people. The dwarfest plant employed in the scheme was dwarf Pearl Nasturtium. Liberal masses of mixed Montbretias came up here and there to the edge of the grass, the rest of the space being occupied with Scotch, French, and African Marigolds, which provided rich browns, oranges, and light yellows. Tall yellow Snapdragons gave another tone, and a brighter yellow was secured by the free use of a Chrysanthemum. The Ribbon Grass, Phalaris arundinacea variegata, provided a neutral tint, and a few Galtonias were added, as much for the sake of distinction of form as anything else. There was a backing of grey-green to the whole and grass-green in front, both of which probably were needed to neutralise the strong colouring, which, as planted, was not too garish.

A simple but formal bed which appealed to ladies, whose taste, as far as my experience goes, often does not run in the same

direction as that of their gardeners, was planted with crimson Begonias intermixed with an equal number of Chlorophytum elatum—the yellow-leaved form—and the ground thickly carpeted with the variegated Ice-plant. The Begonia arrangement that appealed most strongly to gardeners was a long border of all colours, yellow and white being excluded, with a carpeting of Königa variegata, which was clipped at regular intervals. The quantity of manure dug into the soil, in addition to that applied as surface dressings and dissolved in water which these Begonias assimilated, almost surpassed all belief. Yet they throve amazingly. There are dozens of plants which space will not permit even to name for which there is room in most gardens. Verbena venosa, Gazania splendens, Harrison's Musk, Cuphea strigilosa, Lobel's Catchfly: how seldom are they seen!

It was painful last year to see in many gardens incomplete arrangements through failure of growth. This is a drawback incidental to the employment of so great a variety of plants, and although it may be expected to occur annually, it was accentuated by the unfavourable weather of 1907. To meet these losses reserve plants, not necessarily of the same species, should be grown to fill up such gaps. These are also useful to take the place of any plant offensive in its colouring, which it is far better to remove than to allow it to remain as an eyesore for weeks and months. Not a season passes but I find it necessary to alter in this way arrangements which at planting it was hoped would be perfect, but which failed on flowering to give the satisfaction expected. *B.*

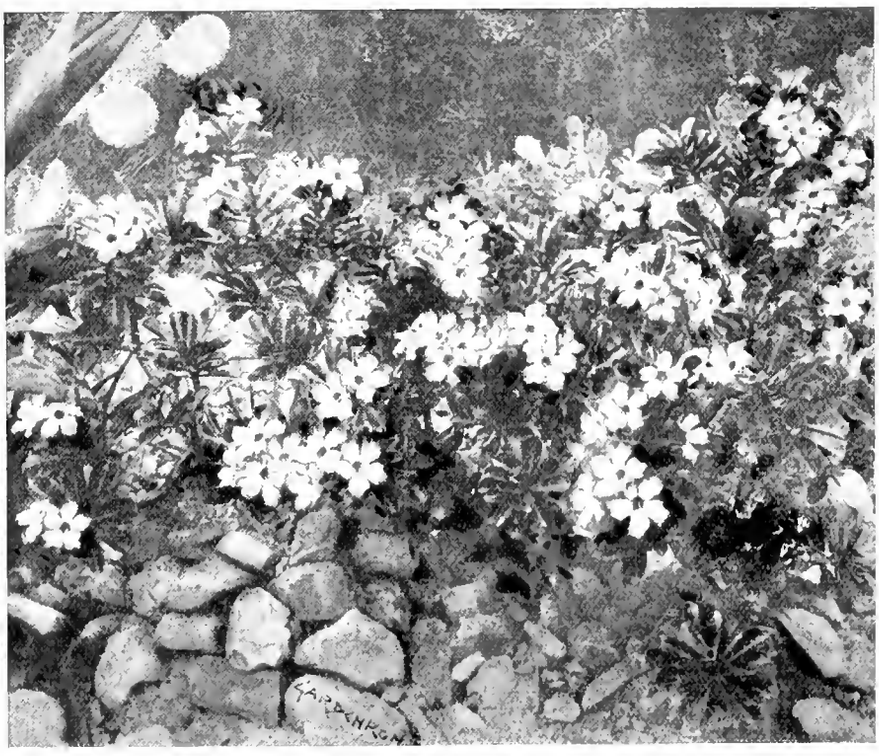

FIG. 99.—ADENIUM OBESUM GROWING ON A ROCKERY AT HOPE GARDENS, JAMAICA: FLOWERS PINKISH-CRIMSON.

ADENIUM OBESUM IN JAMAICA.

A SMALL plant of Adenium obesum (Roem. and Schult), belonging to the order Apocynaceae, was received from Kew Gardens in August, 1898, and planted at Hope Gardens, Jamaica. It was planted out on a low rockery which had been built for Agaves, Cacti, &c. It proved such an attractive plant that attempts were made to propagate it by means of cuttings, but these all failed. Then enlayering was tried, and to effect this, the rockery was built up with loose stones round some of the branches, and a little soil was filled in. The branches rooted readily, and in this way about a dozen large plants were raised. Some of the rooted branches were not removed, and we have now a multiple plant, 5 feet in diameter, and 14 feet 6 inches in circumference. When photographed by Mr. W. J. Down last November, it had 114 expanded blooms, the individual flowers varying from 2½ inches to 3 inches in diameter. Last September it produced seeds for the first time.

Some of the enlayered plants were kept for some time in earthenware flower pots, but they did not seem to be successful and were then put out on rockeries, when they at once improved and they are now growing well. Three or four of these are in King's House Garden, others are in Lady Swettenham's garden at Bellevue at 3,800 feet elevation.

The elevation of Hope Gardens where the plant is growing is 650 feet, and the rainfall is 53 inches. This is a dry district, and most of the plants in the garden can only be kept alive by constant watering, but the Adenium is never watered. *W. Fawcett, Director of Public Gardens and Plantations, Jamaica.*

BYRAM PARK, FERRY BRIDGE.

ALTHOUGH Byram Park, the residence of Sir John W. Ramsden, is not situated in the most picturesque part of the county of Yorkshire, it possesses many attractive features. The estate has been in the possession of the Ramsden family since 1612, and the baronetcy was created in 1689. The mansion is somewhat rectangular in shape, and at the end, which faces to the south, is the carriage entrance. On the western side there is a wide, open terrace, which is enclosed by a low balustrade wall, at the base of which is a ha-ha or sunk fence, with the deer park beyond. This park forms a most picturesque tract of natural country; its surface is studded with groups, avenues, and single specimens of Oak, Lime, Elm, and Beech trees of all sizes. The present owner of Byram takes a keen interest in all that pertains to woodland, and he is an authority on forestry. In the portion of the park nearest to the mansion no tree is cut down if there is any life in it. Dead branches are carefully removed, and any decayed or decaying places in the tree are filled with cement or covered with sheet-lead to arrest further mischief. Large portions of the park are covered with the Common Bracken (Pteris aquilina) and there are acres of Bluebells which, in the early summertime, present a most glorious spectacle. As befits a mansion with such beautiful natural surroundings, little attempt is made to cultivate summer-flowering plants near to it. The glasshouses and kitchen garden are situated on the eastern side of the residence. The paths leading thereto pass through well-kept grounds that are furnished with fine forest trees, and groups and individual specimens of shrubs in variety. Yews are especially abundant and healthy. I was informed that the owner takes a special interest in these trees. Numerous examples of natural inarching are to be seen on the large Beech trees. One in particular might be fitly described as an example of natural engineering on the cantilever principle.

The walks alluded to pass by the upper portion of a natural lake, views of which are obtained through the shrubs and trees that are planted down to the edge of the water. The lower portions of this lake extend through the enclosed grounds, and about the middle portion it is bounded by a balustrade wall with a broad path on its northern side. On a large grass terrace above it there are groups of Dutch panelling in clipped Yew, some old Cedars of Lebanon, groups of Thuja occidentalis, specimen plants of the Golden Yew, with here and there beds for the accommodation of summer-flowering plants. At the time of my visit Richardia africana, growing in the lake, was in full flower. At the back of this terrace is situated the main range of planthouses. The flowerbeds were in their full beauty; some were occupied by tuberous-rooting Begonias in variety, with a carpeting of variegated Mesembryanthemum beneath them; another was furnished with Dactylis glomerata variegata, mixed with Larkspur Blue Butterfly, and edged with a pink-flowered Verbena. In long borders were seen fine clumps of Fuchsia Riccartonii, others of Skimmia japonica, covered with berries, Pyrus japonica, and Jasminum nudiflorum. The two last-named shrubs are pruned severely each season after flowering in order to keep them dwarf and suitable for their position. There are also several specimens of the Witch Hazel (Hammamelis arborea), which flower annually; also Verbascum olympicum, Astilbe Davidii, besides numerous hardy flowering plants.

The planthouses were erected more than 20 years ago by Messrs. W. Richardson & Co., of Darlington, and they are still in excellent order. The central one is 25 feet in height by 50 feet in length, and it reminds one of the old Orangeries seen in some gardens. It has for a cornice a balustrade of a unique design and of the same pattern as that on other walls near to the lake. At each end of this central house there is a narrow corridor which opens into two three-quarter-span houses, each about 40 feet in length by 20 feet in width. At the west end is a greenhouse which, while full of healthy plants, was not so gay with flowers as I have seen it on several former occasions. A large batch of Begonia Haageana looked very promising. Up the roof, the old, but seldom seen Maurandya Barclayana was flowering freely. The adjoining house is a stove, the central stage of which is filled with a collection of exotic Ferns. A batch of young plants of Ixoras in variety were just coming into flower. The front and end stages were filled with a collection of Orchids. Amongst those in flower were Dendrobium for-

mosum giganteum, D. Phalænopsis (some plants having nine strong flower-spikes), and Cattleya Gaskelliana. Hung up overhead, and partially shaded with Stephanotis, were some very fine plants of Cattleya labiata, growing on blocks of Elder wood. One of these Cattleyas had six strong flower sheaths. Other houses were filled with Anthuriums in variety, including both flowering and foliage species; large batches of Begonia Gloire de Lorraine, Caladiums, and Palms. The roofs were well furnished with climbing plants. A specimen of Allamanda Hendersonii had not fewer than a thousand flowers expanded or in bud. Dipladenia Brearleyana was also freely flowered. On the back walls were plants of Monstera deliciosa, Ixora Colei and I. coccinea, Thunbergia laurifolia, and other suitable plants. On shelves near the ridge were plants of Calanthe Veitchii and C. oculata exhibiting the best of culture.

There are two ranges of fruit houses, four in each range. These were erected by the late Mr. Ormston, of Chelsea, about the year 1860, and they are still in a sound condition. They are lean-to structures, divided into four compartments, each about 40 feet long and 16 feet wide. Six are planted with vines, and two with Peach trees. The early vinery was replanted three years ago, the majority of the vines being of the variety Black Hamburgh. A capital crop of Grapes was produced in this vinery last season. In common with the other vineries here, the vines are planted inside the house, but their roots have a free access to borders outside. One house is planted with Muscat Hamburgh. The crop in this house was a large one. Two other vineries are planted with Muscat of Alexandria and Bowood Muscat, and they produce splendid crops of fine fruit. I was impressed with a specimen of the Lady's Finger Grape, the vine being in full fruit.

In the early Peach house there is a splendid old tree of Violette Hative Peach. Its stem at 3 feet from the ground has a girth of 2 feet. I have on more than one occasion seen fruits weighing 10 ounces picked from this tree. It is intended to remove the trees from the second Peach house for the purpose of replacing the present roof trellising with cross trellising on what I may term the "horse stall" system. The back walls of the Peach houses and some of the vineries are covered with Camellias. One of these is a seedling from C. reticulata crossed with C. Donckelaari. Fortunately there is no mealy bug at Byram gardens, hence the fruit houses can be utilised for housing flowering plants when occasion arises, with no danger of infesting the fruit trees with this pest. A batch of 2,000 Strawberries in pots intended for forcing appeared very healthy. The varieties were Royal Sovereign, President, and Sir Joseph Paxton.

There were many excellent pits and frames, and these were filled with batches of Cyclamen, Primulas, Salvias in variety, Poinsettias, Eranthemum pulchellum, Moschosma riparium Bouvardias, Carnation Winter Cheer, and other winter-flowering plants. There are numerous sunken span pits, each 14 feet in width, with a path up the centre. The side beds are filled with fallen leaves, and they are employed for a variety of purposes.

The necessary garden buildings, including potting sheds, packing rooms, seed room, tool shed, and Grape room are well built and maintained in a state of efficiency. The Grape room, in spring time, contains well-preserved bunches of black and white varieties of Grapes. The stalks are inserted in bottles, through a rubber cap, which keeps the bottles almost watertight. The temperature of this structure is maintained at 50° to 55°, and forms a suitable place for the storing of late dessert Pears; indeed, the flavour of Pears stored in this Grape house is very superior to those housed in the ordinary fruit room.

The kitchen garden contains the fruit and plant houses, and the whole is so well arranged that the one seems to merge into the other. The area of ground available for the culture of vegetables and fruit is limited, hence close and careful cropping is necessary to maintain a constant supply of produce. Culinary Peas succeed exceptionally well; one variety has been grown in the vicinity for more than 50 years, and this was conspicuous for the strength of its haulm and the abundance of its crop. The varieties of Pears include Doyenné du Comice, Louise Bonne of Jersey, Marie Louise, Charles Ernest, Winter Nelis, Nouvelle Fulvie, Josephine de Malines, and Beurré Rance. Apples include Lord Suffield, Cockpit, Ecklinville Seedling, Warner's King, Peasgood's Nonsuch, Bramley's Seedling, Lane's Prince Albert, Pott's Seedling, and Cox's Orange Pippin. The soil of these gardens is a stiff loam resting on magnesian limestone. The gardens have been under the care of Mr. Taylor for the past 20 years. *Yorkshire Gardener.*

FIG. 100.—NARCISSUS "EVANGELINE"; PERIANTH PURE WHITE, CORONA LEMON-COLOURED.

NARCISSUS "EVANGELINE."

THIS new variety of Narcissus (see fig. 100) was exhibited by Messrs. Cartwright & Goodwin, Blakebrook, Kidderminster, at the meeting of the Royal Horticultural Society on March 31. It belongs to the Leedsii section, and the flower, as will be seen on reference to the illustration, possesses first-class form, its broad perianth segments, that are pure white, providing an admirable setting to the lemon-coloured crown, which rises from its centre. The beautiful flowers of the Leedsii Daffodils may be said to combine the purity and refinement of the Poet's Narcissus with something of the vigour and boldness common to those of the trumpet sections.

FLORISTS' FLOWERS.

DAHLIA NOTES.

DAHLIAS, especially when cultivated for the production of exhibition blooms, are seldom planted in the open until the end of May or the beginning of June. Although they are planted at so late a season, it is advisable to prepare the ground in the early spring by digging in a good dressing of manure, and leaving the surface of the soil rough. Autumn manuring is not to be recommended for Dahlias, on account of the long period that elapses before the manure is used by the plants, for the greater part of the manurial properties are then washed away by the winter and spring rains. Deep digging is one of the secrets of success in Dahlia culture, and it is especially valuable if the weather of the following summer should be hot and dry. The manure when dug in deeply is of great value, as at the time the roots reach it the plant requires every possible aid in order to give the best results. Dahlias should be grown entirely by themselves, for it is useless to expect perfect flowers if they are surrounded by other plants, each struggling to secure as much root room as possible. The Dahlia is a gross feeding plant and, broadly speaking, the higher the manurial

treatment the better will be the flowers. Not a few growers have in the past condemned the Cactus varieties of Dahlias for various reasons, but chiefly on account of their bad habit as garden plants. This has arisen from growing unsuitable sorts. A first-class exhibition variety which is much lauded in the nurserymen's catalogues, is not always the best variety for general purposes. There is not the slightest doubt but that the majority of the best habited seedlings are discarded by raisers simply because new varieties are judged on their merits as exhibition flowers. There are, however, many useful kinds which possess a strong flower-stem, and if a good habit is of greater importance to the grower than form of flower, these varieties should be selected. Much has been written respecting the merits of the Pæony-flowered Dahlia, but with their broad, flabby florets they are inferior as cut flowers to the Cactus section, for they wilt very quickly. If they are simply required to form a mass of colour, such as is required for church decoration, they are to be recommended, and are even better for this purpose than the Cactus varieties. For the planting of flower beds, Cactus Dahlias in small batches, intermingled with other plants, or in beds of dwarf-growing sorts of one variety by themselves, are eminently suitable, and they grow very evenly, especially in height. The Pompon Cactus Dahlia promises to become popular when more generally known, as the flowers are suitable for many uses, and especially those that are pure white. The great difficulty in this section is to produce stout, robust-growing plants, as the raisers have found the tendency is towards a weakly plant with a correspondingly weakly flower. Still, there exist some very creditable varieties, notably Mignon Nain, Peace, Coronation, Tomtit, and Gracie.

It is a very common practice to plant Dahlias that are badly pot-bound. This is to be condemned, as the roots not only fail to push freely into the surrounding soil, but in most cases the plants have already become stunted.

If old tubers are divided and potted, it is best to delay the work until the end of April, and instead of packing the pot full of useless tubers, it is far preferable to select one or two with prominent buds. If this is done, they can be potted sufficiently deep to bury the crown under the soil, and then the shoots will not only start away stout and healthy, but they will emit strong, young tuberous roots close to their bases, and these young roots are worth more than any quantity of old tubers. The plants should be planted out before these roots entwine and fill the pot, or they will form a mass from which it will be difficult for any of them to extricate themselves. When lifting old roots in the autumn, it will often be seen that the tubers still retain the shape of the pot, and such plants have generally been failures. Young plants raised from cuttings are not very liable to become pot-bound. Growers are often anxious to obtain early blooms, and the plants are pushed on with a view to this, the gardener believing that the larger the plant at planting-out time, the sooner will the flowering season commence. This is very generally a mistake, as big plants are often "hard," and even if in a growing condition, the check caused by the disturbance at the roots is greater than in the case of a comparatively small one. The larger plant has to wait until its roots get a fresh start, whereas the small plant grows away and quickly passes the other. It is not unusual for large plants to cease growing for some time, and in consequence become very stunted, and then to break from the base and make an entirely fresh start. Young plants growing in 5-inch pots are the best for planting.

One of the worst enemies of young Dahlia plants is thrip, therefore the plants should be dipped in an insecticide before they are finally planted. *Harry Stredwick.*

FERTILITY OF DAFFODIL VARIETIES.

In the case of plants like Daffodils, which take from five to eight years to flower from seed, any information that will help to save time at the start is useful. First of all, it is very desirable at least to know what varieties can be relied on to set seed, or to furnish fertile pollen, and which are partially or wholly sterile. The lists given below are based on experiments made during the last five years. Altogether about 1,000 crosses were made, each variety being separately tried with the pollen of several different kinds, and those that failed to set seed one year were tried again in succeeding years. I have combined the results thus obtained with observations communicated to me by several other raisers of Daffodil seedlings. I am in particular indebted to Mr. H. F. Chapman, Mr. W. C. Bull, and other members of the Kent, Surrey, and Sussex Daffodil Society, and also to Miss Willmott, especially for information as to some of the newer varieties.

Fertility is, of course, very largely dependent on the conditions of the environment—soil, climate, &c.—as well as on constitutional peculiarities, and it would be unsafe to state definitely that this or that variety is or is not fertile. No such dogmatic statement is intended, but inasmuch as the lists are the outcome of a considerable number of crosses and embody the experiences of several raisers under varying conditions, they may, I think, be relied on for practical purposes.

Ajax or Trumpet Varieties (Yellow).—Abscissus,* Countess of Annesley,* Emperor,* Glory of Noordwijk, Golden Spur, Henry Irving, King Alfred,* Maximus, M. J. Berkeley,* Monarch, Obvallaris,* P. R. Barr, Santa Maria are free seeders, and are fertile as pollen parents, those that are starred being especially free.

Admiral Togo, Big Ben, Cabeceiras, Fred Moore, Golden Bell,* Golden Eagle,* Golden Prince, Lord Roberts, Noble, Van Waveren's Giant* are also free seeders, but I have not tried them as pollen parents. Glory of Leiden seems to be quite infertile, both ♀ and ♂ with nearly everybody, but I once obtained a pod containing one large good seed, and I have heard of at least two others who have obtained seed from it. Telamonius plenus is a very shy seeder, but has very fertile pollen.

Trumpet Varieties (Bicolors).—Duke of Bedford* and Weardale Perfection* are very free seeders, and have very fertile pollen.

Empress, Grandis, Horsfieldii, J. B. M. Camm, Mme. Plemp, and Mrs. W. T. Ware are all rather shy seeders; they set seed with certainty when fertilised by such varieties as Mme. de Graaff and Duke of Bedford, but average less than 10 seeds to a pod. Horsfieldii and Mme. Plemp are rather better seeders than the others, and are even free with some. Their pollen seems generally quite infertile (except Mme. Plemp), but I have obtained a few pods (containing only two or three seed) with the pollen of Horsfieldii and also of Victoria. Lettice Harmer seeds freely. Victoria sets seed freely with the pollen of Duke of Bedford, but proved barren with every other variety (13) tried, though a few seeds have been obtained by others with pollen of Mme. de Graaf and Triandrus calathinus. Sentinel is quite infertile ♀ and ♂.

Trumpet Varieties (White).—Albicans, Cernuus, Cernuus pulcher, Moschatus, and Pallidus præcox are good or fairly free seeders and pollen parents. Mrs. Camm, Mrs. Thompson, and Princess Ida are free seeders. Mme. de Graaf is a moderately free seeder, and is one of the most fertile of pollen parents.

Incomparabilis Varieties.—Artemis, Dorothy York, Lady M. Boscawen, Mabel Cowan, and Princess Mary* seed fairly freely; Beauty is a shy seeder; these I have not tried as pollen parents. Great Warley is freely fertile both ♀ and ♂. Lucifer seeds very freely, but its pollen is infertile. Blackwell and Lulworth are only moderately fertile, both ♀ and ♂ with me and others; with some, Blackwell is quite barren, and, again, some find it a fairly free seeder (being an early variety, this varying experience is probably due to climate). Will Scarlett is a very shy seeder, and C. J. Backhouse has never set seed with me, but both these varieties have good pollen. Gloria Mundi is quite infertile ♀ and ♂. Sir Watkin has never set seed with me (15 crosses), but others have found it fertile, both as seed and pollen parent, and with some it seeds freely.

The Leedsii Section.—Lilian, White Lady, and White Wings are free seeders; Mrs. Langtry and White Queen are shy seeders; I have not tried these five as pollen parents. M.M. de Graaf is a very shy seeder, and its pollen is infertile. Beatrice and Gem do not set seed, but have moderately fertile pollen. Minnie Hume is an uncertain variety, seeding freely some years and quite infertile others.

The Barrii Section.—Albatross, Dorothy E. Wemyss, Flora Wilson, and Mrs. C. Bowley* seed freely, and the latter is also a good pollen parent. Crown Prince and Seagull are shy seeders. Barrii conspicuus and M. de Vilmorin are quite infertile ♀ and ♂.

The Burbidgei, Englehearth, and Bernardii Sections.—These varieties are said to be generally good seeders. I have only tried a few. Beacon, Blood Orange, and Southern Star seed fairly freely, but, on the other hand, Firebrand, John Bain, Rosalind, and Sequin are shy seeders. Firebrand is the only one I have tried as pollen parent, and it is fertile, but very slightly. Incognita is fertile, both ♀ and ♂. Bernardii H. E. Buxton has proved infertile ♀ and ♂ with me so far, but I have only tried it one year. Johnstonii Queen of Spain and N. odorus are quite infertile ♀ and ♂. Nelsonii Major has seeded with me with pollen of Triandrus calathinus; its pollen is quite infertile.

Varieties of Poeticus.—I have found all the Poeticus varieties free seeders and good pollen parents (and Mr. Chapman, who grows most of the new varieties, confirms this), except P. grandiflorus, which has never seeded with me (14 crosses), but its pollen is fairly good.

Narcissus Species, &c.—Triandrus albus and calathinus seed freely, and have very fertile pollen; Cyclamineus, Jonquil, and Corbularia Clusii are fairly fertile ♀ and ♂, and Corbularia conspicua is shy. This refers to when they are crossed with Daffodil varieties; they all seed freely with their own pollen. *A. J. Bliss.*

CROCUSES IN A LONDON PARK.

The illustration at fig. 101 shows the beautiful effect that is obtained by planting bulbous plants on grass slopes or dales in the more secluded spots of a public garden or park. It represents a waterside slope in one of the London public parks, planted with Crocuses in batches of one colour, including purple, yellow, rose and white. The large breadths of these flowers seen in Regent's Park in spring time are always a popular feature. Unfortunately the flowering period is short, especially when several warm days succeed at the time they are in bloom. The worst enemy of the Crocus in town gardens is the sparrow, which seems to have a preference for the yellow blooms. Black cotton intertwined and kept in position by short sticks serves to ward off their attacks somewhat; the sticks should be neat and thin, in order that they may not be obtrusive. A system of planting Crocuses in grass to be recommended is to place them in separate batches of one colour around the base of a tree. *A. J. Hartless.*

VEGETABLES.

FORCED EDIBLE PEAS.

In order to be successful in the cultivation of Peas under glass it requires a little more than ordinary care. This is especially the case if pods are required for picking early in April. I am not referring to those grown early in Guernsey under conditions so much more favourable to them, but those required from the various gardens in England in either town or country. The many varieties of Peas now on the market only add confusion to growers when a selection of what is best for a given purpose is required. It may appear strange, but it is none the less a fact, that some of the early varieties of Peas that are so desirable in the open are almost failures as regards profitable cropping when grown under glass. Peas of the Gradus type, of which there are several, and are so excellent for general cultivation in the open, are not satisfactory under glass, and after having tried a good many types, it is evident that some of them are more easily fertilised than others. Generally speaking, too, the dwarfed sorts with dark-leaved branches and short internodes are not so profitable or so easy to grow as those attaining a height of from 3 feet to 6 feet. Where Peas are grown in the same position in the soil under glass for several seasons in succession, some care is necessary as regards suitable food for sustaining the plants until such time as the pods are properly matured. Soil under glass lacks the silky texture that is so cheaply obtained in the open by the ameliorating influence of frost, rain, and winds, and even the modest earth worm assumes a bilious hue under his new conditions. With Peas under glass, as in the open, moisture plays a very important part, and in preparing the soil for sowing or planting from pots, which latter is the more economical, because the houses either contain late Tomatos or Chrysanthemums, and the Peas may conveniently be kept in the pots for eight to ten weeks in cold frames previous to setting out, we have found nothing so good as well-rotted hot-bed manure, supplemented by a little bone-meal and wood ashes. Of course, water plays a very important part in the successful management of Peas under glass, and only under cool, moist conditions of the soil can success be achieved. Previous to the flowering, after very bright days, a very light dewing with tepid water will do much good; also after the pods are set and swelling freely. Up to this stage quite cool treatment is necessary, or the internodes will be long, the flowers weak, and the crop a poor one. I have found it good practice to remove the growing point when the maximum number of pods are set. This concentrates the plant's energy on those remaining, and it is at this stage that more warmth may be given to hasten maturity. A light sprinkling of nitrate of potash or nitrate of soda may, with advantage, be given when the pods are swelling, just to give that glaucous bloom so much admired and which is a point in favour of better returns when placed upon the market. I am often at a loss to understand, apart from those grown entirely under glass, why more Peas are not raised early in the season for transferring into the open, because the system has so many advantages. Safety from birds, mice, and no fear of decaying seeds in cold, wet soils are reasons sufficient to encourage all who are anxious to obtain this excellent vegetable as early as possible. Peas raised in pots are robbed of a little luxuriance of growth early in the season. This is an advantage, as they are thrown earlier into bearing, which is the chief object aimed for. Neither is it always necessary to have the protection of walls, as is often thought. Plenty of twiggy shoots and a soil not too rich in organic remains will be found to suit Peas for early use; also a fairly consolidated soil if it is naturally of a

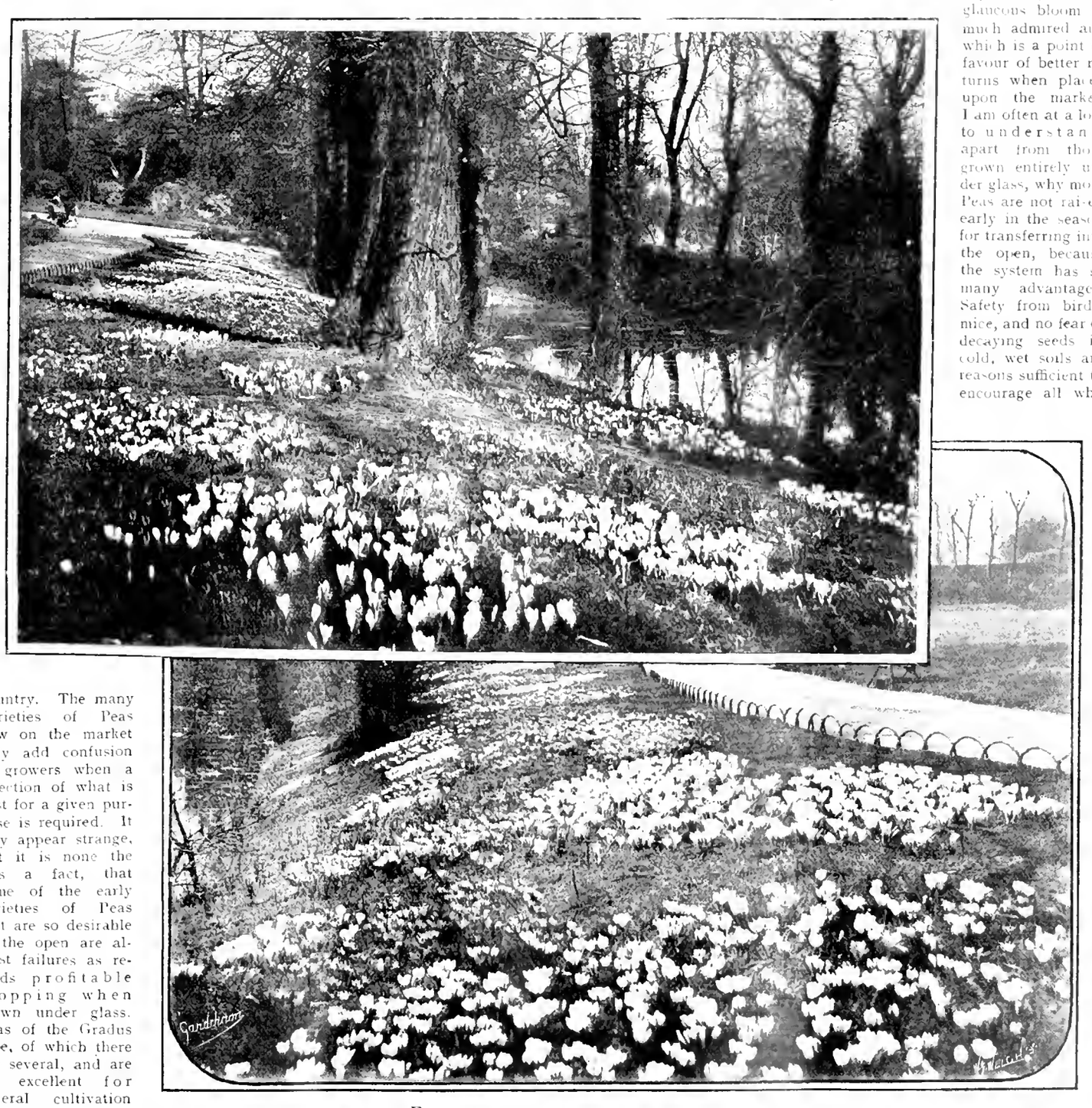

Fig. 101.—Crocuses in Waterlow Park, London.

light, sandy character. Amongst the most prolific varieties for growing inside are Duchess of York, Duke of York, Telegraph, the dwarfer stock of Duke of Albany, Thomas Laxton, Ideal, Empress of India, and May Queen (if objection is not taken to a pale pod). The round-seeded varieties like William I., The Pilot, a pod as large as a Marrowfat, or Bountiful fill well, and of the dwarfer type, Little Marvel is very reliable. *Charles Foster, University College, Reading.*

The Week's Work.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Newly-planted vines.—Upon each young vine it will be necessary to select a suitable leading shoot to form the foundation of a permanent rod. This should be carefully trained to a Bamboo cane or similar support, and which can be secured in position on the trellis for this purpose. When these growths have grown to a length of about 3 feet, varying more or less according to their strength, they should be stopped, and all the lateral shoots must be stopped after the first leaf, the principal leaves being carefully preserved. This will cause the shoots to strengthen and thus develop their buds. After stopping the main shoot, let another shoot be selected from the top of the shoot thus stopped. This secondary leading shoot may be allowed to grow until it reaches the top of the house. These shoots will be cut off at the winter pruning, but in the meantime they may be allowed to make a few lateral growths, as the presence of these will stimulate root action. Care must be taken not to overcrowd these lateral shoots. Vines which have been planted one or two years will need similar treatment as regards training to that I have just described, as also will young rods which are being raised for replacing exhausted canes of old vines. By removing old rods and allowing the plants to develop young canes increased vigour may be easily imparted to old vines. The amount of crop that young vines which have been planted one or more years should be allowed to ripen will depend on the vigour of the individual plants. Give close attention to the ventilation of the house and endeavour in every way to encourage short-jointed growths. No root stimulants will be needed at present if the borders have been properly constructed.

Fig trees in pots.—Upon trees started at about the end of November the fruit will be approaching its final swelling. Afford the roots a top-dressing of loam and manure and apply plentiful supplies of liquid manure, which should be made tepid before use. Syringe the trees thoroughly twice a day in bright weather, and if thrip or brown scale insects should appear, carefully sponge the leaves with soapy water. When the fruits show signs of ripening expose them as fully as possible to the influence of the sun, and thin out and stop the shoots as may be necessary to admit sufficient light. Increase the amount of ventilation in favourable weather, and leave the ventilators open a little during the whole of the night. Less atmospheric moisture will be needed at that stage, but it should not be decreased sufficiently to affect the health of the trees or the development of the second crop of fruits. Let the temperature at night be 65°.

Melons in frames.—Melons may be satisfactorily grown in frames or pits during summer. Preparations for growing them in this manner should be made at the present time. Fermenting materials should be collected and made into beds in the same manner as was described on p. 156 for Cucumbers. Place thin turves over the hot-bed and build a firm ridge on the turves, forming the ridge of stiff loam, with some crushed mortar rubble, leaf-mould, or wood ashes mixed with it, and a little dry soot. This bed should be formed rather nearer the back than the front of the frame. Raise the necessary number of plants in small pots, and when the heat of the hot-bed has declined to 80° or 85° plant them on the ridge, putting two plants under each light at equal distances apart. Stop the plants at the third rough leaf and train two shoots from each plant, one towards the front and the other to the back of the pit, stopping these when they reach the limit of the pit. Ventilate the frames carefully upon sunny days and close the ventilators early in the afternoon, at which time the plants and surface of the bed should be syringed with tepid water. Protect the frames at night with a covering of mats.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Chrysanthemums.—Plants which are cultivated for supplying large blooms should now be ready for re-potting into pots 6 inches in diameter. Employ a slightly heavier compost than that which was used at the last potting. It may be formed of fibrous loam, leaf-mould, lime-rubble, wood ashes, sand, and horse-dung. This latter should be used in the same condition as it is prepared for a Mushroom bed. A sprinkling of bonemeal may also be added to the compost. Care should be taken to see that the plants have formed roots which reach the sides of the pots before they are re-potted. After the re-potting has been done, place the plants in an unheated frame containing an ash bottom; pay careful attention to ventilation, and prevent cold draughts from reaching the plants. Syringing may be done each morning and afternoon in bright weather. If the presence of green-fly can be detected, let the plants be dipped into extract of quassia. During the present month attention should be given to pinching and stopping the shoots for securing second crown blooms, but no definite dates can be given for doing this, as it has been proved again and again that locality-method cultivation and nature of soil have a very wide influence on this matter. When a plant has been recently stopped, rather less water should be given the roots until growth has recommenced. Pinching and potting should not be carried out at the same time, because each operation causes a check to the plant. Before re-potting a plant the roots should be examined to see that the soil is in a medium state of moisture, because it is inadvisable to apply water for a period of two or three days immediately following the process of re-potting. When placing the plants in the frame it will be necessary to see that the tops will be near to the glass, and also that there is sufficient space left between the plants. Each specimen should be turned round towards the sun once a week. Attention to these minor details, and especially to securing the buds at the proper date for each variety is necessary if a large measure of success is to be attained. For guidance another season, a record should be taken of the dates on which all the operations I have mentioned were carried out in the case of each variety, and notes made of the effects, whether good or bad. If dull weather should occur during the time the plants are in the unheated frames they may suffer an attack of mildew, in which case the foliage should be dusted with flowers of sulphur.

Rondeletia speciosa.—This is a most useful species for flowering in the stove in autumn and winter. It succeeds well if trained on a wall or on the roof, continuing to flower freely if kept growing in an upright position. If it is required for forming a specimen plant on a balloon-shaped trellis, the shoots should be started from the base slightly on the incline, always training them upwards, as if allowed to hang with their shoots pointing downwards they cease to flower and sometimes die back to an upright joint. The species succeeds well in a compost consisting of loam, peat and sand in equal parts. Use clean pots, provide them with liberal drainage, and in the process of potting make the compost very firm.

Statice profusa.—This plant is now starting into growth, and the stock may be increased by layering the growths, as is done in the case of Carnations. Use a compost of loam, peat, and silver sand, and press this material firmly about the layer. Roots will soon be formed, and the layers may then be severed and potted into small pots, using rather more peat than loam. They should be afforded a heat of 65° until they are freely growing. Remove all flower-spikes and encourage growth in every way possible. Old plants may be given liberal dressings of artificial manure during the season of growth, and the flower-spikes should be picked off until the plants are needed to bloom. These old plants need a cool atmosphere, but should be shaded from bright sunshine.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Bandstands.—While many people maintain that bandstands are abominations in parks, and that they frequently mar the music more than aid it, these structures have come to be recognised as part of the necessary equipment, and have to be studied accordingly. It must be admitted, however, that many of them seen in public parks are inartistic in design and inharmonious with their surroundings. When it has been decided to erect one, the first point for consideration is that of the selection of the most suitable site available for the purpose, but, unfortunately, bandstands are by some garden architects made too much a special feature in park designs. For instance, a bandstand is sometimes placed at the intersection of cross-roads, where its utility is impaired by the noise of the passing traffic, which seriously interferes with the enjoyment of those who wish to listen to the music. At another time it is set on an eminence and, although it may be an architectural feature in such a position, it is useless for the special purpose such structures are erected. The presence even of a moderate wind is sufficient to destroy the effects of the finer passages of the music, and the listeners are subjected to discomfort in unfavourable weather. I have personal experience of several examples such as I have described.

The best position.—No hard-and-fast rule can be laid down, as local circumstances must to a great extent govern the situation. The nearest approach to an ideal site suitable for this country, in which the climate is proverbially variable, is that afforded by a fairly open grass-covered space, a sufficient distance away from the stream of traffic, and which will accommodate an audience amounting to 10,000 persons. One in a natural depression, from which the ground rises on all sides, and is surrounded with a border or belt of trees and shrubs. A natural amphitheatre of this description provides the necessary shelter and quietness, and affords the audience an opportunity of seeing the performers as well as hearing the music. Where the situation lends itself for the placing of a bandstand in a position where, while serving its primary purpose, it will also form a feature of some value in the park architecture, the opportunity need not be thrown away, though it may prove to be a somewhat costly form of park adornment, and is only to be recommended in cases where private individuals desire to make such a gift to a public garden.

The best form of bandstands.—Bandstands in this country are usually circular or octagonal in form, and have a roof supported by iron or wooden pillars. This canopied pattern is open on all sides, and possesses certain advantages. There is, however, another type which is very popular on the Continent, especially in Germany, which, for convenience, I call the "shell" pattern. We have two such structures in Glasgow, and many bandmasters and other musicians speak highly of their acoustic properties. They are somewhat more expensive to erect than the canopied stand, but they are also more suitable for certain situations. Were we Britons less conservative than we are, I think the shell pattern would be adopted in numerous cases. Whilst a bandstand ought always to be a structure of dignified appearance, excessive elaboration of detail and ornamentation is not to be recommended, and the painting should be carried out in subdued colours.

Music-stands.—Most bands carry with them music-stands, which are usually of a folding type, being made as light and portable as possible, but occasions arise when these are forgotten, or owing to some other reason fail to serve their purposes. We therefore undertake to equip each bandstand with music-stands designed so as to best meet our requirements. The stands have a flat, three-pointed, cast-iron base, in which a tubular stem is fixed, fitted with a thumbscrew. The music-board is attached to an iron rod, which is slipped into the tube, and can be raised or lowered to suit the musician. Spring clips are fitted on the board to keep the music sheets from being displaced by wind. These stands cost about 7s. 6d. each, but the short time they require in setting up, and the little space they need for storage, render them preferable to other patterns which we have tried.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire.

Trees and shrubs.—Any recently-planted trees and shrubs should be sprayed frequently with water during dry weather. This is better than applying excessive quantities of water to the roots, especially at this season, when the soil is cold. Examine all the specimens and see that they have proper supports, and that the ties are in a perfect condition.

Box edging.—These should now be trimmed by clipping them level with a pair of shears, making them the desired shape. If there are any gaps, these must be made good by planting fresh plants. Box does not thrive as an edging in all soils, therefore it is useful to remember that there are other plants that may be used for forming green edgings. These include Armeria maritima (common Thrift), Gentiana acaulis, and Saxifraga umbrosa, any one of which may be selected when it is found that it will thrive in a particular garden.

Grass verges.—These may now be trimmed with the edging iron, but care should be taken to use a line and measurement rod, it being unsafe to trust to the eye for maintaining parallel lines. Beat and roll the grass before commencing to cut it, and if the edging is out of condition in some places cut away the turf about a foot wide and move more turf forward to the line; the cuttings from other portions may be utilised to fill in behind the turf which has been brought forward to the line.

Hardy herbaceous plants.—Examine such species as Phlox, Aster, and Sunflower, which are in the habit of producing many more shoots than are desirable, it being necessary to remove a considerable number before they suffer injury from overcrowding.

Bedding Pelargoniums.—These may now safely be transferred to unheated frames for hardening off. Afford them protection at night by placing mats over the frames, and carefully ventilate the frames during the day. If sufficient stock has not already been raised, propagation may be still continued.

The rockery.—This portion of the garden will need to be made tidy before the plants make further growth. Fern fronds that were left to add to the appearance during winter may be cut off, and the surface soil stirred. A light top-dressing of leaf soil should be afforded. Many plants require frequent attention to keep them within proper bounds; such subjects as Saxifragas and Sedums should be allowed to grow in clumps extending to not more than a yard in diameter. Sometimes Lichens and Mosses spread quickly over the stones that form the rock garden, and their presence is not disagreeable, provided they do not encroach on the space allotted to the Alpine plants.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Oncidiums.—The species that flower in the spring and early summer, such as O. Marshallianum, O. olivaceum, O. Phalænopsis, O. microchilum, &c., are now developing flower spikes, and such plants as show signs of this should be afforded a moderate supply of water, until the plants cease to flower. When that stage is passed, rather less will suffice for a time, as the plants will need a short rest before starting into growth again. The late summer and autumn-flowering kinds as O. varicosum, O. Forbesii, O. crispum, O. dasytyle, O. tigrinum, O. Mantinii, O. Gardneri, etc., having rested since they flowered last year, are now making new growths. They will soon push forth young roots from their base, and when these are observed any re-potting or top-dressing that may be necessary should be given immediate attention. A suitable rooting medium for these plants is one consisting of equal parts Polypodium fibre, Osmunda fibre, and sphagnum-moss, all these materials being chopped up and mixed well together. Let the pots be well drained, make the compost moderately firm about the roots of the plants, and surface with clean sphagnum-moss. These Oncidiums are all inmates of the cool-intermediate house, and are best grown in pans suspended from the roof. Great care must be exercised in watering the roots during their early stages of growth, otherwise the new growths will sometimes damp off. Later on, when the plants are rooting freely and developing pseudo-bulbs they may be given a plentiful supply of water, and the foliage may be freely syringed during favourable weather. O. ornithorhyncum also thrives well in a cool intermediate temperature. Afford these plants fresh rooting material if necessary as soon as the new growths are a few inches high and are about to produce their thread-like roots.

Dwarf-growing Lælias.—L. prestans, L. pumila, and L. Dayana are easily cultivated and free-flowering species. The plants should be grown in small, shallow pans suspended in the cool intermediate house, where plenty of sunlight can reach them. The season has arrived when the plants show renewed activity, and any necessary re-potting or top-dressing should be carried out forthwith. My remarks in a recent calendar on the preparation of a compost for Cattleyas and the operation of potting them will apply to these plants. It is always well to bear in mind that newly-potted plants are best accommodated on the stage for a time, where they can be afforded shade, and be frequently sprayed over and damped between, this treatment helping them to re-establish themselves.

Lælia Jongheana.—This species and its hybrids, Lælio-Cattleya Sunset, L. c. Olivia, L. c. Baroness Schroder, etc., form a very desirable section for making a display of flowers during the spring months. As these plants produce their flowers on growths which are only partially developed, a plentiful supply of water to the roots should be given, even after the flowers are removed, until such time as the pseudo-bulbs are complete. Afterwards, while the plants are resting, give sufficient only to prevent shrivelling of the pseudo-bulbs, and keep the roots healthy. The best time to give these plants new rooting material is shortly after the flowering stage, when new roots are being produced from the last-made growths, treating them as advised above for other dwarf-growing Lælias. The plants grow best when suspended in a light position at the coolest end of the Cattleya-house.

THE KITCHEN GARDEN.

By E. Beckett, Gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, Hertfordshire.

Vegetable Marrows.—Seeds which were sown according to the directions previously given ought by now to have made good, sturdy plants, and be ready for planting out in their permanent quarters on very mild hot-beds. Such plants should yield good crops of fruit by the middle of next month, and these are sure to be appreciated when vegetables generally are none too plentiful. Keep the growths well pegged down, and early in the afternoon syringe the plants with tepid water and close the frames. Any vacant spaces in the greenhouse or cool orchard-houses may be well utilised by placing a few plants in 12-inch pots and training up the growths near the glass. Such varieties as Moore's Cream, Pen-y-byd and Perfection answer splendidly to this form of treatment. Make another sowing singly in small pots for furnishing successional supplies.

French Beans.—Little difficulty will now be experienced in securing a plentiful supply of these if the conditions are favourable. An intermediate-house will suit them well if the plants are elevated near to the glass. Feed them liberally with manure water, and syringe the under side of the foliage with clean, tepid water twice daily. Make one more sowing in 8 or 10-inch pots, and at the same time sow a few dozen seeds singly in 3-inch pots for raising plants to plant out in cold frames. These will be found extremely useful to form a connecting link between those cultivated in houses and those out-of-doors. Ne Plus Ultra and Canadian Wonder are two of the very best varieties for this purpose.

Mushrooms.—Successional beds may now be made up in the Mushroom-house, in caves, cellars, or any cool shed, or under the shade of a north wall. Failing any of these situations, choose a cool place in the open garden. Beds which are in bearing should not be unduly forced. Maintain the house at an even temperature of from 50° to 55°. The beds will continue to produce Mushrooms for a much greater length of time, and the quality of the Mushrooms will be much better than if they were forced more severely. Any beds which show signs of exhaustion will be much benefited if a good drenching of farmyard liquid is applied in a tepid state. The paths should be damped down also with manure water.

Winter Greens.—The main sowing should now be made on ground which has not previously been occupied for two years with any of the Brassica family. Choose an open site on ground which has not been freshly manured. The seed should be sown thinly broadcast on neatly-prepared beds; I much prefer this plan to sowing in drills. Where land is addicted to clubbing, give a thorough good dressing of finely-sifted cinder ashes, and net the seed beds securely against birds, the greenfinch especially having a particular liking for all Brassica seeds. Where garden mice abound, means must be taken to trap or destroy these.

Lettuces.—Continue to plant out any which have been raised and pricked out in boxes under glass. No better site can be found for them than the centre of the ridges between the Celery trenches. Sow seeds once a fortnight, selecting both Cabbage and Cos varieties to maintain a continuous supply.

Celery.—The principal and main sowings should now be ready for pricking off into skeleton frames, or a south border where slight protection can be afforded for a few days after the planting. Make the surface very firm, and prick out the seedlings, putting them at 3 inches apart all ways.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Apricot trees.—In northern districts such as this, it has not yet been necessary to examine the borders of wall trees owing to the frequent rains that have fallen. On light soils, however, especially in gardens where the walls are provided with fixed copings, it will now be necessary to apply a good soaking of water, assuming that the borders are perfectly drained. This is a very important matter in dry districts, and any newly planted trees will need extra care in this respect, failing which they would be liable to perish. Apply a mulch over the roots of all trees after water has been given, this being particularly necessary in cases where the trees have been worked upon shallow rooting stocks. Should the weather continue wet and cold, it may be necessary in certain districts to delay applying such mulches until a little later in the season. Keep a look-out for the Apricot maggot as soon as the trees pass out of flower, for at that stage they generally commence to feed upon the young leaves, which become rolled and twisted in consequence. Remove all the maggots by handpicking and burn them, or having found them in the leaves pinch the leaves between the finger and thumb, thus crushing the maggots.

Strawberries.—Take advantage of a dry day to clean the surface of the ground of all weeds and runners, after which it may be hoed over. Apply a dressing of soot and freshly slaked lime to destroy slugs, but do not coat the crowns with the soot and lime. The beds may afterwards be mulched with liquid from the stables. If the old beds have not been previously mulched with manure, apply a dressing of some chemical manure which contains a good proportion of potash. If it is intended to form fresh plantations by planting out Strawberries which have already been forced in the houses, such plants should first be hardened off carefully in frames. In the meantime they should be kept perfectly free from mildew and red spider. These early plants if treated properly may be depended upon to produce a moderate crop of fruits in the autumn, or if planted in frames they may be made to fruit in August. Later plants which have not been subjected to severe forcing are preferable for forming permanent beds.

Need for hoeing.—At this season of the year when the seeds of numerous weeds are at the point of germinating, an infinite amount of good may be effected by frequently stirring the surface soil with the hoe, as this will have the effect of preventing such seeds from growing. For purposes of aeration of the soil hoeing is likewise beneficial to the trees.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, APRIL 13—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, APRIL 14—
Royal Hort. Soc. Coms. meet. Brit. Gard. Assoc. Ex. Council meet. Nat. Rose Soc. Com. meet.

WEDNESDAY, APRIL 15—
Roy. Caledonian Hort. Soc.'s Spring Sh., in Waverley Market, Edinburgh (2 days). Kent, Surrey and Sussex Daffodil and Spring Fl. Soc. Sh. at Tunbridge Wells.

FRIDAY, APRIL 17—*Good Friday.*

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich = 46.8°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, April 8* (6 P.M.): Max. 57°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, April 9* (10 A.M.): Bar. 30; Temp. 49°; Weather—Fair.

PROVINCES. *Wednesday, April 8* (6 P.M.): Max. 52° Ireland S.; Min. 48° Lancaster.

SALES FOR THE ENSUING WEEK.

MONDAY—
Hardy Bulbs and Plants, Lilies, &c., at 12; Roses at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

TUESDAY—
Clearance Sale of Greenhouse Plants at The Gardens, Hedsor, Bucks., by order of Lord Boston, by Protheroe & Morris, at 1.

WEDNESDAY—
Herbaceous and Border Plants, Lilies, Hardy Bulbs, &c., at 11.30; Roses at 1.30; Palms, Azaleas, &c., at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

Ergot of Rye in Russia.

That the grains of many different grasses are frequently found attacked by the destructive fungoid disease known as ergot is a matter of common knowledge; but it is not so generally known that the ergot which attacks the Rye has become, especially of late years, such an important article of commerce as to produce in Russia alone an export article valued at nearly £17,000 in 1906.

Ergot is usually described in books on pharmaceutical subjects as the sclerotium, or resting stage of a fungus (Claviceps purpurea), found on the Rye, and the countries of production are given as Spain, Russia, and Germany. Ergot contains about 30 per cent. of a fixed oil, besides the alkaloid ergotinine, in the following proportion in the different kinds: Spanish about 0.3 per cent., and Russian and German about 0.2 per cent., and in addition sphacelinic acid. Although ergot contains poisonous principles, it is of valuable service in medicine.

Much interesting information on this peculiar product in Russia is given in the *Pharmaceutical Journal* for February 29 last, p. 247, from whence are gathered the following facts: Rye being the staple cereal of Russia, the annual crops are enormous, hence the very large quantity of ergot is produced. This is not the result of any effort in cultivation, for, on the contrary, everything possible is done to prevent its growth, it being regarded as a pest and a source of disease, from which many thousands of Russians fall victims during the periodical epidemics of ergotism that devastate the country, in consequence of the people feeding on ergotised Rye. It is said that sometimes as many as ten of these ergotised grains may be seen in one ear.

During the harvesting of the Rye quantities of the ripe ergots fall to the ground, where the spores germinate and freely infect the new crop of Rye. Rainy districts and wet seasons are favourable to the development of the ergot, and the size of the "horns," as they are called, depend to some extent on the size of the ear than on cultivated Rye, being much larger than those growing on a wild form.

The collection of the ergot is made during the harvest time, and the fungus is separated from the grains in the process of threshing. It is said that the question has been frequently raised in Russia as to whether it would be possible to separate the ergot from the Rye during the period of growth, not for the sake of keeping the ergot, but for destroying it, but nothing has hitherto been done in this direction. After the ergot is separated from the grain it is dried, but this is done in a very imperfect manner, being simply exposed to the air, the Russians having no system of artificial drying; consequently, if kept by the peasants for any time, it frequently becomes coated with a mould, when it is considered useless; the people, however, have some means of heating it with oil and then palm it off as fresh crop, which accounts for the fact that much ergot, which is apparently sound, is often destitute of any therapeutic value.

The chief Russian trading centres for ergot are Tomsk and Omsk, Siberia, and Viatka, Samara and Bessarabia. The peasants collect it in small parcels of about 36 lb. (English), which they sell to the local dealers, and the dealers, after amassing a supply of about five times this amount, bring it into town, where it is purchased by the pharmacists and exporters.

In addition to the palming off of old ergot as fresh, the exporters in the centre of Russia are not always to be trusted, since their samples are frequently not true indications of the bulk. It is only after the ergot has reached the large exporters at the seaports that the samples can be relied upon; further, it is difficult to buy a large quantity from one exporter only. Large quantities can only be obtained from the houses in towns like St. Petersburg, Riga, Libau, or Odessa.

The best ergot is obtained in South Russia, and though it is small, it contains more alkaloid than the larger Siberian kind.

The growth in the export of ergot from Russia has been increasing for some years past. In 1900 it amounted to about 45 tons, of the value of a little over £2,000. In 1902, 65 tons were exported, valued at £3,420. In 1905, 102 tons of the value of £3,788, and in 1906 the quantities and values had leaped to 215 tons, and the value to £16,900. The prices recently quoted for ergot at the London drug sales has been 11d. per pound for Spanish, and 10d. to 10½d. per pound for good Russian.

Referring to the prevalence of ergotism in Russia, it is stated that exact statistics are furnished showing the death rate, and the Russian Government is said to be fully alive to the perils arising from the presence of the fungus; but notwithstanding all the precautions, epidemics continue to rage from time to time. In 1854 an epidemic broke out in the Crimea among the soldiers, in 1862 in Finland, and in various Governments in 1865, 1872, 1879, and 1880. In 1888 there were many cases of ergotism in the Government of Poltava, where many people died, lost a hand or foot due to gangrene, or became paralysed for the rest of their lives; and since this date several severe epidemics have occurred. It has been suggested that as a preventive to these visitations, the Rye, together with the ergot, should be kept in a granary for a year, by which time the action of the ergot would be practically nil, and then only should the Rye be used. It is observed that this would be a difficult course to pursue, especially in years of famine.

OUR SUPPLEMENTARY ILLUSTRATION depicts a portion of an Australian garden with a water scene in the foreground, at Leura, the residence of T. H. PAYNE, Esq. The scene might be taken as almost typical of an English garden, except for the different character of the vegetation, but the view of the residence at fig. 102 with its broad verandah, is that of a style very common in the warmer Colonies. The gardens have been laid out in the methods common in England, and the gardener, Mr. JOHN W. BLACKBURN, who has been largely responsible for their design, was previously employed in some noted gardens in this country, including those at Scone Palace, Dalmeny Park, and Headford House, before journeying to Australia. The lake is surfaced with Nymphæas, whilst the clump of Papyrus (P. antiquorum) indicates the advantage in climate which these gardens possess over our own. The bank of stone work abutting on the water on the right hand of the picture is planted with Cactaceous plants. The circular Rose bed forms a fine setting to the broad lawn, and in the background is a belt of trees which includes many indigenous species and Palms. Several photographs, besides the two we reproduce, were kindly sent us by Mr. BLACKBURN, and in one of these is shown the kitchen garden, with the glasshouses. These include vineries, Orchid houses, and Melon pits, just as are usually provided in country establishments at home. Another illustrates a handsome conservatory in a setting of flower borders, with a profusion of ornamental shrubs and trees surrounding it. Mr. BLACKBURN, who went to Australia in 1890, has had the care of Leura Gardens since that date.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held in the Hall in Vincent Square, Westminster, on Tuesday, April 14. In addition to the usual exhibits, there will be a special exhibition of Narcissus, for which Messrs. BARR & SONS' silver vase and other prizes are offered. At 3 p.m. a lecture on "Hardy Cacti and other Succulents" will be delivered by Mr. E. A. BOWLES, M.A., F.L.S.

The Surveyors' Institute.—The next ordinary general meeting will be held on Monday, April 27, at 4 p.m., being the second of the two afternoon meetings arranged for the convenience of the country members, when a paper by Mr. Kenneth J. J. Mackenzie (Associate), Lecturer on Agriculture, Cambridge University, entitled "The Agricultural Education of the Land Surveyor," will be read. The Council have accepted an invitation from the Kent Provincial Committee to hold the next country meeting at Dover on May 21 and 22. Arrangements have been made for visits to various works and places of interest, including the harbour works and the castle. The following excursions have also been arranged: (1) to Calais and Boulogne, returning to London via Folkestone; (2) to Canterbury Cathedral and Chatham Dockyard.

English-Grown Shrubs for Germany.—Messrs. Smith & Sons, Darley Dale Nurseries, have despatched 1,500 specimen shrubs to Potsdam, where they will be planted in the grounds about the Emperor of Germany's Palace. Messrs. Smith & Sons' business was founded more than a century ago. The present owners represent the fourth generation of the family.

The Railway Conference.—We understand that the President of the Board of Trade has appointed Mr. E. W. Berry, fruit-grower, Faversham, to serve on the Sub-committee of the Railway Conference which is considering the question of rates and other matters connected with transport.

Royal Meteorological Society.—An ordinary meeting will be held at the Institution of Civil Engineers, Great George Street, Westminster, S.W., on Wednesday, April 15, at 7.30 p.m. Papers to be read: (1) "Report on the Phenological Observations for 1907," by Mr. Edward Mawley; (2) "The Anticyclonic Belt of the Southern Hemisphere," by Colonel H. E. Rawson, C.B., R.E., F.R.Met.Soc.

The Imperial Russian Horticultural Society.—On February 21 of the present year a festival in commemoration of the fiftieth year of its existence was held by this society in St. Petersburg, numerous distinguished guests, honorary members, and members being present. Among the honorary members are H. Hermann Holzer, and Court Gardener Katzer, both of whom were present at the foundation of the society 50 years ago. The latter gentleman was not present at the Jubilee festival, as, owing to his great age, he was unable to journey from Zarskojo-Selo. To mark the fiftieth year of the society's existence, it is intended to hold an exclusively Russian Horticultural Exhibition in St. Petersburg, from May 9 to 22 of the present year.

Insurance against Damage by Hailstorms.—The 13th annual general meeting of the Nurserymen, Market Gardeners' and General Hailstorm Insurance Corporation, Ltd., was held at 41 and 42, King Street, Covent Garden, on Friday, 3rd inst. The accounts showed an increase in the year, both as regards premium income and interest, as the year had been peculiarly free from hailstorms. During the 13 years of the society's existence, the premium income has increased from £681 1s. 9d. to £2,476 13s. 10d. A dividend of 7½ per cent. and a bonus of 2½ per cent. was declared, and £1,500 added to the reserve fund, which now stands at £13,500. The invested funds amount to £23,969 0s. 7d. The area of glass now insured amounts to more than 35,500,000 square feet.

Fig. 102.—"Leura," the residence of T. H. Payne, Esq., at Toorak, near Melbourne, Australia.
(See also Supplementary Illustration.)

Midland Daffodil Society.—This society's exhibition will be held, as usual, in the Botanical Gardens, at Edgbaston, near Birmingham, on April 23 and 24. The prize money amounts to about £175, and classes are provided for flowers other than Narcissi, so that a good show may be expected. The most important class is one for a collection of 50 varieties of Daffodils, excluding those of the Polyanthus section. In addition to quality of the flowers, the judges will be influenced in their decision by correct nomenclature and taste in arrangement. The "Bourne" Memorial Challenge Cup is offered for the best group of 12 distinct varieties of Daffodils raised by the exhibitor. The schedule contains 53 classes, and these include many for amateurs only. Several have been added for the newer varieties of Daffodils, in order to encourage the raising of seedlings. The hon. secretaries are Rev. Joseph Jacob, M.A., Whitewell Rectory, Whitchurch, Salop, and Mr. Herbert Smith, 22, Tenby Street North, Birmingham.

PRESENTATION AT VICTORIA PARK.—Mr. R. J. GILES, late foreman of this park, has been appointed superintendent of Myatts Fields, Camberwell, and on March 30 his late fellow-employés presented him with a marble clock. Mr. J. W. MOORMAN, superintendent, in making the presentation, referred to the abilities of Mr. GILES and to the good feeling that had existed between him and the staff and stated that he himself had his first management under the London County Council at Myatts Fields.

LEAF-FALL AND TEMPERATURE.—The effect of temperature in connection with leaf-fall is well shown by an illustration which appeared in *Die Gartenwelt* some weeks ago. The illustration was from a photograph of a number of Pavia trees planted along a road-side, and was taken in November last. The trees had all completely lost their leaves, except those branches which were near the street lamps, and these still retained their foliage. The trees formed a striking object-lesson on the effect of night temperatures in accelerating leaf-fall, for, of course, during the daytime the lamps were not alight. The converse is seen when a branch of an outside vine is trained into a greenhouse or vinery—as is well known. The leaves appear on such a branch long before they unfold in the parts growing in the open air.

PLANTS AND COAST EROSION.—The problem of coast erosion is one that appeals to all inhabitants of a sandy or muddy littoral. An article by Dr. STAPF has recently appeared in the *Gardeners' Chronicle* (January 18, p. 33) dealing with this matter, and explaining the use of species of Spartina in binding and consolidating the foreshore. We read in the *Journal of the Board of Agriculture of British Guiana*, that another species, Spartina braziliensis, has been used for preventing erosion on certain littoral estates in that country with great success. The grass is planted in rows 6 feet apart and 2 feet in the rows. The plants flourish and soon meet, forming dense patches, which root deeply and firmly. Even if they are covered by mud washed over them, they soon make their way through it again. On the estate in question, as soon as the grass is firmly established, Mangrove seedlings are planted in it, and ultimately form dense thickets that effectually prevent further erosion.

PICTURE EXHIBITION (see also p. 237).—Mr. HERBERT OLIVIER'S exhibition at the Grafton Galleries, which will be open until April 14, is well worth a visit. The collection comprises some striking portraits, charming pictures of the picturesque gardens at Kew, and some sketches of various places in Italy. The collection of portraits of princes of Central India is a most interesting one, the quiet dignity of the faces contrasting so quaintly with the masses of marvellous gems, almost barbaric in their splendour. The collection has been painted for the Daly College in India, where they will be hung in the Great Hall. The pictures of Kew Gardens, which will form the illustration to a book that has been compiled by some of the staff, contain some delightful sketches. It is hard among so many attractive pictures to pick out any as being most attractive, but No. 98, "Bluebells," the subject of which is wild Hyacinths lit up by sunlight filtering through branches of trees, was certainly one of the gems of the collection. Mr. OLIVIER also exhibits some sketches and pictures of various parts of Italy. We delighted in No. 129, an Ilex, near Netuno, which is beautiful in its breadth and simplicity, and, we may add, deserves a better position than has been allotted to it in the exhibition.

INTERNATIONAL SHOW AT NANCY.—Horticulture is to be fully represented at the International Exhibition of the East of France, to be held at Nancy from May to October in 1909. The horticultural section will comprise a show which will remain on view during the whole period of the exhibition, and also a number of separate shows to be held during the months of May—September. Those who desire to exhibit in the permanent section are requested to apply before July 1st, 1908, if they require to utilise the space this year, and before November 1 if they desire to commence operations next year. They are asked to state the nature of the exhibits they propose to offer. Those desiring to exhibit at the ordinary shows, of which four or five will be held, each lasting four days, are requested to apply to the Direction Generale, Nancy, six weeks before the show at which they wish to exhibit.

THE FELLOW'S "IVORY."—At fig. 103 we have illustrated a "tally," which was formerly employed by the Royal Horticultural Society in place of the tickets which are now issued annually to the Fellows. This "tally" was recently unearthed in the kitchen garden at Brookfield, near Arundel, where it has probably been buried for nearly half a century. It is inscribed with the name of JOHN HALBY, and in order to determine the period at which this gentleman was a Fellow of the Horticultural Society we communicated with the Rev. W. WILKS, who has courteously supplied us with the information that, on reference to

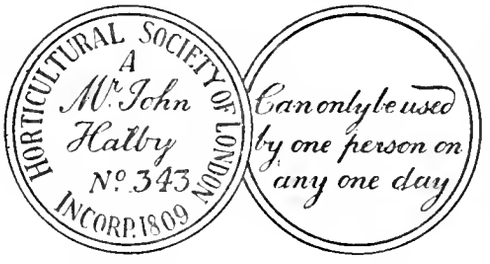

FIG. 103.—"TALLY" ISSUED BY THE HORTICULTURAL SOCIETY OF LONDON.

the society's books, he found that Mr. HALBY ceased to be a Fellow in 1863, therefore this particular "tally" must have been issued earlier than that year, and probably about the year 1853. It was made of ivory, and used to pass by the name of "The Fellow's Ivory." For the opportunity of figuring this interesting relic of the Royal Horticultural Society, we are indebted to Mr. F. KING, the gardener at Brookfield, who sent us the "ivory" for the purpose. Mr. KING states that "the present owner of Brookfield, EDW. CARLTON HOLMES, Esq., is in his 90th year, and his father resided at Brookfield before him. The gardeners at that residence can be traced back for nearly a century, one, TAPNER by name, being there for more than 50 years, but no one of the name of HALBY has been traced."

ORCHID SALE AT GHENT.—The sale of the collection of Orchids formed by the late Marquis DE WAVRIN is announced to take place at Ghent during the Ghent Quinquennial Show week, the dates being fixed for Monday, April 27, Tuesday, 28, and Wednesday, 29, at the Salle des Ventes. The collection is one of the richest and most varied in Belgium, and includes a selection of fine white Cattleyas, which is one of the most complete in existence; a remarkable display of these flowers was made from this collection at the last Ghent Quinquennial Exhibition. Varieties of the showy, large-flowered Cattleyas, Lælias, and Lælio-Cattleyas were special favourites with the late marquis, who also raised many good hybrids.

VIOLETS IN FRAMES.—On p. 217 in the last issue we stated that Violets of excellent quality had been sent us by Mr. STOKES, of Cokethorpe Park Gardens, Witney, Oxon, who has since obligingly furnished us with the following particulars of his method of cultivating these flowers:—"At the end of April a fresh start is made for the following season's blooming. The old plants are taken from the ground and pulled apart, the strongest and best rooted crowns being selected for the new stock, and all old and central crowns discarded. The crowns are planted 12 inches apart each way in their summer quarters, choosing a site facing to the north-west, the soil having been previously well dug and enriched with a moderate dressing of rotted stable manure. After planting, the young plants receive a copious watering, and for some days they are shaded during bright sunshine. Attention is given the plants throughout the summer, the work of hoeing, weeding, watering and the removal of useless runners being carefully performed. Should red spider attack the plants, they are syringed occasionally with soot water, the best time for the operation being late in the afternoon. Towards the end of September the plants are lifted and placed in cold frames facing to the south. These frames are used for the culture of Cucumbers, and all that is necessary is to place a few inches of fresh soil in them before planting the Violets. The plants are well pressed in the soil, and afterwards watered. The lights are kept closed for a few days, but after the plants are established an abundance of ventilation is given on every favourable opportunity throughout the winter. Care is taken to exclude frost and fog. Very little water is given during short, dull days in winter, and in this matter the exercise of discretion is necessary."

POTATO SCAB AND LEGISLATION.—A deputation of the National Fruit Growers' Federation have attended at the Board of Agriculture on the subject of the "black scab" disease of Potatos. The Federation desires that this pest be made a notifiable disease under the Destructive Insects and Pests Act, 1907, with the object of enabling the Board of Agriculture to ascertain at once the exact areas at present affected. Also that where the disease is known to exist on any farm or holding, it shall be illegal for the grower to sell any Potatos until the same shall have been examined by an inspector from the Board of Agriculture, or other duly qualified person; and that all tubers found to be diseased by black scab shall be destroyed, the grower to be compensated for the same up to half their value, such compensation to be paid from the Treasury funds. Further that within a period of seven years every grower who plants Potatos in ground where the disease has previously existed shall be required, before offering the crop for sale, or allowing it to be removed, to possess a certificate from the Board of Agriculture certifying that the same is free from the disease. It is desired that no restrictions be placed upon the growing of Mangel or Beetroot on land contaminated with the black scab disease of Potatos. In view of certain statements that have been made, the Board of Agriculture is requested to investigate as to whether the disease is being introduced into this country by means of imported tubers. As a result of the interview, the Board of Agriculture has invited a deputation of Potato growers and other persons interested in the matter to attend the Board's offices at an early date, and discuss the question of the measures to be taken. Further particulars may be obtained from the Secretary to the National Fruit Growers' Federation, Royal Horticultural Hall, Vincent Square, Westminster.

BRITISH GARDENERS' ASSOCIATION.—We are informed that a public meeting will be held at the Eccles Rooms, Station Road, Blackburn, on Wednesday, April 15, at 7.30 p.m., when a delegate from the Executive Council will deliver an address, with a view to forming a new branch of the Association.

FORESTRY IN SCOTLAND.—Considerable interest is being aroused in arboricultural circles in Scotland over the Royal Scottish Arboricultural Society's forthcoming Forestry Exhibition at Aberdeen in connection with the Highland and Agricultural Society's show from July 21 to 24. The committee has issued a schedule inviting members and others interested to offer exhibits for approval. The exhibits required are:—Specimens illustrating the rate of growth of trees, together with a statement of their age and crop per acre; specimens of any abnormal growth of trees; different kinds of wood; pitwood and railway timber; examples of turf or soil, illustrating the advantages of pasturing woodland or waste land by stock previous to planting; plants, trees, and timber damaged by storms, frosts, insects, animals, birds or other causes, and specimens of insects, animals, birds, or fungi which caused the damage; plants with rootlets, showing the results of various methods of transplanting; tools and implements—home and foreign—used in various operations connected with forestry, with their prices; working plans, maps, and diagrams, giving details of management; seeds of various kinds of forest trees, with description of methods of collection and extraction: cones and foliage of different kinds of Conifers; pictures and photographs connected with forestry; general forest literature, and anything else of interest relating to forestry. The entries must reach the hon. secretary, Mr. ROBERT SCOTT, solicitor, 75, Union Street, Aberdeen, not later than May 30.

Publications Received.—*The First Book of Farming*, by Charles L. Goodrich. Published by Archibald Constable & Co.—*Quarterly Journal of Forestry for April.* Published by Simpkin, Marshall, Kent & Co.—*Colour in the Flower Garden*, by Gertrude Jekyll. Published by George Newnes.—*Essex Education Committee—Higher Education Report for 1907. Some new cases of Mendelian inheritance (with four figures)*, by George Harrison Shull.—*Importance of the Mutation Theory in Practical Breeding*, by George Harrison Shull. Both reprinted from Proceedings American Breeders' Association.—*The Complete Farmer: Soils, their Nature, and Treatment*, by Primrose McConnell. Published by Cassell & Co., Ltd.—*Cassell's A B C of Gardening.* An illustrated encyclopædia of practical horticulture, by Walter P. Wright. Published by Cassell & Co., Ltd.—*The Horticultural College, Swanley, Kent.* Syllabus of Work, January, 1908.—*A Plant Book for Schools*, by Otto V. Darbishire. Published by Adam and Charles Black.—*Contributions to the Flora of British New Guinea*, by F. Manson Bailey, F.L.S., Colonial Botanist. Extracted from the *Queensland Agricultural Journal*, vol xix., part 5, November, 1907.—*The Germination of Vegetable Seeds*, by Edgar Brown, Botanist in charge of Seed Laboratory, and Willard L. Goss, Assistant, Seed Laboratory, being a pamphlet issued March 7, 1908, by the United States Department of Agriculture.—*The Botanical History and Classification of Alfalfa*, by Carl S. Scofield, Agriculturist in charge of Western Agricultural Extension Investigations, being a pamphlet issued March 14, 1908, by the United States Department of Agriculture.—*Apple Leaf-spot caused by Sphaeropsis malorum*, by W. M. Scott, Pathologist, and James B. Rorer, Assistant Pathologist, Investigations of Diseases of Fruits. Pamphlet issued March 12, 1908, by the United States Department of Agriculture.—*The Nut Weevils*, by F. H. Chittenden, Sc.D., Entomologist in charge of Breeding Experiments (Circular No. 99). Issued March 6, 1908. Reprinted from the *Year-Book of the Department of Agriculture* (American) for 1904, pp. 299-310, pls. xxviii.-xxx, text figs. 17-26.—*Market Classes and Grades of Horses and Mules* (Bulletin No. 122), by Rufus C. Obrecht, and *Variety Tests of Wheat* (Bulletin No. 121), by Albert N. Hume, O. D. Center, and Leonard Hegnauer, both from the University of Illinois Agricultural Experiment Station.

NOTICES OF BOOKS.

* THE ART OF LANDSCAPE GARDENING.

THIS book is a reprint of some of the writings of Humphry Repton, who practised landscape gardening in England about a hundred years ago. His writings collectively form a series of works on the principles of landscape gardening, such as had never previously been attempted, and never since have they been equalled, notwithstanding the abundant literature on the subject.

He wrote mainly about the principles of what may be termed broad landscape gardening as applied to parks and areas of great extent, and distinct from the "landscape gardening" of present-day writers, who confine themselves to the mere laying out of a garden and the immediate surroundings of a residence.

This reprint, we are told in the preface to the book before us, is intended to commence "a series of classics in landscape architecture which has been undertaken at the suggestion and with the co-operation of the American Society of Landscape Architects," and is edited by John Nolen, A.M., a member of the American Society of Landscape Architects.

It was a wise choice of the society to commence the projected series with a reprint of Repton's *Theory and Practice of Landscape Gardening*, published first in 1803, and his *Sketches and Hints on Landscape Gardening*, published in 1794, as these are two of his best works, and together with his *Fragments of the Theory of the Art of Landscape Gardening*, published in 1816, and *An Inquiry into the Changes of Taste in Landscape Gardening*, published in 1806, constitute a classic of the art.

Since Repton no writer has dealt so thoroughly with the purely theoretical aspect of the subject in such an original way, though he has often been copied, and even during his day he speaks of his many imitators in practice.

This American reprint is the more welcome as Repton's books are more or less rare, for though Loudon published in 1838 a reprint of the four works mentioned, even this work is only to be met with occasionally among second-hand books. Now this compact volume brings two of the works within the range of everyone.

These two, the *Theory and Practice* and *Sketches and Hints*, provide intellectual food for students of the subject, written in the lucid, pure English that characterised the writers of that period.

He who has no previous acquaintance with one author will doubtless contrast the difference between Repton's discourses on the art and the recent treatises on landscape gardening. For the latter, taken generally, deal only with those narrower details of garden design, which for Repton merely formed the embroidery of the principles he did his utmost to expound. Repton mainly dealt with square miles, while modern writers deal with rods and acres.

We can now appreciate the work of such men as Repton, for we see around us the many beautiful gardens and parks with the mature growth of a century, and which are the glory of rural England. We have only to reflect upon the beauties of such places as Cobham, Welbeck, Thoresby, Holkham, Glevering, and many others that Repton transformed, to recognise in him an artist of rare ability and genius. We appreciate now the mind of the man who so accurately anticipated the future effect of his work, for he well knew, as all do who work in the same direction, that it is only after two or three generations that the mature effect of garden and park scenery can be seen.

Indeed, Repton says in one of his works that the landscape gardener is at a great disadvantage in the practice of his art as compared with the architect who can show on plans the full effects of his buildings which in the course of a few months or years can be seen in reality, whereas the landscape gardener obviously can only imagine the picture he aims at producing after a long lapse of time when the tree growth has matured.

But, he goes on to say, that as soon as the architect has completed his work the fabric begins to decay, whereas from the completion of the planter's work every year marks a stage towards the realisation of his anticipated landscape scene.

In the study of Repton's writings one must necessarily make allowance for the difference between the conditions existing in his day, which may be termed the dawn of English landscape gardening, and those of the present time, for though the principles of the art always remain the same, there has been in the long interval a great change in what may be termed "fashion" or "taste."

In those early days the prevailing fashion was the formation of the grandiose style of residence surrounded by deer parks of great extent. The creation of these often necessitated the abolition of arable land, though this was the chief source of income. In these democratic days it is quite unlikely that the fashion will revive in such a small country as these islands, though in such a continent as America, with illimitable areas, the lordly ideas of Repton can be carried out in park and garden landscape, as indeed they are. In Repton's days what we now call ornamental gardening did not enter largely into the scheme of landscape gardening, for beyond the walled enclosures for fruit and vegetable growing, which were often of great extent, there was little of what we call the garden around the house. The residences were surrounded by parks with magnificent tree growth, and deer and cattle grazed under the windows of the house. Fashion and other circumstances have changed all this. Now it is a rare occurrence to hear of a large park being made, but the formation of gardens is more and more on the increase. Therefore those who take up Repton and think they will find in him a guide for the designing and making of gardens will be disappointed, for he ignored detail, particularly as regards the material, such as trees, shrubs, and plants, which form the essence of beautiful gardening.

Repton dealt only with broad principles, and on these he always wrote with a lofty ideal. The choosing of sites for houses was a matter that concerned him greatly, and he gives his reasons for the selection of particular sites. He always dealt with every place on its merits or peculiar circumstances of the situation and surrounding country, and these conditions obtain now as then except that now residences can be placed on hills owing to modern appliances for raising water.

The planning and laying out of roads, entrance lodges, and the formation of artificial lakes were matters of great concern with Repton. His lines of roads as exemplified in his plans were always sensible and graceful, though we should in many cases prefer the stately straight avenues of trees which he in some cases destroyed, in order to make his curved lines. His treatment of artificial water was always artistic, that is the artificiality was not apparent, and there are many park lakes and streams in this country made by him which one can scarcely realise to be artificial until the dam is seen.

But it was in the bold schemes of park and woodland planting that Repton appears to have excelled, and we enjoy to-day the result of his bold conception in the grand woodland scenes, as at Beaudesert, Bayham, Thoresby, Holkham, a few among many others of his works that have ripened into maturity during the past century. These magnificent examples of tree landscape gardening tend to elevate the art in

* *The Art of Landscape Gardening*, by Humphry Repton. Edited by John Nolen, A.M. Boston and New York: Houghton, Mifflin & Co. London: Archibald Constable & Co., Ltd.

the minds of lovers of nature, and they form a strong contrast to the puny works of landscape gardening about so many houses at the present day.

Enough has been said of the book to commend it to the notice of everyone interested in the subject, and especially to those young people who are studying the matter, who will find it helpful in assisting them to grasp the subtleties of the art, though it may never make them landscape gardeners unless they have a natural gift in this direction, for, as with all successful art workers, they are born not made.

The book is reproduced in the commendable style one expects from American printers. It is well illustrated, many being reproductions from Repton's original works, and there are photograph reproductions of views of his work as seen at the present day, such as Thoresby and Clumber. There are also illustrations which show an ingenious device of sliding sheets, how a place appeared before he began to work upon it and how it would appear after it had been "Reptonised." He originated this peculiar method in his original *Red Books*, which contained his reports on important places, illustrated by original plans and drawings.

Repton originated the term "landscape gardener." Before his time workers in this direction were termed "improvers" or "planners." Though the term is now general in this country, and we are not ashamed of it, our American friends as a rule ignore it and call themselves "landscape architects," which is only a degree more appropriate than another of their terms, "landscape engineer," which is too atrocious a term to ever get a foothold in this country, however desirous one might be to find a substitute for the term landscape gardener. *W. Goldring.*

LAW NOTE.

TRADE NAME DISPUTE.

MESSRS. Alexander Dickson and Sons, Ltd., carrying on business in Newtownards, Belfast, Dublin, Blackrock, and also in Hertfordshire, have recently sued for an injunction in the Irish Chancery Division restraining Mr. Alexander Dickson and his two sons, who are in business as seed merchants in Parliament Street, Dublin, under the name of the Ashbourne Agricultural Company, and as Rose-growers and nurserymen at Woodlawn, Dundrum, under the name of Alexander Dickson and Sons, from selling Roses or seeds not grown or propagated by the plaintiff company as Dickson's Roses or Dickson's seeds, and from carrying on the business of nurserymen and seedsmen under the style of Alexander Dickson and Sons, or any style in which the name Dickson appears, without taking reasonable precautions to clearly distinguish the business carried on by the defendants from that carried on by the plaintiff company. The plaintiffs alleged that their Roses have obtained a world-wide reputation for excellence, and that Roses stated to be Dickson's would be understood in the trade and by purchasers as the plaintiff company's Roses. They further charged that Mr. Alexander Dickson, the principal defendant, who, until February, 1907, carried on business in Parliament Street as the Ashbourne Company, had opened a nursery at Dundrum under the name of Alexander Dickson and Sons, with the object of taking advantage of the reputation of the plaintiff company for Roses and seeds. The defendants repudiated all these allegations in their defence, and denied that there is any foundation for them. Leave had been given to administer a series of interrogatories to the defendants as to the origin of the name under which they were trading, the date on which they adopted that trade description, and other queries relating to the nursery business.

The Master of the Rolls held that certain of the answers were uncandid and not sufficiently full; and, adjourning the case, made an order that the defendants should disclose the facts asked for by the plaintiffs.

THE GHENT QUINQUENNIAL.

ORIGIN AND HISTORY OF THE ROYAL AGRICULTURAL AND BOTANICAL SOCIETY OF GHENT.

ABOUT 1622 the Bishop of Trieste, whose taste for art and flowers is famous, formed a fraternity of gardeners under the patronage of St. Amand and St. Dorothy. The fraternity had its chapel in the Church of St. Michael, where on the Saints' days the altars of St. Amand (1) and St. Dorothy (2) were decorated at the cost and by the care of the fraternity.

Besides this, there was also at Ghent a fraternity of amateurs whose altar was in the Abbey Church of St. Peter, and was founded in 1669 by the Abbot Reyntkens, author of a treatise on gardening which was published in 1675.

These two fraternities suffered the fate of all the others, and were suppressed by the decree of August 18, 1792. But the taste for plants and flowers grew apace with the public prosperity. The number of gardeners increased, and besides those who were employed by the large landed proprietors and wealthy amateurs, little by little the professional gardener, half florist and half market-gardener, set up in business round the town. It was chiefly along the Coupure where their nurseries were to be found. Even after the alterations in this part of the town the nurseries remained. The old establishment of Linden's has only of recent years been turned into building land, and on its site a new street made called the Rue Liévin De Winne. On the right bank of the Canal de la Coupure, behind the Salon Napoleon, there still exists a large space of land occupied by Mr. B. Spae's greenhouses. At the beginning of the 19th century, on the right bank, at the place where the Passage de la Coupure joins the paved roadway, was a famous inn or public-house bearing the sign of "In Frascati." It was kept by a gardener and his colleagues, of whom many lived in the neighbourhood, or else had ground there and were the principal customers. Amateurs also frequented the place to talk about their subjects of common interest on the principle of the old proverb "Birds of a feather flock together."

About this time England, thanks to the advantages she enjoyed by the possession of her colonies and the development of her marine, had made great progress in horticulture. New plants were introduced there without cessation, the cultural methods were greatly improved. The importance of this branch of industry was so considerable in that country at the beginning of the 19th century that the English nurserymen had catalogues of their goods printed and circulated all over the Continent.

Gardeners and amateurs had on several occasions crossed the Channel to view the wonders of English cultivation and bring back from Great Britain the horticultural novelties. We can easily imagine with what curiosity the customers at "Frascati" awaited the return of these fortunate and enterprising professional and amateur gardeners, and what a full house there was on the evening of their arrival.

It was at one of these gatherings that the Royal Agricultural and Botanical Society of Ghent was formed. On October 10, 1808, Frans van Cassel, gardener and botanist, related to his friends and colleagues what he had seen in England, whereupon it was resolved to form a society for the purpose of holding flower shows and promoting the love and culture of plants in Ghent. The idea was received with enthusiasm, and forthwith the lawyer, Mr. L. Lebègue, judge of the Court of First Instance and an amateur of some distinction, undertook to draw up the rules. On October 28, 1808, the proposed rules were submitted to the Mayor, M. Pycke, for approval according to law. As a proof of the way in which the taste for horticulture had spread at that time among the people, we give below the names and callings of 47 townspeople who signed the request addressed to the Mayor.

List of 47 founders of the society, viz., Messrs. C. Reylof, private gentleman; P. A. Verschaffelt, gardener; F. Spae, ditto; L. Verleeuwen, ditto; L. de Coninck, ditto; J. de Herdt, ditto; J. Alberdienst, ditto; L. De Bieve, architect; J. B. Carbonelle, plumber; J. X. Van de Woestyne, shareholder; Ch. Goethals, advocate; L. Myncke, gardener; E. Haemelinck, shareholder; J. B. Van Coppenole, surgeon; A. Houssiaux, bailiff; Van Bambeke, brewer; J. M. Verdonck, priest; Lavandan, private gardener; Versturme, private gentleman; J. Van Lokeren, doctor; A. Spiller, gardener; A. Taminiau, surgeon; J. Bonnet, engraver; P. Terveert, manufacturer; J. Sudan, private gentleman; Du Colombier, gardener; P. L. Pyn, merchant; L. Lebègue, advocate; J. M. Mussche, head gardener to the Botanic Garden; J. B. Delbecq, schoolmaster; P. Fermont, architect; J. Malpré, painter; P. de Graeve, private gentleman; J. Dubois, amateur; l'Olivier, police commissary; P. Mortier, amateur florist; B. Alexis, manufacturer; P. Van Rossem, ditto; A. Schellinck, private gentleman; C. Lanckman, gardener; J. Verleeuwen, gardener; Van Winghen, shareholder; H. Willems, gardener; P. de Cock, ditto; F. Van Cassel, ditto; J. Van der Woestyne, doctor; C. Schepens, gardener.

It will be noticed that these names belong to all classes of society. The favour with which the society was at the outset regarded is clearly shown by those who accepted office. The president, Van de Woestyne, belonged to a great Ghent family; the secretary, Lebègue, was an advocate and a judge; the treasurer, Goethals, was an advocate. In 1810 F. F. Verbeeck, the surgeon, was elected general secretary, whom we find shortly afterwards professor at the university.

The objects of the society, as well as the means to attain them, are thus set forth in the 2nd and 14th rules:—

Rule II.—The object and aim of the society are the diffusion of botanical knowledge and the cultural improvement of indigenous and exotic plants.

Rule XIV.—Every year, on the fête day of St. Dorothy, the patron saint of gardeners and botanists, a public exhibition of plants, flowers, and shrubs shall be held in one of the garden halls of "Frascati," and shall be advertised in the "Gazette de Gand" at least eight days beforehand. To render this exhibition interesting and useful every member must send to the hall at least three days in advance two pots containing plants, flowers, or shrubs of his own selection under a penalty of incurring a fine for each pot wanting, a fine of 63 centimes, or one escalin (1). Every member, however, will have the right to send more than two pots, but the number must not exceed six. The name of the exhibitor must be written on each pot to avoid disputes as to ownership. The arrangement of the pots in the showroom will be made by five stewards appointed for the purpose by the officers, and every member must accept this arrangement without protest, and he who displaces a pot to substitute his own or another shall pay a fine of one franc six centimes, or two escalins, and the pots so displaced shall be put back in their original position.

To carry out this programme, the young society held its first exhibition in its headquarters, "In Frascati," on February 6, 1809, and it obtained so great a success that in 1815 its old home became quite inadequate, and it then moved to the Rue de la Caverne to a tavern of the sign of "In de Zaal Flora," and here a special hall was constructed for the shows.

In 1818 the society, having gained the sympathy of King William, begged for the privilege of calling itself a royal society, and asked for a grant of a coat of arms. The King acceded to the request, and granted the society the title of "royal." The Herald's College registered the arms, a waterpot, a spade, a rake, and other garden tools, with the motto, *Venefficia mea, Quiriles, haec sunt.* This motto alludes to a legend bequeathed to us by the Romans. They say that in the days of ancient Rome a gardener of Latium surpassed all his competitors by the perfection of his flowers and the favour with which his products were received. The young patrician women would have no other flowers but his with which to ornament the garlands they used to offer to Venus, and the courtesans no Roses but his to crown the guests at the Bacchanalian feasts. This fortunate florist's colleagues denounced him to the Pontifex Maximus, charging him with having relationship with the powers of darkness, who, as they alleged, taught him the

(1) February 6. (2) March 10.

(1) A Dutch coin worth about 6d.

secrets of cultivation. A trial for witchcraft was the result, probably one of the first, and when he appeared before the court, the good man, to the astonishment of the judges, simply produced the tools of his craft, and the only defence he could make was to utter the words, "My sorcery, my lords, are these."

The continued and increasing success of the shows necessitated another change of place, and in 1827, by resolve of the Common Council, the grand vestibule of the Town Hall was placed at the disposal of the society for its floral fêtes. The library and collections were placed in the Grande Conciergerie of the same building, and it is there that the Council of the society has since held its sittings. During the events of 1830-31 (1), the shows were not discontinued, but were held in St. George's Hall, now the Leipsic Fair, at the corner of the Rue Haut Port and the Butter Market.

In 1832 the society returned to the Town Hall, where it remained until 1836, except in 1834, when the March Show was held in the vestibule of the Palace of the University to enable it to celebrate the 25th anniversary of its existence. On this occasion the ever-increasing prosperity of the society induced the members to secure premises more in accordance with the position it had acquired. A joint stock company was constructed, having for its object the erection of a building suitable for housing the Royal Agricultural and Botanical Society and the Philharmonic Society of St. Cecilia. The town gratuitously gave up to this company the site of a mill and some unoccupied land belonging to it situated at the Coupure, close by the birthplace of the society, where it had been started in 1808.

While preserving its old title, it took, in addition, the name of Casino. The building was executed on the plans of the Architect Roelandt by the builder Kerfyser. In 1839 the Philharmonic Society of St. Cecilia left the Casino to go to premises at Spiegelhove; this change was fatal, and the society ceased to exist in 1840.

The Casino Company scored success after success, and in 1866 a further enlargement was considered necessary. The garden, of semi-circular form, where the open-air concerts were given, was covered in, and became the great winter garden which now exists. This glass structure was executed, so far as the ironwork is concerned, by Mr. Carels, Senr., from the plans of Mr. Adolphe Pauli, professor at the University.

Now the ever-growing requirements and the continued success of the shows have necessitated a new transformation in view of the celebration of the centenary fêtes. These later works, carried out in 1906, have been undertaken by Messrs. Myncke Bros., under the supervision of Mr. De Waele, architect.

THE APPROACHING EXHIBITION.

The International Horticultural Exhibition, which will mark the hundredth anniversary of the foundation of the Society, will be held in the Casino from April 25 to May 3. The annexe of the exhibition has been erected in the Casino gardens by Mr. Schauvliege, from the plans of Mr. de Waele, the architect. This building, of gigantic proportions, covers about 2½ acres of ground. Its elegant facade faces the existing imposing building, and produces the finest effect, set off with mouldings and allegorical paintings. In the immense greenhouse, the design of the plan is the work of Mr. Fred Burvenich, Senr., the distinguished professor of horticulture, who, with Van Halle, Ed. Pynaert, and Rodigas, made up the rare "four-leaved Clover," as they were familiarly called in the horticultural world.

Mr. Burvenich has endeavoured to give to the exhibition hall a powerful, far-stretching perspective, being careful to arrange paths wide enough to allow thousands of visitors to pass round. At the far end of the annexe is an immense painted panel representing an English garden, the work of the artists Bylebier and Tolffaert, which will complete the panoramic illusion.

On the Coupure side the middle of the hall will be occupied by the exhibition of 50 plants shown a century ago at the little inn "Frascati." The spectators, who will be supposed to be in the smoking-room where the first "Salon de Flore" was arranged, will look out on the garden of the inn, with its characteristic arbours called "gloriettes," surrounded by the modest yet typical landscape of Meulenberg. This optical illusion is obtained also by the assistance of a painting executed by the same artists.

Finally, a view depicting the severe and impressive landscape of the Cape will serve as a background to the new plants imported in such large numbers from the south of Africa.

The efforts of Mr. Heursel-Demeester, the devoted curator of the Society's collections, to bring together the 49 or 50 plants shown in 1809 have not entirely succeeded, for there is one wanting, the Rosea portlandia; but the patient collector does not yet despair, and is in communication with the leading English and Austrian botanists.

The designing of the plan in the large winter garden will be the work of Mr. Charles Pynaert.

The handsome ballroom will be the Orchid palace. From the flight of steps to this room will be viewed a French garden, with its symmetrical design, which, in the open air, will connect the two buildings.

More than 300 persons belonging to the élite of the European horticultural world have been invited as members of the jury. Some of these will celebrate at the same time as the centenary of the Society the fiftieth anniversary of their first visit to the City of Flora. In the traditional country of the Tulip not a single juror invited has refused the honorary distinction, and from the banks of the Amstel is announced the despatch of plants for exhibition by special motor boats.

A number of nurserymen in and around Ghent have given foreign exhibitors the use of their greenhouses. They are pushing forward plants that are too delicate to undergo the perils of a long journey just previous to the opening of the show.

(1) The revolution by which Belgium was separated from Holland.

NOTES FROM THE "FRENCH" GARDEN.

Lettuces and Melons are now requiring constant attention. Carrots are growing well. We have had to give them a thorough watering, and it will be necessary for us to give them further waterings from time to time, it being important that they should continue to be ahead of the Cauliflowers that have been planted amongst them. The lights are left open day and night at present, in order to keep the growth sturdy.

The Cabbage Lettuces planted with the Cos Lettuces under the cloches at the end of February are being sent to market during the present week. They have succeeded well, as have the Cos Lettuces, which are filling other cloches. The somewhat cold weather in March was favourable to the Lettuces, for it prevented them growing tall and encouraged them to make hearts. Out of doors we have planted Cos Lettuces and Cauliflowers raised in the autumn. They have been planted at 2 feet apart each way.

At the end of January we planted a variety of Cabbage Lettuce known as "Passion." The seeds were sown and the seedlings pricked off just as was done in the case of the Black Gott Cabbage Lettuce and the Paris Green Cos Lettuce. They were planted in frames, and 25 plants were put under each light. We do not prepare hot beds for the "Passion" Lettuce, this variety being particularly hardy. During last week five Cauliflowers were planted amongst these Lettuces under each light. Presently we shall take away the frames and lights, and these will be used for the second batch of Melons. The first batch of Melons, planted rather more than a fortnight ago, are doing well. We had to fill the paths between the frames with fermenting manure, as the winds are very cold, and it is necessary to keep the temperature of the beds as equable as possible. Air is admitted to the Melons every day; even if it is only possible to do this for half an hour it effects a complete change of atmosphere, and the plants become less likely to attacks from the stem disease that so often destroys Melon plants.

Seeds of Celery were sown on a hot bed during last week. We grow the two varieties, Chemin and Green Celery, the latter variety to form the main crop. The Celery will follow the Cauliflowers which were planted recently among the Carrots, after the clearance of the Cauliflowers in July. *P. Aquatias, Mayland, Essex.*

HOME CORRESPONDENCE.

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

Elementary School Gardens.—The letter of *A. D.* (see p. 219) on the subject of school gardens contains a reference to the value of gardening work for girls as well as boys. Gardens in connection with elementary and secondary schools for girls is an accomplished fact in Ireland. A number of these gardens have been in existence for several years, the course of instruction including lessons on flower, fruit, and vegetable culture, and the girl students are no less keen than their more sturdy brothers. As a rule, a plot is allotted to each of the pupils, and all the work of planting, sowing, and cultivating the various crops is carried out by them just as it is by boys of similar age in their gardens. Certainly anything the girls lack in strength they make up in enthusiasm, and at present no girls' school which has commenced this work has abandoned it. All this is done without any grant, except the occasional services of an instructor, and as none of the schools distribute the produce, other than surplus plants, it is evident that the subject only needs to be properly taught to at once become as popular among the girls' schools as among the boys'. In this country, at any rate, the value of a knowledge of gardening to the girls as well as to the boys can hardly be over-estimated, as almost every cottage has some ground attached to it which might be cropped with fruit and vegetables, and all but the heaviest of the work carried out by the wife and family of the cottager. *L. J. Humphrey, Dublin.*

The Sweet-scented Dahlia.—I think the interesting new plant mentioned in a paragraph on p. 218 of your current issue must be Dahlia coronata, offered for distribution in May at the price of two francs a plant by Monsieur Georges Bruant, of Poitiers, Vienne, France, as his description of it in his new catalogue corresponds in every way with what you say about it. I send this information in case any of your other readers may wish to acquire so desirable a new plant, as I hope to do myself as soon as it is sent out. *W. E. Gumbleton.*

Pictures of Kew (see also p. 234).—There are on view at the Grafton Galleries 184 pictures by Mr. Olivier, including a number of studies in the Royal Botanic Gardens, Kew; and in some Italian gardens and landscapes; likewise, 24 pictures of Indian chiefs. The paintings of Kew Gardens include a view of the Azalea garden, representing the east side, and having beds of these brilliant-flowering plants of the hardy species in the distance; with a large tree and ample greensward in the foreground. Another depicts a Lily pond, with the Nymphæas in flower, and trees around it. There is also a brilliant, finely-painted mass of Lilium speciosum; adjoining this picture is a view in the Rhododendron Dell, looking south and showing the plants covered with blooms. No. 11 is a view of a field of Opium Poppies—P. somniferum with flowers of various tints. A picture of the lake at Kew, with Water Lilies of various colours planted near the bank, is a well-chosen subject, and the chief feature—the Lilies—are suitably balanced in the picture by arboreal vegetation. Near this is a picture of Cypripedium insigne Chantonii, very faithfully drawn and coloured. There is another view of the lake in autumn or early spring, the slight haziness of the season being delicately depicted. In the middle gallery is a pretty picture of Horse Chestnuts, with Bluebells beneath them, and the Queen's Cottage with masses of Foxgloves in the foreground—a semi-wild type of gardening. The picture of a bank of Rambler Roses of various tints invites imitation. There is another view of the Rhododendron Dell, this time looking north. No. 81 shows the Lily basin in one of the glasshouses at Kew, with a large plant of Papyrus in the background, and white Water Lilies at the front. Pomegranates in flower show what beautiful shrubs these are in the milder parts of the country. The colours of the blossoms are very various and pleasing. A long gallery is devoted chiefly to views in Italian gardens and landscapes, with the inevitable "Stone" Pines as single trees and groups. Roses in great profusion of bloom are exhibited in a picture entitled "Banksia Roses." The Nerium Olean-

der, as it grows in Italy, is shown as good-sized trees with round crowns and smooth, grey-barked boles. A picture in this section exhibits the curious effects of grafting Willows on tall stems of the Lombardy Poplar, the bright-yellow shoots of the Willow employed having a weird appearance in the winter months. *F. M.*

MEALY BUG ON VINES.—*W. P. R.* will kill the tender young leaves of his vines, as well as the mealy bug, if he uses the hydrocyanic acid gas in sufficient strength to destroy the bugs. He had better continue the paraffin, or methylated spirit, process until the foliage gets hardened, and then try the cyanide of potassium. I have had the sub-laterals slightly scorched in July when using 1 ounce per 1,000 cubic feet, and I believe a smaller quantity than this will not have the desired effect. I think the best time to effect a cure by the above method would be as soon as the vines could be cleaned in spring, repeating the cyaniding weekly for three weeks. The house must be as dry as possible, and the temperature low, at the time of the operation. *A. S.*

———The employment of hydrocyanic acid as an insecticide when vines are bursting into leaf is not to be commended, because if the poison is used strong enough to destroy mealy bug, it will also injure the foliage. As a specific for this pest, *R. P.* should try warm water, applying it carefully by means either of a syringe or of a "Four Oaks" spray syringe, which is to be preferred. If the vineries have been kept close and damp, the foliage will be very tender and must not receive the water so hot as in the case of vines subjected to less heat and moisture. Water at 150° will be safe, and if the water is previously boiled it will not leave any deposit on the leaves and bunches, excepting perhaps an almost indiscernible spot on the lower tips of some of the berries. The syringing must be continued at intervals, and the house vaporised with the cyanide once or twice during the autumn. *R. P. B.*

———My experience is, that the destruction of mealy bug on vines, Peach trees, and Figs is not a difficult matter provided the house is vaporised with sodium cyanide. The best season to commence cyaniding is the early autumn, for then the foliage is thoroughly matured and dry. After a few further experiments have been carried out to determine exactly the proper quantity of the gas that can be used with safety on greenhouse plants, we shall be in possession of a cheap and efficient method of ridding the plant houses of mealy bug, red spider, thrips, and all other insect pests. It is advisable to cyanide the houses two or three times at intervals of a fortnight, as it is impossible to destroy the eggs. There is in commerce a safety cyaniding machine, which was illustrated in the *Gardeners' Chronicle*, March 31, 1906, p. 203, and this I recommend *W. P. R.* to procure. The maker gives all directions, including the quantities of the cyanide required per thousand cubic feet of space. It is important that very great care is used when handling the poison, as sodium cyanide dissolves very quickly when placed in the receptacles. The gas will exhaust itself in an hour or less, after which the house must be opened from the outside, but it is safe to enter the structure after the ventilators have been opened for about half an hour. The vines here were badly infested with mealy bug, and, like *W. P. R.*, we used many so-called remedies, but none was satisfactory until we used sodium cyanide. A little methylated spirit or diluted XL-All Insecticide should be kept at hand in a bottle with a brush for the purpose of destroying any stray bugs that may hatch after the cyaniding has been performed. After cyaniding has been practised for one or two seasons, mealy bug will be entirely extirpated. *H. King, Sketchley Hall Gardens, Hinckley.*

——— I have used the following method of ridding vines badly infested with mealy bug with success. After the vines are pruned, strip and clean off all the loose bark and adventitious roots, cut off all snags and knots as cleanly and closely as possible. Scrape the rods, especially around the spurs, but do not injure the wood beneath. Examine the rods, and thoroughly scrape or drill out with the point of an old knife all holes and crevices. Next give the vines a good washing with a strong solution of soft soap and hot water, using a brush that is not too stiff for the purpose, a spoke brush being the best. Care must be taken not to injure the "eyes" on the spurs. Remove all peelings, scrapings, etc., and some of the surface soil. Thoroughly scrub every part of the house, including the woodwork, glass, trellis, ventilating apparatus, walls, &c., with hot water and soft soap previous to painting them with paraffin. Work the brush into any holes or crevices, joints, &c., of the woodwork that are likely to harbour the bug or their eggs, but care must be taken not to spill any of the paraffin on the vines. After having thoroughly cleansed the house, give the rods another washing with the soft soap and hot water, and then fill up any holes in the rods with painter's putty, using a small blunt knife for the purpose. Should any eggs hatch after the vines have started (which is very unlikely if the work has been carefully done), these stray bugs may be killed by either methylated spirit or paraffin applied with a brush or a piece of sponge tied to a stick. *H. W., Compton Bassett Gardens, Wilts.*

THE GENUS PHORMIUM.—In these gardens are several large plants of Phormium that have been in their present positions undisturbed for 35 years. The clumps are about six yards in circumference at their bases; the large, lance-shaped leaves are, in many instances, 8 feet long, and the plants have developed inflorescences, some of which have attained to a height of 14 feet. Three of the largest specimens are growing on sloping banks in almost pure sand, and they are given no attention. The climate here is mild and equable, the gardens being close to the sea and within the warming influence of the Gulf Stream. The soil is deficient in lime. In regard to Mr. Bartlett's theory that a poor soil conduces to the safety of trees and shrubs of doubtful hardiness, I may state that I have proved this to be true in the case of Veronica Andersonii. This plant, when grown in soil rich in humus, and consequently very moist, is damaged by a few degrees of frost, in some instances being completely destroyed, whereas in poor, stony soil the species has grown into large bushes, enduring many years, and flowering freely annually. *F. Street, The Gardens, Ardwell, Wigtownshire, N.B.*

———My experience of this species is that the plants thrive best in a marshy situation, and I should have no hesitation in planting them there, provided they were sheltered from cutting winds, which fray the tips of the leaves and render them unsightly. Here, in the West of Ireland, this species develops into fine specimens. The best, which is situated in a valley and growing in a peat bog, is about 10 feet high and 14 feet in diameter. There are hundreds of fine plants growing under similar conditions. During last winter there occurred as much as 20° of frost, but the plants were uninjured. Such specimens as were in exposed positions suffered a little from gales and the cold winds from the Atlantic. *Interested, Co. Galway, Ireland.*

LETCHWORTH GARDEN DESIGN EXHIBITION AND COMPETITION.—The following interesting competition has been instituted by the Letchworth Garden City authorities:—Class 1.—Design for gardens of a suburban residence, drawings of which will form part of the particulars furnished to each competitor; these drawings will include a site plan giving levels. Class 2.—Design for gardens for above to include a Rose garden. Class 3.—Design for gardens for above to include a Kelway herbaceous border. Prizes: Class 1, first prize, £5; Class 2, first prize, £3 3s., given by Robert Harkness, Rose grower, Hitchin, Herts; Class 3, first prize, £5; second prize, £3 10s., both given by James Kelway & Sons, Langport, Somerset. Class 4.—Design for gardens for a block of ten cottages to be built as a speculation on a corner site, six facing east and four facing north. Drawings, including site plan with levels shown thereon, form part of the particulars supplied to competitors. Entrance fee for each of the above classes 2s. 6d. For particulars write to Estate Office, First Garden City, Ltd., Letchworth, Herts, inscribing letters "Garden Design Competition." The drawing embodying part of the particulars given to each competitor has been kindly prepared for the purpose by Messrs. Barry, Parker & Raymond Unwin, architects, Letchworth. All designs sent in for the competition, which are to reach the Estate Office, First Garden City, Ltd., Letchworth, not later than June 1, must bear a *nom de plume* only, and must be accompanied by a sealed envelope giving the author's name and address. Designs sent in for Class 3 are to become the property of Messrs. James Kelway & Sons. *F. J. C.*

A CLIMBING ACONITE.—It would be interesting to learn whether the climbing Aconite from China, introduced by Messrs. Vilmorin, Andrieux et Cie, Paris, and mentioned on p. 218 of the *Gardeners' Chronicle*, is identical with, or differs from, Aconitum Hemsleyanum, such as Messrs. Barr & Sons have in their Long Ditton nursery, and which I saw growing there in the autumn of 1906, then fully 5 feet in height, forming a really lovely climbing subject. To see a true Monk's Hood climbing in that manner was novel and interesting. The plant was treated as a hardy perennial, and was very ornamental. I do not know whether it produces seeds in this country. *A. D.*

RHODODENDRON × FOSTERIANUM.—On p. 197 of the issue for March 28 last there appeared some notes on Greenhouse Rhododendrons, and a remark which suggested it is difficult to determine which variety of a number mentioned is the best to grow. We find that R. Fosterianum is by far the best both as regards growth and flowers. It is of much freer habit; the flowers are very much larger than any of the others, and they are exceedingly fragrant. Perhaps readers will remember the fine plant that was exhibited from these gardens at the R.H.S. meeting held on April 2, 1907. If plants of each of the varieties named on p. 197 were grown together and afforded the same treatment, R. Fosterianum would prove the best. We have Countess of Haddington planted outside, also R. Gibsonii, Mrs. James Shaw, Countess of Sefton, Lady Skermsdale, Duchess of Sutherland, and a hybrid between R. ciliatum and R. Edgeworthii, and these have been in the open for several years. *W. A. Cook, Leonardslee Gardens, Sussex.* [Our correspondent enclosed flowers of R. × Fosterianum.—ED.]

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 19.—*Committee present:* Messrs. E. Ashworth, Leemann, Cypher, Ashton, Shill, Ball, Cowan, Ward, Walmsley, Warburton, Parker, Keeling, and Weathers (hon. sec.).

J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), gained a Silver Medal in the competition for Cattleyas and Lælias, also a Silver Medal for a miscellaneous group of Orchids.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), exhibited a collection of good plants, one of the most important being Cattleya × Undine, "Gratrix's variety," which was awarded a First-Class Certificate. Odontoglossum × ardentissimum var. virginale, and Dendrobium × Chessingtonensis gained similar awards, while Awards of Merit were voted to Cattleya Schröderæ variety "Niobe," C. S. variety "William Duckham," and Odontoglossum crispum variety "Harmony."

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), staged a group of Cypripediums in the "Sander" competition. (Silver-Gilt Medal.) A distinct form of Cypripedium Godefroyæ labelled C. G. variety Marjorie received an Award of Merit, and the same distinction was conferred on Cypripedium × Lemoniana, C. villosum, Rann Lea variety, C. × Olga Bagshawe variety The Gem.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Fletcher), was awarded a Silver Medal for a group of Odontoglossums, in which were several distinct O. crispum hybrids.

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), staged a number of good plants, amongst which Cypripedium × Adrian Lefebre, C. × Alfred Dimmock, and C. × Yellow Prince and Dendrobium × xanthocentrum received Awards of Merit.

Dr. Hodgkinson, Wilmslow (gr. Mr. Woore), obtained a First-Class Certificate for Cymbidium Sanderi.

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherley), was awarded a Silver-Gilt Medal for a splendid exhibit of Odontoglossums. Awards of Merit were granted to Odontioda × Bohnhofiæ, O. × Rolfeæ, Ward's variety, and O. × ardentissimum, Ward's variety.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), staged a fine exhibit of Orchids in three sections, viz., Cypripediums, Cattleyas, and Lælias, gaining Silver Medals for the two first-named and a Silver-Gilt Medal for the last-mentioned exhibit. First-Class Certificates were awarded to Cypripedium × Stepmanii variety superba, Cattleya × Dormaniana, Warburton's variety (a richly coloured form), Odontoglossum × ardentissimum var. xanthotes, O. × Lambeauianum "Purple Gem," and O. crispum variety Perfect Gem (see fig. 104). This is a finely-marked variety of splendid proportions; the spotting is dark purple coloured on a pure white ground. Awards of Merit were voted to Cypripedium × Œdippe variety superba, Cattleya Schroderæ variety Prunus, Cattleya × Miss Harris variety E. Ashworth, and Cattleya × Mont Blanc.

Messrs. H. Low & Co., Enfield, staged a fine array of Dendrobium species and hybrids, some good forms of D. × splendidissimum being prominent. (Bronze Medal.)

Odontoglossums in variety, and they were flanked on either side by plants of Dendrobium splendidissimum, D. nobile var. nobilius, and Masdevallia Veitchii. In the foreground were some choice Lycastes, Lælio-Cattleya hybrids, and Cypripediums, while the group also included two large banks of seedling Dendrobium nobile virginalis, all of which were raised by this firm. The exhibit was staged in a very effective manner, and was one of the best displays of Orchids ever shown at Manchester. (Gold Medal and a Special Vote of Thanks.)

Another beautiful display of Orchids was made by Messrs. Charlesworth & Co., Bradford, who staged a large group of plants, every one of which was worthy of individual inspection. The finest plant in the group was Odontoglossum × His Majesty, which is not far removed from O. crispum. The flower is 4 inches in diameter, of perfect shape, with densely-blotched sepal and petals, and a splendidly-proportioned lip. Brasso-Cattleya × Bradshawiæ var. superba was seen for the first time in Manchester. In this group were also some notable varieties of Lælio-Cattleya × callistoglossa, a pleasing form of Lælio-Cattleya × luminosa, a collection of Lælia cinnabarina, and another of L. flava hybrids. (Gold Medal.)

Messrs. James Cypher & Sons, Cheltenham, staged a charming group of spring flowers and Orchids. One of the best of these latter plants was Lælio-Cattleya × callistoglossa var. The Sultan. There were also many well-grown and

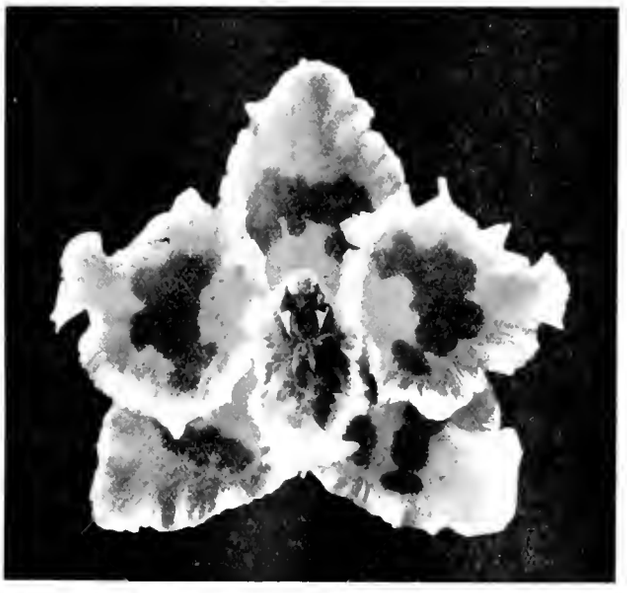

Fig. 104.—Odontoglossum crispum "Perfect Gem," as exhibited at the meeting of the Manchester and North of England Orchid Society.

Messrs. Cypher & Sons, Cheltenham, put up a showy group of plants, in which were noticed many good forms of Cattleya Trianæ and C. Schröderæ, Dendrobiums, and Cypripediums. (Silver Medal.)

Mr. D. McLeod, Chorlton-cum-Hardy, staged a few Cypripediums and a quantity of cut flowers of Odontoglossum crispum and hybrids.

Messrs. Moore, Ltd., Rawdon, Leeds, were awarded a Bronze Medal for a miscellaneous collection of Orchids.

EXHIBITION IN THE ST. JAMES'S HALL.

April 1, 2.—An exhibition under the auspices of the above society was held in St. James's Hall, Manchester, on these dates. This is a very large building, but it was well filled with exhibits, and the society is to be congratulated upon the success of their efforts.

One of the most important displays was made by Messrs. Armstrong & Brown, Tunbridge Wells, Kent, whose exhibit occupied a stage measuring 60 yards in length, and having a width of 9 yards. The subjects consisted principally of Dendrobiums, with here and there a choice specimen of some other Orchid. The centre of the group was composed of flowered Odontoglossums; a specimen of Odontoglossum triumphans var. Othello, with nine spikes of flower; a fine form of O. × excellens, Cymbidium × eburneo-Lowii, some good forms of Miltonia vexillaria; Cattleya intermedia var. nivea, with a fine inflorescence; Dendrobiums in variety, Oncidium varicosum Rogersii, well-flowered plants of Oncidium concolor, &c. (Gold Medal.)

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), put up a tastefully-arranged group consisting of some choice forms of Cattleya Trianæ, Odontoglossums in large variety, including forms of O. crispum, O. triumphans, O. Pescatorei, O. polyxanthum, O. Hallii, and O. cirrhosum; Masdevallia Veitchii, Cypripedium Rothschildianum, Lycastes, and several Lælio-Cattleya hybrids.

The Liverpool Orchid & Nursery Co., Liverpool, made a bold display with popular Orchids, chiefly Odontoglossums, Dendrobiums, some good forms of Cattleya Schröderæ, and various forms of Cypripediums. (Silver-Gilt Medal.)

A. J. Keeling & Sons, Bradford, were awarded a Silver Medal for a miscellaneous group of Orchids.

J. McCartney, Esq., Bolton (gr. Mr. Holmes), was awarded a Silver Medal for a group, in which were many good Cattleyas, several forms of C. Trianæ and C. Schröderæ being prominent; also varieties of Dendrobium and Odontoglossums.

Messrs. Sander & Sons, St. Albans, had an effective group of choice plants, in which were noted some good varieties of Lælio-Cattleya × callistoglossa, a fine strain of Dendrobium Wardianum, Lælio-Cattleya × Empress of Russia, Phaius Wallichii, Cattleya intermedia var. Snowflake, Cypripedium × Lord Derby, Cattleya Schröderæ var. "Queen Alexandra," C. Schroderæ "The Bride," Odontoglossum Uro-Skinneri, a fine form of Cypripedium Rothschildianum, and a plant of Lælio-Cattleya Choletiana, in addition to a fine display of Anthuriums. (Silver-Gilt Medal.)

Mr. J. Robson, Nurseryman, Altrincham, exhibited Dendrobiums in variety, Odontoglossums, and a small collection of Cypripediums. (Silver-Gilt Medal.)

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), staged a group of choice plants. Odontoglossum "The King" was one of the most notable; the plant was carrying two flowers, each of a fine, rich colour. Several other fine Odontoglossums were included in the group, also a beautiful collection of Miltonia vexillaria. (Silver-Gilt Medal.)

William Bolton, Esq., Warrington, staged Cattleyas and Odontoglossums in variety. (Silver Medal.)

A. W. Jensen, Esq., Hayward's Heath, displayed a group of Cattleya Schröderæ, all of which were selected forms. (Bronze Medal.)

Messrs. Moore, Ltd., Rawdon, Leeds, exhibited a miscellaneous group, consisting of Odontoglossums, Cypripediums, Phalænopsis, and some plants of botanical interest. (Silver Medal.)

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherly), exhibited a meritorious group of Odontoglossums, including many known species and several choice hybrids. (Silver-Gilt Medal.)

Messrs. J. & A. A. McBean, Cooksbridge, exhibited a number of plants of Odontoglossums, principally O. crispum and its varieties, all of which were excellently flowered. (Silver-Gilt Medal.)

Norman C. Cookson, Esq., Wylam-on-Tyne, exhibited Phaius × Clive and Phaio-Calanthe delicata, both of which were much admired.

J. E. Williamson, Esq., Stretford, was awarded a Silver Medal for a group consisting of Odontoglossums, Dendrobiums, Cypripediums, and a well-cultivated plant of Angræcum sesquipedale.

Mr. E. G. Mitchell, Sale, exhibited Dendrobium seedlings.

R. Ashworth, Esq., Newchurch, was awarded a Silver Medal for a choice exhibit of Odontoglossums. Several pleasing hybrids of spotted varieties of O. crispums were included in the group.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), was awarded a Silver Medal for a group consisting of Cypripediums, Cattleyas, and Dendrobiums.

Messrs. Hugh Low & Co., Enfield, staged a showy group of Orchids. Cattleyas formed the principal feature, and they included some choice forms of Cattleya Trianæ. They also showed Odontoglossums in variety, Dendrobium barbatulum, and a number of Oncidiums. In addition to the Orchids, they also made a bright display with Carnations. (Gold Medal.)

Messrs. Cutbush & Son, Highgate, showed a collection of forced shrubs, including Laburnums, Lilacs, Prunus, Staphylea, Magnolias, Azaleas in variety, &c. (Gold Medal.)

Messrs. Dickson, Brown, & Tait, Manchester, were awarded a Silver Medal for a miscellaneous collection of plants, the chief feature of which was a display of Primula × kewensis.

Messrs. Frank Dicks & Co., Manchester, were awarded a Silver Medal for Cinerarias and floral devices.

AWARDS.

First-Class Certificates were awarded to Brasso-Cattleya × Thorntoniæ var. Boydiæ; Dendrobium nobile virginalis var. magnificum, Cymbidium × Holfordianum, all of which were shown by Messrs. Armstrong & Brown, Tunbridge Wells; Brasso-Cattleya ×

Bradshawiæ superba, Phalænopsis Sanderiana, Wigan's variety, and Odontoglossum × His Majesty: these three were exhibited by Messrs. Charlesworth & Co., Bradford. Odontoglossum × Lambeauianum "The Lady," Odontoglossum × L. Perfection, O. crispum var. "King of England," Miltonia vexillaria, Vine House var., these four were shown by A. Warburton, Esq., Haslingden; Lælio-Cattleya × callistoglossa var. "The Sultan," shown by James Cypher & Sons, Cheltenham; Phaius × Clive, from the gardens of Norman C. Cookson, Esq., Wylam-on-Tyne; Cypripedium × microchilum var. Honoræ, and C. concolor var. "Emperor"; these two were exhibited by H. J. Bromilow, Esq., Rainhill; and Odontoglossum × ardentissimum var. album, shown by Z. A. Ward, Esq., Northenden.

Awards of Merit were awarded to Dendrobium × Geo. Woodhams, D. × Alice Bound var. giganteum, Lycaste Skinneri var. amœna, Cypripedium × Braceyanum, C. hirsutissimum var. giganteum, Lycaste gigantea, all of which were shown by Messrs. Armstrong & Brown, Tunbridge Wells; Odontoglossum × exultans, from the gardens of W. Thompson, Esq., Stone; Brasso-Cattleya × Thorntoniæ var. gigantea, shown by Messrs. Cypher & Sons; Phaio-Calanthe × delicata, exhibited by Norman C. Cookson, Esq., Wylam-on-Tyne; Cypripedium × Euryades var. superbum, Cypripedium × Wootonii, Rann Lea variety, both shown by H. J. Bromilow, Esq., Rainhill; Dendrobium × Chessingtonense, "Keeling's variety," shown by Messrs. A. J. Keeling & Sons, Bradford; Odontoglossum × Atalanta and Odontoglossum × æthiopica, the two last-mentioned being exhibited by R. Ashworth, Esq., Newchurch. *P. W.*

Obituary.

David Donald.—We regret to record the death of Mr. David Donald, who passed away at his residence, Beulah Road, Walthamstow, on April 2, at the age of 83 years. The late Mr. Donald was for a period of more than 30 years gardener to Gurney Barclay, Esq., of Knott's Green, Leyton, and since the death of that gentleman, some 10 years ago, has lived in quiet retirement. In addition to being a first-class gardener, deceased was a successful exhibitor and a judge at flower shows, also a contributor to the horticultural Press. He will, perhaps, be best remembered by his exhibits at the National Chrysanthemum Society's shows held at the old Westminster Aquarium, where his excellently-trained plants of Chrysanthemums were always a notable feature.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending April 8.

Frequent showers of rain and hail. On the whole this was rather a warm week, but the temperature was very variable. For instance, on the warmest day the temperature in the thermometer screen rose to 58°, and on the coldest night the exposed thermometer registered 11° of frost. The ground is now both at 1 foot and 2 feet deep about a degree colder than is seasonable. Frequent showers of rain and hail fell on four days, but the total measurement was only about half an inch. Nearly three-quarters of a gallon of rain-water came through the percolation gauge on which short grass is growing, and rather more than a gallon through the bare soil gauge. The sun shone on an average for 4½ hours a day, which is about a quarter of an hour a day short of the average duration for the time of year. In the early part of the week the wind remained as a rule high, and in the windiest hour the mean velocity amounted to 21 miles—direction west. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 7 per cent.

Our Underground Water Supply.

With March came to an end the winter half of the present drainage year. The total rainfall for these six months exceeded the average quantity by 2½ inches, which is equivalent to an excess of 54,970 gallons on each acre in this district. At the same time last year there was an excess of 29,860 gallons per acre. *E. M., Berkhamsted, April 8, 1908.*

CATALOGUES RECEIVED.

James Steedwick & Son, Silverhall Park, St. Leonards-on-Sea, Sussex—Dahlias.

Alex. Shanks & Son, Ltd., Bush Lane House, Cannon Street, London, E.C.—Lawn mowers, motors and rollers.

Liverpool Orchid and Nursery Co. (Cowan's), Ltd., Gateacre Nurseries, near Liverpool—Lucksley collection of Orchids.

Answers to Correspondents

Bulbs Diseased: *E. P.* It is possible the bulbs were not all planted in the same manner. Much depends upon the depth at which they were planted and upon the texture of the soil. There might easily be a difference of both in the half-moon-shaped and centre beds. The soil in the centre bed might, for instance, have been very loose in texture, allowing the frost to reach the bulbs and thus predispose them to disease. As the bulbs planted in all the beds were from the same parcel, it is evident that they were healthy at the time of planting. Those you sent were attacked by the Sclerotium disease, and possibly some sclerotia were present in the ground from a previous season. Nothing can now be done to arrest the disease, but the bulbs should be dug up and burned, or the Sclerotium will spread to the healthy ones.

Chrysanthemums: *G. H. H.* Your plants appear to be attacked by Septoria Chrysanthemi, a new disease described by Mr. Salmon in our issue for September 21, 1907, p. 213, with illustrations.

Clematis Jackmannii: *Philanthos.* During the years which your plant has been left unpruned, it must have made much useless wood, and although you might not like to see it pruned severely now, it will eventually be all the better for the plant. It is by a judicious use of the knife that flowers of the greatest size and best quality are obtained. The shoots should be shortened to within 9 inches or a foot off the main stem, a few of the very strongest might be left even longer than this, provided they are thoroughly well ripened. All weak growths should be cut away entirely. If pruning is attended to at once, the soil about the roots loosened with a fork, and a top-dressing of manure or good leaf-mould applied, the plant will soon produce an abundance of good wood capable of flowering freely.

Fumes: *Road.* You must remove the varnish, or, failing this, keep the ventilators open a little until the pipes cease to give off any fumes.

Hippeastrum Flower: *H. P.* The flower received is not a double flower in the ordinary sense of the term, but a combination of two flowers. We have seen similar examples.

Hours of Work at Kew: *Interested.* The gardeners work from 6 a.m. to 6 p.m., with three-quarters of an hour (8 to 8.45) for breakfast, and one hour (12 to 1) for dinner. They have afternoon leave from 12 o'clock noon on alternate Saturdays. During the four winter months (November to February) they work from daylight to dark.

Lilium Auratum: *M. G.* The compost should consist of good, fibrous loam, leaf-mould, and a liberal addition of sand, or, if the loam is not sufficiently fibrous, some peat may be added. Good drainage is very necessary, and after this has been provided the pots should be filled about half full with the compost. Put a layer of sand for the base of each bulb to rest upon; do not press the bulbs down, but leave the soil loose beneath them. A little sand and charcoal may be shaken among the scales, and the bulbs should only be buried about half their depth. Keep the soil moderately moist, but do not pour water upon the bulbs. The pots may be placed in a frame or in the greenhouse under the stage until they show signs of making growth. After this time the pots should be filled up with the compost already mentioned, but it may receive the addition of a little manure. Roots will grow from the base of the stem, and if the pots are not deep enough to allow of these being covered, the plants will need to be shifted into larger pots. Healthy, home-grown bulbs are frequently placed in the open and covered with cocoanut fibre refuse, but in the case of imported bulbs it is better to leave them exposed, as they are liable to rot when covered.

Manure for Palms: *W. M.* Almost any of the plant fertilisers may be used in very small quantities, but we prefer liquid manure prepared from soot and guano, or from cow manure. Do not apply any manure until the pots have become well filled with roots. Many amateurs put their Palms into pots of too large a size, and apply too much water at the roots. The plants require much atmospheric moisture, but should not be kept in a wet condition at the roots.

Mushrooms: *L. H.* You do not send the complete stems, so that the species is uncertain, but they appear to be edible and not different from the common Mushroom.

Names of Plants: *H. M. W.* Acacia longifolia. —*J. S.* 1, Ixora stricta var. alba; 2, not recognised, send when in flower. You are wrong in suspecting it to be a Psidium.—*W. L.* 1, Curculigo recurvata; 2, Davallia (Microlepia) platyphylla; 3, Mackaya Bella; 4, no flowers, probably Tecoma jasminoides; 5, Diosma ericoides; 6, Dracæna hybrids.—*A. M., Derry.* 1, Cypripedium Ashburtoniæ (a very poor variety); 2, Dendrobium Brymerianum; 3, Brassavola cordata.—*A. W. G.* Jasminum ligustrifolium.—*H. J. C.* Erythronium Dens canis, probably an escape from the garden.—*W. B.* Arrhena-therum avenaceum.

Notice to Terminate Employment: *A. R.* It is usual for head gardeners to receive one month's notice. We do not know if there are special conditions in your case.

Richardia africana: *A. J. K.* It is largely a matter of convenience. Excellent results are obtained with Callas by cultivators who keep them in pots during the whole year, and by others who plant them out at the commencement of the summer and pot them up again before frosts occur in autumn. For ourselves, we prefer the planting-out system for large batches, as less watering is required during summer. If you practise both systems for one season you will not be likely to suffer any loss, and the experience thus obtained will teach you which method will best suit your requirements.

Spiræas Failing to Flower: *W. M.* We cannot determine the exact cause of the flower-spikes damping off, but it may have been the result of the plants receiving a check from drought, draught, or excessive applications of manure after they had started into growth; or it may be that they had not made sufficient roots before attempting to make growth. For early forcing the plants should be placed where there is a little warmth beneath them, and be covered with 3 inches deep of cocoanut fibre refuse; when the growths appear above the surface of the fibre, this material may be shaken off and the plants placed in a light, warm position. Although Spiræas require plenty of moisture, it is possible to over water them, and if the soil becomes sour from this cause the roots will decay and the plants fail to flower.

The "French Garden": *E. B.* The average size for the type of garden described by Mr. Aquatias is two acres, and we are informed that the materials required are as follow:—400 French-made lights, £140; 133 frames for these lights, £50; 2,500 cloches, £100; 600 mats, £40; implements, including three wicker baskets and stands, £18. It is also necessary to provide a large tank for a water supply with the necessary pumps, hydrants, hose, &c., and this will cost from £100 to £400. Provision must be made for 1,000 tons of manure per annum, and the necessary seeds will cost about £5. The net profit realised by an experienced gardener is, after all expenses, including those of the household, have been paid, is about £120 per annum. Radishes are grown as a "catch" crop. They realise from 1s. to 1s. 6d. per dozen bunches. Lettuces realise from 5s. to 16s. per hundred. Carrots sell for about 4d. to 7s. per bunch.

Communications Received.—A. S.—C. O.—J. C. M.—E. R.—Mrs. W.—T. G. W.—F. W. G.—W. D.—Yendys—E. S.—W. G.—A. H. P.—T. H. T. C.—T. L.—C. T. D.—F. C. T.—A. B. E. H. R. R.—J. S.—W. A. C.—F. Bedford—Beckenham Hort. Soc.—C. R.—E. C. H. W.—Dr. B.—Rev. F. C. L.—F. M. G.—C. Jones—H. J. M., Cornell University—F. J.—J. G. W.—T. C.—W. M.—W. H. C.—R.—C. F.—C. H. P.—H. P. L.—F. H.—W. G. S.—H. G.—J. C.—W. E. G.—M. D., Ghent.

View in Mr. T. H. Payne's Garden, at Leura, Tookak, near Melbourne, Australia.

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THE

Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

POPULAR SPECIES OF PALMS.

ANYONE acquainted with horticulture during the past 40 years or more can recall many instances of plants which were rare at that time, but have since become extremely popular in gardens. Among them may be included Palms. Half a century ago very few species were cultivated, except in the temperature of the stove, and now they are largely employed, not only for the embellishment of glass structures, but for indoor decoration in various ways, as well as for planting in the flower garden during the summer months, either as specimens sunk in the turf or arranged in groups. In addition to the more or less tender Palms, the value of the hardy species Trachycarpus excelsa (often known as Chamærops excelsa and C. Fortunei) is now very generally recognised.

It is however as pot plants that Palms are most generally grown, and a visit to Covent Garden Market in the early hours of the morning upon a market day will give the visitor some idea of the immense numbers that are now sold in this and similar markets. If some of the large plant nurseries and market-growing establishments be also visited, it will serve to further drive home the importance of the Palm trade, for the plants are cultivated, literally, by the acre. Most of them soon come to an untimely end after sale, hence there is a constant demand for fresh plants, but this need not happen if proper attention be given them, for even in a dwelling-house many Palms may be made to succeed fairly well for several years.

Though Palms now form a regular feature in Covent Garden Market at all seasons of the year, the only one common there 40 years ago was Livistona chinensis (Latania borbonica), which, owing to its somewhat heavy habit of growth, has since become more or less ousted in favour of those kinds that form lighter and more elegant specimens. In those days the Kentias, now the most popular species, were unknown. One of the earliest to cultivate Palms in large quantities for market was the late Mr. Hermann Herbst, of Richmond. His knowledge of Brazil enabled him to obtain seeds of many species, which he thought likely to meet with popular appreciation.

Fortune at once smiled on the enterprise, for with the commencement of the Franco-German war many wealthy people came to this country from the Continent, where foliage plants in those days were more popular than here. They soon singled out Palms as especial favourites, and the taste for them quickly spread. The result was very satisfactory to Mr. Herbst, who, having a large stock of saleable plants, enjoyed a great advantage over other competitors, as the raising of Palms from seeds requires a considerable time.

In order for a Palm to be popular with the public it must possess certain definite characteristics. In the first place, it must not be exacting in its cultural requirements, for if a considerable amount of heat and atmospheric moisture are necessary to keep it in good health it is next to useless for general decorative purposes.

The plant must be free from formidable spines, as these may not only prove a source of danger, but they injure other plants that may be packed with it. For this reason the beautiful forms of Dæmonorops, now known as Calamus, have never become common. It is also necessary that a Palm must be of fairly quick growth, and therefore be capable of making well-furnished specimens in comparatively small pots.

Kentia Belmoreana and Kentia Forsteriana may be quoted as ideal market Palms, but the private cultivator prefers at least a certain amount of variety, as a continual repetition is apt to pall. Of these two species, K. Belmoreana has the fronds more divided, and it forms at least in a young state a dwarfer plant than the other. Where large, bold specimens are required, K. Forsteriana is generally preferred, but K. Belmoreana is a favourite for growing in comparatively small pots. The time can readily be recalled when a guinea each was asked for small plants of either of these Kentias, such as can now be bought for a few pence. The large quantities of seeds that are annually sent to this country from Lord Howe's Island enable the stock to be maintained, despite the vast numbers disposed of every week.

The genus Cocos is an extensive one, but by far the most generally grown of all is Cocos Weddelliana, a charming little species with much divided fronds; indeed, it is one of the lightest and most elegant of Palms. Though a native of Brazil, it is hardier than is generally supposed, and with attention will often hold its own in a dwelling-house for years. While all Palms greatly dislike overpotting, this is one of the most susceptible in this respect. As tall plants from 6 feet to 12 feet in height, Cocos plumosa is perhaps the most popular species. In its earliest stages this has large, simple fronds, but after a time, say, when the above heights are obtained, the fronds become divided into many segments, and in this stage the plant well merits the specific name of plumosa.

Two species of Areca, namely, A. Baueri, from Norfolk Island, and A. sapida, a native of New Zealand, will thrive in an ordinary greenhouse, but they are not much grown as they need larger pots in proportion to their head than many other Palms. Areca lutescens, from Madagascar, needs stove, or at least intermediate-house, treatment. Before Kentias were obtainable this was one of the most popular Palms, but now it is not grown to anything like the extent it once was. A notable feature of this Palm is its habit of pushing out numerous shoots from the base, so that in time it often forms a dense tuft.

Chamærops humilis, the dwarf Fan Palm of Southern Europe, is a very ornamental subject for the greenhouse, and it also succeeds out of doors during the summer. A peculiar feature of this is the individual variations that occur when it is raised in large quantities from seed. It is more marked in this species than in any other Palm that I know, and no fewer than five recognised varieties are mentioned in the Kew *Hand List*. The hardy Trachycarpus excelsa (or Chamærops excelsa) is, apart from its value for planting out of doors, extremely useful when cultivated in pots for various decorative purposes, as its hardiness enables it to be employed for the furnishing of draughty corridors and similar places where more delicate species would soon suffer.

Corypha australis, an Australian Fan Palm with spiny leaf stalks and a harsh, unyielding style of growth, would probably not be much grown but for the fact that, like the Chamærops, it is but little affected by cold draughts short of actual frost.

Geonoma gracilis is a delightful Palm somewhat suggesting Cocos Weddelliana, but its habit of growth is altogether more graceful. As far as my experience goes, it is also of a more delicate constitution. But few market cultivators grow this species, and well-furnished plants always realise good prices.

Latania borbonica is a native Fan Palm of China and Japan, and will thrive in the greenhouse. It was at one time grown almost universally, but has has fallen into disfavour in late years, though I have recently noted signs of increased interest in the plant.

Several members of the genus Phœnix are

valuable for decorative purposes, though the true Date (Phœnix dactylifera) cannot be included under that head. The nomenclature of the genus is in a very confused state, and I am not sure that all the forms grown as P. canariensis rightfully belong to that species. At all events, P. canariensis itself is one of the best of Palms for the embellishment of the conservatory, or for placing out of doors during the summer, while few, if any, surpass it as a plant for the dwelling-house. Other good species are P. reclinata and P. rupicola, while that delightful little gem among Palms, P. Roebelinii, is making rapid headway in popular favour. For its successful culture, however, stove heat is necessary.

Rhapis flabelliformis is a Japanese Palm that pushes up suckers freely, so that in time it forms quite a mass of stems. It is essentially a greenhouse species, and is very popular for decorative purposes in its native country.

Seaforthia elegans is rarely seen nowadays, but before Kentias were so generally grown this Palm was cultivated in considerable numbers.

Culture.

When used for decorative purposes many of these Palms have to be placed in ornamental pots or vases. Such being the case, it is a great advantage to keep them in as small pots as possible, consistent with their remaining in good health. Fortunately, most of the ordinary decorative Palms readily lend themselves to this treatment, while it is easy to injure them by overpotting. There are now many stimulating manures on the market that can be used without any unpleasant smell, and when Palms are much pot-bound they are greatly benefited by occasional applications. Care must be taken to strictly follow the instructions, for if too much is applied the growing tips of the roots are apt to be injured, and the plant soon falls into ill-health. As a rule, no water should be allowed to stand in the saucers or other receptacle, though this rule may be relaxed in the case of Phœnix canariensis, whose roots, when much pot-bound, delight in this extra moisture.

Cleanliness is a very important factor in the successful cultivation of Palms, hence a frequent sponging of the leaves with tepid water and a little soap is beneficial.

It may be pointed out that while the names as above given are those in general use, botanists and horticulturists are by no means of one accord with regard to the nomenclature of the different members of the Palm family. Thus Kentias are to the botanist Howeas, from Lord Howe's Island, Areca Baueri is Rhopalostylis Baueri, Areca sapida is Rhopalostylis sapida, Areca lutescens is Chrysalidocarpus lutescens, Corypha australis is Livistona australis, Latania borbonica is Livistona chinensis, and Seaforthia elegans is Archontophœnix Cunninghamii. W.

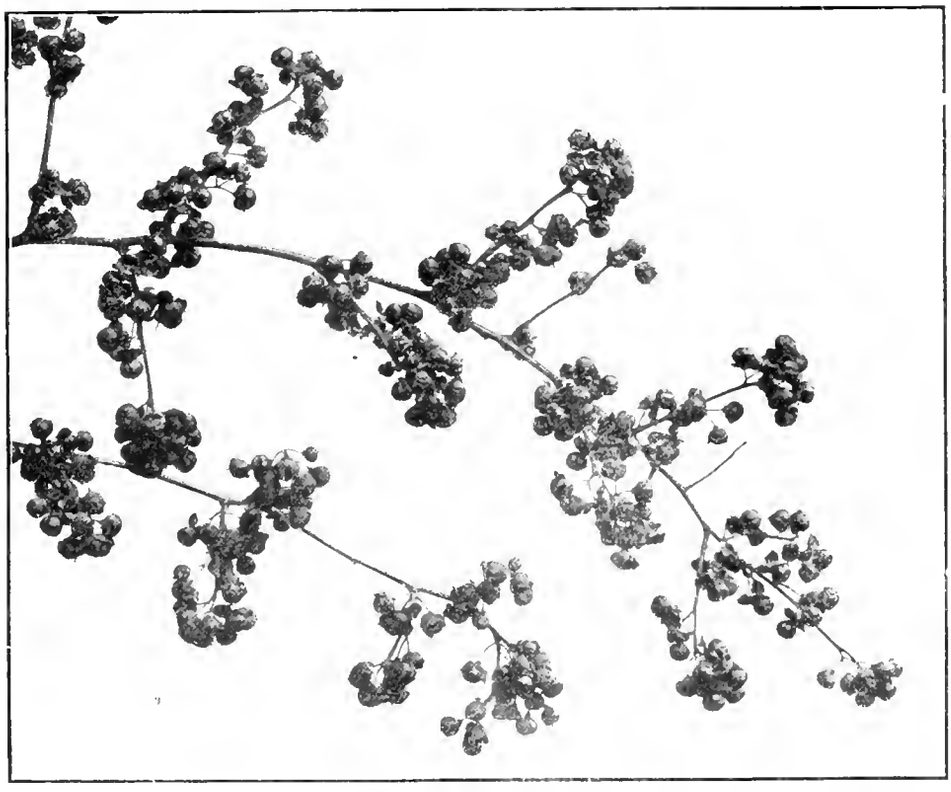

Fig. 105.—Flowering spray of Celastrus articulatus.

CELASTRUS ARTICULATUS.

During the past winter no deciduous climber has made so effective and continuous a display as this Celastrus from Northern Asia. It is a comparatively recent introduction, having been raised at Kew, in 1891, from seeds sent by Professor Sargent, of the Arnold Arboretum. It is not yet so well known in gardens as it deserves to be or is likely to become. Of very vigorous growth, it is admirably adapted for covering trees that are past their best, when, instead of uprooting them, it may be thought worth while to utilise them as supports for ornamental climbers. This Celastrus is a twiner, and once attached to a suitable support, soon makes good its hold. A group of plants in the Kew Arboretum growing over some rough branches stuck in the earth set an enormous quantity of fruit last autumn, and for several months were singularly attractive. During November, December, and January there was nothing out of doors that made so fine a display. The Celastrus is a near ally of Euonymus, and, as in this genus, the species owe their beauty mainly to the fruits. In the plant we are now considering the fruit has at first the form of a pea-shaped capsule. This capsule is three-valved, and, as the fruit ripens, the valves open and become reflexed. It is then that the full beauty of this climber is revealed, for the inside of the valves is golden yellow, and the large seeds are of a shining scarlet. The plants in cultivation are probably of Japanese or Chinese origin, but the species is widely spread over North-East Asia. W. J. B.

FRUIT FORCING AT GUNNERSBURY HOUSE.

I recently visited these well-known gardens, and was much interested in the forcing of fruits which is extensively undertaken by Mr. James Hudson, the gardener. The forcing of fruit trees in pots is a special feature at Gunnersbury House Gardens, and many of the trees were, at the time of my visit, in full blossom, but others had set large crops of fruit. There were Peaches, Nectarines, Plums, and Figs. These trees have been forced each season for more than ten years, and some are of a greater age than this, which disproves the general belief that such trees do not last long and are costly to replace. In this connection I may state that when visiting a garden last year in which I was employed some 40 years ago, I saw the same trees that were there in my time bearing good crops, though in very large pots. Several houses at Gunnersbury House are filled with pot-trees, and the earliest have fruits about as big as Walnuts, at which size they are thinned, for thinning is not done so early in the case of potted trees as with those that are planted out.

In the early house are six rows of trees, and taking into account their age—some are from 10 to 15 years old they are splendid specimens of pot culture. The size of the pots at once impresses one as being small, and here I think is one of the secrets of success—for small pots, with annual repotting, careful stopping of the shoots, and suitable feeding, are the main requirements. Pots having a diameter of 9 to 12 inches are used, and the larger size mentioned is rarely exceeded, though some of the trees almost touch the glass with their shoots. Amongst the Peach trees I noticed some fine specimens of Duchess of York, Duke of York, and others. The Peaches and Nectarines are also represented by the best of the mid-season kinds, such as Crimson Galande, Dymond, Grosse Mignonne, Sea Eagle, the Nectarine Peach, and Pine Apple Nectarine, Rivers' Orange, Humboldt and others. Cardinal Nectarine is much grown, also Early Rivers, and others, including Victoria, a fruit having the same flavour as the Stanwick Elruge, and which forms a grand tree for pot culture. When the trees were opening their flowers a hive of bees was placed in the house, and this was transferred from one house to another as the blossoming proceeded. There are very large crops of Plums, and though some of the trees are small, the fruits will require a severe thinning.

Cherry trees are a great feature in another house. The varieties of Cherries cultivated in these gardens are numerous, Guigne Annonay, a fine black fruit, being the earliest to ripen, is of excellent flavour, and ripens ten days earlier than Early Rivers; it is a great bearer in pots. Guigne Annonay is largely grown and is a favourite. Belle d'Orleans is also grown for its early fruits, and the May Duke for its pollen, which is valuable for setting the fruits of other varieties. Some of the late kinds, such as

Governor Wood, Bigarreau Napoleon, and Bigarreau de Schreken have set grand crops.

Of Plums, all the best of the Gages are represented, including Jefferson. Count Althann's Gage is a splendid late red Plum.

A large house is entirely devoted to pot Figs, and fruits of the variety St. John's are gathered daily. Mr. Hudson also cultivates the Pingo de Mel variety largely, and holds it as valuable as the St. John's, but I have always been under the impression that Pingo de Mel was not so valuable a variety, as it has a more spreading growth and a deeper-coloured fruit; at any rate, it is a grand Fig for forcing.

A large house, which may aptly be called "The Store," is filled with trees and kept as cool as possible to provide a succession. Here are large quantities of Peach, Nectarine, Plum, and Fig trees. Other houses are filled with Strawberries; the earliest house is well furnished with fruits that are at their final swelling stage. The variety is Royal Sovereign. But, though this is largely grown, Mr. Hudson is impressed with the qualities of Laxton's Progress, and this is on trial with Royal Sovereign. The plants in the second house are equally good, but in a later stage of growth, and there are large supplies of Strawberries in cold frames to form a succession. *G. Wythes.*

Fig. 106.—sprays of darwinia hookeriana: flowers greenish-white.

THE GENUS DARWINIA.

This genus was named in honour of Dr. E. Darwin, author of *The Botanic Garden*, a poem in two parts published in 1795. In addition to the name of Darwinia, plants in this genus have been assigned several other generic names. The reasons for this will be perhaps best understood by the following explanation, taken from a paper by George Bentham, P.L.S., read before the Linnean Society on February 2, 1865, "described and figured by the late Mr. Rudge in the eleventh volume of the *Linnean Transactions* as Darwinia." "Owing to Mr. Rudge having overlooked the minute calyx-lobes, and misunderstood some other points of its structure, it was generally referred to Monochlamydeæ, where it naturally did not occur to De Candolle to seek for it when working up the Myrtaceæ for the *Prodromus*. He therefore described the latter in the *Prodromus*, and figured it in his memoir on Myrtaceæ, as a new genus, under the name of Genetyllis. Unfortunately he also overlooked the staminodia, expressly distinguishing it from Chamælaucium by their absence. Lindley, therefore, in his account of the Swan River vegetation appended to the *Botanical Register*, having to describe three additional species, established another genus under the name of Hedaroma." "Endlicher also, about the same time, in the second volume of the *Annalen des Wiener Museums*, proposed a fourth genus under the name of Polyzone."

The genus is found only in Australia. Mueller, in his second census of Australian plants, enumerates 37 species. All are evergreen, and shrubby in habit. An interesting point about the Darwinias is the highly-coloured bracts surrounding the flowers. It is to these that the plants owe their decorative value, the flowers themselves being small, and enclosed within the bracts. The campanulate inflorescences are terminal, and last for a long time in perfection on the plants. The bracts enclosing the flowers can be seen fully six months before they are fully developed. These are freely produced, there being some 250 on the plant, each spray on an average bearing six flowers.

The species of Darwinia, like the genus, have at various times had several names. As far as I am aware only two species are in cultivation at the present time in this country. These are D. Hookeriana and D. macrostegia. A third species, D. fimbriata, with rose-coloured bracts, was introduced by Messrs. Veitch, of Chelsea, in 1864, but has apparently been lost to cultivation. It has figured in the *Botanical Magazine*, tab. 5468, as Genetyllis fimbriata. Judging from dried specimens, one of the most decorative species is D. Meisneri, collected by Drummond in South-western Australia, but I can find no record of its being cultivated in this country.

Darwinia Hookeriana, Bentham, in the *Journal* of Linnean Society, IX. (1867), p. 179 = Genetyllis macrostegia, Hooker, in *Botanical Magazine*, tab. 4860 = G. fuchsioides, Hort.—The linear-oblong leaves, about half an inch in length, are freely scattered over the thin red stems, giving the plant a heath-like appearance. The inner bracts of the campanulate involucre surrounding the flowers are bright red in colour, 1 inch in length, ½ inch broad, two or three outer ones shorter, greenish-red, passing to stem leaves. Flowers: small, greenish-white, sessile, usually in 6's enclosed in terminal heads, within the bracts. Introduced by Drummond, who collected seeds in Western Australia. The plant, of which a spray is figured, is 3 feet in height; with age they attain much greater dimensions.

D. macrostegia, Bentham, in *Journal* of Linnean Society, IX. (1867), p. 179 = Genetyllis tulipifera, Hooker, in *Botanical Magazine*, tab. 4868. Hedaroma tulipiferum, Lindley, in *Gardeners' Chronicle* (1854), p. 323.—The elliptical-oblong leaves are scattered, ½ inch to ¾ inch long. The inner bracts of the campanulate involucre creamy-white, striped and splashed with red, about 1½ inch long, outer ones shorter, and with rather more colour, several of the lowest merging into stem-leaves. In appearance this species is rather more robust than the preceding. A plant figured in the *Gardeners' Chronicle* for 1879, p. 785 (now reproduced), was 7 feet 6 inches in diameter and 4 feet 6 inches high. As in the case of D. Hookeriana, this plant was also introduced by Drummond. Exhibited as a new plant, it received a Silver Medal at the Horticultural Society's show held at Chiswick on May 13, 1854.

Cultivation.

Propagation is effected by cuttings, the points of well-ripened side shoots being the best. September and spring are the most suitable seasons for inserting the cuttings; the month of September is preferable, the growths at that time being moderately hard. Cuttings 1 inch to 1½ inch in length will be found the most suitable. Pots 3 inches in diameter are a useful size for the cuttings. Make the pots half full with broken crocks, and over these place a layer of rough peat, filling up the pot with finely sifted peat and sand, the surface to the depth of ¼ inch being all sand. Insert the cuttings fairly close together and make them firm. Leave sufficient space round the edge of the pot to permit of a bell-glass being placed over the cuttings. An atmospheric temperature of 50° to 55° Fahr. will be suitable. If convenient the pots will be better plunged nearly to the rim in ashes in a propagating frame. Remove the bell-glasses every morning and wipe them, otherwise if there is an excess of moisture the leaves will fall. When the cuttings are putting forth roots the bell-glasses may be tilted and finally dispensed with altogether. By April or May in the case of cuttings inserted in autumn, and September when inserted in spring, they should be ready for potting off singly in small pots. Use finely sifted peat and coarse sand and pot firmly. The soil must be used in a moist condition, as it is not advisable to water the young plants for several days after potting. Give them a light position on a moist stage in a house in which the heat is kept at 50° to 55° Fahr. until they are nicely rooted. Afford shade from bright sunshine until the plants have become well established in the pots, after which stage the points of the shoots may be removed. During winter a temperature of 5° lower will be more suitable. In the following spring the plants should be shifted into 4-inch pots, and again in autumn if they have done well a further shift may be necessary, this time into 6-inch

pots, as the plants in a young state must not be allowed to get root-bound. A minimum temperature of 45° is sufficient for large specimens. In August when the bracts have formed, the plants may be stood outside in a position sheltered from the mid-day sun. A certain amount of attention will be necessary from time to time in stopping and tieing the plants to obtain good specimens. The heads of flowers should be picked off as soon as the colour shows signs of fading. Peat, coarse sand, and a little broken charcoal form the best compost for Darwinias. Mildew sometimes attacks the plants, but if they are dusted with sulphur it will destroy the pest. In potting Darwinias more space should be left for watering than is usual with most plants. Large specimen Darwinias were very popular for exhibition 20 to 50 years ago. This was no doubt in a large measure due to the length of time the plants retain their beauty when in flower; for three or four months, or even more when grown quite cool, the bracts keep a good colour. *A. O.*

COLONIAL CORRESPONDENCE.

HÆMANTHUS KATHERINÆ.

IN the *Gardeners' Chronicle* for February 1 there is a figure and some remarks on Hæmanthus Katherinæ, and in the accompanying note it states that "Mr. Baker named it in compliment to Mrs. Katherine Saunderson, wife of the gentleman who first sent dried specimens, which he had collected in Natal, to be determined at Kew." This is an error which ought, I think, to be corrected. The lady who sent the specimens, and I think bulbs, of the plant to Mr. Keit, asking that they should be sent to Kew, was Mrs. Katherine Saunders, the wife of Mr. J. Renault Saunders, the manager and part owner of the Tongaat Sugar Estate, and the mother of Sir Charles Saunders, of Zululand. Mrs. Saunders was an accomplished artist, and painted numbers of our wild flowers in a very beautiful manner. Some of these paintings were sent to the late Professor Harvey for naming, and some also to Kew. Both Mr. and Mrs. Saunders died some years ago. Mr. J. Sanderson, who sent numbers of dried plants to Kew, died many years ago; his speciality was Orchids. He made many coloured drawings of these plants, which were for some years in my possession, but the late Mrs. Sandersoa did no botanical work to my knowledge. Mr. Sanderson was editor and proprietor of the *Natal Colonist*, and the well-known Sandersonia aurantiaca was named after him. *J. Medley Wood, Director, Natal Botanic Gardens.*

PLANT NOTES.

TROPÆOLUM TRICOLORUM.

THIS decorative greenhouse plant is in flower during March and April, and few subjects furnish a brighter display than this Nasturtium when climbing up to the glass roof, a position in which all its fiery-coloured flowers are seen to advantage. While this plant is making its growth, almost daily attention is necessary to train the slender shoots in the direction required, as they soon become entangled owing to each one of the many tiny leaves encircling itself around the support. The plant is frequently trained over a balloon-shaped trellis, but I consider the flowers are shown to greater advantage when the shoots are trained up strings fastened to form festoons on the lower parts of the roof of a cool greenhouse. During bright days, a light spraying with clear water during the afternoon has the effect of destroying red spider should it be present on the foliage; this pest will be very troublesome if the roots are allowed to suffer from dryness. When the flowering period is over and the foliage begins to turn yellow less water should be given, and as soon as the growths are thoroughly ripened they should be cut off and the pots containing the plants be removed to a sunny position, and be kept comparatively dry until the end of September. After this period of rest, a good soaking of water should be given to the roots, and immediately new growth is apparent the old soil should be shaken from the roots, and the plants be re-potted into 7-inch pots, care being taken that the tiny, brittle growths are not damaged in the process. My former practice was to re-pot these plants while they were dormant, but I find they succeed better if they are first started into growth. The pots should be well drained, and the soil should consist of a mixture of turfy loam and a little peat, with a good sprinkling of coarse silver sand. When the potting is finished, a crooked peg should be driven into the centre of each pot to fasten the string for training.

CANTUA DEPENDENS.

THIS plant is not often seen in gardens, either under glass or in the open. Its season of flowering is February, when it should be given a little warmth, such as is afforded Primulas, Cyclamen, and other spring-flowering plants. In these gardens it is planted out in a narrow border against a dark wall, and the growths are trained up to the glass roof, where its hanging, funnel-shaped flowers are seen to advantage. This species (which is identical with C. buxifolia) is considered sufficiently hardy in the West of England to withstand the winter if planted in a sheltered corner, but I have never seen it in the open in Devon, though I believe it is so planted in Cornwall, where the temperature is not so changeable as in this part of Devonshire. When grown under glass, the plant is susceptible to attacks of red spider, especially during the summer months; the syringe should therefore be freely used both in the early mornings and again towards 5 p.m. The shoots should be thinly trained for the purpose of producing stout flowering growths. The roots absorb much moisture during the summer months, and applications of weak manure water made either from cow, sheep, or deer droppings, should be given once a week during the growing season. The plant is easily increased from cuttings of half-ripened shoots, dibbled in small pots filled with sandy soil and placed under a bell glass in the house where the parent plant is growing. When cultivated in pots, it should be trained as a pyramid, and the pendulous shoots be allowed to hang at will. After the flowers have faded, any necessary thinning of the shoots should take place, and new growth be encouraged for a couple of months, when the plant may be put out of doors for the purpose of ripening the wood. *J. Mayne, Bicton.*

BORONIA FASTIGIATA.

IN Western Australia this pretty little flowering shrub is said to become a bush 6 feet high. It is rarely seen in this country, and is of doubtful hardiness, so that its chief use is as small pot shrubs for the decoration of the cool house or conservatory. At the present time well-grown examples are in full flower. The four-petalled blooms are only a little over ½ inch across, but this is amply compensated for by their beauty and perfume. Nearly every shoot is terminated with erect cymes bearing eight or ten flowers, and lower on the leading shoots occasional axillary flowers are produced. The petals are rose-coloured, with curiously-haired anther filaments of the same colour, which are surmounted by deep yellow stamens. The leaves are small, obovate, somewhat coriaceous, and greyish in colour. As with all Boronias, great care in watering is necessary, and free ventilation should be given whenever possible. Being of a somewhat straggling habit, a little pinching of the leading shoots is of advantage, but, remembering that the bush is fastigiate, the stopping must be regulated so as to keep the plant open, or the shoots will become congested and either not flower or only do so sparsely. Boronia fastigiata responds to the treatment usually given other species of Boronia, but unless the peat used is of good quality, it should be dispensed with. *A. C. B.*

COREOPSIS GRANTII.

ACCORDING to the *Index Kewensis*, over 100 species of the genus Coreopsis have been described. By far the greater number of these are natives of the American continent. Of the remainder, a dozen or more inhabit tropical Africa, the subject of this note being one. C. Grantii was first collected during the Speke and Grant expedition, 1860-3, in the district of Karagué, German East Africa. To Mr. Morley T. Dawe, Director of the Scientific and Forestry Department, Uganda, we are indebted for its introduction into our gardens. In the spring of 1905 he forwarded seeds of it to Kew, collected at Buddu, in Uganda, where he says it flowers in December. Under cultivation the plants open a few flowers in mid-winter, but it is from the middle of February onwards that C. Grantii flowers so freely. During the summer of 1905, most of the seedlings raised were planted in a warm sheltered border outside the Water-Lily house; they failed to flower, however, before the plants were cut down by frost. Fortunately, two or three plants were kept in a cool greenhouse, where the first flowers opened early in 1906. A spray from one of these plants is figured in the *Gardeners' Chronicle*, Vol. xxxix., p. 162. It is also figured in the *Botanical Magazine*, tab. 8110.

Under cultivation the plants at present average 1 to 2 feet in height. The habit is low and bushy, the branches being semi-spreading. There is considerable variation in the size and lobing of the leaves, which are bipinnate, 2 inches to 6 inches in length, and the lower pair of leaflets 1 inch to 5 inches broad. The flowers of the seedlings raised vary a good deal in size, one especially having much larger flower-heads than the others; bright yellow in colour, they average 2 inches in diameter. The flower-heads are freely produced, and a succession is kept up for from three to four months.

The cultivation of the plants is very easy. As previously mentioned, the original plants were raised from seeds, but, so far as I am aware, despite repeated efforts, no seeds have so far ripened in this country. It is, however, readily increased by cuttings, which can be obtained from the plants cut back after flowering. These root readily in a close frame, with a little bottom heat in April or May. When rooted and potted off singly, they make rapid growth. As soon as the plants are established in the flowering pots, 5-inch or 6-inch, according to the time of rooting, they may be stood outside. This will be about the end of July. Early in September, or a little later if the weather is favourable, place the plants in a house where the minimum night temperature is not less than 50° F. Weak doses of manure water may be given at intervals. The plants will commence to flower about Christmas, or early in the New Year. The plants thrive in a compost of three parts fibrous loam, one part leaf-mould and sufficient coarse sand to make the whole porous. C. Grantii in habit would be termed a greenhouse shrub or sub-shrub. Why this plant failed to obtain notice from the R.H.S. Floral Committee at the meeting on March 3 last I do not understand. Were they to grow the plant, I make bold to say the majority would wish to award it a First-Class Certificate. *D. D.*

STREPTOSOLEN JAMESONII.

THIS plant is now one of the most showy species in the greenhouse. Owing to its orange-yellow-coloured flowers, it is much appreciated at this dull season, and specimen plants measuring 5 or 6 feet in height can be cultivated in two

years. Cuttings may be inserted at the present time, and if grown on liberally during the summer they will make such specimens by this time next year as will be capable of affording a mass of flowers. As soon as the cuttings have made roots, they should be potted and re-potted as they require more rooting space, and in June should be plunged in a position out of doors, leaving them there until October or such time as it is feared frosts may occur. The plants may be trained as pyramids, standards, or as climbers against a wall or up the rafters of a roof. As the flowers are pendant, they show effectively from these positions.

CLIANTHUS MAGNIFICUS.

This plant is now in flower on the roof of a greenhouse in these gardens, where its brilliant crimson flowers are very effective. In growth it is somewhat similar to Streptosolen, and may be given the same kind of cultivation.

ABUTILON VEXILLARIUM.

Like most of the species of Abutilon, A. vexillarium makes an excellent pillar or roof plant. It has green and yellow leaves and distinct, curiously-shaped flowers.

MANDEVILLA SUAVEOLENS.

This old-fashioned climbing plant still ranks as one of the best. It flowers very freely, and the flowers are white and fragrant. The shoots should be trained and tied regularly during the time the plant is making its growth, and syringing should be performed frequently, as the species is very liable to attacks of red spider. At Leonardslee this pleasing species is cultivated on a wall out of doors, facing to the south, where it yields a succession of flowers to those produced in the greenhouse. The plants should be pruned severely each season before they commence to grow.

TRACHELOSPERMUM JASMINOIDES.

As a roof or pillar plant this species is well known in gardens. It has evergreen foliage, and small, white, fragrant flowers. The plants flower during May and June. The species succeeds in a warm corner out of doors at Leonardslee. *W. A. Cook, Leonardslee Gardens, Horsham, Sussex.*

[Our correspondent sent good specimens of each of the species mentioned above.—Ed.]

A LATE APPLE CROP.

At fig. 107 is illustrated an Apple tree, the fruits of which were still ungathered on January 1. By the time the new year arrives most Apples have been removed from the store-room and consumed, and it is not often that they can be gathered in January on the trees, although we have known stray fruits of such late-ripening kinds as French Crab and Northern Greening to be found hanging as late as February. For the opportunity of figuring the example, we are indebted to Mr. Frederick Bedford, Straffan House Gardens, Co. Kildare, who writes: "The photograph of the Apple tree was taken by Mr. Robert Lindsey, Straffan, on New Year's Day. The variety is the French Pomme de Fer (Iron Apple), and the crop of one bushel was gathered on the day the photograph was taken, after having withstood the heavy autumn gales and early winter frosts, not a single fruit having been blown off. The fruits hung with tenacity even so late as the date of their gathering. The variety is a desirable one for culinary purposes, and is in season from April to the end of June, being then as fresh and brisk in flavour as fruits of other varieties gathered in December. Although French Crab is by some growers considered synonymous with Northern Greening, there is no resemblance between the two fruits."

TREES AND SHRUBS.

PICRASMA QUASSIOIDES (P. AILANTHOIDES).

A tree belonging to the Simarubaceæ, of which but little is as yet known in this country, though it promises to form a distinct and desirable acquisition, is Picrasma quassioides. The species has a wide distribution over Eastern Asia, for it has been found in Japan, China, the Himalaya, and even as far south as Java. The plants in cultivation have come from North Japan, and have proved to be quite hardy. It is probable that the specific limitations of Picrasma quassioides are at present too widely extended, and that the forms from Java and other southern habitats may prove to be distinct. It is scarcely credible, at any rate, that a Javan plant could survive our winters without protection. In the forests of Japan, Picrasma quassioides is a slender tree 20 to 30 feet high, with a trunk about 3 feet in girth. Its habit is rather thin, and this is especially noticeable when the tree is leafless. The leaves are pinnate and of a dark, lustrous green. In a young state the most attractive feature of the tree is the bark.

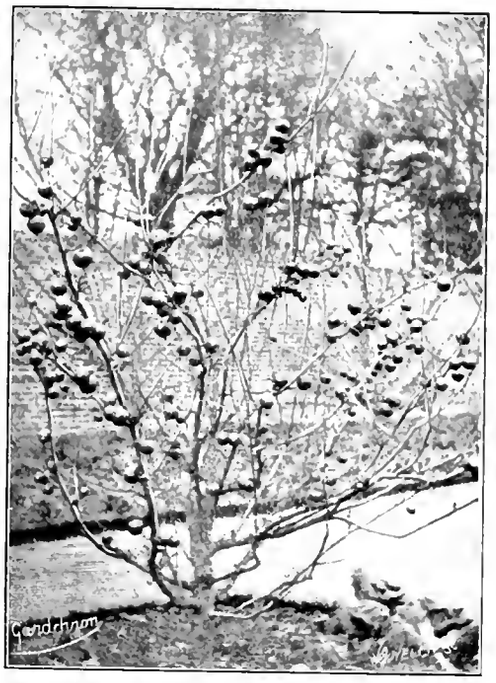

Fig. 107.—A crop of apples in Straffan House Gardens, Co. Kildare, as it appeared on New Year's Day.

This is of a reddish-brown, handsomely marked with yellowish lenticels. But in Japan its greatest beauty is in the autumn-colouring of its leaves; these turn first from green to orange, and then to deep scarlet. Sargent observes that "few Japanese plants I saw are as beautiful in the autumn as this small tree." There is a healthy young tree growing on the lawn near the Cactus house at Kew. This is about 12 feet high, and has flowered and produced seed from which young plants have been raised. The leaves have turned yellow before falling, but, up to the present, have not acquired the scarlet tinge. This tree belongs to the same family as the Ailanthus and is permeated by a singularly bitter principle. *W. J. B.*

THE ALPINE GARDEN.

HELONIOPSIS JAPONICA.

Although not entirely new to cultivation, this attractive Japanese Liliaceous plant was little known till the last year or two, when importations of it have been received from Yokohama under the erroneous name of H. breviscapa. H. japonica was first brought home by Mr. Maries, and plants flowered with Messrs. Veitch in March of the year 1881. It flowered at Kew in 1887, and was figured at the time in the *Botanical Magazine*, t. 6986. Judging from herbarium specimens, it appears to be a somewhat variable plant, and two species of the genus are recorded from Japan; while a third is found in Formosa. They are all, however, connected by intermediate varieties, and may well be extreme forms of one species. H. japonica, which is now in flower in the Alpine house, forms a tuft of strap-shaped leaves, each about 4 inches or more long, and from ½ to 1 inch wide. When young they are green, but assume a bronzy appearance with age. The stout scape, furnished with leafy bracts, is from 4 inches to 6 inches high, and bears from six to ten flowers, disposed in a very short raceme, or almost an umbel. When fully expanded the flowers are over an inch in diameter, and rich rose-purple in colour, set off by the spreading violet purple stamens, which are longer than the segments of the flower. This plant has a wide distribution in Japan, and is found at altitudes varying from 2,000 to 7,000 feet. H. breviscapa (often wrongly spelt "breviscarpa") is very similar in habit, but has smaller, white flowers, with blunter segments. It was exhibited by Messrs. Barr and Son at the Royal Horticultural Society's show in March, 1905, and obtained an Award of Merit (see fig. and description in *Gard. Chron.*, March 25, 1905). H. umbellata, the Formosan species, is not in cultivation, but does not appear to be distinct from H. japonica. *W. I.*

The Week's Work.

FRUITS UNDER GLASS.

By T. Coomber, Gardener to Lord Llangattock, The Hendre, Monmouthshire.

Late vines.—Vines in the late houses having started into growth, a genial atmosphere must be maintained by syringing the vines in the morning and afternoon, and by damping the surfaces of the house on fine days as often as necessary. The atmospheric temperature at night should be 50° to 55°, and by day 60°, allowing the heat to increase under the influence of sunshine and in the presence of liberal ventilation. Disbudding may be commenced by rubbing out the weak and otherwise unsatisfactory growths, leaving a very liberal number of the strongest shoots until it can be seen which shoots will be capable of producing the strongest inflorescences. Stop the shoots at two or more leaves beyond the flowers, according to the amount of space available for foliage, and after they have become sufficiently strong draw them down very gradually to the trellis. When this stage has been reached the vines will require liberal supplies of liquid manure or top-dressings of some quick-acting artificial fertiliser. Out-of-door borders are always too wet at this season of the year for liquid manures to be applied, therefore make applications of an artificial manure in showery weather, and later in the season afford the border a light mulching of short stable litter.

Late Hamburgh house.—This description of vinery is more often employed by amateur gardeners than any other. The vines have usually indoor borders only, and these are frequently allowed to suffer from lack of moisture and plant food. If such houses were not closed until the vines commenced to push their growths, they will now require similar treatment to that recommended for the late vines.

Cucumbers.—Plants which were raised early in the year should be lightly cropped, and the fruits should be gathered directly they are ready for consumption if it is desired to keep the

plants in a fruiting condition for a considerable period. Apply frequent supplies of liquid manure in a tepid state to the roots, and also occasional top-dressings. Maintain a heat during the night of 70°, and afford a little ventilation during the day when the sun-heat has caused the thermometer to register 80°. Syringe the plants and the surface of the beds early in the morning and again in the afternoon at the time of closing. Thin out any weak shoots and remove any damaged foliage, stopping the other shoots at one leaf beyond the fruit, it being essential to prevent overcrowding of the foliage.

Cherries.—If the trees have not been hurried during the process of flowering, they may now be considered to have passed a critical period. Care will still be needed until the fruits have formed stones. No more fire heat should be employed than is necessary to maintain the atmospheric temperature at night to 45 degrees, which may be increased during the day to 50 degrees. As soon as 50 degrees is reached, afford a little ventilation. Increase this on sunny days so that 65 degrees may not be exceeded. In the afternoon, as the sun loses its power, reduce the ventilation, and close the house moderately early. Syringe the trees, morning and afternoon, on bright days, and take care that the soil, whether in pots or borders, is not allowed to become dry. Applications of carefully diluted manure water may be given the roots occasionally. Stop the shoots of fully-developed trees at the third or fourth leaf to promote the formation of fruit buds, but in the case of young trees of any description, suitably placed shoots will be needed for purposes of extension.

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Disbudding and thinning.—Apricot, Peach, and Nectarine trees are later than they have been for several seasons past, but they will now need to be examined every day. Apricots are the first to need attention in the matter of disbudding, but they do not require to be disbudded so severely as the Peach. Commence as soon as the shoots can be rubbed off by means of the thumb and finger, beginning at the top of the tree and gradually working downwards to the base. Remove all the shoots that are in undesirable positions, such as those that grow from the extreme back or from the front of the tree. Encourage the formation of natural spurs whenever possible, and also artificial ones by pinching such shoots as are not required for extension. It is better to do a little disbudding and thinning at one time, repeating the operation at frequent intervals, until the work is finished, than to cause a check to the trees by removing much growth at one time. The cultivator should study the peculiarities and habits of each kind of tree and endeavour to disbud and pinch in such a manner as to render it necessary only to use the knife in winter to a limited extent. Train in young shoots near to the base of all the spurs and branches that are likely to become useless, and will have to be cut out at a future time. Many old trees are thickly studded with fruit spurs, and therefore often set their fruits in clusters. It will be necessary to thin out such fruits and any others which would be likely to get crushed, as soon as it can be seen which will swell best. Do not, however, thin the fruits severely at the first operation, but remember that many may fall during the "stoning" process. The protective material should be removed from the trees whenever the weather is mild, but it should be kept in a position where it will be available for use when required.

Grafts.—Freshly-grafted trees should be examined and any cracks that are found in the clay encircling the grafts be made good by moistening the clay and rubbing portions of it into the cracks; a little damp moss if tied into position over the clay and frequently moistened will serve to prevent further cracking. One or two shoots may be allowed to grow from the stocks below the point at which the graft is inserted for a short time only to encourage the sap to circulate; all others may be removed at once. If any grafting remains to be done it should be pushed forward to completion. Fruit trees or stocks that were grafted last year should be examined and the grafts made secure from winds by the affording of stakes and ties.

Raspberries.—Canes planted in autumn and spring that were cut down to the ground level, as advised in a previous Calendar, will now be producing many suckers from the base. Do not allow any but the strongest of these to remain. Remove any suckers that may appear above the surface of the soil between the rows of old plantations and any weak growths that appear in the rows themselves. This should be done carefully with a fork, and the ground should be made firm afterwards by treading.

THE KITCHEN GARDEN.

By J. Beckett, Gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, Hertfordshire.

Beetroot.—The Globe or Egyptian variety raised from seeds that were sown on a mild hot-bed in frames are now making active growth and should be thinned sufficiently to allow the plants to develop without becoming drawn, but the final thinning can be done after the roots have become as large as a good-sized Radish; the thinnings may then be used for salads. Keep the surface soil frequently stirred and admit plenty of ventilation during favourable weather. Make a liberal sowing of the same variety on a south border out of doors; the produce will be found to be much more serviceable during summer than the longer rooted kinds. The main sowings should not be made until the end of the present month or the beginning of May. Roots of small to medium size are most desirable.

Globe Artichokes.—Although these have been protected in these gardens, they have fared badly during winter, and we shall have to depend to a large extent on suckers which were removed from the plants last autumn and have been wintered in cold frames. There will be no further need for the protective material, and if this has not been already removed, it may be taken away at once. After this has been done, apply a good dressing of short manure and let it be forked into the soil, leaving the plantation in as tidy a condition as possible. Plants at present in pots should be planted out into deeply trenched and heavily manured ground, applying plenty of finely sifted cinder ashes round the base of each plant.

Parsley.—A constant supply of Parsley throughout the year can only be assured by making frequent small sowings from early in spring until late in summer. I have found that the best results during summer can be obtained by making at least two sowings in boxes in spring, raising the plants in heat, thoroughly hardening them off and pricking them out whilst still quite small into deeply tilled rich land, which should be made very firm. They are planted in rows, placed 1 foot apart, and the plants are placed at the same distance in the row. April and May are the two best months for the planting, and almost any situation in the kitchen garden is suitable. Frequent applications of soot are very beneficial to Parsley. It is advisable to take great care in selecting the best varieties for cultivation.

Spring Cabbages.—Many complaints have reached me from various parts of the country as to the unsatisfactory condition of these plants, due probably in a great measure to the excessive wet in autumn, and also to several short periods of severe frosts. Unless the stems are well protected they are insufficiently matured to withstand such weather. It is very necessary in the early part of November to draw the soil well up to the stems of these plants, much in the same manner as Potatos are earthed up. I never remember to have seen our Cabbage plants in better condition than they are this season. The frequent use of the draw-hoe at this season is the greatest stimulant to growth that can be applied to this crop.

Turnips.—Make another sowing of the variety Early Milan on a south border. Apply a liberal dusting of soot, and afford the seeds protection against birds.

Summer Spinach.—Make frequent sowings of this vegetable between the rows of Peas.

Chicory and Sorrel.—Make two sowings of Chicory, one at the present time, and another at the beginning of May. Seeds of Sorrel should also be sown at the present time.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Hard-wooded plants.—Such species as are suitable for growing into large specimens, including Eriostemon pulchellus, E. densifolius, E. buxifolius, Polygala oppositifolia, P. Dalmaisiana, Boronia tetrandra, Tremandras, Darwinia, Hookeriana (Genetyllis Fuchsioides) and D. macrostegia (tulipifera) should now be examined for the purpose of determining which of them needs to be repotted. Many of these plants obtain a firm hold of the sides of the pots with their roots, and it is therefore advisable to break the pot before turning the plant out. Let the ball of soil be pricked up slightly by means of a sharp-pointed stick, doing this with great care and only sufficiently to loosen the points of the roots. The roots of the plants should be brought into a medium state of moisture before repotting is attempted. Let the pots be provided with sufficient drainage, and, if possible, select such pots as are made of soft and, therefore, porous material. The plants should be shifted into pots only sufficiently large to allow of 1 inch of fresh soil being placed round the roots. In the process of potting add only a little soil at one time and ram this very firmly together with the potting stick. Any stakes that need to be removed and others substituted should be given attention before the plant is potted. If the side stakes have to be removed the plants should be securely tied to three stakes placed in the form of a triangle into the old ball of soil before commencing to take it out of the old pot. This will prevent the plant getting loosened at the neck just above the surface of the soil, for if once a plant of this nature becomes loosened at this point it never thrives afterwards. A suitable compost for use in potting is one consisting of peat, silver sand, and a few small bits of charcoal. The strictest attention should be given to the matter of affording water, this being the most essential point in the cultivation of these plants. For forming specimens very careful training is necessary; the stronger shoots should be securely tied down, and all the weak ones left in as upright a position as possible. This will prevent the need for cutting back the strong growths, and the plant will become furnished with shoots in a shorter period. The best position for the plants is one exposed to the light in an ordinary greenhouse. In no circumstances must they be crowded. Liberal ventilation should be afforded whenever the nature of the weather will allow.

Diosma ericoides.—This species may be treated in a similar manner to that I have already described, if it is required for flowering, but the green, sweet-scented shoots if arranged amongst cut flowers at this period are very agreeable. When potting this plant add a little loam to the compost already described, and do not pot quite so firmly as in the case of the other species.

Seedling Primulas.—These will now be ready for pricking off into small thumb pots, filled with a compost of loam, leaf-mould, and sand in equal parts. Place the plants in a position near to the glass in a house or frame of intermediate temperature, and afford shade from bright sunshine.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Cattleya citrina.—This remarkable species, which is commonly known as the Mexican Tulip, is just now opening its fleshy, yellow flowers, which yield a delicate odour. The peculiar habit of this species necessitates the plant being suspended head downwards, as in no other position can it be induced to grow. The plant should be fastened on rough blocks of wood or teak-wood rafts, the latter being preferable, as a little sphagnum-moss can then be packed between the bars, which helps to conserve the moisture about the roots. Abundance of water should be afforded until after the flowering season, and this should be given by dipping the plants in a pail of water. After flowering it is only necessary to afford enough to prevent the pseudo-bulbs shrivelling. Most Cattleyas grow during the spring and summer, but this practice is quite reversed in the case of Cattleya citrina;

but it is not difficult to keep the plants resting if a light and well-ventilated position in the cool intermediate house be chosen for them.

Zygopetalums. The hybrids, Z. Sanderi, Z. Perrenoudii, Z. crinito-Gautieri, and others, which produce their flower spikes simultaneously with the young growths, are all very attractive for flowering during the spring months. Soon after the flower spikes have been removed, attention should be paid to the repotting of any plants that need this operation, as from the base of the new growths young roots are produced at an early stage. These plants have a great dislike to root-disturbance, therefore should not be shifted unless the rooting material is in an unsatisfactory condition. The directions as to compost, position, watering, &c., given in an earlier Calendar for species of this genus, will meet the requirements of the hybrids.

fifth, with plenty of crushed crocks and charcoal and silver sand added, constitutes a suitable rooting medium. Use the materials in as rough a state as possible, and provide the pots with plenty of drainage, so that the large quantities of water required during the growing season will not render the material sour.

THE APIARY.

By Chloris.

Feeding.—There is more need than usual for feeding, and the conditions in some cases are extreme. This is not surprising, when the weather of last year is considered and the poor crop of honey that was secured. Those who were prudent fed liberally last autumn, and they are now reaping the reward, for such colonies are

each side. Some advocate the use of the spur, but, generally speaking, it is not needful, and its careless use leads to the foundation being cut across. The whole of the frames in one hive that I examined had been rendered useless by the foundation being cut in the manner named.

Preparing supers.—Too much stress cannot be laid upon having all shallow frames and sections ready to put on when the right time comes. As with brood frames, so with shallow frames, they ought to be wired so that they will withstand the rotary motion of the extractor. There is only one exception to the wiring, and that is where the source of the honey supply is heather, and in this case the honey is usually pressed out, as the extractor is often useless for the purpose. In such cases wiring would be a hindrance rather than a help. If new frames have to be purchased, the broad-

Fig. 108.—Flowering specimen of Ada aurantiaca from Major Holford's collection. Awarded a cultural commendation at the meeting of the Royal Horticultural Society held on March 31 last.

Ada aurantiaca (see fig. 108).—This showy species is amongst the most beautiful of spring-flowering Orchids, and especially when well-flowered specimens are seen. Cool house treatment is usually recommended for these plants, but my experience is that a rather warmer temperature, especially during the winter, gives better results. We grow them in the cool intermediate house, and they are shaded from strong sunlight during the hottest part of the year. Plants that have passed out of flower, if in need of fresh rooting material, may be given attention, as new roots soon push forth from the last-made growths. A compost consisting of lumpy peat two-fifths, fibrous loam two-fifths, and sphagnum-moss one-

in a safe condition and well able to look after themselves. Syrup should be supplied wherever there is need, care being taken not to spill any, and not to cause any unnecessary loss of heat.

Fitting up brood frames.—It is necessary, about every third or fourth year, to renew the foundation in the brood frames, for the cells become smaller each time brood is hatched in them, because the thin skin of the chrysalis is left behind. If economy is necessary, then thinner foundation may be used up to 10 sheets to the pound if the frames be wired. There are many ways of wiring, but four strands horizontally placed is one of the simplest, allowing the foundation to have the strands alternately on

shouldered class are well worthy of a trial, for they enable us to do without the broad metal ends. The sections should all be fitted with full sheets of foundation. Remember, too, that when you are preparing them, that you set to work first to wet all the joints with hot water to render them supple, and when you have wet the number required, turn the pile over and thus fold those first wetted. By following this plan, many disasters in folding will be averted.

Water.—When bees are raising large quantities of brood, it is necessary to provide water for the bees if there is no natural supply near the hives. If water be placed in any shallow vessels containing stones, with their surfaces out of the water, the bees will be able to make use of it

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Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, APRIL 20—*Easter Monday.* Bank Holiday.

TUESDAY, APRIL 21—
Huntingdonshire Daffodil and Spring Fl. Soc. Sh. at Huntingdon. Devon Daffodil and Spring Fl. Sh. at Plymouth (2 days).

WEDNESDAY, APRIL 22—
Roy. Bot. Soc. Exh. at Regent's Park.

THURSDAY, APRIL 23—
Midland Daffodil Soc. Sh. at Bot. Gardens, Birmingham (2 days).

SATURDAY, APRIL 25—
Quinquennial Exh. of the Soc. Roy. d'Agri. et de Botanique de Gand at Ghent, Belgium, lasting until May 2.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich - 48.5°.

ACTUAL TEMPERATURES.—
LONDON.—*Tuesday, April 11* (6 P.M.): Max. 48°; Min. 37°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Wednesday, April 15* (10 A.M.): Bar. 30.1; Temp. 43°; *Weather*—Sunshine.
PROVINCES.—*Tuesday, April 11* (6 P.M.): Max. 48° Ireland S.; Min. 44° Lancaster.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Herbaceous and Border Plants, Liliums and Hardy Bulbs, at 12; 600 Roses at 1.30; Palms and Plants, Azaleas, &c., at 4, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Liliums, Hardy Plants and Bulbs, Gladiolus, Greenhouse Plants, Ferns, at 12, Imported and Established Orchids, at 12.45, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

***Trees.** Several works have recently appeared on the trees of this country, but in spite of this, it cannot be said that anyone since Loudon's time had really got at close quarters with the subject until the authors of the present work set about their task. The publication of *The Trees of Great Britain and Ireland*, by Messrs. Elwes and Henry, therefore marks an era in the history of the tree-lore of these islands.

It is true that the limits of the work are somewhat circumscribed. The authors only profess to concern themselves with such trees, native and foreign, as can be considered to be of timber-producing size. So that in comparison with the whole extent of woody vegetation hardy in the British Isles, or even with that portion genuinely arborescent, the scope of the work is, to a certain degree, restricted. But the group with which the authors deal is not only the most important one from an economic point of view, but it is in many ways the most interesting.

* *The Trees of Great Britain and Ireland*, by Henry John Elwes and Augustine Henry. Privately printed.

Messrs. Elwes and Henry have treated their subject from two points of view—the botanical and the practical. First there is the botanical aspect. This consists of a general discussion of the genus, a description of its botanical characters, its limitations and relationships, and its geographical distribution. This is followed by a synoptic key to the species. In these keys we note a feature of peculiar value: they are based almost wholly on vegetative as distinct from reproductive characters. Every cultivator of large-growing trees, especially those of exotic origin, knows that a large proportion of them rarely or never flower and fruit. This is especially true of young trees. A means of "running them down," and identifying them in the absence of flower or fruit and on leaf and stem characters alone, is, therefore, particularly useful. After the key comes a detailed description of the individual species and an account of its varieties and hybrids—if such exist. All this is written in language that is scientific yet intelligible to men of ordinary education. For this, the botanical side of the subject, Dr. Henry appears to be largely responsible. It is only those possessed of some knowledge of the difficulties and pitfalls that hamper the student of this branch of the subject who can fully appreciate the labour, research, and critical acumen that is shown in its elucidation.

The practical and perhaps more popular side of the subject is the work of Mr. Elwes. This deals with the introduction to this country of individual species, their behaviour under cultivation and under various climatic conditions, the value of their timber and the uses to which it can be put, the diseases by which they are attacked, and other cognate matters. A feature of singular interest is an account of the remarkable trees in the British Isles, giving their history (when known) and descriptive notes as to form, height, girth of trunk, &c. The gathering together of these statistics must have entailed much labour, but their historical interest and their value for purposes of comparison in future years are such as to make it well spent. It is well known that both the authors have travelled greatly. Possessing, therefore, the great advantage of having studied in their wild state nearly all the trees dealt with in this work, and having besides visited every notable arboretum and forest in the British Isles, they have been able to invest their subject with much interest and even fascination.

Having written in general terms of the works as a whole, we may turn in particular to the volume which has just been published. In the quality of both its illustrations and letterpress it marks, if anything, an advance on its two predecessors. In all the volumes the beauty of the pictures has been remarkable. They are admirable reproductions of photographs, some of which depict the trees as growing wild. Most of them, however, have been made from specimens or groups of trees existing in the British Isles, which are described in the text. The Cedars lend themselves peculiarly well to artistic treatment, and in this third volume there is a fine series of illustrations of that genus. We see, for instance, the Lebanon Cedar as it occurs wild on its native site, as well as typical flat-branched specimens of magnificent spread and girth of trunk such as are to be found at Blenheim, Painshill, Goodwood, and other places; we also see other specimens more remarkable for their lofty stature as they are to be observed at Strathfieldsaye and Petworth. The famous Cedar Avenue at Dropmore is well presented, whilst pictures of the Atlas Cedar and the Deodar are also given. There is likewise a series of illustrations of the Scotch Pine of perhaps even greater artistic merit. We have never seen any tree-portraits, produced by a mechanical process, more charming than the "Scots Pine Avenue at Carclew," or the "Scots Pine at Loch Morlich." But whilst such pictures as these will probably attract the ordinary lover of trees, the specialist will turn to the illustrations of trees of greater rarity, even though they may be less picturesque. Of these there is a rich assortment, amongst which are the magnificent Gymnocladus and Sassafras, at Claremont, the fine Cunninghamia at Bagshot Park, the Nyssa at Strathfieldsaye, Fagus Cunninghamii at Fota and F. betuloides at Bicton, Carya amara at Bute House and C. alba at Brocklesby Park.

To supplement the descriptive work by Dr. Henry, there are engravings to illustrate in outline the leaves of many of the species mentioned in this volume, exhibiting their characteristic venation, hairiness and margins. The buds and young bark are also shown. These diagrams will be of considerable assistance for the purposes of identification.

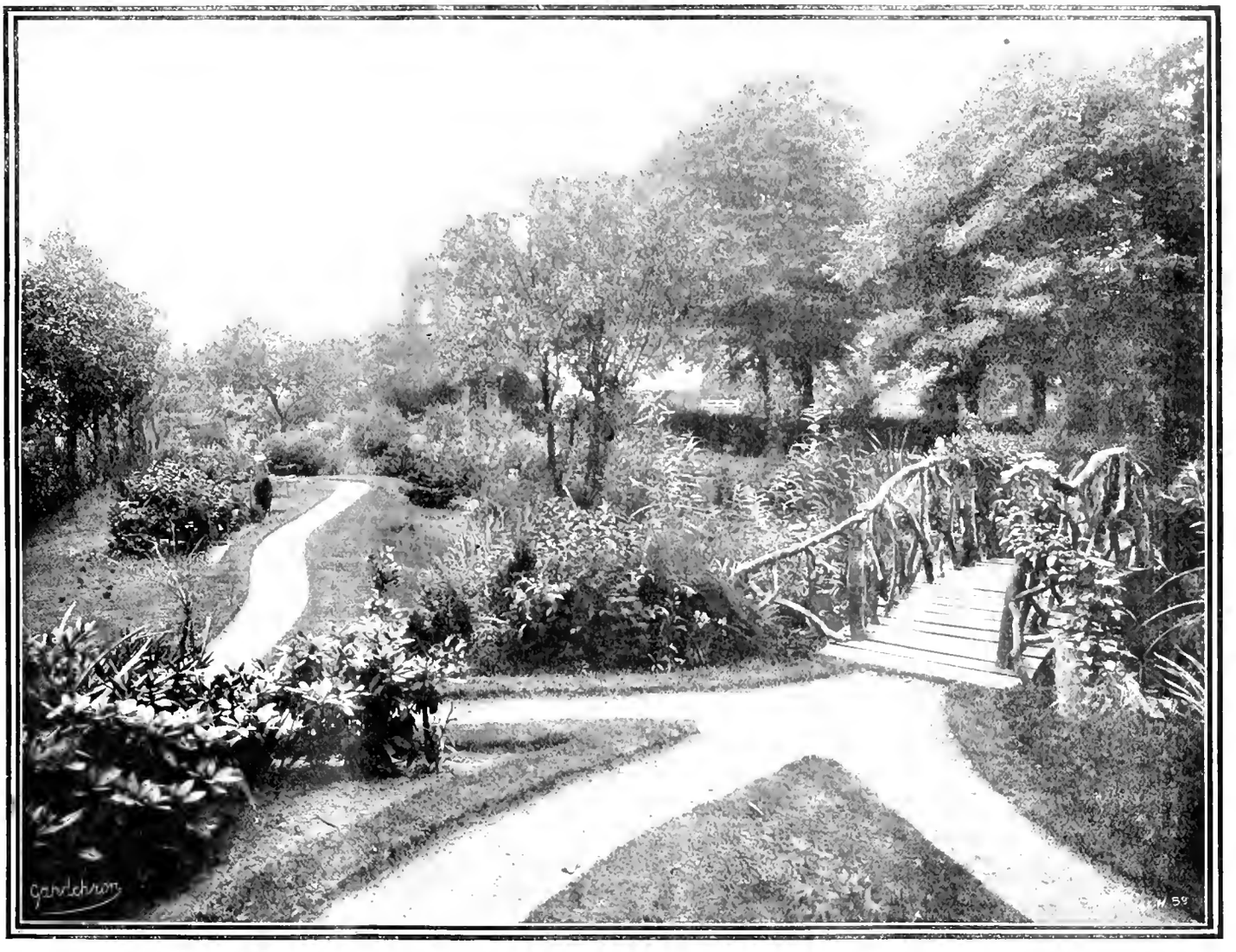
From what we have said as regards the illustrations, it will have been gathered that this third volume deals with many trees of special interest. Concerning the Cedar of Lebanon Mr. Elwes has written an interesting and instructive account extending over more than a dozen pages. The old and vexed question as to the specific distinction of the three Cedars is discussed; but not only are they here given the specific rank often accorded them, but they are joined by a fourth, the Cyprus Cedar, hitherto known as C. Libani var. brevifolia, which is here elevated to a species. Not many however will in these days, we think, subscribe to the opinion here expressed that there are better reasons for uniting C. atlantica and C. Deodara as one species than there are for uniting C. atlantica and C. Libani.

Blume's genus, Nothofagus, is revived for the Beeches of the southern hemisphere, with, as it seems to us, very good reason. English arboriculture is indebted to Mr. Elwes for the recent reintroduction of some of the South American species to this country, and he has here an interesting story to tell about them, based on his recent visit to that Continent. The pages devoted to the Hornbeams and Hop Hornbeams are useful and interesting, as also are those in which the stately and beautiful members of the genus Arbutus are described. An admirable and exhaustive account of the Scotch Pine occupies nearly thirty pages. Many of the world's most remarkable and interesting trees belong to genera containing but one or only a few species, and they naturally represent the most distinct and unusual types. In this volume several species belonging to such genera are dealt with. Among them we have Cunninghamia, Liquidambar, Sassafras and Sciado-

pitys; and the story of the two Sequoias—the mammoth trees of California—is told once again. The largest and most diverse genus dealt with is Acer. A synopsis is given of all the cultivated species (which now amount to between fifty and sixty), whilst fifteen of the larger timber-producing Maples such as the Sycamore, Norway Maple, and Sugar Maple are reviewed in detail.

The absence of any system in the arrangement of the genera dealt with in this work has been adversely criticised. There are only two arrangements that are available: the Natural Orders and genera might have followed each other according to their assumed natural relationship (as they do in Loudon), or they might have been arranged alphabetically. Both these methods are usually found to be difficult in practice. Whilst the order of relationship adopted in this country is commonly based on Bentham and Hooker's *Genera Plantarum*, whilst the Americans and Germans follow a totally different sequence, and indeed, whatever "natural" system the authors might have adopted, it would probably have been of little service to nine-tenths of the students of such a work as this. The alphabetical plan, on the other hand, possesses one great advantage in enabling the general reader to find his subject quickly. This, however, assumes he knows the adopted name of the genus he is in quest of. In such a work as that before us most people would scarcely think of looking under the letter "N" for the Antarctic Beeches, and many would expect to find "Sassafras" under "Laurus." Then the alphabetical arrangement usually implies either keeping back the publication of the work until it is completed, or else the addition of omitted matter in the troublesome form of an appendix. On the whole, then, we do not consider that the haphazard arrangement of the subject-matter need give serious ground for complaint, provided that a full and careful index is given.

It would, however, have been desirable to have kept all the species of one genus together. Whilst the Corsican Pine appears in the second volume and the Scotch Pine in the third, the rest of the genus Pinus has yet to come; and the article on the Common Oak in the second volume is the only portion of the genus Quercus that has yet appeared.



[*The Garden* photo by H. N. King.

Fig. 109.—View in the "Japanese" garden at Rufford Abbey, Notts.

(See Supplementary Illustration, also fig. 110.)

Our Supplementary Illustration affords a view of the Roman garden at Rufford Abbey, Ollerton, Notts., the residence of Lord John Savile. This Roman garden was formed in 1904, and is approached by four stone-covered paths that lead to an old Venetian well-head in the centre. There are several arches and pergolas in the garden, and there is also a temple, built mainly of stone discovered in Roman excavations and brought to this country by the late Lord Savile. There are also two trees that have been planted by His Majesty King Edward VII., who has several times visited Rufford Abbey. Nearly opposite the garden under notice is another known as the Japanese garden (see fig. 109). This is also of recent construction, having been formed upon the site of an old orchard about five years ago. In it are four ponds that are connected by streams and fed by an artificial waterfall. The central pond contains an island, and all around are planted subjects of a water-loving nature, with Clematis and Roses entwined along the rustic bridge which affords access to the opposite bank. There are many handsome shrubs hereabouts; some are accommodated in beds cut in the grass lawns, others are planted singly, or interspersed in clumps near the water's edge. The waterfall is a very pretty scene, and near by is a tea-house, which forms a delightful and cool retreat in summer time, when it is set in a bower of beautiful flowers. There are many fine borders planted with hardy herbaceous plants, and at fig. 110 is given a view of a portion of one of these borders on the east front, the vase forming the boundary line. The Rufford gardens are under the care of Mr. J. Doe, and their condition is most praiseworthy.

BOTANICAL MAGAZINE.—The April number contains illustrations and descriptions of the following five plants, and the usual cultural notes are added under most of them:—

BULBOPHYLLUM BINNENDIJKII, tab. 8187.—This is a fine illustration of a remarkable plant, which almost suggests the form of an octopus with outspread tentacles. The plant originated from Java, and there has been some doubt as to its relation or identity with other species from the same island. A flowering specimen was shown under the name of B. Ericssonii by Messrs. SANDER & SONS, of St. Albans, at the Temple Show in 1907. It appears to be a difficult subject, and Mr. WATSON says that of the many specimens imported by the St. Albans firm, it is doubtful if a score are now alive.

KÆMPFERIA KIRKII, VAR. ELATIOR, tab. 8188.—This is a handsome plant, allied to Hedychium, and occurs in tropical Africa. The specimen from which the figure was drawn was presented by Mr. H. J. ELWES, of Colesborne, Cheltenham. The prevailing colour of the flower is pink.

SAXIFRAGA BRUNONIANA, tab. 8189.—This plant occurs in the Himalayas, at an elevation extending from 9,000 to 13,000 feet. Its flowers are yellow, borne on red stems, and it shares with a few other species the peculiarity of producing long red stolons, which bear vegetative shoots at their apices. These serve as propagative structures, readily becoming independent plants. This Saxifraga has proved hardy at Kew, but thrives best when cultivated in stony soil in a cold frame.

RHEUM INOPINATUM, tab. 8190.—It has been proposed to divide this genus into two groups one, the Monticolæ, with leafy stems and membranous leaves; the other, the Deserticolæ, possessing bare stems and firm leaves. The species figured belongs to the latter group. The seeds from which the specimen was raised were collected in Tibet, and sent to Kew in 1905. The plant is an attractive one, the grey-green leaves forming a good ground colour for the crimson inflorescence, which lasts for several weeks in good condition. It is quite hardy, and should prove a valuable plant for the border.

OLEARIA CILIATA, tab. 8191.—At first sight, the plant suggests a shrubby Aster, bearing lilac-coloured flower heads, rather than an Olearia. It forms a bush 1 to 2 feet high, the stems of which are covered with linear recurved leaves. The plant is a native of Western Australia, and seeds were sent to Kew by Sergt. Goadby, R.E. These were sown, and a bush flowered in the temperate house in April last year. The plant seems difficult to propagate, and has failed so far to set seeds.

MR. BURPEE.—Our American contemporary, *The Country Gentleman*, has recently published an account of Mr. W. ATLEE BURPEE, whose seeds, especially Sweet Peas, are known world-wide. Mr. BURPEE was born at Sheffield, New Brunswick, April 5, 1858, and at the age of 18 opened, in connection with Mr. G. S. BENSON, jun., a little store at 223, Church Street, Philadelphia, dealing chiefly in fancy pigeons and poultry. The firm lost $3,500 the first year, and was glad to take in a third partner. In April, 1878, Mr. BURPEE withdrew from the firm and started by himself as "W. Atlee Burpee & Co.," dealing in seeds as well as birds and dogs. The second year of the first partnership just paid expenses. "The third year, by myself," Mr. BURPEE says, "I netted a profit of $2,700. In 1882 the shop in Church Street was found to be too small for the increasing business, and the firm's present commodious premises were acquired." Mr. BURPEE is a life member of the Société Nationale d'Horticulture de France, and has been for some years vice-president of the National Sweet Pea Society of England. In 1893, in Chicago, he was elected president of the American Seed Trade Association, presiding at the next annual meeting at Toronto, and has been a director of the Wholesale Seedsmen's League since its foundation.

FLOWERS IN SEASON.—A flower of the curious and evil-smelling flower of Scoliopus Bigelowii has been sent us by Mr. W. A. COOK, gardener to Sir EDMUND LODER, Bart., Leonardslee, Horsham. The flowers are a dull greenish colour, with purple stripes. A plant of this species was figured in our issue for March 3, 1894, p. 267.

[*Photograph by H. N. King.*

FIG. 110.—BORDER OF HARDY HERBACEOUS PLANTS AT RUFFORD ABBEY.
(See Supplementary Illustration, also fig. 109.)

THE NATIONAL CHRYSANTHEMUM SOCIETY having again decided to hold three exhibitions, the dates are fixed for October 7, 8; November 4, 5, & 6; and December 2, 3. All these shows will be held at the Crystal Palace, Sydenham. At the exhibition on November 4, 5, & 6, interest will be centred, as usual, in the classes for Japanese blooms, and in the most important class, that for 48 blooms, a special prize of £5 5s. is offered by the late president, C. E. SHEA, Esq., in addition to a cup. An interesting class is the one for 24 blooms of Japanese varieties, six of which are to be of the last two season's introductions; the substantial sum of £12 is offered as the first prize. Sir ALBERT ROLLIT, the president, offers a prize of £5 5s. in the class for 24 Japanese blooms of distinct varieties. There are numerous classes for floral devices, and others are for fruits and vegetables. The income of the Society during 1907 shows an increase over that of the previous year, but this notwithstanding, it has been necessary to transfer £70 from deposit to general account. By the new rule members of the committee are eligible to act as judges at the Society's shows, but no fees will be paid them.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The exhibition of this society, which is fixed for Wednesday, July 22, will again be held in the Royal Horticultural Hall, Vincent Square, Westminster. The schedule provides for 73 classes, of which four new ones are added to those for dressed flowers. The object of these additional classes is to encourage the cultivation of Bizarres, Flakes and white-ground Picotees, which have to some extent been somewhat neglected of late years. In the open class is offered the "CARTWRIGHT" Challenge Cup of the value of 20 guineas, and the Committee invite competition in this section by the trade growers. The schedule is mainly divided into four divisions, and in each of the first three of these the President, MARTIN R. SMITH, Esq., offers challenge cups to the winner of the highest aggregate number of points. Valuable information is included at the end of the schedule upon the standard of excellence in the florists' Carnation and Picotee, with a description of the various flowers, including Selfs, Fancies, Bizarres, and Flakes, and yellow and white-ground Picotees.

EDINBURGH CHRYSANTHEMUM EXHIBITION.—The annual exhibition of the Scottish Horticultural Association will be held on November 19, 20 & 21, in the Waverley Market. The prize money offered totals £450, the classes including several for fruits and vegetables. The most important class is that for 15 vases of Japanese Chrysanthemums. The first prize is the City of Edinburgh Cup and £20 in money. A challenge cup is also offered for eight vases of Japanese Chrysanthemums, but the competition is restricted to Scottish gardeners and amateurs.

THE NATIONAL AURICULA AND PRIMULA SOCIETY will hold their annual show in conjunction with the Royal Horticultural Society's fortnightly exhibition on Tuesday, April 28. Copies of the special prize schedule may be had on application to Mr. T. E. HENWOOD, Auricula Villa, Hamilton Road, Reading.

A GARDENER'S LONG SERVICE.—Mr. JOSEPH MALLENDER has retired from the post of gardener at Hodsock Priory, Worksop, after a period of 40 years' service. Mr. MALLENDER has made many friends at Blyth, and they have recently presented him with a marble timepiece, chair, and purse containing gold. In thanking the donors for their kindness, Mr MALLENDER said that during the 40 years he had been at Hodsock Priory he had been encouraged by generous employers. The MELLISH family had made him a happy man for the rest of his life, and only the previous day the Misses MELLISH gave him a gold watch as a keepsake.

RUBBER EXHIBITION IN LONDON.—The proposals to hold a rubber exhibition this year have met with such ready response on the part of the planters and rubber manufacturers, as well as from the governments of rubber-producing countries, that an arrangement has been made for an exhibition to be held in the R.H.S. Hall, Vincent Square, from September 21, 26. A preliminary prospectus has been issued, and it is evident that the show will be one of considerable interest. The whole art of rubber-collecting and manufacture is to be illustrated, and there will be addresses and lectures on the various processes which will serve to explain the various matters connected with the industry.

THE CULTIVATION OF CAPSICUMS IN ROUMANIA.—Of Capsicum annuum (Paprika) there are several varieties having pods of various sizes, some large, others small, sweet, slightly hot in the mouth, and others very pungent. In the Balkan lands, the seeds are sown on hotbeds in March to allow of a long season for developing the crop. When there is no longer any danger from frosts, the plants are set out in light soil in warm positions, and, with the exception of abundant applications of water and hoeing, they get no special attention. In those countries, and so far north as Hungary, Capsicums, like the Egg plant (Solanum Melongena) and Mallow (Hibiscus esculentus) are reckoned among the principal vegetables. The large-fruited, thick-fleshed Capsicum fruits are, whilst still green, roasted on the hot plate of the close cooking stove, freed from the rind, and eaten as salad with oil and vinegar; or the raw fruit is filled with meat and rice and cooked, and are thus brought to the table. The small fruited Chillies are eaten in the green state, or allowed to ripen, and used as a condiment with meat. The Roumanian vegetable cultivators set out the plants at distances of 10 inches to 18 inches apart. By good applications of water the plants produce more fruits than leaves. The fruits (pods) are sold for about 10 centimes per 100.

"THE QUARTERLY JOURNAL OF FORESTRY" for April contains an interesting article on the planting of sand-dunes at Holkham, the Norfolk estate of the Earl of LEICESTER. The plantations are about 3 miles long and of an average width of about 300 yards. The primary object in view was neither forestry nor coast protection, but to secure an ornamental covering for the rather bleak, sandy hills. This appears to have been fully secured, and even hardwood trees are springing up. The trees originally planted and proving most successful are the Corsican, Scotch and Austrian Pines. The two former species seem to thrive best, and at the present time they are advancing towards the sea, and, though perhaps rather indirectly, are responsible for the reclaiming of formerly submerged ground, for the belt of trees causes an accumulation of sand and thus enables the dunes to extend in a seaward direction. But the dunes themselves then become occupied and fixed by the Pine seedlings, which spring up and take permanent possession of them.

"BIRD NOTES AND NEWS."—The quarterly publication of the Royal Society for the Protection of Birds (3, Hanover Square, W.) contains in its Spring Number an article on "Bird-Watchers," dealing with the urgent need that exists for the better protection of rare birds; reports of numerous Bird and Tree (Arbor day) celebrations promoted by the Society's Challenge Shield Competitions; notes on "The Plume Trade," "Economic Ornithology," portraits of the Society's President, the Duchess of SUTHERLAND, and of the Earl of STAMFORD, &c. The magazine is issued primarily to members of the Society, but can also be obtained for a subscription of one shilling a year.

EXPERIMENTS AT READING. The results of last season's experiments carried out by the University College, Reading, at the College Farm, Shinfield, have just been published in pamphlet form. An interesting experiment was that of testing the influence of weeds and hoeing on the crop yield. With this object in view, a quarter of an acre of Globe Mangels were sown on April 25, 1907. After the plants were set out, the plot was divided into five equal parts (each one-twentieth of an acre). (1) One lot was simply left to combat with the weeds, the total yield on this plot being 15¼ tons an acre. (2) The second plot was kept clean by hand-weeding only, no hoeing being done after setting out the plants. This yielded at the rate of 40 tons an acre. (3) A third, which was kept clean by repeated hoeings, yielded practically the same weight of roots (39½ tons an acre) as No. 2. (4) When only two hoeings were carried out, the yield was 37¾ tons an acre, and (5) when only once hoed, the weight of Mangels grown amounted to 33½ tons per acre. The difference between the weight of Mangels grown on the plot that was kept clean, and that where no weeding took place, amounted to 60 per cent. of the crop. The difference between hoeing once and hoeing twice amounts to four tons an acre. The results obtained, which are detailed in the report, are very suggestive, but it would be advantageous if the experiment were repeated during a dry season. For the purpose of making another experiment, one acre of ground on the farm was planted with a crop of Maize. Two kinds of seed were used, viz., Giant Caragua and White Horse Tooth. The seed, which was drilled the last day of May, was placed 3 inches deep in rows 24 inches apart. An application of 10 loads of dung and 3 cwt. of superphosphate was made to the acre; 1 cwt. of nitrate of soda was also applied as a top dressing. The yield of green fodder per acre amounted to 45 tons 18½ cwt. in the case of the former, and 49 tons 2¼ cwt. in the case of the latter. The report also contains much information as to the effects of applications of different nitrogenous manures on Mangels; the effects of manures on grass land, and the results of experiments on the laying down of permanent grass land. As these last-mentioned experiments have only been down for a short period, it is too early to draw any definite conclusions.

THE DEVELOPMENT OF FRUIT GROWING IN BRAZIL.—A writer in a recent number of the *Journal of the Society of Arts* gives an interesting account of this industry in Brazil. The vine is, naturally, one of the most important fruits grown in the country, and in order to encourage its cultivation, experts have been sent to Italy in order to acquire the necessary information as to the best methods in use. Furthermore, viticulturists from Sicily will, if possible, be induced to take up their abode at San Paulo. The Peaches, Figs, and Bananas figure among the most successful of the other fruits, and already a good market has been established for tinned and bottled produce. The cultivation of Oranges is also being undertaken, and many of the Coffee planters also have Orange orchards, but the abundance of wild Oranges, and the difficulty of transit at present render it difficult to obtain a satisfactory return for the necessary outlay. The Departments of Agriculture in Rio Janeiro and Minas Geraes have proved that many fruits belonging to temperate climates can also be grown with success. The great drawback to the advancement of the enterprise for the present lies in the difficulty of properly disposing of the fresh fruit, owing to the inadequate and expensive methods of transport. There seems to be a promising future for the establishment of canning factories, and also for the production of wine. The Agricultural Departments take an active interest in the development of these important industries, and Brazil in the future will probably be able to depend on herself for the supply of the canned and preserved fruits she requires, and also to export a considerable surplus to other countries.

SCHOOL GARDENS IN JAMAICA.—According to the *Agricultural News*, the section of the Jamaica *Report* for 1906-7 which relates to educational work in the colony contains the following note relating to school gardens and their educational value. "It is pointed out by the chief inspector of schools that certain changes made in the code last year have stimulated the formation and maintenance of school gardens with great educational benefit, not only to the school, but to practical agriculture in their neighbourhood. It should, however, never be forgotten that the main object of such work in elementary schools is in fact essentially identical with that of manual training. It aims at the training of the hand and eye and the general development of the powers of observation under circumstances, and in a medium, which correspond to the conditions under which a great majority of the children will earn their livelihood. A new officer who has had experience of their working in the United States has been appointed inspector of school gardens."

INSTRUCTION IN RURAL SUBJECTS IN ELEMENTARY SCHOOLS. It is pointed out in the *Journal of the Board of Agriculture* that a defect in most of the school gardening was that it is not dealt with as a branch of nature-study, i.e., as a study of the plant in relation to environment; the opportunity of developing the general intelligence of the scholars in rural work was largely lost. An attempt has been made in certain counties to provide a remedy by issuing a syllabus of nature-study for the

gardening classes But this is useless if the teachers are not themselves nature students, and it cannot be too strongly insisted that imposing a syllabus in such cases may lead to the worst form of text-book cramming Twenty-one counties already make some provision for affording the teachers a training in nature-study, but much remains to be done. A number of Saturday classes and summer courses in nature-study and gardening have been recognised. One of the most encouraging features in the school nature-study movement is the increase in the number of school exhibitions of nature-study and rural economy at agricultural shows and local flower shows. The exhibits have in many cases been of a very high order of merit. To the children, such exhibitions provide a stimulus; to the teachers they provide fresh ideas for work in their own schools; to the general agricultural public they demonstrate that the children's studies have a very real bearing on their future work in life. *Fruit culture.*—Of other rural subjects increased attention is being paid to fruit culture as a part of school gardening, thus carrying out the recommendation of the Departmental Committee on the Fruit Industry in Great Britain. The committee also advocated the teaching of gardening in training colleges. Bee-keeping is also sometimes associated with gardening or recognised as a subject of nature-study.

PRIZES FOR AGRICULTURAL STUDENTS.—The Board of Agriculture and Fisheries have received from Mr. MARTIN SUTTON and Sir GEORGE BARHAM, on behalf of the Dr. Fream Memorial Committee, of which the Earl of JERSEY was the president, the sum of £200, the income from which will be applied to provide a prize of books to be competed for each year by students in the science of agriculture. So long as an examination is held by the National Agricultural Examination Board for the National Diploma in Agriculture, the prize will be awarded to the person who obtains the highest marks in that examination. Owing to the generosity of an individual donor, the Board will be in a position to award a sum of £5 as a Fream Memorial Prize at the next examination for the Diploma.

Publications Received.—*The Trees of Commerce*, by W. Stevenson. Revised edition, extended to a notice of the higher or special branches of the Hardwood trade. (London: William Rider & Son, 164, Aldersgate Street, E.C.)—*Observations on the Cultivation of Roses in Pots*, including the Autobiography of a Pot-Rose, by William Paul, F.L.S. Ninth edition, revised. (London: Simpkin, Marshall, Hamilton, Kent & Co., 4, Stationers' Hall Court.)—*The Enemies of the Rose*, by George Massee, V.M.H., F.L.S., and Fred. V. Theobald, M.A. Illustrated by Miss C. M. Beard. Edited by the Hon. Secretary, under the direction of the Publications Committee of the National Rose Society.—*The National Rose Society's Annual for 1908.*—*The Cultivation of the Perpetual Flowering Carnation*, by C. H. Taudevin, (Cheltenham: Young & Co., Hatherley.)—*Proceedings of the Fifty-third Annual Meeting* (Western New York Horticultural Society), held at Rochester, N.Y., Wednesday and Thursday, January 22 and 23, 1908. (Rochester, N.Y.: Democrat and Chronicle Press.)—*Bulletin of Miscellaneous Information* (Royal Botanic Gardens, Kew), No. 3, 1908.

HOME CORRESPONDENCE.

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

THE SEASON AT EVESHAM.—In recent years gardeners in the Vale of Evesham have adopted much more extensively the cultivation of flowers than was the case a few years ago, and, generally speaking, they have found the industry remunerative. Wallflowers are now being sent to the markets, and are selling well, a preference being shown for the dark-coloured varieties. In the case of Narcissi, which are grown by the acre under Plum trees, it is essential to catch the right market, and in order to be able to sell at the best advantage it is requisite that the crop should be in full bearing at the White Festival of Easter. This was the case last year when Easter fell very early, and in accordance with the fitness of things this year, with Easter falling very late, the crop should have been all over too soon. The cold, wet spring, however, has so retarded vegetation of all kinds that the Narcissus is only just coming into bud, and the crop should be at its very best for the Easter festival. Those who have never seen Narcissi growing under the pure white blossom of the Plum trees can only form a very inadequate idea of the beauty of the scene. Gardeners in this vale have, so far, had a very poor spring, but there is compensation in the fact that with the fruit blossom held back, there is less liability of it being damaged by late frosts. In some places the blossom is very shy, and under the best conditions it is not expected that the crops can be anything like so heavy as those of last year. *H. S., Evesham, April 11.*

THE BLACK CURRANT MITE.—Mr. Johnson stated on p. 219: "I am of opinion that spraying with any insecticide that can be applied without injury to the bushes is useless." My experience is that it can be destroyed or cured by the lime and sulphur remedy. Four years ago the Black Currant bushes in these gardens were all so badly affected with the mite that I decided to destroy them. Before doing so, I purchased young trees from a reliable nursery, and planted them in another part of the garden, situated a good distance from the old plantation. When these young trees arrived they were apparently quite free from the mite, but the following year they proved to be badly affected. Soon after this I heard of the sulphur and lime remedy, which has in my case proved entirely successful, as at the present time not a "big bud" can be found. A gardener friend of mine who knew these trees were badly affected with the mite two years ago, called on me the other day, and when I told him the plants were now quite free from the mite, he expressed surprise, and searched among the trees for a big bud, but could not find one. My friend's trees are affected, and he has tried several remedies without success. *W. J. Snell, gr. to Viscount Clifden, Wimpole Hall, Royston.*

——— I was surprised to read in your last issue the letter from Mr. Wm. Johnson respecting Black Currant mite. It does not seem to be much use to publish information even in a valuable paper like the *Chronicle*. I have already twice written in your columns [see *G. C.*, May 21, 1904, p. 298, and May 13, 1905 ED.] saying that I have completely cured bushes which were badly affected with the mite by spraying during March, April, and May with the ordinary soft soap and quassia mixture. Of course, it is the soap which kills the mites. I don't suppose that the quassia chips have any effect whatever, but we use this remedy for other things and it saves the trouble of making a separate mixture. Then, again, Mr. Collinge has published in your columns from time to time (see *G. C.*, March 23, 1907, p. 193) the results of his experiments, which have proved very plainly indeed that sulphur and lime dusted upon the trees will also kill the mite. I have not tried Mr. Collinge's remedy myself, as the lime is apt to burn the foliage, which, of course, in a nursery is a grave objection, and I suppose the only reason why most people have not tried the soft soap mixture is that it is too simple. *A. H. Pearson, Lowdham Nurseries, Notts.*

CABBAGES.—Much of the history of the evolution of the Cabbage family appears to have been lost in obscurity. We have learned that certain forms of the tribe were known and cultivated 200 years B.C., although these seem to have been of very inferior character. In his lecture on March 31 last Professor Henslow told the Fellows of the Royal Horticultural Society that there seemed to have been from that time to the 16th century a long period during which members of this family, although existing occasionally under cultivation, nothing further was known about them. Professor Henslow's illustrations and remarks tended to show that for 18 centuries at least little was done to develop or improve these vegetables. But even from the 16th century until the present time, a period during which some very remarkable developments took place, nothing authoritative seems to be known as to the origin and gradual evolution of Cauliflowers, Broccolis, Brussels Sprouts, White and Red Savoy Cabbages, Borecoles or Kales, all of which must have developed from the wild species (Brassica oleracea), and not from B. Rapa, or other allied species to which the Turnip, Rape, and glaucous-leaved Kales are attributed. In reply to a question I submitted to Professor Henslow, asking him if any species of vegetable had evolved greater variation in form than B. oleracea, Professor Henslow replied that he knew of none that had done so. It has often been a matter for wonder whether any one original species could have produced such diverse varieties as the Cabbages, Cauliflowers, and Brussels Sprouts now in cultivation. Those who have inter-crossed these variations have found that all sorts of inferior and probably early forms are reproduced, but few varieties having any garden value. In the experiments of inter-crossing diverse forms conducted by Mr. Arthur Sutton, his recent lectures have shown the coarse and worthless nature of most of the seedlings. This would appear to show that the results we have at the present day in cultivation are the results of selection carried through a long period, probably amounting to centuries. *A. D.*

NUTTALLIA CERASIFORMIS.—Writing of this shrub in the *Gardeners' Chronicle*, March 28, p. 196, Mr. Fitzherbert remarks, "Not by any means tender, for it succeeds in gardens in the neighbourhood of London." I am forwarding a few flowering sprays taken from plants growing some 400 miles north of London. Here it is quite hardy, and in the early months of the year it is one of the most conspicuous occupants of the shrubbery by reason of its delicate light-green foliage. Very often when the buds are bursting the snow is still on the ground. The plant will thrive in almost any soil, but if given generous treatment it will throw out sucker-like growths in abundance; these afford a ready means of propagation if increase of the stock is desired. *Fred. W. Jeffrey, Woodend Gardens, Cathcart, N.B.* [Accompanying this note were freely-flowered shoots of this early-blooming shrub.—ED.]

WYDALE GARDENS, YORKSHIRE.—Wydale, Brompton S.O., the residence of H. Illingworth, Esq., is situated some eight miles from Scarborough. Mr. Scott, the gardener, has effected many improvements, and on the occasion of a recent visit to Wydale, I was impressed with a batch of seedling Clivias (Imantophyllums) in 6-inch pots, which Mr. Scott raised two years ago. They form the best batch of these plants I have seen. The colour of the flowers is exceedingly bright. Begonia Gloire de Lorraine and the Turnford Hall variety both showed evidences of good culture, and were a mass of bloom. Cyclamen and Primulas were also well grown, and the flowers of some of the Cyclamen were of very large size. The vines have been planted only two years, and they reflect credit on the cultivator. The varieties are Lady Downes, Black Alicante, Muscat of Alexandria, and Appley Towers. Mr. Scott speaks in high terms of the Appley Towers variety, which in his opinion is superior to many varieties commonly cultivated. *J. Snell, Kirby Misperton Hall Gardens.*

CYCLAMEN "MONT BLANC."

THE Cyclamen is not a difficult subject to cultivate, and a batch of seedling plants will always provide a good selection of colours for the greenhouse. Sometimes these plants will produce flowers of a particularly pleasing shade, and in some instances these special colours are perpetuated, until, by selection, the variety comes true to seed. By such means has been produced the beautiful salmon-coloured variety shown by Messrs. Hugh Low & Co. under the name of Low's Salmon, to which an Award of Merit was recently granted by the Royal Horticultural Society. Of equal value to the coloured varieties to the gardener in winter are the pure white kinds, such as is represented in Messrs. Ed. Webb & Sons' Mont Blanc variety (see fig. 111). The plant from which our illustration was prepared was photographed in Messrs. Webb's nursery at Wordsley, and, as will be seen on reference to the figure, is a very floriferous specimen and a good type of this useful plant.

SOCIETIES.

ROYAL HORTICULTURAL.

April 14.—The meeting held on this date was noticeable for many good exhibits of Narcissi, in addition to collections of spring-flowering subjects, Roses, forced shrubs, Carnations, and a large batch of Hippeastrums.

At the afternoon meeting of the Fellows, 60 new Fellows were added to the roll of the society, and a lecture on "Hardy Cacti and Other Succulents" was delivered by Mr. E. A. Bowles, M.A., F.L.S.

Floral Committee.

Present: W. Marshall, Esq. (in the chair), and Messrs. Chas. T. Druery, W. A. Bilney, R. C. Notcutt, John Green, T. W. Turner, C. R. Fielder, J. F. McLeod, Wm. Howe, John Jennings, W. Bain, Chas. Dixon, Geo. Gordge, Arthur Turner, Herbert J. Cutbush, Chas. E. Pearson, Wm. Cuthbertson, W. J. James, Chas. E. Shea, Edw. Mawley, R. C. Reginald Nevill, George Paul, and E. H. Jenkins.

Fig. 111.—cyclamen "mont blanc"; flowers white.

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, furnished a large table with flowering plants. At one end of the group was a fine specimen of Medinilla magnifica in flower, also many specimens of Xanthoceras sorbifolia. One of the most pleasing features of this exhibit was Erica propendens, with mauve-coloured flowers. There were also blue-flowered Hydrangeas, and a batch of plants of the beautiful Rhododendron Fosterianum, Boronias, Streptosolen Jamesonii, Crowea angustifolia, &c. As a separate exhibit, Messrs. Veitch showed a group of forced shrubs and trees. (Silver-Gilt Banksian Medal.)

Messrs. H. Cannell & Sons, Swanley, Kent, staged large trusses of scarlet Pelargoniums of the Zonal-leaved type, also plants of a pink-flowered Cineraria with revolute florets, named Gem of the Stars. (Silver Flora Medal.)

W. G. Vivien, Esq., Clyne Park, Blackpyl, South Wales, showed trusses of Rhododendrons.

A magnificent exhibit of dark-coloured varieties of Hippeastrums was shown by Alfred de Rothschild, Esq., Halton, Bucks (gr. Mr. R. Sanders). The plants were all unnamed seedlings. (Silver-Gilt Flora Medal.)

Messrs. H. B. May & Sons, The Nurseries, Edmonton, showed miscellaneous flowering plants, including Cinerarias, Roses, Pelargonium "Clorinda," Astilbe (Spiræa) japonica, and Salvia splendens "Pride of Zurich"; the last-named is valuable as an early-flowering, dwarf-growing variety, and the plant continues in flower throughout the summer months. The bracts are a rich scarlet. (Silver Flora Medal.)

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, made a fine exhibit of green-house flowering plants and winter-flowering Carnations. A draping of Lotus peliorhynchus along the front gave a fine effect to the group, which consisted of dwarf and standard plants of Roses, Ericas, Azaleas, Acacias, Meterosideros floribunda, &c. (Silver-Gilt Banksian Medal.)

Messrs. Carter, Page & Co., 52 & 53, London Wall, London, E.C., exhibited Violas in variety displayed in trusses in the usual pyramidal manner of exhibiting this flower; at the back being varieties of the large-flowering type of Pansy. Viola Admiration is a rich shade of blue; Kingcup, yellow; Dr. McFarlane, purple and violet; Molly Pope, yellow; Mrs. Rowland, rosy heliotrope; and Mary Burnie, pale sulphur yellow, are varieties of merit.

A small group of herbaceous Calceolarias was shown by H. D. Broughton, Esq., Birch Hurst, Andover.

A very showy group of forced shrubs was exhibited by Mr. Russell, Richmond Nurseries, Surrey, all the plants exhibiting good culture. (Silver Flora Medal.)

Very brightly-coloured but small-leaved Caladiums were shown by Mr. Chas. Turner, Royal Nurseries, Slough. (Bronze Flora Medal.)

A small, prettily-leafed Coleus named Coleus salicifolius nanus, was shown by Mr. W. H. Young, Mercury Nursery, Romford. The long, narrow leaves are red with deeper colouring on the margins.

Messrs. Jas. Carter & Co., High Holborn, London, staged a semi-circular group of Cinerarias, in the ordinary and the "Cactus" or stellata varieties.

Mr. Geo. Mount, Canterbury, again exhibited Roses, more numerous than at the last meeting, and even more beautiful. Blooms of such sterling varieties as Catherine Mermet, Richmond, Madame Abel Chatenay, Lady Ashtown, Mrs. John Laing, Captain Haywood, Prince de Bulgarie, and Ulrich Brunner were shown in large batches, the entire collection filling the whole of one of the long central tables. (Gold Medal.)

Messrs. W. Paul & Son, Waltham Cross, Herts., exhibited a group of Roses, the back plants being tall specimens of rambler varieties. Isabella, H.T., rose pink; Margaret, H.T., shell pink; Renee Wilmart-Urban, H.T., blush; Mrs. Aaron Ward, white, with a copper-coloured base; and Frau Ernst Borsig are all of this year's introduction, the first two being of Messrs. W. Paul's raising. (Silver Flora Medal.)

Messrs. Paul & Son, The Old Nurseries, Cheshunt, displayed flowering sprays and plants of uncommon trees and shrubs with boxes of Alpine plants at the front. A fine new Cytisus was noticed in the variety Daisy Hill, apparently of the Andreanus type; the keel is pleasingly blotched with brownish red, the remainder of the flowers being yellowish; Lonicera Maackii, Vitis Henryana, V. Coignetiæ, Acer colchicum aureum, &c. (Silver Banksian Medal.)

Some charming plants of greenhouse Rhododendrons, including R. × Fosterianum and R. Aucklandii, were shown by Sir Edmund Loder, Bart., Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook). (Silver Banksian Medal.)

Messrs. Wm. Bull & Sons, King's Road, Chelsea, London, staged a group of ornamental-leaved plants of stove and greenhouse varieties.

Ornamental Acers in variety were shown by Messrs. Thos. Cripps & Son, Tunbridge Wells, Kent. (Bronze Flora Medal.)

Messrs. G. and A. Clark, Ltd., The Nurseries, Dover, showed Polyanthuses and coloured Primroses, Aubrietias, Viola cornuta "Papilio," Anemones, Geum montanum, Primula rosea, and other Alpine and rock garden plants.

The Misses Hopkins, Mere Gardens, Shepperton-on-Thames, displayed Alpine plants in a well-arranged exhibit, representing a portion of a natural rock garden.

Messrs. Barr & Sons, 11, 12 & 13, King Street, Covent Garden, showed boxes of Alpine plants in variety.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, exhibited Alpine and rock-garden plants in five boxes, with dwarf shrubs and Conifers at the back.

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, displayed a small but pretty exhibit of Alpines, with sprays of flowering shrubs.

Messrs. W. Cutbush & Son, Highgate, London, N., showed an exhibit of hardy flowering plants arranged with skill in an imitation rockery. A prominent place was afforded well-flowered plants of Cypripedium pubescens, C. acaule, Trillium erectum, Ramondia Nathaliæ, Tulipa pulchella, Mertensia virginia, and Stylophorum diphyllum. On the opposite side of the table Messrs. Cutbush exhibited forced shrubs. (Silver-Gilt Flora Medal.)

Mr. C. F. Waters, Deanland Nursery, Balcombe, Sussex, exhibited vases of Carnations relieved with sprays of Asparagus Sprengeri. (Bronze Flora Medal.)

Mr. W. H. Page, Tangley Nurseries, Hampton, again exhibited vases of Carnations and bunches of well-grown flowers of Lilium longiflorum. (Silver-Gilt Banksian Medal.)

Carnations of fine quality were also shown by Mr. A. F. Dutton, Iver, Bucks, the effect being enhanced by long trails of Smilax. (Bronze Flora Medal.)

Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester, exhibited rare and choice

species of rock-garden plants, with vases of Tulips. A curious plant is Carex Fraseri, the inflorescence being composed principally of the white stamens. (Bronze Flora Medal.)

Mr. A. R. UPTON, Millmead, Guildford, showed a batch of plants of Primula frondosa in a collection of other Alpine plants.

Messrs. JOHN PEED & SON, West Norwood, showed several boxes of Alpines, with Daffodils at the back.

Mr. G. REUTHE, Keston, Kent, showed Alpine plants, trusses of Rhododendrons, Lomatia pinnatifolia, Corylopsis pauciflora, Hepatica cærulea grandiflora, an old but rare garden plant; Saxifraga scardica, &c. (Bronze Flora Medal.)

A very representative collection of Alpine and hardy plants was shown by Messrs. WARE, LTD., Feltham. (Bronze Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, displayed seasonable Alpine and hardy garden flowers. (Silver Banksian Medal.)

Displays of Alpine plants were also staged by the Misses KIPPING, Hutton, Essex; Miss ALICE M. SMITH, Barnham, Bognor, Sussex, and Mr. H. C. PULHAM, Elsenham, Essex.

AWARDS OF MERIT.

Viburnum Carlesii.—This species was introduced from China, and a description of the plant is given with an illustration in our issue for October 11, 1902. The flowers are fragrant and of the purest white, reminding one of a glorified inflorescence of a white Bouvardia. Shown by Sir TREVOR LAWRENCE, Bart.

Cyrtomium falcatum var. Mayi.—A crested form of this well-known Fern, the ends of the fronds being sub-divided and much broader than in the type leaves. Shown by Messrs. H. MAY & SONS.

Narcissus Committee.

Present: H. B. May, Esq. (chairman), and Messrs. J. T. Bennett-Poe, R. Sydenham, F. W. Currey, John Pope, P. R. Barr, Geo. H. Engleheart, Chas. Dawson, P. D. Williams, G. W. Leah, Alex. M. Wilson, J. D. Pearson, E. M. Crossfield, A. R. Goodwin, H. A. Denison, W. W. Fowler, W. A. Milner, J. Jacob, F. H. Chapman, W. Poupart, R. W. Wallace, W. T. Ware, Chas. T. Digby, E. A. Bowles, G. Reuthe, W. Goldring, Jas. Walker, A. D. Hall, and Chas. H. Curtis (hon. sec.).

Messrs. BARR & SONS, Covent Garden, had a choice display of Narcissi representative of many sections, Fire Flame and Queen of Spain being noticeable among a large number. A fine collection of the Darwin Tulips was included in this group. (Silver Flora Medal.)

Messrs. POPE & SONS, Kings Norton, Birmingham, had many good varieties, amongst which Kings Norton, Lady Margaret Boscawen, and Boniface were noticeable.

Sir JOSSLYN GORE-BOOTH, Bart., Lissadel, Sligo, had many interesting varieties, including Gloire de Leiden, Albatross, Cresset, Lady Margaret Boscawen, Incognita, Mrs. R. Sydenham (a white Ajax), White Queen, &c. (Silver-Gilt Banksian Medal.)

Mr. CHAS. DAWSON, Gulval, Cornwall, had a delightful group of new varieties, in which the scarlet-crowned Charm, Mrs. R. Sydenham, Miss Mary, Red Bairn (a flower with a white perianth and scarlet-orange cup), Ptarmigan, Bracelet (with creamy perianth and scarlet-edged cup), Hypatia, a fine Engleheartii, Bedouin (with a rich scarlet cup), Bernardi (with a pale orange cup finely pleated), Buttercup (rich in colouring), Geoff (a fine bicolor Ajax), Cossack (a grandly-shaped Engleheartii, whose Leedsii white perianth has not a little of the finer poeticus shape), Pearl Diver (a white flowered seedling from Mrs. Langtry, with poeticus-like segments and pure white cup, a most charming flower), are a few of the best in this choice collection. (Gold Medal.)

Messrs. CARTWRIGHT & GOODWIN, Blakebrook, Kidderminster, showed a beautiful lot of Narcissi in choice kinds, such as Rising Sun (rich yellow self), Glee Maiden (Minnie Hume × Snowflake), a variety having a white Picotee edge, Argosy (a new giant Leedsii, Duke of Bedford (bicolor Ajax), Alice Knights, &c. (Silver-Gilt Banksian Medal.)

Messrs. CARTERS, LTD., High Holborn, had a batch of some 300 blooms of the large-flowered King Alfred. As an example of fine grouping this was a really superb lot.

Messrs. HOGG & ROBERTSON, St. Mary Street, Dublin, had a very fine assortment of Daffodils, including Lady of the Snows, King Alfred, Maggie May, Lady Margaret Boscawen, Atalanta, and Penguin. (Silver Flora Medal.)

Mr. R. O. BACKHOUSE, Sutton Court, Hereford, had a few varieties. The gem of this smallest group was White Admiral, probably the finest white Leedsii yet seen.

Mr. F. H. CHAPMAN, Rye, contributed many choice varieties of Daffodils as Horace, Cassandra, Will Scarlet, Weardale Perfection, King Alfred, &c.

Messrs. R. H. BATH, Wisbech, had a large assortment of Daffodils and Tulips in the best kinds; and Miss F. W. CURREY, The Warren Gardens, Lismore, Ireland, also contributed a choice assortment of kinds, as Chancer, Lady of the Snows, Geraldine, with red cup, Argent, Atalanta, Bennett-Poe, Lady Margaret Boscawen, &c. (Silver-Gilt Flora Medal.)

Mr. H. R. DARLINGTON, Park House, Potters Bar (gr. Mr. D. Bignall), was the only exhibitor in the "Barr" Cup competition, for which the prize was not awarded.

AWARD OF MERIT.

Narcissus Buttercup.—The parents of this rich-yellow, self-coloured Daffodil are N. odorus × N. Emperor. The colour partakes of the first-named parent and it also possesses not a little of its fragrance. It is a striking novelty, possessing richness of colour, fragrance, and good form. Exhibited by Mr. CHAS. DAWSON, Rosemorran, Gulval, Penzance.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, Stuart Low, W. Boxall, J. Forster Alcock, A. A. McBean, J. Cypher, F. M. Ogilvie, J. Charlesworth, W. Cobb, H. G. Alexander, W. P. Bound, H. A. Tracy, Gurney Wilson, R. Brooman-White, A. Dye, W. Bolton, F. J. Hanbury, De B. Crawshay, W. H. White, and F. Sander.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), staged an effective group, for which a Silver Flora Medal was awarded. Prominent in the group were the fine white Brasso-Cattleya Digbyano-Mossiæ Wageneri; a nice selection of Cattleya Schroderæ, and varieties of Odontoglossum crispum, including several spotted forms; O. loochristiense Tracyanum, a fine yellow, blotched with red-brown; Miltonia Phalænopsis, Cattleya intermedia nivea, and various Lælio-Cattleyas, &c.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, were awarded a Silver Banksian Medal for a group containing a good selection of Odontoglossum crispum, O. Pescatorei, O. triumphans, Cattleya Schroderæ, &c., together with two good forms of Zygopetalum crinitum, and a very rich orange-scarlet form of Ada aurantiaca with nine spikes.

Mr. A. W. JENSEN, Lindfield, Haywards Heath, secured a Silver Banksian Medal for a group of fine varieties of Cattleya Mendelii and Odontoglossum crispum, the latter represented by two types, the Pacho section having a grandly-blotched variety, a fine white flower, heavily marked with purple, and the other a small spotted variety of the punctatissimum class. All were of the best type.

Messrs. J. & A. A. MCBEAN, Cooksbridge, were voted a Silver Banksian Medal for a very pretty group of splendidly-grown Odontoglossums, Cattleya Mendelii, &c. Among the hybrids was a very charming hybrid between O. Rolfeæ roseum and O. crispum, Starlight. The flower was of fine shape and substance, and most exquisitely blotched and spotted with claret red, the lip being white. Among the O. crispum were several blotched forms, one imported plant flowering for the first time being very handsome. O. Hallii Charlesworthii, with two fine spikes, and Cypripedum Lawrenceanum Hackbridgense were also included.

Messrs. JAS. CYPHER & SONS, Cheltenham, staged a small group of very finely-flowered Miltonia vexillaria, Cattleya intermedia nivea, Masdevallia macrura, Lælio-Cattleya Dominiana, and a good selection of Odontoglossums, Brasso-Cattleya Thorntonii, &c. (Silver Banksian Medal.)

Messrs. HUGH LOW & CO., Enfield, staged a small group of Dendrobium Wardianum, with a plant of the pure white D. W. ochroleucum, D. barbatulum, Cattleya Schroderæ, good Cypripediums, &c. (Silver Banksian Medal.)

Monsieur MERIENS, Ghent, showed a selection of fine hybrid Odontoglossums.

Messrs. SANDER & SONS, St. Albans, and Bruges, showed Cypripedium Black Watch (Lord Derby × Curtisii, Sander's variety), a large and dark-coloured flower with shorter petals than C. Lord Derby. Dorsal sepal white, with a green centre, and closely-arranged dark purple lines; petals twisted, rose at base, white outward, spotted with claret red; lip brownish rose.

From the ROYAL HORTICULTURAL SOCIETY'S gardens, Wisley, came an inflorescence of the yellowish-green Cymbidium chloranthum.

[illegible] PEEL, Esq., sent Cypripedium ajax.

J. FORSTER ALCOCK, Esq., showed a very fine form of Lælio-Cattleya Highburyensis.

C. D. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed three plants of his Odontoglossum Urania (crispum × cristatellum), all varying in colour.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Schroderæ "The Baron," from Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander). The phenomenal variety shown by Messrs. Sander & Sons at the Temple Show, 1905, and of which we reproduce the illustration prepared at the time. The sepals and petals are of a delicate white, the disc of the broad lip a blending of orange, rose, and purple.

Cypripedium bellatulum, Exhim's variety, from J. FORTSER ALCOCK, Esq., Northchurch, Berkhamsted. The finest dark variety of C. bellatulum known, the greater part of the flower being covered with intensely dark, blackish chocolate blotches.

AWARD OF MERIT.

Dendrobium Brymerianum, Gatton Park variety, from Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound). A splendid form of this handsome, bright-yellow Dendrobium, the flower measuring 4 inches perpendicularly, and 2½ inches across the fringed labellum.

Cymbidium eburneum Goodsonianum, from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day). A singular variation with a white flower, having a broad rose-purple band down the middle of the lip.

CULTURAL COMMENDATION.

To Mr. W. H. White (Orchid grower to Sir TREVOR LAWRENCE, Bart., Burford), for a magnificent plant of the fine yellow Dendrobium fimbriatum oculatum with 40 spikes, the blotches at the bases of the labellums being very dark maroon.

To Mr. J. Davis (gr. to J. GURNEY FOWLER, Esq., Glebelands, South Woodford), for Masdevallia Schroderiana with 51 pretty white, crimson, and yellow flowers.

Fruit and Vegetable Committee.

Not much was presented to the notice of this committee, the chief exhibit being a variety of Rhubarb shown by Mr. T. E. DAWES, The Nurseries, Syderstone, Norfolk. The stalks were pale in colour and possessed little colour in the cup, but the plants were remarkable specimens on account of their size; one clump, with its leaves, weighed 63 pounds, and another had a total of 92 stalks. (Cultural Commendation.)

Sir EDMUND LODER, Bart., Leonardslee, Horsham, Sussex (gr. Mr. W. A. Cook), displayed a dozen dishes of Apples and three of Pears.

Mr. JOSEPH CHEAL, nurseryman, Crawley, showed fruits of Passiflora, Anona, Loquat, and other plants from the Madeira Islands.

Scientific Committee.

MARCH 31. *Present:* E. A. Bowles, Esq., M.A., F.E.S. (in the chair); Rev. W. Wilks, M.A.; Messrs. H. T. Gussow, G. S. Saunders, E. M. Holmes, A. Worsley, J. T. Bennett-Poe, H. J. Elwes, L. de B. Crawshay, G. Gordon, G. Massee, A. R. Rolfe, and F. J. Chittenden (secretary).

Inheritance of albinism in Orchids.—Mr. C. C. HURST, F.L.S., sent the following notes in relation to this subject, which has been brought up

at several meetings recently:—"Since my last communication, I have had an opportunity of examining some plants of Paphiopedilum insigne Sanderæ. Much to my surprise, I found distinct traces of purple sap in the basal margins of both the old and young leaves. The plants were not in flower, but I am told on good authority that some minute spots are also to be found on the dorsal sepal. In view of this, it would appear that P. insigne Sanderæ, so long regarded as an albino, is in reality a coloured form in which the purple sap is present in minute quantities. In accordance with the provisional scheme suggested in my last note, P. insigne Sanderæ will therefore be carrying both the colour factors C and P, and when mated with albinos may be expected to give coloured hybrids, as it has done in the case quoted by Mr. Rolfe. It would be interesting to know if the two other yellow forms P. insigne Sanderianum and P. insigne Macfarlanei, recorded as unspotted, are true albinos, and what they produce when crossed.

"If P. insigne Sanderæ is not an albino it must be deleted from my tables of albino crossings, which will now read as follows:—

TABLE A.

1. P. callosum Sanderæ (P) × P. callosum Sanderæ (P) gives albinos (P P).
2. P. Lawrenceanum Hyeanum (P) × P. Lawrenceanum Hyeanum (P) gives albinos (P P).
3. P. Lawrenceanum Hyeanum (P) × P. callosum Sanderæ (P) gives albinos (P P).
4. P. bellatulum album (C) × P. callosum Sanderæ (P) gives coloured hybrids (C P).
5. P. bellatulum album (C) × P. Lawrenceanum Hyeanum (P) gives coloured hybrids (C P).

TABLE B.

1. P. bellatulum album (C) × P. bellatulum album (C) should give albinos (C C).

"Mr. Rolfe's theory that the colour reversions are due to the fact that the albinos crossed belong to diverse species, fails to account for the cases in Sweet Peas, Stocks, and other plants where two albino individuals of the same species, variety, and race, may revert to coloured forms when crossed. On the other hand, the conception of complementary colour factors satisfactorily explains all the known phenomena of colour reversions in plants and animals, so far as they have been critically and experimentally studied."

Psocidæ injuring plants.—Some time since, Mr. STANTON BROWN, A.R.H.S., of The Cedars, Breadsall, Derby, sent a number of insects from Oleander, &c., which were identified as Caecilius Dali, an insect belonging to the Psocidæ, and known only to feed upon spores of fungi and similar things. Mr. BROWN now sent some pieces of recently-struck cuttings of Salvia splendens, upon which the insects occurred in great numbers. These cuttings were injured by insects, and Mr. BROWN said that the injury was solely due to the work of these insects, which did not appear at all particular with regard to the plants upon which they feed. This adds another to the already long list of insect pests in plant houses. Mr. SAUNDERS took the plants for further examination.

Larch with gall-like growths.—Mr. H. J. ELWES showed a one-year-old shoot of Larch taken from a young tree in his nursery having several gall-like growths along several inches of its growth. The shoot was referred to Mr. MASSEE, who undertook to obtain some information upon it if possible.

Orchid hybrids.—Mr. R. A. ROLFE, on behalf of M. E. CAPPE, Vésinet, France, exhibited two very diverse hybrids raised from the same seed pod of Lælio-Cattleya Cappei (a hybrid from L. cinnabarina × C. Warscewiczii), the result of fertilising a flower with mixed pollen from Lælia flava and Cattleya Mendelii. One flower appeared to be a true hybrid between L.-C. Cappei and C. Mendelii, whose characters were well blended, but the other closely resembled Lælia Cowanii (a supposed hybrid between L. flava and L. cinnabarina) in size. It was suggested as a case of dissociation of the "mixed character" whereby an ovule of L.-C. Cappei, from which the character of C. Warscewiczii had been eliminated, had been fertilised by a pollen tube from Lælia flava.

Scale insect on Holly.—Mr. SAUNDERS reported that the insect attacking Holly, shown at the last meeting from Ipswich, was the very local scale insect, Aspidiotus britannicus. He recommended that the Holly hedge should be thoroughly sprayed with paraffin emulsion, taking care that both surfaces of the leaves received the spray; or the hedge might be fumigated with hydrocyanic acid gas, if some means of enclosing it could be devised.

Yucca and Agave disease.—Mr. H. T. GUSSOW reported that he had examined the leaves of Yucca and Agave shown at the last meeting by Mr. SAUNDERS, and found they were attacked by the fungus Coniothyrium concentricum, a common fungus in America, and previously recorded in this country. He recommended that to stop its spread the leaves should be dipped in a 1 per cent. solution of copper sulphate.

HORTICULTURAL CLUB.

MARCH 31.—After the usual monthly dinner of this club, held at the Hotel Windsor on the above date, under the chairmanship of Mr. W. A. Bilney, the Rev. Joseph Jacob gave an interesting lecture on the Tulip and its history. The culture, as he pointed out, was one of considerable antiquity, since even as far back as 1554 their beauty was appreciated and recorded by noted botanists of the time, and both Clusius and Gerarde refer to them in 1573 and 1597. By 1634 indeed the Tulip had attracted so much attention and had produced so many varieties in evidence of its peculiar sportive character that the Tulip mania commenced, new forms fetching fabulous prices, one bulb of an unnamed form actually being sold for £5,000, and it is recorded that there being only two bulbs of a particular rarity, the owner of one paid a small fortune for the other, which he at once destroyed to render the remaining one "unique." Madness could hardly go further, and it is therefore not a matter of surprise that a reaction followed, so that in 1637 Tulip fanciers of the speculating kind tried to realise, with the result that a "slump" followed. The States-General of Holland stepped in and instituted regulations, and by 1638 common sense had reasserted itself. Eventually in 1730-40 popular taste turned to American plants, and Tulip cultivation fell into the background, but the varieties by this time ran into thousands. The first double Tulip, T. lutea centifolia, is recorded in 1665, and Parrot Tulips came to the fore in 1690. The origin of these appears to be somewhat mysterious, since they agree when in form with no known species. France appears to be the locality where they are first recorded. The curious fact was stated by the lecturer that in a catalogue issued at the end of the 18th century, the quoted varieties of Ranunculus far exceeded those of the Tulip, two bulbs of each of 500 kinds being offered for £30. In 1820 to 1840 there was waged the war between the Tulip connoisseurs of the north and south, the former considering the character of the marking to be the first essential and the latter the purity of the flower. The precise shape of the flower was also a vexed question, Glenny fixing it as a cup embracing one-third of a sphere; Groom, another authority, at one-half; and Slater, a third expert, at nine-sixteenths. In 1849 the National Tulip Society was founded, and Tulip cultivation was greatly in favour. In tracing the history of the flower up to the present date, the lecturer interpolated with the data above cited a number of very interesting facts relating to the introduction of new varieties and species.

CORNWALL DAFFODIL AND SPRING FLOWER.

APRIL 7.—The twelfth annual show of this society was held in the Market Hall at Truro, and, notwithstanding the lateness of the season, exceeded all earlier exhibitions in excellence. That the judges from the Council of the Royal Horticultural Society fully recognised the merits of the exhibits was shown by the number of medals that were awarded. They stated that never before had they seen anything approaching the collections of hard-wooded flowering shrubs that were staged, which, indeed, were superb. Rhododendrons were very fine and hardy spring flowers were largely shown, and included several rare and beautiful things. The management left nothing to be desired, the Hon. John Boscawen, who has been secretary since the inception of the society, fulfilling his arduous duties with conspicuous ability.

For the best collection of 30 varieties of Daffodils in commerce, the 1st prize was awarded to Mr. E. H. WILLIAMS for a fine stand of fresh flowers, of which Lucifer, Incognita, Firebrand, Homespun, Oriflamme, Beacon, White Queen, Armorel, Cassandra, Chaucer, and Herrick were especially noteworthy.

The best collection of 30 varieties of Daffodils, in commerce or not in commerce, was shown by Mr. J. C. WILLIAMS, who had a grand stand of unnamed seedlings, which deservedly received the only gold medal awarded. Of these, a variety known as "272," an enormous bright golden trumpet; "700," with white perianth and broad orange-scarlet cup; "415," pale primrose perianth and bright orange cup over 1 inch across, and "733," white perianth and wide yellow cup margined with glowing orange, were remarkably fine. The 2nd prize was won by Mr. P. D. WILLIAMS, with a stand only slightly inferior to the gold medal collection; this was awarded a Silver Flora Medal.

Nine classes were devoted to flowers obtained from bulbs costing not more than 10s., and in single blooms the 1st prize for Magni-coronati was won by Mrs. S. H. CHRISTY with Hamlet; the 1st prize for Medio-coronati was divided between Mrs. S. H. CHRISTY with Amazon and Miss M. WILLIAMS with White Lady. The 1st prize for Parvi-coronati was won by Mrs. W. TYACKE with Blood Orange, and the 1st prize for Poeticus by Mrs. W. TYACKE with Almira.

Groups of Daffodil seedlings that have not yet been in commerce for four years were very interesting. Mr. C. DAWSON won the 1st prize with Bernardino, Pilgrim, Dawn, Armorel, Rosella, and Fair Lady, a beautiful exhibit.

There were three classes for Polyanthi and Primroses, but the winning baskets were quite eclipsed by a large group of the Lanarth strain exhibited, not for competition, by Mr. P. D. WILLIAMS, which was awarded a Silver Flora Medal.

For 12 hardy spring flowers, Mr. P. D. WILLIAMS was awarded the 1st prize for Muscari, Heavenly Blue, Iris bucharica, Iris orchioides, Saxifraga cihata, Ranunculus asiaticus, Anemone Pulsatilla, A. apennina, A. blanda rubra, Caltha platypetala, Ornithogalum nutans, Chionodoxa gigantea, and Tulipa sylvestris.

For the finest plant of Rhododendron in the show, the 1st prize and Silver Banksian Medal were awarded to Mrs. J. P. ROGERS for a magnificent plant of R. suave measuring more than 6 feet in diameter.

The best group of Rhododendrons was shown by Mr. D. H. SHILSON, whose stand contained R. grande, Pink Pearl, Lady Alice Fitzwilliam, Countess of Haddington, and many seedlings (Silver-Gilt Banksian Medal). Mr. R. FOX had an exhibit almost as good, which was also awarded a Silver-Gilt Banksian Medal.

The classes for hard-wooded flowering shrubs produced, perhaps, the most interesting feature of the show, the entries being numerous and the exhibits of exceptional merit. In the class for 20 varieties there was little to choose between the first three exhibits. Mr. R. FOX was awarded the 1st prize, and included Forsythia viridissima, Staphylea colchica, Andromeda japonica, Daphne indica, Sutherlandia frutescens, Erica mediterranea, Berberis Darwinii, Acer rubet, Magnolia conspicua, Eriostemon lineanifolia, Grevillea thyrsoides, Cytisus racemosus, Spiræa Thunbergii, Drimys aromatica, Embothrium coccineum, Calceolaria violacea, Pittosporum eugenioides, Boronia megastigma, Magnolia stellata and Skimmia japonica (Silver-Gilt Banksian Medal). The 2nd prize and Silver Flora Medal were awarded to Mr. T. B. BOLITHO, whose stand contained the rare Viburnum rugosum, Boronia heterophylla, and Chorizema Lowii. The 3rd prize was won by Sir ARTHUR P. VIVIAN, who also received the Silver Flora Medal.

The best exhibit of six varieties of hard-wooded flowering shrubs was shown by the Countess of ILCHESTER, who was awarded the 1st prize and Silver Banksian Medal. The stand contained many superb blossoms of the lovely Magnolia Campbellii, which formed the most charming feature of the show. Mr. T. A. DORRIEN-SMITH sent a very interesting collection from the Isles of Scilly, which was awarded a Silver Flora Medal.

NON-COMPETITIVE EXHIBITS.

An Award of Merit was given to Messrs. CARTWRIGHT & GOODWIN for "Rising Sun," a golden trumpet seedling Daffodil of promise.

Messrs. ROBERT VEITCH & SON, Exeter, staged a fine exhibit, including Primula rosea, P. denticulata, P. cashmeriana, P. marginata, P. auricula, Corydalis cheilanthifolia, Lithospermum rosmarinifolium, Cytisus kewensis, C. scoparius, Clematis montana rubra, Azalea purpurea plena, Grevillea sulphurea, Eriostemons, Osteomeles anthyllidifolia, Correa cardinalis, Brachysema acuminata, and many other plants (Silver Flora Medal). The DEVON ROSARY, Torquay, showed a fine assortment of pot Roses in bloom, set off with Boronias, Acacias, Azaleas, Ericas, Cytisus racemosus, C. præcox, and Clivia miniata (Silver Banksian Medal). Mr. G. REUTHE contributed an interesting collection of rock plants (Silver Flora Medal). Messrs. BARR & SONS, who obtained a Silver Banksian Medal, made a fine display of Daffodils; they also exhibited a collection of rock plants. Messrs. W. CUTBUSH & SON provided a handsome show of plants, these including a large mass of Primulas in many species and varieties, Meconopsis Wallichii, Rhododendron racemosum, Fritillaria aurea, and other plants. (Silver Flora Medal).

SCOTTISH HORTICULTURAL.

APRIL 7.—A largely attended meeting of the above association was held on the above date, Mr. Whytock, the president, being in the chair. Mr. David King, nurseryman, Osborne Nursery, Edinburgh, read a paper on "Some Ideas regarding Planting for Effect."

In opening his paper, Mr. King referred to the cold, forbidding appearance which main entrances to policies and grounds from public highways often have. Avenues in general were, he said, "often one long weary stretch of gravel and grass." A pleasing effect is produced by the planting of groups of Abies, Picea, and Cupressus against a background of forest trees, the soft green of whose foliage contrasted well with the rich green of the Conifers. He also advocated the planting along avenues, behind a broad margin of grass, irregularly shaped groups of evergreen shrubs. Dealing with Rose gardens, Mr. King said he had seen many pergolas, in which too much of the structure but very little of the Rose was seen. Mr. King described some examples of trellising and pillars for Rose growing, constructed of rough Larch poles. A Rose-garden should dip gently to the centre, with high evergreen shrubs, such as Holly, Portugal Laurel, Yew, &c., all around for shelter.

Mr. King referred to a feeling of disappointment which he experienced when he first visited Chatsworth, and he contrasted the artificiality of the so-called waterfall at that place with a natural waterfall. In the latter part of the paper, Mr. King strongly advocated a more extended use of flowering trees and shrubs, both evergreen and deciduous, and by means of diagrams he gave a number of examples of artistic treatment of ground under varying conditions by means of these and other plants.

Some interesting plants were shown at the meeting, included amongst which were the new Spiræa "Peach Blossom," from Mr. D. W. Thomson, 113, George Street, Edinburgh; a flower stalk of Narcissus "Empress," bearing three flowers, from Mr. Balmer, Orphan Hospital, Edinburgh; and a single bulb of Hyacinth "Grand Maitre," bearing twelve flower spikes, from Mr. H. F. Cowan, 22, George Street, Edinburgh. A Cultural Certificate was awarded to Mr. John Fraser, Duddingston Cottage, Midlothian, for a plant of Tree Pæony "Lord Roberts."

SCHEDULES RECEIVED.

Bolton Horticultural and Chrysanthemum Society's 22nd exhibition, to be held in the Albert Hall, Bolton, on Friday and Saturday, November 20, 21, 1908. Sec., Mr. George Corbett, Heaton Grange Gardens, Bolton.

Sutton and District Rose Society's 27th exhibition to be held in the Public Hall, Sutton, Surrey, on Wednesday, July 1, 1908.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

Mr. C. F. MOWL, junr., for the past 2½ years Foreman in the gardens of the Right Hon. Viscount NEWPORT, Castle Bromwich Hall, Birmingham, as Gardener to A. J. ASH, Esq., Packwood House, Hockley Heath, near Birmingham.

Mr. THOMAS A. AYRES, for 10 years Foreman in the gardens of W. A. WYKEHAM-MUSGRAVE, Esq., Thame Park, Oxon, as Gardener to W. A. WYKEHAM MUSGRAVE, Esq., at the same address.

Mr. DAVID CALTHORPE, for over 2 years Gardener to Sir ALGERNON COOTE, Bart., H.M.L., at Ballyhn House, Mountrath, and previously in charge of Lord LANGFORD'S gardens, at Summerhill House, Enfield, co. Meath, as Gardener to A. D. CROSBIE, Esq., D.L., Bally Leigue Castle, Bally Leigue, co. Kerry.

Mr. JOHN JOHNSON, for upwards of 30 years Gardener to the late W. C. SPRAKER, Esq., Hazelshaw, Kenley, Surrey, as Gardener to A. S. TOMSON, Esq., Sunny Side, Kenley, Surrey. (Thanks for contribution to Royal Gardeners' Orphan Fund).

Mr. H. JOHNSON, for the past 4 years Foreman at Pennington Hall, Leigh, Lancashire, as Gardener to H. HARDY, Esq., Poole Hall, Nantwich, Cheshire. (Thanks for your contribution of 1s. 6d. to the R.G.O.F. box).

Mr. H. BEST, whose appointment was inserted last week, had previously served in the gardens at Bowood, Deepdene, and Sandbeck, but was not Foreman at Bowood.

Mr. G. ARSOLUM, for the past 6 years Foreman to the late Lady COX at Hillingdon House, Uxbridge, as Gardener to C. MURRAY, Esq., Eastcote Place, Pinner, Middlesex.

Mr. CHAS. M. HOLT, for 3 years and 8 months Gardener to THOMAS J. LENNARD, Esq., J.P., Henbury Court, Bristol, as Gardener to ARTHUR BAKER, Esq., Henbury Hill House, nr. Bristol, in succession to the late Mr. W. J. ORCHARD. (Thanks for 3s. which has been placed in the R.G.O.F. box.)

Mr. HENRY HAINES, for the past 7 years Gardener at Binfield Park, Bracknell, as Gardener to Mrs. M. A. JOHN, The Chantry, Ipswich. (Thanks for donation of 2s. for R.G.O.F.)

Mr. F. TARRY, for the last 6 years Second Gardener at Manor House Gardens, Alton, Hants, as Gardener to LLEWELLYN GRIFFITHS, Esq., Drayton Lodge, Longparish, Hants.

Mr. THOMAS WHITE, for the past 5½ years in the gardens at Broadwater, Weybridge (latterly as Foreman), as Gardener to C. C. NEWTON, Esq., Strafford Lodge, Oatlands Park, Weybridge. (Thanks for donation of 1s. 6d. sent for R.G.O.F.)

Mr. GEO. KIRK, for the past 12 months under Mr. WALKINGTON at Weelsby, and previously under Mr. T. COOK at Orford House, Market Rasen, as Gardener to W. BROWNE, Esq., Fintona, Bargate Avenue, Grimsby.

Answers to Correspondents.

A FLORIFEROUS HYACINTH: *F. C. T.* Your specimen bearing eight inflorescences with 105 flowers is remarkable but not unique. We have occasionally received examples with even more blooms. The side spikes have arisen from bulbs in the axils of the scale leaves, but which are still enclosed by the membranous leaves, giving the appearance of one bulb when there are really several.

ASPARAGUS: *W. W. C.* The Asparagus roots are infested with a soil fungus that has caused rotting. This is usually due to the tops being cut too early in the season.

BULBS: *J. R. P. & Sons.* The yellowing of the leaves is due to bacteria. The bulbs are also infected, and would transmit the disease next season to neighbouring bulbs. Burn all infected plants, and do not plant bulbs in the same soil for two or three years, unless it is sterilised with gaslime.

CULTURE OF PINEAPPLES: *J. H. S.* Read an article to be published in our next issue from Mr. Coomber, whose exhibits of Pineapples in recent years have been of the highest possible merit.

DAISIES AND PLANTAINS IN A LAWN: *A. B. E.* These weeds are not destroyed by the dressings of sulphate of ammonia, but the nitrogenous manure contained in the salt favours the growth of the grasses, and these in time crowd out the intruders. Apply the sulphate of ammonia now, or a week or two later, at the rate of ½ oz. to the square yard. This substance is the basis of the substance known as lawn sand.

INSECTS EATING PEACH AND NECTARINE LEAVES: *Correspondent.* The insects you send are weevils, voracious pests to all plants. The creatures feed at night time. They may be caught by laying white cloths under the plants upon which they are feeding, and after daylight has passed for about an hour, throwing a bright light on the plant, when the insects will be alarmed and fall to the ground. Should they not fall the plant should be shaken. Weevils hide themselves in the most cunning manner during the daytime.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *Weekly Reader.* Both are very fine varieties of Dendrobium nobile, but for which we know no varietal names.—*Rachel.* Some of the numbers were detached. 1, Odontoglossum Pescatorei; 2, the narrow-petalled, brown-spotted flower O. pardinum; 3, O. Adrianæ; 4, O. Adrianæ of fine quality; 5, an indifferent, or immature flower of O. loochristiense.—*W. F.* 1, Dendrobium nobile (very good variety); 2, Dendrobium Pierardii; 3, Dendrobium dixanthum.—*F. R. I.* 1, Brassia caudata; 2, Odontoglossum Lindleyanum; 3, Oncidium obryzatum; 4, Aerides odoratum.—*R. S.* Catasetum atratum.—*A. B.* 1, Selaginella Willdenovii; 2, Pteris longifolia; 3, Adiantum caudatum; 4, Pteris tremula.

NARCISSUS: *H. P.* The yellow stripe is due to a bacterial disease, for which no satisfactory remedy is at present known. The removal and burning of infected plants is desirable.

PALM LEAF: *J. C. M.* The bleached spots are made by leaf-sucking mites. Sponge the leaves with an insecticide, allowing the solution to trickle down to the axils of the leaves, where the mites hide when not feeding.

PEACH BUDS DROPPING: *J. D.* See reply to *F. L. B.* in the issue for March 7 last, p. 160.

PEACH TREE: *A. S.* There is no fungus present to account for the injury to the branches. It is probable the roots are in an unsatisfactory condition.—*Thanks for Past Favours.* The primary cause is excess of moisture in the air. This has enabled the fungus Botrytis cinerea to establish itself. Plenty of ventilation will set matters right.

PELARGONIUM: *E. S.* Mites are the cause of the injury, and the two varieties mentioned are exceptionally susceptible. Isolate diseased plants, and sponge the leaves with a solution of soft soap.

THE BLACK LILY OF PALESTINE: *Vendys.* We suppose by this you mean Arum palæstinum sanctum, which is known as the Black Calla, or Black Arum Lily. The failure of the plant to flower is probably due to it being of insufficient size. Place it in a warm greenhouse and during the period of active growth afford the roots liberal supplies of moisture, with occasional manurial stimulants. During the late summer and autumn stand the plant in a warm spot in the open, and largely withhold moisture in order that the rootstock may be thoroughly ripened and become charged with an abundance of reserve material, so that its following season's growths may be sufficiently strong to produce flowers.

TULIPS: *C., Bros.* The Tulips are attacked by the fungus Botrytis parasitica. As the fungus is present in the bulbs received, all diseased plants should be burned, and the soil treated with quicklime.

COMMUNICATIONS RECEIVED.—J. S., Salisbury—F. M.—K. F.—E. W.—J. H. D. W. C.—S. T., Moseley—J. T. L.—L. G.—W. W. Portus—M. B.—W. T.—E. R.—A. C.—Mrs. W.—H. P. L.—South Eastern Agricultural College—C. T. D.—J. D. G.—T. C.—F. J.—de B. C.—W. F—W. K.—C. F.—F. M.—H. W. W.—C. P. R.—S. W. F.—G. B. M.—J. C.—L. C. L.—W. M.—J. J. W.—K., Dublin—J. D., Leeds—T. R.—W. B.—G. H.—P. & M.—J. C.—W. H. C.

Photograph by H. N. K.

VIEW IN LORD SAVILE'S GARDEN AT RUFFORD ABBEY, NOTTINGHAMSHIRE.

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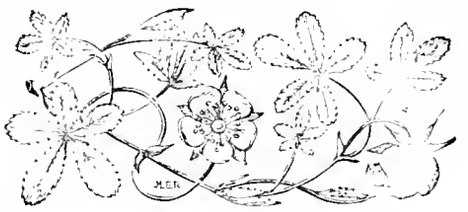

THE
Gardeners' Chronicle
No. 1,113.—SATURDAY, April 25, 1908.

CONTENTS.

ILLUSTRATIONS.

NEW PLANTS AT GHENT.

WE are enabled in this issue, and in the succeeding one, to publish illustrations (specially taken for us by Mr. A. E. Smith) of the new plants exhibited by Messrs. Sander & Sons, of St. Albans and Bruges, at the centenary exhibition of the Ghent Botanical and Horticultural Society now open at Ghent, in Belgium. These plants are included in the competitive group of 12 new plants, and as most of them have not yet produced flowers, the names given must be taken as provisional only. Compared with the new plants shown by Messrs. F. Sander & Sons at previous Ghent exhibitions, the present collection is not inferior, although it may not contain any such striking novelties as Acalypha Sanderi, Strobilanthes Dyerianus, Dracæna Godseffiana, and D. Sanderi, which have at one time and another figured at the Ghent exhibitions.

BROMELIA TRICOLOR: HORT. SANDER. Fig. 115.

In the absence of flowers, it is impossible to decide the genus to which this plant belongs. At first sight it might easily be mistaken for the variegated Pineapple, Ananas sativus variegatus, but it differs from that plant in habit, in the thinner texture of its leaves, and in the size and setting of their marginal spines. These, in the variegated Pineapple, are small, close set on a straight, even margin, whilst in Bromelia tricolor they are large, hooked, ¾ inch or more apart, and the margin is wavy. The leaves are 2 feet long by 1½ to 2 inches wide. The two plants can be distinguished by the softer Cordyline-like texture of the leaves of the Bromelia, just as Pandanus Veitchii differs from P. javanicus, with which it was at first confused. Bromelia tricolor was discovered some years ago on the Rio Negro, by Mr. L. Forget. He found only one plant, which arrived in bad condition, but it has since grown into a handsome specimen. The broad marginal bands of creamy yellow, and the rose-red colour on the young leaves and on the basal margins of the old leaves, the central portion of which is of a glossy green colour, are very decorative.

PHILODENDRON ILSEMANII: HORT. SANDER.

This plant is known only in its juvenile stage, and the leaves of Philodendrons often change very considerably as they get older. It is possible that P. Ilsemanii may be a form of P. rubescens or P. sagittifolium. It has the same habit, stem, and leafage as they have, but it differs from them and also from all other Philodendrons in having its oblong, cordate, dark green leaves splashed or marbled with white, and also now and then a tinge of rose-pink, particularly when the leaves are immature. The plant was discovered in Brazil by Mr. Forget, Messrs. F. Sander & Sons' collector. It should prove a good decorative climber for covering walls, pillars, &c., in tropical plant houses, and a useful bedding plant for gardens in tropical countries.

PERESKIA GODSEFFIANA: HORT. SANDER. Fig. 114.

This strikingly decorative plant is supposed to have originated in Queensland; at any rate, Messrs. Sander & Sons obtained it from that country. Botanically, it is probably a sport from the West Indian P. aculeata, known as the Barbados Gooseberry bush, which has been in cultivation for at least 200 years, and is largely grown in tropical countries as a fence plant. Here it is grown only as a stock on which Epiphyllums are grafted. It rarely flowers; indeed, although it has been cultivated at Kew ever since the foundation of that establishment, it has never been known to flower there except once, and that was in 1889. The flowers, which are pretty, are Cactus-like, 2 inches across, yellowish-white tinged with rose. The plant, although very variable in habit and foliage, is known only as a straggling bush or small tree, with more or less hooked spines in tufts. It grows very freely in tropical countries, as freely as Hawthorn does with us. For this reason P. Godseffiana, with its rich leaf coloration, is certain to become a popular garden plant in tropical countries. We can imagine a fence of it in such a place as Jamaica, where, when making fresh growth under the influence of bright sunshine, it would be wonderfully effective. Grown in pots under glass, P. Godseffiana requires plenty of sunshine and heat to bring it to perfection. It may prove to be a valuable shrub for summer effect out of doors in warm, sunny situations, and may even turn out to be a first-rate plant for summer bedding. The young leaves are rich crimson, apricot yellow and green above, the underside being of a uniform purplish-crimson colour; some shoots have leaves wholly yellow above and crimson below. The shoots grow rapidly, and the variation of colour on a specimen plant is quite extraordinary. Messrs. Sander are growing it in the form of pyramid specimens, as a climber for pillars, &c., and as a basket plant.

ENCEPHALARTOS WOODII: HORT. SANDER.

The discovery of a new Cycad in Zululand by Mr. Medley Wood, Curator of the Durban Botanic Gardens, Natal, is an event of some interest. Whether the plant now named in compliment to him will be accepted as a good species, distinct from the variable E. Altensteinii, we are not at present able to say, but it is quite certain that, for garden purposes, E. Woodii is as distinct from that species as the other recognised species of Encephalartos are. The largest plant seen has a stem 18 inches high and 8 inches through, with a handsome head of 25 leaves, which attain to 5 feet in length. They are gracefully curved, and are clothed with leaflets of variable size, the largest being 8 inches long and 2 inches wide. These are set about 4 inches apart on the lower part of the rachis, and more closely towards the apex, where they overlap. The broadest leaflets are irregularly pinnatifid, the strongest divisions and apex being spine tipped. The texture and bright shining green colour of these large pinnatifid leaflets easily distinguish this from all other species of Encephalartos. It grows well under cultivation, and is a strikingly handsome plant.

PTYCHORAPHIS SIEBERTIANA: HORT. SANDER. (Supplementary Illustration.)

The genus Ptychoraphis is exceptional among eastern Palms in its elegance, the three or four species known, all of them Malayan, being as graceful as Cocos Weddelliana and Geonoma gracilis. P. singaporensis and P. augusta, which are already in cultivation, although comparatively recent introductions, possess good decorative qualities, and in this new species, which is named in compliment to Herr Siebert, the highly-esteemed director of the Palm Garden at Frankfort, we have a most promising garden Palm. In the pose and form of the young plant there is a resemblance to Dæmonorops fissus, but there are no spines on the Ptychoraphis. The stems are slender, in the case of mature plants probably tufted, with elegant arching leaves, the petioles clothed with small brownish scales, the leaflets regular, 10 inches long, ¾ inch wide, tapering gradually to a long thread-like point. When young they are copper-coloured, changing with age to a rich green colour.

PINANGA MICHOLITZII: HORT. SANDER. Fig. 113.

A handsome dwarf Palm from Central Sumatra, where it was found by M. Micholitz. It comes near P. disticha (bicolor) of Blume, but that species is a native of Penang and Perak, and it has much shorter leaves. P. Micholitzii has dwarf, slender, tufted stems, with a bulbous base, and it forms an elegant specimen up to 6 feet high. The leaves are about a yard long, with slender, arching, sheathing petioles, dotted with blackish scurf; the midrib is rounded below, angular above; the leaflets are 15 inches long, variable in width, elegantly curved and attenuated, and of a rich green colour, conspicuously blotched with yellow above, glaucous green beneath; when young they are tinted with purple. The charm of this little Palm is in the elegance of its foliage and its pleasing variegation. It appears to be happier under cultivation than Pinangas generally are.

COCOS NUCIFERA VAR. AUREA.

The Cocoanut Palm is the most widely distributed and the most extensively cultivated of all Palms; consequently it exhibits considerable variation in stature, size, and form of fruits, the age at which it begins to fruit, and in leaf coloration. There is a variety known as nana, which has a very short stem, and bears fruit when it is about six years old. The golden Cocoanut introduced by Messrs. F. Sander & Sons is probably a form of this, characterised by the bright orange-yellow of the sheath, petiole, and midrib of the leaves, the colour of which is

heightened by the bright green colour of the leaflets. The ordinary Cocoanut is not looked upon as a garden Palm, but this golden variety deserves to rank with the red-stemmed or sealing wax Palm (Cyrtostachys Renda), which created such a sensation when shown at Ghent ten years ago by M. de Smet Duvivier.

ANTHURIUM LAUCHEANUM. HORT. SANDER. Fig. 112.

One of the most remarkable of the cultivated Anthuriums is A. splendidum, introduced in 1882 from Colombia by the late Mr. W. Bull, and described by Sir J. D. Hooker as a "truly splendid plant." It has ovate cordate leaves of a metallic green colour, and bullately reticulate, the habit of the plant being that of A. crystallinum. In this new introduction of Messrs. F. Sander & Sons, named by them in compliment to M. Lauche, we have a plant with the general characters of the well-known A. Andreanum, and leaves with the same striking reticulation as in A. splendidum. The stem is elongate, probably climbing by means of aerial roots; the leaves have smooth rounded petioles, and an oblong cordate blade from 12 to 15 inches long and 6 to 9 inches wide. Flowers not seen. Native of Colombia.

ANTHURIUM SANDERI. HORT. SANDER.

This has large, handsome leaves in the way of A. crystallinum, A. regale, and A. magnificum, but of nobler dimensions than either of them. Botanically, it comes nearest to A. magnificum, but it differs from that species in the form and nervation of its leaves. It has a short, stout stem, bearing symmetrically-disposed leaves, the petioles of which are up to 3 feet long, conspicuously angled and winged, the blade being cordate, 3 feet long and 2 feet wide, with the basal lobes wavy and less rounded than in A. magnificum, and a wide sinus, the lobes not overlapping. The upper surface is olive green, with silvery white, irregular bands along the midrib and nerves; the under surface is pale green, and the nerves are sharply angular or keeled. Flowers not seen. This will be a first-rate foliage plant for tropical houses, and if planted out on a mound or rockery in a peaty, well-drained soil, and kept moderately wet, it will probably grow to larger dimensions than those here given. Thus treated, all the big-leaved Anthuriums are most effective. For the introduction of A. Sanderi we are indebted to Mr. L. Forget, Messrs. Sander & Sons' energetic collector, who found it "somewhere in South America," which probably means Colombia.

NEPHRODIUM GRACILLIMUM. HORT. SANDER.

An extremely elegant variety of the Australian Nephrodium (Lastrea) decompositum, which is very variable in the size, texture, and cutting of its fronds, and in the habit of its usually wide-creeping rhizomes. Messrs. Sander & Sons obtained this plant from Brisbane, and it has proved so free a grower and the fronds are so finely divided that it is likely to become a favourite Fern with market growers. It has a close-growing rhizome, from which spring numerous fronds from 2 to 3 feet long, the stipes wiry, scaly at the base, the lowest pinnæ 12 inches long, those above being gradually shorter, the whole forming a deltoid elegant frond of pleasing appearance. The pinnules are as finely divided as in Onychium japonicum. The cultivated forms of N. decompositum are so different from N. gracillimum that it might reasonably be doubted that they are forms of the same species. There are, however, specimens of wild plants from Australia which prove their identity.

CALADIUM CENTENAIRE. (Supplementary Illustration.)

The modern garden Caladiums are more remarkable even than the modern tuberous Begonias. The film-like texture of the leaves, the variety in their size and form, and their often dazzling coloration are really wonderful characters to have sprung from the old Caladium bicolor, which was first introduced from Madeira about 150 years ago, where it was supposed to occur in the wild state. It is now known to have come from Brazil. The innumerable varieties of Caladium now grown—for they are bred not only in European gardens, but also in the tropics, many good ones coming from the gardens of South America—makes it difficult to say with certainty that any one is distinct from all the others. Nevertheless, one may say of C. Centenaire that it has exceptionally large and elegant leaves, whose shining black-purple petioles and rich, satiny, rose-red blades, with veins of a darker shade of red, place it among the handsomest of the big, unicoloured forms. It originated in Brazil.

CODLEUM (CROTON) FRED SANDER.

Garden Crotons are not Crotons but Codiæums, and they are all descendants from one species, viz., C. variegatum, which used to be called Croton pictum, and is the Aucuba of the tropics, being grown for fences, &c., in all tropical gardens where bright colours and a sturdy constitution are valued. It is said to have come originally from the Moluccas. So far as leaf characters go, no plant has developed such a multitude of forms and colorations as this; from broad to linear, from straight to spiral, trilobed, irregularly lobed and interrupted; and the marvel is why the leaves should have sported in this fashion. The shades of colour on the leaves also are as variable as they are often fantastic in arrangement. Crotons are ideal decorative plants, for they are easily grown, they pack and carry well, and they furnish colours that no other plants can. Consequently, they occupy a prominent place with market growers. The test of a good Croton lies in the way it strikes the market grower and decorator. It must be of good habit, bright, and pleasing in coloration, and able to stand the conditions of ordinary house decoration. These qualities are possessed by Croton Fred Sander, "the handsomest and most elegant of all trilobed Crotons, as it has the right habit, being elegant as well as leafy, and the leaves are bright green in the lower half and golden yellow in the upper half." This is the opinion of an experienced market grower.

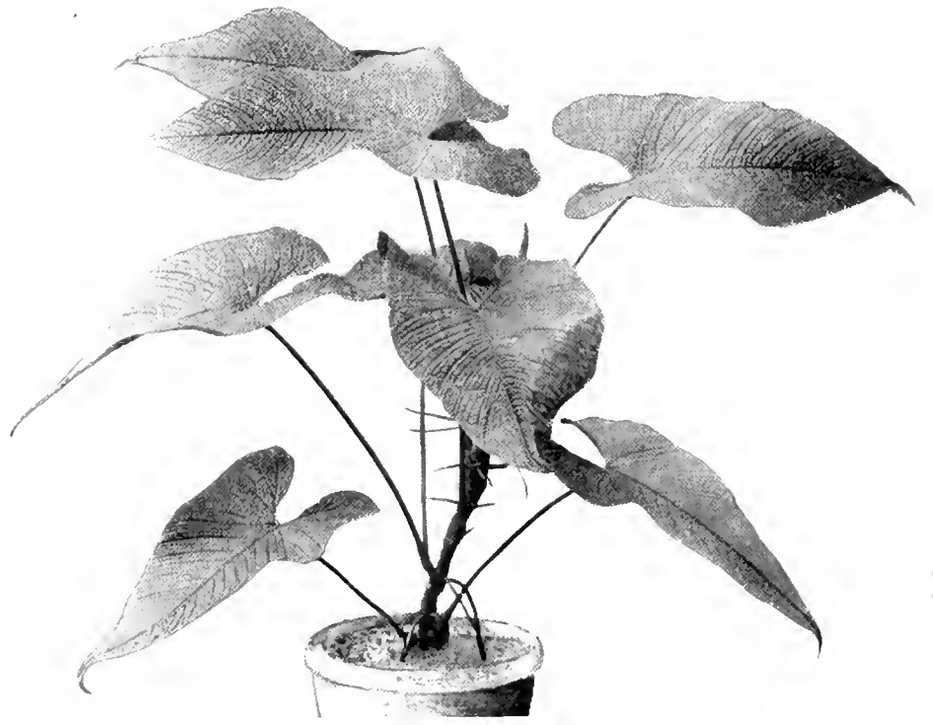

Fig. 112.—Anthurium Laucheanum: Hort. Sander., as shown at the Ghent International Exhibition.

CULTURE OF PINEAPPLES.

For the proper cultivation of Pineapples suitable structures are indispensable, although they need not be of an expensive character. Our houses are low with hip-shaped roofs. They are provided with adequate means of ventilation, and sufficient hot-water pipes to maintain the necessary amount of top and bottom heat. It is necessary, even in the coldest weather, to have an atmospheric temperature of from 70 to 80 degrees, and the heat of the bed in which the pots are plunged should be 90 degrees, and this should be possible without it being necessary to overheat the pipes. The pathways are sunk deep enough to allow the surface of the beds being made on a level with the surface of the surrounding ground; these beds are 3 feet in depth and composed of decayed tree leaves. This arrangement is economical, as less fire-heat is needed to maintain the temperatures in severe weather. The varieties of Pines most commonly grown are The Queen, of which there are several varieties, Smooth-leaved Cayenne, Charlotte Rothschild, and Black Jamaica; their cultivation is very similar, except in so far as it is modified in order to obtain ripe fruits at different seasons of the year. The Queen Pine, as cultivated for ripening fruits in summer, may be taken to illustrate the general cultivation of Pineapples. For a potting compost, light, fibrous loam is necessary, and this should be stacked in a heap long enough for its herbage to decay before it is required for use. The loam should be broken into suitable pieces for use in potting, and most of the fine particles shaken away from it. To each barrow-load of this fibrous loam a 7-inch pottul of dry soot should be added, also a similar quantity of bone meal or any good vine manure.

The plants are propagated by means of suckers, and those of The Queen intended for fruiting in summer should be potted early in September. When a sucker is detached from its parent plant a few of the lower leaves from

the sucker should be removed, cutting off the jagged ends closely. If the suckers are strong, they should be potted in well-drained pots having a diameter of 7 inches. The soil should be warmed before it is used, and by the aid of a potting stick during the process of potting, must be made very firm about the roots. Plunge the pots to the rim in a bed having a heat of 80 to 85 degrees, and do not let the atmospheric heat of the house fall lower than 65 or 70 degrees at night. It should be allowed to rise 5 or 10 degrees during the day. The house will need to be kept moderately close, and the plants should be shaded from bright sunshine, spraying them overhead with tepid water in the morning and afternoon of fine days, until the roots reach the sides of the pot. After this stage they will need to be watered with tepid water at the roots, rather more ventilation will be necessary, and little or no shade from sunshine need be employed. In winter the heat of the house should range from 55 to 60 degrees and the bottom heat 75 to 80 degrees. At that period the roots will not require much water, nor should the atmosphere contain much moisture. At the middle of February the plants should be fit for planting out in a bed or for potting into 12-inch pots. We find the latter more convenient. Before potting is commenced the balls of soil should be in a moist condition. First remove a few of the bottom leaves from the plant, then turn out the plant from the pot and remove the crocks. The potting should be done in a similar manner to that I have described for the suckers, and the pots afterwards may be plunged at 2 feet apart in a bed having a heat of 85 degrees. The atmospheric temperature of the house should be 60 to 65 degrees until the end of March, and until that time little water will be required by the roots. The summer treatment consists in carefully watering the plants so that the soil may be preserved in an equable condition of moisture, but by no means very wet. The roots may be fed regularly during the growing season by dissolving enough Peruvian guano in the water to colour it well. The temperature at night at that stage should be 70 degrees, and a little air should be admitted early in the morning, increasing the amount of ventilation when the heat reaches 80 degrees. Close the house early in the afternoon, after which time the heat may be allowed to rise to 90 degrees, the bottom heat being kept at 85 degrees. Spray the plants overhead early in the morning on fine days and again at closing time in the afternoon. Promote atmospheric moisture by damping the surfaces in the house as often as may be necessary. Remove any suckers as they appear, and afford the plants slight shade from powerful sunshine. As autumn approaches, the heat and moisture should be gradually decreased, until by the end of October, and during winter, similar conditions should be maintained, as I have recommended for newly propagated plants.

For the purpose of securing ripe fruits early in the summer, the night temperature may be raised to 65 degrees early in January, increasing it early in February to 70 degrees, allowing for rises by day in each case, and maintaining a bottom heat of 85 degrees. Carefully ventilate the house when the heat reaches 80 degrees, and gradually increase the ventilation as the heat of the sun increases. Maintain a moist atmosphere, afford water and nourishment to the roots as required, slightly shade from sunshine and remove the suckers, except those required for propagation, as I have recommended for the previous season's management. When the plants are in flower, a moderately dry atmosphere is necessary, and as soon as the flowers have passed, a stake should be placed to the fruit to keep it in an erect position. When the fruits are ripening, a moderately dry atmosphere with considerable ventilation is necessary, but no water should be applied to the roots. *T. Coomber, The Hendre Gardens, Monmouth.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM NOBILE "FRANCES RUNDLE."

This elegant variety has just bloomed in the collection of C. E. Rundle, Esq., at Deer Park Lodge, Tavistock, where Orchids are grown in immense variety, including many plants not often seen in these days of specialisation. The variety "Frances Rundle" is a well-formed flower of good substance, the sepals having a flush of colour on the reverse side. The petals are white; the lip is of the usual form with a good reniform blade, the shoulders of the side lobes being marked with a broad, short marginal line of purplish-brown colour. There are two "eye-spots," one on each side of the isthmus of the lip, and a linear, irregular broken series of markings down the median nerves; and, lastly, the distinguishing point of this variety, lies in the "picotee" edge of purple-brown all round the reniform blade of the lip in each of the six flowers the plant produced. This pretty margin makes the variety a very attractive one, and, if placed among thousands, it would immediately attract attention. I dedicate this plant to Mr Rundle's daughter as a testimony to a pleasant afternoon I spent with him among his plants. *de B. Crawshay.*

Fig. 113.—Pinanga micholitzii: Hort. Sander, as shown at the Ghent International Exhibition.

CULTURAL MEMORANDA.

LILY OF THE VALLEY.

When an old bed of Lily of the Valley is taken up because the soil has become exhausted by the plants, the grower has to select the crowns (young growths) for the formation of a fresh bed. A crown of Lily of the Valley flowers when it is three years old, and it does not flower again although it will continue alive, producing leaves, and thus help to starve its progeny. It, however, forms a rhizome or underground stem, which develops a bud annually, and these appear at a small distance from each other and push forth leaves.

Supposing a plantation be formed solely of three-year-old crowns, the crowns should produce blooms the following spring; but the buds that form on the rhizomes will not flower until they are three years old; so there will be a gap in the flowering lasting two years. In order to have blooms in successive years, a bed should be planted with a mixture of one, two, and three-year-old crowns, or a bed should be planted of three-year-old crowns annually, or three beds of one, two, and three-year-old crowns respectively, in which case the oldest bed should be taken up after flowering is over in the third year.

The ground chosen for the beds should be light and loamy, and be trenched two spits deep, a good dressing of manure, well decayed, being applied. Rank manure is injurious. When a Lily bed has been laid down for two years, a top-dressing of rotted stable manure, or that from a one-year-old hotbed, should be applied several times during the summer. If the plants seem to need extra assistance, weak manure water may be afforded. Too often the plants are neglected, and the flower-spikes are therefore short and weak. *F. M.*

THE FERNERY.

BRITISH FERNS.

Now that the beautiful varieties of our native Ferns are coming again into favour, and their culture, both by amateur and trade growers, is spreading extensively, a word of warning from one who has pursued the cult for more than forty years may not be inappropriate. About the middle of the last century Fern varieties were in greater vogue than at present, and their numbers were multiplied entirely disregarding the fact that the beauty of a Fern is altogether dependent upon symmetry of form and constancy of character. If we examine a catalogue of that time, we find the great majority were more curious than beautiful, and "irregulare," "crosum," "interruptum," "deficiens," "multiformis," &c., were characteristic names of the majority. It is a curious fact in Fern propagation by means of

spores, that while the symmetrical and perfect type of Fern, in which the character, crested or plumose, is evenly and distinctly evidenced throughout the plant, will, as a rule, produce equally good or even improved progeny, the Fern which shows any ruggedness, imperfection, or inconstancy is extremely liable to exaggerate these defects in its offspring. The fertility of such defective Ferns is frequently much greater than in the thoroughbred class, so much so indeed in some cases, that they spring up in profusion in Fern pots and pans, owing to the scattering of the spore crop.

Obviously such a facility of propagation is a snare to the trade grower as well as to the amateur, and there is not the slightest doubt but that the falling from favour of British Ferns fifty years ago was the direct outcome of putting these inferior types on the market. Some few years ago I visited what had once been a choice collection of British Ferns; the owner had died some time before, and the collection had been left to take care of itself. It was a dense jungle of "rogue" and inferior forms of the kind described, and all the choice ones had been starved and crowded out by their robust neighbours. Not long since I saw in a garden row after row of frames filled with similar inferior forms. Since the last "boom" a very large number of beautiful kinds have been produced, and there is now no excuse for another failure from similar causes. To maintain British Fern varieties in public esteem the selection must be made on very strict lines, and only the very finest types be catalogued for sale. Fortunately for the Fern lover, a young Fern very speedily asserts its true character. The third or fourth frond should decide the question of survival or destruction, since if there are defects up to that stage, it may be relied upon that they are inherent and persistent, and in that case it should be rooted out and destroyed. Another suggestion of vital importance to the trade exhibitor is that British Ferns should be treated as liberally as exotics. Specimen plants of exotic Ferns are cultivated and exhibited in such a manner that their full size and character are well in evidence, so that the purchaser may fully appreciate what can be done with them if only proper cultural conditions are afforded. British Ferns, so far, except on the occasion of the R.H.S. Conference in 1891, have never been so treated. Thumb pot examples are all very well for sale, but the full quality of the plant must be shown in a full-sized, well-grown specimen. *Chas. T. Druery, V.M.H., F.L.S.*

TOMATOS.

THE Tomato industry is still one that attracts new growers to try their skill in the production of this most popular fruit. There are important details in connection with Tomato culture—light, well-ventilated structures, good soil, and convenient water supply are necessary, in addition to a carefully-prepared feeding system, in which the food given may be utilised for building up each pound of fruit without any superfluous waste. Generally speaking, the troubles of Tomato growers are not serious when new houses, new soil, and other conditions are favourable. It is after the elapse of some years that extensive growers are perforce led to take careful note of how best to proceed in order to secure good crops, and freedom from fungoid diseases and animal pests, with little expenditure upon labour. Diseases and pests are difficult to avoid when continuous cropping with the same class of plants must necessarily be carried out.

Almost every grower at the present day has a carefully-selected type of Tomato, and were I to give a list of names it would, at least in many cases, lead to confusion. There are varieties possessing differences in foliage, fruits, internodes, and some have more perfect flowers than others, but each of these characters has scores of imitators. The points worth consideration concerning Tomatos are: the variety should produce plenty of pollen at almost every season of the year; it should have sturdy growths with short internodes, and therefore be capable of producing a maximum crop in as little space as possible. The fruits should be of good medium size, dense in flesh, and should take on colour early and mature quickly well up to the calyx. Many people who are carrying on a large trade in Tomatos trouble little about the names. They are, however, quick to note a heavy-cropping plant, or it may be that a fancy is taken to a type well cultivated in another nursery. When all is said and done, cultural methods have much to answer for as regards the crops taken from the plants, and everyone who grows Tomatos is soon taught that the plants are great feeders and cannot be grown successfully except under liberal treatment.

We have tested several methods for the production of early and very late fruits, and are in favour of pots for very early supplies, or else shallow beds on benches not far removed from the hot water pipes. It must be understood that, early in the season, too much soil is a great evil, and if it remains in a wet state for a long time it is a serious hindrance to healthy growth. Pots 8 or 9 inches in diameter are large enough for plants which will carry from four to six trusses of fruit. Usually the top trusses are the finest. When the growing point has been removed, the energy of the plant is concentrated in the development of the fruits. Remunerative crops may be had early from 6-inch pots topped at two trusses; and plants in 6-inch pots, raised from sowings made late in July, will give plenty of ripe fruits at Christmastime. Plants in these small pots may be placed rather closely together. For private use, many dishes of excellent Tomatos may be obtained late, and good fruits may always be kept for at least a month after the pots are turned out.

With the advent of March, plants raised from seeds sown in the autumn recover strength rapidly, and should be placed in their final pots early in the month. The compost should be on the dry side at the time of use, and firm potting should be practised. Advantage may be taken of maintaining high temperatures when bright, sunny days prevail, for such warmth does much good at this early season. We have frequently had excellent results from plants grown in conjunction with early Cucumbers, when the latter have been grown in low, three-quarter-span houses, using the back portion for the Tomatos. There are plenty of varieties that set freely enough under such conditions, and it is very rare for the fungus Cladosporium to attack Tomatos even under such treatment.

Of course, such plants are not suitable for yielding a supply over a long period. They are topped when they have produced three or four bunches of flowers, and when the fruits have ripened the plants are thrown away, and further plants cultivated under more normal conditions. We have grown Tomatos in an ordinary greenhouse, and these have furnished fruits for exhibition purposes not only in July, but in November also. The prolongation of the period of bearing is merely a matter of affording food in solution, and, of course, a soil mixture in the first instance that, with proper drainage, will keep in a sweet condition for a long time. There is nothing better for this purpose than old mortar rubble and charcoal, mixed in proportions varying as the staple soil is of a light or heavy character. The next important point is the maintaining of the surface soil in a healthy state, so that air and water may enter freely, and I know of nothing so useful as manure from a spent Mushroom bed, or manure specially prepared and sweetened before being used. If this is laid lightly on the soil, the surface is always open, and the manure becomes quickly permeated with roots.

In country gardens liquid manure for stimulating growth is usually easy to obtain, also

FIG. 114.—PERESKIA GODSEFFIANA: HORT. SANDER, AS SHOWN AT THE GHENT INTERNATIONAL EXHIBITION.

wood ashes, which are highly beneficial for mixing with the compost.

Some growers obtain compounded fertilisers, and others obtain the necessary items for mixing, or for applying separately. It is always wise to remember that Tomatos are capable of taking up their maximum amount of food when growth is most vigorous, and at such times superphosphate of lime is best utilised, when the formation of fruit is rapidly going on. A good liquid manure may be prepared by mixing 3 lbs. superphosphate of lime (35 per cent. sol. phosphate), 2 lbs. ammonia sulphate, and 1 lb. nitrate of potash, using ½ oz. of this mixture to one gallon of water, and regulating the application according to the growth and crop upon the plants. *C. Foster, University College, Reading.*

Fig. 115.—Bromelia tricolor; hort. sander, as shown at the ghent international exhibition.

VEGETABLES.

TURNIP-ROOTED CELERY OR CELERIAC.

It has often been remarked in the horticultural Press that the kitchen gardeners on this side of the English Channel have never fully discovered the value of Celeriac, a variety of the cultivated Celery known as Apium graveolens rapaceum. And although the spur has been applied in this way time and again, matters have improved but little, for in nine good gardens out of ten the Turnip-rooted Celery is either absent altogether or it is cultivated so indifferently that the produce is second or third rate, and consequently little or no use is made of it. I am inclined to think that the fault lies not so much in the grower's ignorance of the existence of such a vegetable or salad, as in his want of knowledge in regard to the capabilities of the plant under cultivation in warm localities in this country. The large number of roots annually imported from the Continent and displayed during the winter months in Covent Garden and other important markets, have brought the vegetable under the notice of a large number of amateur gardeners, but these have not the knowledge that equally good roots might be grown in their own gardens, provided everything were done to make the cultivation as perfect as possible. The first thing to remember is that the plant will naturally succeed best in a warm climate and warm seasons. This fact should teach the gardener that it is necessary to sow the seeds in heat some time before the third week of March, in a rich, light compost contained in a box, just as one would sow Celery seeds. As soon as the seedlings are large enough to be handled, they should be pricked out into other boxes, in which they will have sufficient space to grow into plants of considerable size before they are planted out into their permanent quarters in May. After transplantation into these boxes, and when the plants have established themselves in the fresh soil, they should be gradually accustomed to a cooler atmosphere, keeping them in a position near to the glass where they will grow slowly but sturdily, thus acquiring such a habit that they will not be likely to suffer much check when the final transplantation is carried out. For the same purpose it is necessary that the compost in the boxes should consist of somewhat rough materials, especially putting some rough leafmould only partially decayed over the drainage material. If care is given to this detail, it will be found that, when lifting the plants from the boxes, some of the materials will adhere to the roots. Having thus obtained good plants before the weather permits of them being planted in the open air, the cultivator's next attention should be given to encouraging them to make the best use possible of the short summer season in developing large roots. In this case one need not be afraid of getting too much size into the produce, for the larger the roots the better they will be. Small produce is not appreciated, and often it meets with absolute rejection when offered to the cook. The site chosen for the plants should be one facing the south, and the best I can suggest is that of an outside vine border, which is usually some degrees warmer than any other spot in the garden. Let the soil be thoroughly tilled and richly manured, for, like Celery, the plant we are now considering is a gross feeder. Put out the plants in rows on the level soil, and allow each one a space of 1½ foot to 2 feet. During the growing season it is necessary to remove the suckers from the plants and a few of the lower leaves also. The surface of the ground should be stirred frequently, because the repeated waterings required by this crop are apt to cause the surface soil to cake, thus hindering the aeration of the soil. The waterings should consist of liquid manure from the farmyard and occasionally a pinch of some nitrogenous chemical manure may be scattered over the soil, watering it in with clear water. If these directions are properly carried out, the cultivator will be rewarded with fine, large roots, ready for lifting in November or later. Celeriac has a very agreeable flavour. It is prepared for consumption by boiling in salt and water until soft. Before boiling, thoroughly cleanse the skins, but do not remove them. After cooking the roots, allow them to become cold, then remove the skins, and either cut the roots into slices or shred them with a vegetable cutter. Serve with oil and vinegar or with a salad dressing. They may also be served hot with melted butter. Celeriac is at its best in the months of December and January, and is a favourite salad at Christmas time. *P.*

TREES AND SHRUBS.

PHYLLOSTACHYS FASTUOSA.

In some respects this is the noblest of all hardy Bamboos, and it is certainly one of the hardiest. It is said to be of Japanese origin, and was first introduced to Europe by M. Latour-Marliac in 1892. For several winters past it has suffered less than any of the taller Bamboos, several of which, although quite capable of withstanding our severest cold, are liable to have their foliage disfigured by the bitter winds that come so frequently with the New Year. This species, however, seems able to withstand the coldest weather untouched, and at the present time its leaves are quite fresh and green. A striking character of the plant is its stately habit. The stems are 15 feet or more high, quite erect, with the branches rather short and well furnished with leaves, thus giving a somewhat columnar aspect to each stem. The species is represented by two fine clumps near one of the entrances to the Bamboo Garden at Kew, each forming a dense, erect mass of luxuriant and rich green leafage. The underground rhizomes do not show any undue tendency to spread. This Bamboo has not flowered under cultivation, and has been provisionally put under Phyllostachys. It seems more probable, however, that it will eventually prove to belong to the Arundinarias. Although not yet very common in gardens, it deserves a place wherever Bamboos are grown and appreciated. *W. J. B.*

NOTICES OF BOOKS.

* "'The Studio' Year-Book of Decorative Art."

This volume covers a wide field, and contains designs of houses, furniture, &c., necessary for furnishing in the most modern and decorative of styles. The book is divided into sections, in which are illustrated modern productions of Great Britain, France, Germany, and Austria. Apart from the general interest of the book from the point of view of decorative art, it will doubtless be instructive to anyone who is about to build, furnish, or incidentally to lay out a garden. There are some charming specimens of houses, and some attractive suggestions for interior embellishment.

† "Gardening for Women."

Under the title of *Gardening for Women*, the Hon. Frances Wolseley has dealt with all matters appertaining to horticulture for women in a thorough and exhaustive manner. To those who intend to become lady gardeners, the book should prove of great use, for it contains practical advice, as well as much necessary information. We think the authoress has done wisely in encouraging only those who are fit to undertake the work, pointing out the pitfalls which lie before those who are unsuited for such a profession. Much harm has been done by women who are physically or otherwise unfit, and have commenced a task which has later to be abandoned, or, what is worse, have pursued it in a half-hearted manner.

‡ "Diet Difficulties, with Notes on Growing Vegetables."

Some useful and practical advice is offered respecting vegetarianism in the little book brought out under the conjoint authorship of Mrs. Earle and Mrs. Bryan. Various appetising recipes are among the attractions. The final chapter deals with the directions as to how to grow and cook some of the less known vegetables which are so often met with abroad. Their introduction and use in this country might easily provide a pleasant change from the ordinary vegetables we know so well.

§ The Case for the Goat.

This is a little work in which the case for the goat is stated by an enthusiastic believer in the value of goats for milking purposes. The author states in his "Introduction" that "Three acres and goats are feasible in many cases where Three Acres and a Cow are not within reach," and goes on to argue that on small holdings in cottage gardens, and even in connection with suburban homesteads it is possible to keep a goat or goats that will provide a supply of milk that possesses greater nutritive value than cow's milk, and milk that is less likely to contain the bacilli of tuberculosis. Having explained the peculiarities of the goat and her milk, and shown why goat's milk is to be recommended for the rearing of young and delicate children, as well as for general consumption, he proceeds to relate the actual value of goats and their milk in cash, and in discussing the objections sometimes raised to the keeping of goats, and to the consumption of their milk, he declares that their disagreeable smell is often exaggerated. Much can be done by good management to lessen this disadvantage. The information given on the necessity for obtaining goats of the best breeds, and for breeding from animals that are known to be good milkers, together with the instructions on the best methods of feeding and general management, will enable anyone desirous of giving the goat a trial to do this under conditions that are most likely to be attended with good results. The appendix contains answers from a number of experienced goat-keepers to 24 questions addressed to them by the author, and it forms a valuable feature of the book.

* Published at the office of *The Studio*, 44, Leicester Square, London. 5s. net.

† By the Hon. Frances Wolseley. Published by Cassell & Co., Ltd., La Belle Sauvage, E.C. Price 5s. net.

‡ By Mrs. C. W. Earle, author of *Pot-Pourri from a Surrey Garden*, and Mrs. Hugh Bryan, author of *Secret of Perfect Health*. London: Finsbury & Hemson, Ltd. Price 6d. net.

§ With the practical experience of forty-four experts. By "Home Counties." Published by George Routledge & Sons, Ltd., price 3s. 6d.

The Week's Work.

THE HARDY FRUIT GARDEN.

By E. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Peaches and Nectarines.—In the earlier districts the young shoots upon Peach and Nectarine trees will soon be sufficiently developed so that for the purpose of disbudding they can be rubbed off by means of the finger and thumb. The operation of disbudding should be carefully performed by an experienced man, and it should be carried out at intervals during two or three weeks, in order that it may not be necessary to remove so many at one time as would inflict a serious check to the trees. Commence first upon the most vigorous trees, beginning at the top of the tree and removing all the "foreright" shoots, i.e., those that are growing at right angles, or nearly so, with the wall. Afterwards remove a number of those growing from the sides of the branches, always leaving two well-placed shoots at the base of each branch. In some cases where there is a young fruit at the base, it is advisable to pinch the shoot back to about three leaves until the weather is a little warmer, because many of these fruits will have to be removed later, and the remainder of the shortened shoots can be cut out at the same time. In the course of a few days or a week the trees should be again examined for the purpose of removing any weak shoots or others that will not be required for furnishing the tree. When the process of disbudding has been completed there should be one healthy shoot at the base of each branch and another at the end of the branch which will be needed as a leader. In some cases where the branches are of extra length one or even two shoots may be retained in the middle of such branches if there are open spaces upon the wall needing to be furnished, but do not be tempted to retain more shoots than there will be ample room for next season. Some cultivators retain the best shoots whether they originate on the upper side or underneath the branches, but for the lower part of the tree it is certainly better to select those on the upper side, as they generally grow with greater vigour, and this is the most difficult part of the tree to keep in good order. In the case of young trees a sufficient number of shoots must be left to keep the base of the trees well furnished, but even on these, the shoots should not be more thickly placed than at distances of 4 or 6 inches from each other. Do not stop any leading shoots unless they are excessively strong, in which case the points may be pinched out. Examine the trees frequently and if it is found that any aphides are present, dust the infested shoots with tobacco-powder. When the fruits have set, this powder may easily be washed off the trees by water applied by means of the garden engine. Continue to draw down the blinds at night time as a protection against frost. Examine any trees that are growing on light soils and afford ample water to the roots if it is necessary.

Thinning the fruits.—Read the remarks on this operation in connection with Apricots in the last issue. It should be carried out concurrently with that of disbudding, leaving at the first operation a large number of well-placed fruits, many of which will be removed at subsequent thinnings, especially after the stoning stage is past. It should be constantly borne in mind that it is desirable to secure a good crop of fruits evenly distributed over the whole tree.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Phalænopsis. The present time is suitable for effecting a thorough overhauling of these plants, before they have made many fresh roots. The temperature is now sufficiently high to encourage the plants to make fresh growth immediately afterwards. In the case of Phalænopsis, it is undesirable to disturb the roots more frequently than is absolutely necessary; but however carefully a compost is prepared, it is sure eventually to become loose in texture and sour in condition. When this stage is reached plants will suffer a check unless they are removed to fresh receptacles and afforded new compost. Phalænopsis may be cultivated with equal success in pots or in teakwood baskets, but we prefer to use baskets, as the roots of the plants appear to like the wood, and they certainly live for a longer period than if contained in pots. In either case, the cultivator must provide ample means of drainage, using for this purpose clean broken crocks and lumps of charcoal, working these carefully in amongst the roots. The compost for the rooting material may consist of clean, chopped sphagnum-moss two-fifths, polypodium fibre two-fifths, and osmunda fibre one-fifth, with an addition of a good sprinkling of crushed crocks and charcoal. Do not disturb any specimens which appear healthy and have their roots clinging firmly to sound receptacles, except in so far as is necessary to remove any of the decayed compost or loose crocks from the surface, also to make the drainage good and apply a top-dressing with fresh material. Press the potting compost carefully and firmly amongst the roots, and apply on the surface a layer of freshly-picked sphagnum-moss. Great care is needed in transferring plants from old to new receptacles. Having carefully picked out the old compost and the drainage material, plunge the receptacles containing the plants into a pail of lukewarm water for the purpose of loosening the roots attached to them. They may then be detached by means of a thin-bladed knife. After this operation has been carried out, select for each plant a new pot or basket of a suitable size, and treat it as I have already advised. The plants having been thus disturbed, will need for a time a kind of convalescent treatment, giving them rather more heat and shade from sunshine than they have had hitherto, keeping the atmosphere very moist, and spraying the plants overhead on bright days. It is usual to have these plants in the East Indian house, but if a structure is specially set apart for them, the heat may now be from 70 to 75 degrees during the day, allowing a rise of 10 degrees by sunheat, but it should fall to 65 or 70 degrees by night. I do not recommend that these plants should be grown in a close, stuffy atmosphere and densely shaded, it being better to use more moderate shading and to afford ventilation in suitable weather. The ventilation may be increased as the plants become better established, at the same time, decreasing the shade as much as it is safe to do. In summer, when the plants are in most active growth, they need an ample supply of water at the roots, and a quickly circulating atmosphere. If any flower-spikes show themselves on newly-potted plants before they have become established, thin out the number of flowers upon the spikes, but do not remove the inflorescence altogether, as this would probably cause secondary ones to be produced.

Pleiones.—Increase the supply of water at the root to all these plants that are now growing and rooting freely. Afford them a position on a shelf, or suspend them near the roof glass in a cool intermediate house where they will be exposed to the sunlight. Syringe the under sides of the foliage twice daily to keep red spider in check. Where no dried cow manure was used in the potting materials, weak doses of liquid cow manure might be given to healthy, well-rooted specimens during the growing season.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire N.B.

Luculia gratissima. This plant succeeds best when the roots are planted out in a border, and the border should be composed of light, fibrous loam, leafmould, and sand in equal parts. The warm greenhouse is the proper structure for its cultivation, and it succeeds well if trained up a wall or rafters, where the plant is exposed to plenty of light and will not receive shade from sunshine. Being a plant liable to attacks of red spider and thrips, it should be syringed on all favourable occasions, and care should be taken to see that the water is thrown well on to the underside of the foliage. During active growth the roots may be fed liberally with liquid manure in a tepid condition. Luculia gratissima seldom succeeds well if the roots are confined in a pot, but if this has to be done I would recommend the use of pots as small in size as convenient, employing a compost of peat, loam, and sand in equal parts. The interior of the pots must be clean and well drained. In repotting a plant let it be given just a small shift, and in training the shoots let them be kept always in an upright position.

Euphorbia (Poinsettia) pulcherrima.—Remove the old plants of this species from their resting quarters, and place them in an atmospheric heat of from 55 to 60 degrees, in a position near to the glass and fully exposed to sunshine. Apply a good watering to the roots, which will encourage the plants to start into growth. Directly the shoots are 3 or 4 inches in length, they may be taken off with a "heel" attached to each and inserted singly into small thumb pots containing a mixture of leafsoil two parts, loam one part, and sand one part, first passing all these materials through a ¼-inch sieve. Let the cutting be inserted in the centre of the pot, and, after the insertion of the cutting, fill up the hole made by the dibber with silver sand. Then press the soil firmly. Plunge these pots in a hotbed, and let the atmospheric temperature at night be 70 to 75 degrees, which will cause the cuttings to make roots quickly. As soon as this stage is reached the little plants should be removed to a position close to the glass, and after the elapse of a further week or so, they may be given a heat of 60 degrees, gradually hardening them that they will be able to stand full exposure to sunshine. When it is found that the roots have extended freely round the sides of the pots, they should be repotted into pots 3 or 4 inches in diameter. The potting compost may consist of loam two parts, leafmould one part, and sand one part, adding a moderate sprinkling of bonemeal and a small quantity of manure from a spent mushroom bed. When it is necessary to repot the plants again into 6 and 7-inch pots, a similar compost may be used, and during the summer months the plants may be cultivated in an unheated frame containing a floor formed of coal ashes. Free ventilation must be employed at all times, and a small quantity of air must be admitted very early in the mornings.

Euphorbia jacquiniæflora.—This species may be treated as the one already discussed, excepting that it needs rather more heat throughout the season.

FRUITS UNDER GLASS.

By T. Coomber, Gardener to Lord Llangattock, The Hendre, Monmouthshire.

The late Peach house.—In these gardens this house is 100 feet in length, and it contains 12 fan-trained trees, thus it furnishes a supply of Peaches over a considerable period, which lasts until Peaches are obtainable out-of-doors. At the present time peach trees of this description require careful attention in the matter of disbudding shoots. This work should be carried out at intervals of a few days, and when finally completed a sufficient number of young shoots should have been left to adequately furnish the tree in all its parts. These shoots should be carefully trained into position as they extend in length, and the thinning-out of the fruits should be practised at intervals during the same period. Syringe the trees thoroughly both in the morning and afternoon, and apply water to the borders as often as necessary, also liquid manures, or artificial manure as may be preferred. Ventilate the house early in the morning if the heat has risen to 50 degrees, gradually increasing the ventilation on bright, warm days until the ventilators are fully open. The ventilation should be just as gradually reduced during the afternoon, eventually closing the house when the heat is at 55 degrees.

Early Melons.—The flavour of Melons is greatly influenced by culture, especially during the time the fruits are approaching maturity. At that stage the atmospheric temperature at nights should be 70 degrees, and the front and back ventilators should be left very slightly open during the night. The atmospheric condition of the house by day will vary with the character of the weather, but the presence of much moisture is detrimental to the flavour of the fruits. At such times the use of liquid manures should be discontinued, and the supply of water at the roots should be curtailed, but not to a degree that would cause the plants to flag, for if watering were afterwards resumed it might cause the fruits to split. Gather each fruit as soon as it shows an inclination to crack round the foot stalk, and place it in the shade in a well-ventilated, warm place to fully ripen. When all the fruits have been gathered, clear out the plants and cleanse the house in preparation for late crops, which will need to be cultivated on a system very similar to that recommended for the early Melons.

Successional Melons.—These plants will need attention in various ways according to their stage of growth at the time. Attend as may be required to pollinating the flowers, and seek to obtain a set of three fruits to each cordon plant, after which further blossoms may be removed. Stop the shoots at one leaf beyond the fruit, and secure them to the trellis, thinning out any others as may be desirable to prevent crowding. Top-dress the roots and keep them well nourished with suitable stimulants, including liquid manure, bearing in mind that Melons, being a quickly-growing crop, are apt to suffer considerable injury if neglected even for a short period. Afford supports to the fruits when they become necessary. If no nets are available, strong pieces of raffia crossed under the fruit and tied to the trellis answer very well. Do not shade the plants more than is necessary, but if the sun should shine powerfully after a period of several dull days, the plants may suffer unless slight protection is afforded them. Sow seeds each fortnight in order to raise plants that will maintain a regular supply of ripe fruits.

Tomatos.—Plants which were raised to produce the main crop are now in a fit condition for planting out, or if it is intended to keep them in pots, they are ready for the final potting. In our case, they are placed in a pit that has lately been occupied by Strawberries. They are planted upon a moderately small, firm ridge, composed of three-fourths loam and one-fourth horse manure, with additions of wood ashes and fine mortar rubble. The ridge is placed immediately beneath the bottom wire of the trellis. In planting, it is necessary to turn the plants out of their pots very carefully, and by the aid of a rammer make the soil very firm about the roots. Plant them at distances of 18 inches apart. Tie the tops of the plants to the trellis and train them as cordons. If the plants are to be fruited in pots, place them into pots 12 inches in diameter, and provide good drainage. Make the soil firm in the pots, and place the plant sufficiently low that it will be possible to afford top-dressings as these may be required. If it is possible to plunge the pots in a slightly warm bed composed of stable manure and partially decayed tree leaves, so much the better. Remove lateral growths from each plant as they appear. Pollinate the flowers at mid-day as often as necessary.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire.

Sweet Violets.—The plants in unheated frames are now growing freely, and a supply of runners may now be obtained to increase the stock. Each runner should be secured with a few roots attached to it. If a partially-shaded border was well prepared in the autumn by the free addition of partly-decayed leafsoil and good rotten manure well dug into the soil, it will now be in good condition for planting. Dibble in the runners in rows formed at 2 feet apart, allowing distances of 1 foot between each plant. Insert them just deep enough in the soil to make them secure, pressing the soil firmly around each runner as planting proceeds. When the planting has been finished, apply a good watering, and sprinkle the plants daily with water until they are well established. Remove any runners that may form, and make frequent use of the hoe to keep the surface of the ground in a loose condition. If red spider is troublesome, cover the ground with fresh horse droppings from the stables, and keep them frequently moved with the hoe. In dry weather apply frequent waterings with the hose. If Violets are planted in different aspects the flowering season is prolonged; but the best position for them is one that is shaded from the mid-day sun. Princess of Wales and La France are good single varieties; Marie Louise, Lady Hume Campbell, and Swanley White are double varieties worthy of cultivation.

Montbretias that have been wintered in cold frames have made sturdy growth, and, being well hardened, they may now be planted out in ground previously prepared by trenching and manuring. When planting in groups for effect they may be placed from 4 to 6 inches apart, but if intended for special culture they should be planted in rows formed at 1 foot apart, and at distances of 6 inches in the rows; this will permit of the hoe being used conveniently.

Campanula pyramidalis.—For outdoor and indoor decoration this Campanula and its white variety are very valuable, but the plants must be at least 12 months old from seed. Having been wintered in unheated frames, they may now be transplanted to their permanent positions. Do not disturb the roots more than is necessary, but, in planting, make the soil firm about the roots of each plant, and finish off at a little above the ground level.

Cortaderia (Gynerium) argenteum.—The present is a good time for planting the Pampas Grass, or for overhauling clumps that have become bare in the centre. Dig out the exhausted soil to the depth of 2½ feet, and replace with good loam and manure, using about three parts of the former to one part of the latter. Replant only the healthy portions of the clumps, and allow sufficient distance between each to provide for the rapid growth of which these plants are capable. The Pampas Grass is very effective if planted near to water, or upon the rockery, or as a single specimen on the lawn. The plants need an abundance of water in summer. The female plant is much the better in form and colour.

THE KITCHEN GARDEN.

By E. Beckett, Gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, Hertfordshire.

Onions.—Autumn-sown plants which have been duly transplanted have become established, and every encouragement should be given them to make uninterrupted growth. Abundance of liquid manure should be applied to the roots, either drainings from the farmyard or sewage are very suitable. During showery weather some patent vegetable manure and soot may be applied alternately. The surface soil should be kept constantly stirred by means of the hoe, and during hot, drying days the plants should be sprayed with clean water during the afternoon. The planting out of any Onions which have been raised under glass during the spring should be completed as speedily as possible on ground which has been previously well prepared. Care should be taken to lay out the roots carefully and plant very firmly. Apply a good dressing of soot, and unless the weather is showery, damp over the tops two or three times daily. Permanent crops which were sown in the open should have the surface soil loosened with the Dutch hoe immediately the young plants can be well seen, and, at the same time, a good dressing of fresh soot and finely-sifted wood ashes should be applied.

Last year's stock.—The stock of old bulbs should now be examined and any which have commenced to grow may be placed in the ground for furnishing young growths for salading purposes. These are generally appreciated, being much milder and of better flavour than autumn-sown plants. No better method exists of keeping Onions than that known as roping. These ought now to be hung up in the coolest place available. I made rather an interesting experiment to test the keeping qualities during the past winter, and many of the best varieties, all treated in precisely the same way kept well, but James's Long Keeping was superior in this respect to all others.

Leeks.—The earliest sowing of these ought now to be planted in well-prepared trenches, either in single or double rows. The blanching process should be commenced immediately the plants are put out, drawing up the plant to the desired height with suitably-made paper collars. Many growers do not commence the blanching process until the plants have nearly finished growth, but in such cases the edible portion is only very short, and generally gritty. Prick out successional sowings, and sow one more small batch in the open for supplying the kitchen during late in the spring of 1909. Any old specimens should now be lifted and laid under the shade of a north wall, where they may be kept fit for use for at least another six weeks.

Seakale Beet.—This is much appreciated in many establishments when well grown. It can be easily forwarded under glass in cold frames, or pits, if the seed is sown in pots or boxes. The plants should eventually be planted out 15 inches apart all ways. Seeds may also be sown now out of doors. Prepare trenches in the same way as for Celery, and fill them three parts full with well-decayed manure, sowing one drill in each, finally thinning the plants out to 18 inches apart.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Letters for Publication, *as well as specimens of 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 communications, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, APRIL 25—
Quinquennial Exh. of the Soc. Roy. d'Agri. et de Botanique de Gand at Ghent, Belgium, lasting until May 2.

TUESDAY, APRIL 28—
Roy. Hort. Soc. Coms. meet, and Nat. Auricula Soc. combined show at Hort. Hall, Westminster. Shropshire Hort. Soc. Spring F. Sh.

WEDNESDAY, APRIL 29—
Annual Exhibition of the National Auricula and Primula Society (Midland Section), to be held at the Botanical Gardens, Edgbaston, Birmingham.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—49·0°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, April 22* (6 P.M.): Max. 55°; Min. 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—*Thursday, April 23* (10 A.M.): Bar. 29; Temp. 44°; Weather—Raining.
PROVINCES.—*Wednesday, April 22* (6 P.M.): Max. 52° Cornwall; Min. 34° Scotland N.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Liliums, Hardy Border Plants and Bulbs, Roses, &c., at 12; Palms and Plants at 3.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—
171 cases Japanese Liliums; also thousands of Gladiolus, Begonias, &c., and Palm seeds, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
Choice Imported and Established Orchids from various sources, Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Manuring in Spring.

Now that the use of artificial manures has become so common, and their action both on the plant and the soil is so well known, there is no longer any necessity for the gardener to hesitate in employing them. They have many advantages. They are very concentrated, and small dressings only are needed; they do not, therefore, render the garden unsightly, as dung would do at this season of the year. Further, they are quick in action, and the plant at once begins to feel their effect; if it really needs them, it rapidly begins to derive the benefit; they may, therefore, be applied as the necessity arises, in spring for ordinary purposes, or in summer and autumn for special purposes. Lastly, they are definite in their action, and may always be expected to produce the same general result, due allowance being made for season, &c., so that a gardener who once knows their effects may always hope to get the same results by using them. Some manures, besides benefiting the plant, also act favourably on the soil, and improve its mechanical condition.

There are five substances which act as manures, and all the host of fertilisers on the market derive their value from the fact that they contain one or more of these bodies. The five are: nitrogen compounds, phosphates, potash compounds, lime, and organic matter. The first three benefit the plant alone, the other two also improve the texture of the soil.

The general effect of nitrogenous manures is to promote vegetative growth and leaf production; they are, therefore, of special value on plants like Cabbage, Spinach, and grass, where much leaf development is wanted, and for herbaceous plants where vigorous growth is necessary. Not only do they promote leaf production in good "growing" weather, but they do so at other times as well, so that when growth has been brought to a standstill by a cold spell it may be started again by the addition of a suitable nitrogenous manure. Indeed, the inhibiting effect of low temperatures on assimilation and growth seems to be considerably modified by the addition of nitrogenous foodstuff.

Of all nitrogenous manures the quickest to act is nitrate of soda; it is, therefore, the most valuable in an emergency. Applied at the rate of 1 lb. to the rod, it is very useful when young plants are being kept back by cold weather, or showing the yellowing of the leaf characteristic of a bad condition generally. The writer has used it with advantage on young Peas checked by the cold and suffering meanwhile from the attack of slugs; it is also beneficial to young Carnations, the growth of which may have been similarly retarded. Similarly, a poor lawn may be improved by nitrate of soda; so long as the grass roots are still alive, it causes growth to start earlier and to cover up the bare places. In general, whenever an early start is wanted, either to secure greater growth or to enable the plant to grow away from some pest, a small dressing of nitrate of soda at the rate indicated above may be expected to prove beneficial. Another effect of nitrate of soda is to improve the colour of the plant. Cabbages may be greatly improved in appearance by applying two small dressings, one about five weeks, the other about two weeks, before they are to be cut; they thus get a brighter, fresher colour than they would otherwise have had. A similar improvement is effected in Spinach.

Care is necessary in applying nitrate of soda. Like other saline manures, it should not be put on to dry soil, nor should the salt get on to the young foliage. The most satisfactory way is to dissolve the pound in about two gallons of water, and to pour this solution on to the soil.

Though not quite as useful as nitrate in an emergency, sulphate of ammonia is practically equal to it for all ordinary purposes, and for some special purposes it is considered superior. Thus it is found to be better for Potatos; it increases the yield without injuriously affecting the quality. There is a common belief among Barley growers, which is probably well founded, that their crop is affected in the same way; the yield increases, but the quality does not deteriorate. Its general effect of promoting vegetative growth is sometimes of advantage to the exhibitor who wishes to keep his plants growing a little longer. Chrysanthemums and other plants, which promised to be over a few days before the show, have been kept going for the necessary time by applying a small amount dissolved in water.

As a dressing for the kitchen garden and herbaceous border, 1 lb. to the rod, applied with the precautions given above, is probably sufficient; this quantity contains somewhat more nitrogen than does a pound of nitrate of soda.

The second manurial constituent is phosphoric acid, invariably, however, combined as phospate, and nearly always as calcium phosphate. Four important fertilisers owe their value to this body—superphosphate, basic slag, bone manures, and ordinary Peruvian guano. Phosphates tend to produce a fibrous root development, and are very useful for plants like Turnips and Potatos, which depend to a large extent on a proper development of fine roots near the surface. Probably, most herbaceous plants would be found for this reason to benefit by phosphatic manures. Another valuable function is that they promote the ripening processes, so that a crop well manured with phosphates will finish sooner and ripen better than another receiving none. This is often strikingly illustrated in agricultural practice. Wheat, in the northern parts of England, dressed with phosphates, has been observed to ripen 10 days or more earlier than other Wheat in the neighbourhood which had had no such dressing. On the Rothamsted plots the Barley manured with phosphates takes on a bright golden colour, whilst the control plots are still green. Garden crops wanted to ripen early should, therefore, always be supplied with phosphates; to mention only two instances, both Tomatos and early Peas have been found to benefit considerably. Flower production also seems to be promoted by phosphates, and we find the manurial recipes favoured by successful exhibitors of Tulips, of Roses, and of Chrysanthemums. All agree in including phosphates.

On grass land they have the effect of encouraging clover, so that a lawn which originally was almost entirely grass may have its character considerably altered by one or two phosphatic dressings. This has long been known; it was observed in Cheshire a century ago, and was one of the reasons why bone manures became so exceedingly popular on pasture land; in fact, some of the less educated farmers used to allege that the clover sprang from the bones! Of course, clover is not always wanted on a lawn, but wherever it is desired, phosphatic manure will help to encourage it. On the other hand, nitrogenous manures—nitrate of soda and sulphate of ammonia—favour the grasses, so that the clovers tend to become crowded out. By taking advantage of these two facts the gardener can generally control the proportions of grass and of clover on his lawns, though, of course, sufficient time must be allowed for the crowding-out process.

Of the three phosphatic manures, superphosphate is the quickest to act, and the one most generally useful in spring and early summer; it should be applied at the rate of about 3 lbs. to the rod, all lumps to be previously broken down, so that the distribution may be fairly uniform. It may be put straight on to the soil, but should not touch the young foliage. On heavy clay land that tends to be cold, basic slag at 5 lbs. to the rod is better; by preference this should go on in autumn, but it can still be applied now. Whenever during the course of the year trenching

is being done in gardens where the subsoil is clay, it is always an advantage to dig into the bottom spit about 10 lbs. of basic slag to the rod.

Ordinary Peruvian guano at the rate of 5 or 6 lbs. to the rod is an admirable fertiliser when applied in autumn, but at this period of the year is less useful than superphosphate. Probably most gardens would benefit by the application of phosphates where these do not already enter into the scheme of manuring. Dung, the staple dressing of the horticulturist, contains an insufficient quantity, and it is usually advantageous to add a little more.

Coming now to potash, this serves several important functions, but it is less frequently necessary as a special manure, since dung contains a fair amount, and a good dressing of dung often supplies all that is needed. There are, however, certain cases where more is wanted. In some way not yet understood potash helps the plant to make the food it stores up for the next generation. For instance, it increases the store of sugar in the Sugar Beet and Mangold, and it increases the starch in the Potato and the grain of Wheat; it is, therefore, regularly applied to these crops. Another characteristic effect is that it prolongs the life of the plant. The fruit trees on the potash plots of the Wye College experimental fruit garden keep their leaves longer than the others, and a similar lengthening of life also appears to take place on some of the Rothamsted potash plots. This, perhaps, accounts for the great value of potash manures on thin, chalky, or sandy soils, where the plant tends to ripen and finish off rather too soon to admit of maximum crops. Further, potash checks rank growth, and is useful in correcting an excessive autumn dressing of dung. This is clearly demonstrated on the Rothamsted Mangold plots; where large amounts of nitrogenous manure without potash are applied, the growth is exceedingly rank, and the plants are liable to disease, but where potash is added the plants are healthy, and show an increased yield. Without potash the extra nitrogenous manure is worse than wasted; with potash it exerts its full effect. Potash is always worth trying in a garden, where the rankness of the foliage and the bad colour of the flowers indicate a disproportionately large amount of nitrogen in the soil. In fact, whenever colour of flowers or fruit needs improving, potash may be useful. Potash manuring has also been found to benefit bush fruit; its effect on grass land is often to encourage clover.

Several potash fertilisers are obtainable, but perhaps the most generally useful is the sulphate, which may be used at the rate of 3 or 4 lbs. to the rod. The muriate may also be used, but there was, and to an extent still is, a prejudice against it on account of a supposed bad effect on the quality of Potatos; the case is not definitely proved, but most gardeners would probably prefer the sulphate, with its clean record. Kainit may be more suitable where the garden is run for profit but it should go on in autumn or early spring, and cannot be applied now.

Lime and organic matter are of equal importance with the manures mentioned above, and each produces a characteristic effect shown by nothing else, but they also should be applied in the autumn.

As a general dressing for the kitchen garden or herbaceous border a mixture of 1 lb. of nitrate or sulphate of ammonia, 3 lbs. of superphosphate, and 3 lbs. of sulphate of potash may be tried. But without doubt the great advantage of artificial manures is that the gardener who has made himself acquainted with their effects can use the particular manure or manures necessary to obtain just those results he wants.

South-Eastern Agricultural College.—A meeting of the governors was held at Wye on the 13th instant, Lord Ashcombe presiding. It transpired that the establishment of professorships of agriculture and agricultural zoology in connection with London University is under consideration; members of the college staff are actively engaged in research work in mycology, soil bacteriology, animal digestion, protection of orchards from frost, and other problems of agricultural and horticultural importance.

Flowers in Season.—From Mr. W. Baylor Hartland, Ard-Cairn, Ballintemple, we have received flowers of an almost albino form of Narcissus minor, which he found in an old garden in the Ballintemple locality. N. minor (see fig. 116), the dwarf garden Daffodil, was at one time the commonest representative of the genus in gardens, and it is amongst the earliest to flower. By some authorities N. minor is placed as a variety of N. Pseudo-Narcissus. Mr. J. G. Baker, in his excellent monograph of the genus Narcissus, states that for garden purposes it may be regarded as a distinct species, but he places it with N. major, N. bicolor, and N. moschatus as a variety of N. Pseudo-Narcissus.

Fig. 116.—Narcissus minor.

Two new varieties of double-flowered Violets have been forwarded to us by Mr. Edgar Ricks, Bignell Gardens, Bicester. They were labelled Mrs. Arthur and Mrs. D'Arcy; the former is exceptionally fragrant. The flower named after Mrs. D'Arcy is of a delicate light blue colour, a very pleasing shade, and should prove an acquisition amongst these popular flowers.

Agricultural College at Cornell University.—We have received the following interesting communication from Mr. H. J. Moore, of the Cornell University, regarding the nature of the work done in the horticultural department of the Agricultural College:—"I refer chiefly to work done under glass, and shall try and confine my remarks thereto. All operations, whether experimental or otherwise, are primarily conducted for the benefit of students, and are supported by appropriations furnished by the State Legislature. At present there are two houses of about 1,000 square feet each set apart entirely for the use of graduate students to carry on experimental work, and six houses with a total area of 5,000 square feet for floriculture and the forcing of fruits and vegetables. The principal crops grown at Cornell are Tomatos, Cucumbers, Strawberries, Melons, Mushrooms, and occasionally Cauliflowers. Strawberries and Tomatos are forced on a fairly large scale in winter, and at the time of writing (March 24) we have a splendid crop of the former approaching the ripening stage. Glen Mary and Marshall are the two best varieties used for forcing here, and the berries average six or seven to the pot. We have been picking Tomatos since Christmas, and the plants at present are bearing six to eight pounds each, which is very good, considering the conditions under which they have been forced, the temperature outside falling as low as 10° to 15° below zero Fahr. on several occasions, with strong winds blowing, and as the houses are heated by steam, they cool very rapidly every time fresh coal is thrown into the furnace. The English varieties of Cucumber are not grown here at the experiment station, because commercial growers say they are of less commercial value than the American varieties, which sell much more readily, therefore, such as the White Spine varieties are grown. Turning to floriculture, the Carnation is well to the fore, and a whole house is devoted to its culture. We try both the English and American methods of cultivation, having about 200 nice plants in pots, and 500 planted out in benches. From my own observation, I think that much better results are obtained by the American or bench system, except in the case of one or two varieties. The accompanying photograph (not suitable for reproduction) shows that Carnations do fairly well here, the plants in the benches at present bearing over 5,000 blooms, with promise of more as the season advances. Since October we have cut over 1,000 blooms, and as these realise anything from 2s. to 4s. per dozen, it will readily be understood that Carnation growing is a profitable industry, especially when I say that our bench area amounts only to 262 square feet. The varieties we chiefly grow are Enchantress, Mrs. T. W. Lawson, White Lawson, Harlowarden, Robert Craig, Lady Bountiful, and this year all the new varieties, including Winsor, Imperial, Alma Ward, Mrs. C. M. Ward, and Afterglow are to be tried in order to test their relative merits, and to give students an idea of what is being done by hybridisation. All the leading varieties of Chrysanthemums are grown at Cornell. They are kept under glass all the season, and not stood out of doors as is the custom in England, the climatic conditions of Central New York State not allowing of such a procedure. Primulas, Cyclamens, Senecios, Pelargoniums, and other ornamental plants are grown, and are used both for decoration and plant-breeding purposes. Large quantities of bulbs are forced every winter, and when in flower they are arranged tastefully in one of the smaller houses, to which students have access, and where they may enjoy seeing the results of their labour. Most of the work under glass is done by students, and, speaking generally, the results compare favourably with the work done in some of the older established institutions in England. Although American horticulture is not so far advanced generally as that of the Old World, yet the matter is being taken up seriously by the State colleges, and especially by the Agricultural College at Cornell, which, under the guiding hand of Professor L. H. Bailey, has and will undoubtedly continue to set the example for operations in all things appertaining to the production of vegetables, fruits, and flowers.

Potato Scab in Salop.—According to the report on field experiments connected with the Harper Adams College in Shropshire, Potato scab has been very rampant in some land in the neighbourhood of the college. Experiments were made with various germicides, e.g., lysol, carbolic acid, and copper sulphate, but so far copper sulphate alone has proved efficacious.

Rufford Abbey Gardens. In the account of these gardens given in our last issue, p. 249, the name of the owner of Rufford Abbey was stated, by inadvertence, to be Lord John Savile, instead of Lord Savile.

"THE ROSE ANNUAL."—This little brochure of the National Rose Society is again before us. The editor is Mr. EDWARD MAWLEY, the society's energetic secretary, and this is a guarantee of the value of the contents. The little work contains many illustrations, and as it is printed on art paper they are well reproduced the pictures include portraits of the late Dean HOLE, CHAS. E. SHEA, Esq., both former presidents of the society, and E. B. LINDSELL, Esq., the president. In addition to much useful information affecting the society's business, and notices of forthcoming Rose shows, there are many short articles by well-known rosarians. A review of the society's shows of 1907 is given by the PRESIDENT, and there is an interesting critique of the great summer show at Regent's Park by Mons. TURBAT, who remarks that the blooms exhibited in the nurserymen's classes had attained a degree of perfection unknown in France. A Rose analysis for 1907, from the pen of the SECRETARY, shows that the H.T. Betsy Brown (creamy-white) is the most popular variety for exhibition purposes, followed by Mildred Grant, H.T. (ivory-white, shaded with pink), Dean Hole, and Frau Karl Druschki "Autumn-flowering Climbing Roses" forms the title of an admirable article by the Rev. J. H. PEMBERTON, and the subject is continued by Mr. GEORGE LAING PAUL. Rose-growing in Australia is described by Mr. G. W. KERSHAW, who states that a million plants are annually sold in the Commonwealth: the bulk of these are imported, and, as in the case of other garden subjects, some varieties held in esteem by Rose growers in Britain do not hold their reputation in this colony. It is gratifying to know that our packing is superior to that of Continental nurserymen, and that it is the custom of Australian importers to order all new Roses through British firms. Under the title of "Rose Jottings" are several short articles of interest to the Rose grower, including those on "Rose Mildew," "Fashions in Roses," "To Form a Rose Screen," "The Rose of the Bible," "Pruning," "Roses in Wild Woodland," &c. The concluding portion of the work gives a description of some of the newer varieties of Roses.

GINGER CULTIVATION AT JAMAICA.—In a recent issue of the *Agricultural News*, the following particulars in reference to the cultivation of Ginger at Jamaica were published from a report by the United States Consul at Kingston. The requirements for the growth of the plant are a cool, equable temperature, a regular rainfall, an elevation of over 2,000 feet, and a rich clay loam soil. It is claimed that these conditions are found in the central districts of the island, the northern central, and, to some extent, the northern parishes. No extensive acreage of Ginger, grown by any single individual, at present exists on the island, the cultivation being almost exclusively confined to settlers who possess or rent land in small areas. Since American capitalists have given such a lead to

FIG. 117.—FLOWERING SPRAYS OF NUTTALLIA CERASIFORMIS, WITH FLORAL DETAILS.

A, hermaphrodite variety; B, staminate variety.

Banana growing in Jamaica, many of the small settlers, it is said, have turned their energies in this direction, hence the falling off in the Ginger exports. Ginger is usually planted between April and June, and the crop is ready for picking between the following December and March. A Jamaican authority on the subject states that "with seasonable weather and fair attention bestowed on the cultivation, the grower may calculate upon an average of 2,000 lbs. of cured Ginger per acre."

Tamarind Seeds as Food and Medicine.—Though the Tamarind tree is well known as the source of the sub-acid fruits which, preserved in sugar, form an agreeable kind of preserve, it would scarcely be expected that the hard, bony, shining brown seeds could have any other use than perhaps for stringing as beads. In the *Agricultural Ledger*, however, Mr. David Hooper, F.L.S., of the Indian Museum, Calcutta, writing on their uses and composition, refers to their application both as a food product and for medicinal purposes. The tree (Tamarindus indicus) is a beautiful evergreen, growing to a height of 80 feet. It is considered to be of African origin, and possibly indigenous to some parts of South India. It has long been introduced into the West Indies, as well as into other tropical countries, and it is from the West Indies that we get our best and largest supplies of Tamarinds, which consists of the pulpy portion of the pod, after the removal of the epicarp or shell, but containing the fibrous part as well as the seeds. In the West Indies this is placed in barrels with syrup or sugar, the whole of which becomes amalgamated. East Indian Tamarinds are preserved without sugar; they are darker in colour and are not so agreeable to the taste as the West Indian. In medicine, Tamarinds are used as a mild laxative and refrigerant, and enter into the composition of confection of Senna. As a famine food in India, the seeds are eaten, and are prepared by first roasting and soaking them and removing the outer skin, after which they are either boiled or fried. Sometimes they are dried and ground into a flour or meal. In the uncooked state they are astringent, and are sometimes used as a poultice for boils, as well as in rheumatism. Made into a paste and applied to indolent ulcers, they have the reputation of promoting suppuration.

South African Wild Plants.—A movement has been started in Cape Colony with the object of preventing the extinction of the rarer Heaths and Bulbs which are much sought after by the professional plant collector for market purposes. The Chief Justice of Cape Colony, who is interested in the native flora and fauna, is heading the movement, and it is expected that the collection of the plants in question will be regulated by legislation.

Sale of Duncan House, Torquay.—This property, for many years the residence of the late Dr. Hamilton Ramsay, was sold by auction on the 15th inst. by Messrs. Cox & Son, Torquay, for the sum of £1,620. The late owner of Duncan House was a keen horticulturist, and his garden contained many rare and interesting plants, some of which have formed the subjects of illustrations in these pages.

Fig. 118.—Fruiting spray of Nuttallia cerasiformis (hermaphrodite variety); the diagrams show persistent calyx and a longitudinal section through drupe with seed. Natural size.

NUTTALLIA CERASIFORMIS.

This hardy deciduous shrub is known as the "Orso Berry" of California; it belongs to the natural order Rosaceæ, and is related to the Prunus, being synonymous with Prunus californica, Hort. Though not a showy shrub, it is nevertheless an attractive one, on account of its early flowers and their sweet, almond-like scent. In habit resembling the flowering Currant, the Nuttallia may be pruned and treated in the same manner as that species, as it flowers upon the young wood. In February and March the white flowers are borne in pendulous racemes before the leaves are fully expanded.

The flowers (see fig. 117) are sometimes described as polygamous, but seem to be really dioecious, the pistillate form bearing only rudimentary stamens which do not seem to be fertile. At Glasnevin one of these pistillate forms called N. c. hermaphrodita was obtained from Simon Louis Frères, Metz, and planted close to a male plant it produced fruit last year.

This dioecious or sub-dioecious character explains why fruit is seldom produced in this country, but it is only necessary to plant the two sexes together in order to obtain an abundance. The fruit (see fig. 118) is an oval-shaped drupe, about ¾ inch in length, at first yellow, then turning to purplish-blue; the fleshy part is bitter, though apparently not distasteful to birds. *C. F. Ball.*

THE "FRENCH" GARDEN.

We have now reached a period when all work is at a high pressure, and almost everything requires the attention of the cultivator at the same time. All crops are growing freely. The Carrots, which have now to be thinned out and weeded, have grown so quickly that we have had to raise the frames in which they are growing 2 inches. Previous to lifting the frames, we took care to fill up the paths between them with dry manure to prevent the soil from rolling off the beds.

The Cos Lettuces have required careful attention during the past fortnight, for the weather has been changeable and cold. It was necessary to spread the mats over the cloches when the sun was shining brightly to prevent the "hearts" from becoming soft, and also at night, whenever the thermometer fell to freezing point. This work needs care, for if the mats are placed on too early it is as harmful as if they are placed on too late. Certain growers spread the mats on the cloches when the glass is white with frost, and take them away again as soon as the frost has disappeared from the glass; this is done to make the leaves crisp—a condition much appreciated by the consumer. We have sent our first Cos Lettuce to market this week: they were planted on February 20. The cloches will be removed from the first, fourth and seventh rows, when the first forced rows are cleared. These Cos Lettuces are well established and have developed good crowns of new leaves. They will make good progress when under the cloches. Every week a few seeds of Melon are sown, in order to have a supply of plants when the beds are ready, for every spare moment is spent in making up hot-beds for these plants. This work must be hurried on so that all the frames and cloches available may be utilised for their culture by June 10. The plants of our first sowing of Melons that was made at the end of March have grown well. The plants have developed two good "breaks"; one of these growths will be directed to the top and the other trained to the bottom of the frame. The shoots have been stopped at the fourth leaf, and they will now develop side growths, upon which will be borne the female flowers. *P. Aquatias, Mayland, Essex.*

LAW NOTE.

*THE SMALL HOLDINGS AND ALLOTMENTS ACT, 1907.

MESSRS. SWEET & MAXWELL, LTD., are continuing their policy of publishing separate copies of new Acts of Parliament as they come into force (supplemented by an index, together with annotations and cross references), and we have been favoured with a copy of the Small Holdings and Allotments Act, 1907, treated in this manner. The introduction and notes are furnished by Mr. W. Hanbury Aggs, a writer who, as joint author with Mr. J. M. Lely of the well-known treatise on the law relating to Agricultural Holdings, needs no introduction to students of this subject. The work now under notice is evidently intended for the assistance of the legal practitioner rather than of the layman, its object being to supply explanatory comment on the new Act without attempting any detailed review of the subject as a whole. For this reason the absence of the earlier statutes on which the Act of last year has been grafted is perhaps not very material, as members of the profession can refer to their own copies of the earlier Acts, although the inconvenience of legislation by reference to previous statutes thus becomes especially apparent. For this inconvenience, Parliamentary practice, and not the author, must be blamed, but as soon as the pending Consolidation Act becomes law, a reprint, coupled with notes by the same writer, should prove of even greater value. Meanwhile, it may be observed that the introductory explanation to the present Act is generally clear and concise, though we confess we do not quite follow the author's line of reasoning when he states: "The obligation upon the County Council is only to provide small holdings for persons who desire to buy or lease, and will themselves cultivate the land: consequently, the application of a person who had had no previous experience in cultivation would probably not be acceded to." The author rightly points out that in the case of small holdings, an applicant need not necessarily be a ratepayer or resident in the county, whereas, in the case of allotments, those can only be let to persons belonging to the labouring population resident in the district or parish. At the same time it appears to us that evasion of the latter provision presents no great difficulty, unless the councils should fix a minimum period of residence prior to application. We venture to disagree with the learned author when he suggests that in forwarding an application to the County Council, or the Parish Council as the case may be, a copy of the application should also be sent to the Board of Agriculture and Fisheries, in order that it may reach the hands of the Small Holdings Commissioners. In a previous issue, we have advised applicants to communicate with the Small Holdings Commissioners only in the event of their application meeting with an unsatisfactory response from the council, and this we think is the better course from the practical point of view. Official susceptibilities have to be considered, and probably the clerks to some of the councils might not altogether appreciate the Small Holdings Commissioners being brought into the matter by an applicant before the councils themselves had considered the application. One misses also the customary warning as to the difference between the powers of purchase vested in the council according to whether it is proposed only to let land on lease or whether it is intended to sell to an applicant outright.

These few comments, however, are not intended to detract from the undeniable utility of the general explanation, together with the annotations and cross references, as a whole. Those desiring to form an association for the purpose of creating, or promoting the creation of, small holdings would do well to note the author's reminder that a limited company (formed for this purpose under the Companies Acts) without the addition of the word "Limited" to its name cannot hold more than 2 acres of land without the licence of the Board of Trade.

* The Small Holdings and Allotments Act, 1907, with Notes, Index, and an Introduction by W. Hanbury Aggs, M.A., LL.M., Barrister-at-Law of the Inner Temple (Sweet & Maxwell, Ltd., and Stevens & Sons, Ltd.)

NEW INVENTIONS.

A SELF-WATERING FLOWER BOX.

FLORISTS generally will be interested in the self-watering flower box which the Illinois Heater and Manufacturing Company, 3946, Wentworth Avenue, Chicago, are offering. As the name implies, the box is provided with a self-watering device, which renders attention unnecessary, except at intervals of from 10 to 20 days, according to the size of box and atmospheric conditions prevailing during the periods named. The box is made of heavy galvanised iron, pressed and corrugated at the seams, and so carefully soldered that leakage is absolutely impossible—a fact which makes the box very desirable for use in the windows of flat buildings and apartment houses, doing away with the usual objections emanating from owners. The top edges are made extra strong by forming them in the shape of a hollow square, and then reinforcing the corners by a patented device. The box for window use is made with the front sloping outward and the back straight, so that it may be accommodated on any ordinary window sill, and a window screen may be raised or lowered without disturbance. It is provided with heavy brass eyelets, for easy and secure attachment in a required position. The box is finished in a hard and durable enamel of dark green, but is finished in any other colour when specially ordered, at a slight extra cost.

The operation is simple. A metal tube in the corner of a box extends from a water reservoir in the bottom upward through the soil to the top of the box. Through this tube water is poured into the reservoir underneath a false bottom which supports the soil. Inserted in holes in the false bottom are sponges which touch the extreme bottom of the box and extend upward into the soil in which the flowers are planted. The water is drawn upward through these sponges in sufficient quantities to maintain a uniform moisture in the soil, and at the same time sufficient air is supplied with the water to insure to the plants a thrifty and healthy growth.

The box has been in use in different parts of the country for a season or two, and a large and growing business has already been built up. It has been the experience of users that the soil surface never becomes hardened or baked in the slightest degree, and in the construction of the box is a perfect application of the principle and advantage of sub-irrigation.

The box is made in a variety of sizes for window use, and is also made in styles suitable for porches and cemetery purposes. Hanging baskets, flower pots and jardiniere pans are also made embodying the same principles. The boxes are seasonable articles just now, and florists are recommended to write for the illustrated catalogue which the makers are sending out. *The Florists' Review (American), March 21, 1908.*

A TREE MEASURER AND FLOWER-POT ENVELOPE.

MESSRS. WM. WOOD & SONS, the well-known horticultural sundriesmen, of Wood Green, London, send us particulars of a new instrument for ascertaining the height of trees, also an envelope for retaining the moisture in plant pots. The tree measurer is termed the apomecometer, and consists of a small drum-like instrument, the height being taken by means of openings in the side, through the largest of which the top of the tree is reflected and brought on a level with a point previously determined near the base. The measurement from that position to the bottom of the tree, plus the height of the distinctive mark, gives the total height of the tree.

THE FLOWER-POT ENVELOPE is formed of a water-holding matting, mainly constructed of straw. The envelopes are moistened when the plants are watered, and it is claimed that, by this means, the roots are kept moist in hot weather for a longer period than without their use. They appear to be similar in structure to the straw cases in which wine bottles are often placed.

HOME CORRESPONDENCE.

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

YORKSHIRE GARDENERS AND THE ROYAL GARDENERS' ORPHAN FUND.—This fund and the special appeal which is being made at the present time on its behalf in connection with the coming-of-age festival on May 12 should, I think, be of especial interest to Yorkshire horticulturists, seeing that the inception of the fund was mainly due to a Yorkshire gardener, Mr. Clayton, late of Grimston Park, but probably many, like myself, have hitherto never given the matter any very serious thought, or it may be that we are sometimes apt to think that such institutions, having their headquarters so far away as London, have not much claim upon us here in the North. A glance, however, through the annual report certainly shows that this is not the case. I find that there are in Yorkshire five children in receipt of the benefits of the fund, viz., £13 per annum each, or £65 in all, but the whole of the subscriptions from Yorkshire fall very much below this amount, and the proportion of it which comes from Yorkshire gardeners is very small indeed. I note that one town in the Midlands (not a large one) sends half as much as the whole of Yorkshire. An appeal made during the past week to three small gatherings of gardeners in this locality had an immediate result of nearly 50 shillings being subscribed to the popular shilling collection, and several volunteered to take collecting sheets for their respective districts, so that I hope this amount will be considerably increased before the coming-of-age festival on May 12. May I suggest to gardeners in other parts of the country that, if the matter has not already been taken in hand, some such plan should be adopted, as the result, I am sure, would be a a birthday gift worthy of Yorkshire and Yorkshire gardeners, and would probably arouse an interest which would also have the effect of increasing in future the number of annual subscribers to this worthy object. Gardeners living in a district where no collection is being made, who would like to contribute, and so swell the amount from Yorkshire, are asked to send their subscriptions to Mr. Norman, The Elms, Weetwood, Leeds; Mr. Coates, Spring Bank, Headingley, Leeds; Mr. Wellwood, Wyther House, Kirkstall, Leeds; Mr. Waltham, Landy Wood, Horsforth, near Leeds; or to myself. *George Carter, Chapel-Allerton, Leeds.*

THE WEATHER AT BERKSWELL.—I do not think I can recall such a cold, inhospitable March as the one just passed; and April, up to the present time, is not much of an improvement. We are experiencing cold east winds, with frequent showers of large snowflakes and hail. The cold, however, is not an unmitigated evil—it prevents vegetation from becoming too forward; fruit buds of all kinds are exceedingly plump and promising, and if the weather is genial when the fruits are setting we shall probably have abundant crops of fruit of all kinds. We read in Scandinavian mythology that in the garden of one Bragi there grew an Apple tree which produced Golden Pippins. These Pippins were carried about in a basket by Iduna, who was wife to Bragi, to whom she gave a fruit, and they did eat; they had a renewal of their youth, and in this way lived to a very great age, and no matter how many Apples were given away, their number never grew less. I have often thought that in these times when we have difficulty in growing fruit in this country, someone ought to go into Scandinavia on the off-chance of finding this most wonderful and valuable tree. Apart from the quality of the Pippins, of which I cannot speak, the virtue of the renewal of youth would be much appreciated by tottering, aged horticulturists and others in this country. I have (April 21) neither seen nor heard of the arrival of any of the migratory birds. The cold, stormy weather may have been partly the cause of their absence. They are wise in stopping away, for there are no insects about on which they could live. I have been feeding tom-tits at my window all the winter; they became very tame, and would come close up to the window and look in, soliciting in the most gentle and mannerly way for a few crumbs. *W. Miller, Berkswell.*

Horticultural Hygrometer.—An illustration and notice of this invention in the *Gardeners' Chronicle* last autumn induced the purchase of one for these gardens. It is an instrument for ascertaining the likelihood of a frost during the coming night. "The dew-point determines the minimum temperature of the night," and, as the makers of the hygrometer state, it is only fair to presume that if the dew-point is below freezing point there will be a frost during the night. The value of reliable information on this all-important subject is obvious. Nothing in this world is infallible, and the makers of the hygrometer do not advertise that their instrument will forecast a frost with mathematical exactitude, but that it shows the *likelihood* of a frost, and after a thorough trial I am satisfied that it does this, and look upon the hygrometer as an indispensable adjunct of the garden. Twice during the past week there were no apparent signs of frost at dusk—on each occasion the temperature was over 40° Fahr., but the hygrometer indicated probable frosts, and frosts there were (10° and 8°). The manipulation of the instrument is exceedingly simple, and there is nothing to get out of order. It is important that the observations be taken as late in the evening as possible. Its greatest value to the gardener will be during the next eight or ten weeks. I have found it a good plan to divide the shaded portion of the cylinder into two equal parts, and term the lower half "frost probable." *A. C. Bartlett, Pencarrow Gardens.*

Mealy Bug on Vines.—There is nothing new in the use of cyanide gas for the destruction of insect pests, but the risk to the operator is great and many gardeners have been deterred from using it. With the aid of the cyaniding machine referred to on p. 238, the fumigation can be carried out with safety, provided the house is kept locked and that cards or notices are affixed to the doors stating that the house contains a poisonous gas. The reason why cyanide of potassium is so largely used in preference to cyanide of sodium is that it is easily procurable from any chemist, but the sodium cyanide is much stronger, the strength being 130 compared to 98. The Board of Agriculture have recently issued a leaflet (No. 188) on the use of this gas. This leaflet may be obtained post free from the secretary, Whitehall Place, London, S.W. It states that the vessel containing the acid and water should be placed near the door, but the only successful way to use it is to have several vessels in the house, and this can be accomplished by the use of the machine referred to. *John Donoghue, Bardon Hill Gardens, Leeds.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

April 14.—*Present:* Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the chair); Messrs. G. S. Saunders, W. Hales, E. M. Holmes, A. Worsley, W. C. Worsdell, G. Massee, J. T. Bennett-Pöe, W. Cuthbertson, and F. J. Chittenden (secretary).

Funnel-shaped outgrowth in Ivy.—Mr. W. C. Worsdell showed a leaf of Ivy having a funnel-shaped growth proceeding from near the base, similar to that often seen in Cabbages, but in this case it grew from the lower surface.

Double-spathed Richardia.—G. Siggs, Esq., Streatham Hill, sent an inflorescence of Richardia æthiopica with a second full-sized leaf proceeding from the flowering stem.

Potato-disease fungi.—Mr. Massee showed specimens of Potato tubers affected with "winter rot," with the fungus Nectria solani, which is the cause of the disease, growing thereon, remarking that it had been particularly prevalent during the past season, a fact that he attributed partly to the prevalence of rain during the last summer, and the difficulty of thoroughly drying the tubers before they were stored. This fungus had recently, he said, been described under another name by an investigator, a condition of things found not alone in this disease, for recently the fungus long ago described by Berkeley (see *Journ. Roy. Hort. Soc.*, Vol. I., 1846, p. 33, figs. 30, 31) under the name of Tubercinia scabies, and now known as Sorosporium scabies, Fisch., one of the causes of Potato scab, had been apparently rediscovered and renamed as new, Spongospora solani on the Continent, and this name had been taken up by some botanists in England and Ireland as the newly-discovered cause of Potato scab.

Propagation of Drosera.—Mr. Hales showed plants of Drosera hilaris raised from root cuttings put in about five weeks ago. The plants had each developed a number of leaves.

Hybrid Orchids.—R. G. Thwaites, Esq., Streatham Hill, S.W., wrote in reference to the communications recently received by the Committee concerning the crossing of albino Orchids: "The result of crossing Dendrobium Wiganianum album (in which the peduncle is only slightly coloured) with D. nobile virginale (which is white all through) has been, in every instance, a coloured flower of the ordinary D. nobile type; whilst D. nobile virginale self-fertilised has in every instance produced pure white flowers, appearing to prove that D. Wiganianum album is not a true albino. Again, when D. nobile virginale is crossed with D. aureum in every instance the same result is obtained as from crossing the ordinary D. nobile with D. aureum, namely, D. Ainsworthii, the flowers of which are full of colour."

Gall-like growths of Larch.—Mr. Massee reported that the gall-like growths on the Larch shoot recently shown by Mr. Elwes were really the scales of a female cone, which had been separated from one another by the growth of internodes. They had apparently been early attacked by Thrips abietis. Seed and seed scales were both to be found in their axils.

Seedling Elm.—Mr. Chittenden showed a seedling of Ulmus glabra from Terling, where they had occurred in abundance last season (see *Kew Bulletin*, 10, 1907, p. 404). This Elm is abundant in many parts of Essex, but only once before had he found a seedling, and that in his garden at Chelmsford in 1903. U. campestris, of which this is probably a form, is not known to seed in England, unless the seedlings recorded from the King's College "Backs" should prove to be really those of that tree.

ROYAL BOTANIC.

April 22.—The flower show held on this date under the auspices of the above society was of small extent. The showiest exhibit was composed of Cinerarias from the gardens of Edward Wagg, Esq., The Islet, Maidenhead (gr. Mr. D. Phillips). Some of the florets measured 1½ inches in length. The foliage was ample, and was finely contrasted with a border line of Adiantum Ferns. (Gold Medal.)

Daffodils and Narcissus varieties formed a considerable portion of the display. H. R. Darlington, Esq., Park House, Potters Bar (gr. Mr. D. Bignell), made an exhibit of these seasonable flowers, especially fine being Glory of Leyden, Horsfieldii, Golden Bell, Victoria, Maximus, Madame Plemp, and Stella superba.

The Misses Curry, Lismore, were exhibitors of a larger collection than the foregoing. Very nice flowers were Weardale Perfection, Lemon-drop, Vanity (a beautiful flower of the Poeticus section), Enid (white trumpet), Blood Orange, Lucifer, Firebrand, Albatross, Glory of Leyden (a fine flower), and Argent (a flower with a creamy perianth and bright yellow corona). (Silver-Gilt Medal.)

Messrs. Barr & Sons, King Street, Covent Garden, London, made a display of moderate extent, which contained many of the hand-some varieties of Narcissi. Of these mention may be made of Barrii Sensation, Barrii conspicua, Katherine Spurrell, C. J. Backhouse, Frank Miles, Calpurnia, &c. (Silver-Gilt Medal.)

An interesting display of greenhouse and forced hardy plants was made by Messrs. W. Cutbush & Sons, Highgate, and Barnet. There were Roses, Erica ventricosa magnifica, Boronia heterophylla, small bushes of Oranges, Spiræa, Peach-blossom, Azaleas, &c. (Large Silver-Gilt Medal.)

Edward Wagg, Esq., showed a small group of Hippeastrums.

Messrs. Thos. Ware, Ltd., Feltham, showed Dendromecon rigidum, Satyrium coriifolium, the golden variegated-leaved London Pride (Saxifraga umbrosa), Primula Croussei, Conandron ramondioides, and other rock-garden plants. (Silver-Gilt Medal.)

A bright group of Narcissi, Tulips, and Anemones of the St. Brigid varieties was shown by Messrs. Hogg & Robertson, 22, Mary Street, Dublin. Of Narcissus we may mention the varieties Dorothy Yorke, Lorenzo, Autocrat, Lady Arnott, Maggie May, Mrs. G. F. Brooke, John Bain, and General Murray, varieties of pleasing colour and form, good for grouping and cutting. The Tulips were distinguished by their size of bloom and general vigour. (Large Silver-Gilt Medal.)

Messrs. John Peed & Son, West Norwood, showed a considerable number of rock and Alpine plants in pots sunk in boxes filled with cocoanut-fibre. (Silver Medal.)

BRITISH GARDENERS' ASSOCIATION.

LONDON BRANCH.

April 9.—The first meeting of the recently formed London branch of this association was held on the above date, when there was an attendance of about 50 members and other gardeners.

At 8 p.m. Mr. E. F. Hawes delivered an exhaustive address on "The present opportunities for improving Gardeners' Education in London." After reading the objects of the association, in which "the encouragement of a higher state of efficiency" is set forth prominently, the lecturer said that London offered many advantages to young men seeking to improve their knowledge of horticulture, which could not be secured in country districts. First of all, there are the numerous well-kept public parks and gardens, from which many useful lessons can be learned. Mr. Hawes stated that the late Mr. Jordan, of Hyde Park, undertook long tours through provincial and continental parks for the purposes of comparing them with our London parks, and to gather knowledge.

The great exhibitions in London formed another source of instruction. The fortnightly meetings of the R.H.S. were invariably full of interest, and much up-to-date knowledge could be gained by attending them. The exhibitions of the Royal Botanic Society, the National Chrysanthemum Society, the National Rose Society, together with the Dahlia, Carnation, and other special organisations were also instanced in this connection.

The various evening classes on scientific subjects connected with horticulture, provided by the London, Middlesex, Surrey, and Kent County Councils were of the utmost value to the young gardener. Practice should be combined with science, and practice given the first place. Freehand drawing and a knowledge of arithmetic were desirable qualifications for positions of importance.

Mr. Thomas Winter is announced to give a lecture on "Public Gardens and their Construction" at the meeting to be held on May 14.

April 14.—At the meeting of the Executive Committee, held on the above date, 24 new members were elected, bringing the total up to 1,211. The secretary was deputed to address a meeting at Blackburn on the 15th inst. The draft report of the annual meeting was considered and amended, as was also the report of the Sub-Committee on Examinations. A reference to the conditions of employment at Kew was made, and will be considered by the Executive Council.

NEW BRANCH AT BLACKBURN.

On Wednesday, April 15, a meeting of gardeners of the Blackburn district was held under the chairmanship of Mr. Stradford, superintendent of the Corporation parks, for the purpose of forming a local branch of the B.G.A. The chairman was supported by Mr. Batty, gardener at the Corporation Cemetery; Mr. Hudson, superintendent of Queen's Park; Messrs. Boyd, Pimlott, Marshall, Winter, Bradburn, Murray, and about 60 other gardeners. Mr. J. Weathers, general secretary, delivered an address upon the work, aims, and objects of the association. After numerous questions had been put and answered, it was decided to form a Blackburn branch of the association, and about 60 persons gave in their names for membership. Mr. Stradford was elected chairman, and Mr. Batty, secretary, of the new branch. The committee will be appointed at a subsequent meeting.

ROYAL CALEDONIAN.

SPRING FLOWER SHOW.

April 15, 16.—The spring show of the above society, held in the Waverley Market, Edinburgh, on these days, was affected by the change of dates from those originally selected and by the backward season. The attendance of the public was small, and there was a diminution in the number of large trade exhibits usually seen at these displays. Amongst the best of the exhibits were the displays of Roses, both pot plants and cut blooms.

In the competitive classes, an outstanding feature was a display of Orchids staged by Mr. W. Sharp, Freelands, Forgandenny. Mr. Sharp was awarded the 1st prize; 2nd, Mr. D. Mackay, Viewbank, Lasswade. In the class for a group of miscellaneous plants arranged in a space measuring 20 feet by 12 feet, Mr. A. Knight, Braton, Carlisle, won the 1st prize; 2nd, Mr. G. Wood, Oswald House, Edinburgh.

Other prominent exhibitors in the classes for plants were Messrs. D. Kidd, Carberry Tower, Musselburgh; A. McMillan, Douglas Castle, Lanark; R. Davidson, Kinloch Castle, Rhum; G. McKinna, Norton Park, Ratho; and J. Pearson, Beechwood, Edinburgh. The best display of Alpines was staged by Mr. W. G. Pirie, Dalhousie Castle, Bonnyrig. Mr. A. Johnston, Hay Lodge, Edinburgh, showed the best Ferns, and Mr. J. Thom, Carlowrie, Kirkliston, was the most successful exhibitor of Roses.

In the cut flower section an important class was that for a decorated dinner table; Mr. Davis, Ballathie, Stanley, was awarded the 1st prize; 2nd, Mr. Kidd, Carberry Tower Gardens.

In the competition confined to under gardeners for a plan for laying out a piece of ground 8 acres in extent, the prizes were awarded as follows:—1st, Mr. W. Forsyth, Durris, Drumoak; 2nd, Mr. D. T. McKinlay, Palace Gardens, Dalkeith; 3rd, Mr. J. M. Webster, Bothwell Castle Gardens, Bothwell.

Non-competitive displays were interesting. Exhibits of Daffodils were shown by Messrs. Barr & Sons, Covent Garden, London (Gold Medal); Hogg & Robertson, Dublin (Silver-Gilt Medal); and the Lissadel Bulb Farm, Sligo (Silver-Gilt Medal). Messrs. R. B. Laird & Sons, Ltd., Edinburgh, showed forced plants in an attractive manner (Gold Medal). Messrs. Cunningham, Fraser & Co., Edinburgh, had a fine show of forced hardy Rhododendrons in addition to an exhibit of rock-garden plants (Gold Medal). Messrs. W. Cutbush & Son, London, staged flowering shrubs, Carnations, and a new Coleus named "Cordelia" (Gold Medal). Mr. John Forbes, Hawick, had a collection of Violas, Pansies, Primulas, Carnations, &c. (Silver Medal). Mr. John Downie, Edinburgh, exhibited Astilbe (Spiræas) in variety (Silver Medal). Messrs. Dobbie & Co., Rothesay, showed Primroses, Pansies, and Violas (Bronze Medal). Orchids were finely shown by Mr. McLeod, Chorlton-cum-Hardy, and Messrs. A. J. Keeling & Sons, Westgate Hill, Bradford. An improved strain of Primula obconica was displayed by Messrs. Storrie & Storrie, Glencarse, Perthshire (Bronze Medal). Mr. G. Roche, Gowran Castle, Kilkenny, had a fine exhibit of St. Brigid Anemones (Bronze Medal). Messrs. Hugh Low & Sons, London, displayed vases of Carnations.

Narcissi Bedouin and Charm, exhibited by Messrs. Barr & Sons, received First Class Certificates, and a new hybrid Primula, P. × Angusii, exhibited by Mr. W. Angus, Penicuik, received an Award of Merit.

ROYAL METEOROLOGICAL.

April 15.—The monthly meeting of this society was held on the above date, at the Institution of Civil Engineers, Great George Street, Westminster, Dr. H. R. Mill, president, in the chair.

Mr. Edward Mawley presented his "Report on the Phenological Observations for 1907." He pointed out that the most noteworthy features of the weather as affecting vegetation were the cold and sunless character of April, May, and the three summer months, the frequent falls of rain during that period, the warm, dry, and sunny weather in September, and the heavy and continuous rainfall in October. Wild plants came into blossom behind their usual dates throughout the whole of the flowering season. Such early immigrants as the swallow, cuckoo, and nightingale were also behind their average dates in reaching these islands. The only deficient farm crop taking the country, as a whole, was that of Potatos, most of the other crops being much over average. On the other hand, the yield of Apples and Pears, and particularly that of the former, was below average. There was also a deficient crop of Strawberries, whereas Plums, Raspberries, Currants, and Gooseberries were over average. As regards the farm crops, Mr. Mawley stated that 1905 was a plentiful year, in 1906 the yield was even better, while the past year proved the most bountiful of the three.

Colonel H. E. Rawson, C.B., R.E., read a paper on "The Anti-cyclonic Belt of the Southern Hemisphere."

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

April 13.—The quarterly meeting of this society was held at the Horticultural Hall, Vincent Square, Westminster, on the above date. Mr. Charles H. Curtis occupied the chair. Five new members were elected, making a total of thirty for the quarter. Sickness has been heavy, but rather less than during the first three months of 1907. Members more than 60 years of age are allowed to withdraw the interest on their deposit account; several avail themselves of this privilege, and utilise the money for the payment of their subscriptions. The rules of the society may be obtained from the secretary, Mr. W. Collins, 9, Martindale Road, Balham, S.W.

DEVON & EXETER HORTICULTURAL.

April 10.—This, one of the oldest horticultural societies in the country, held its 206th consecutive exhibition on this date, the exhibition being mainly one of Daffodils. As a first effort in this direction it was creditable, but from lack of funds, and the consequent inability to offer tempting prizes, the competitors were purely local and very few in number. In this respect the show was disappointing, for in many of the classes there was no competition, and in others only two, the judges in several cases withholding the first prize and awarding a second only. There were, however, several excellent trade exhibitions staged by Messrs. Robert Veitch & Son, of Exeter; Messrs. Barr & Sons, King Street, Covent Garden, London; Messrs. W. Cutbush & Son, Highgate, London; W. J. Godfrey, Exmouth, and Sir Josslyn Gore-Booth, of Lissadel, Sligo, all of whom staged interesting and valuable collections of shrubs, plants, and Narcissi.

In the competitive classes, the principal prize-winner was Mr. W. Brock, of Exeter (gr. Mr. Rowland), but the winner of the prize offered for the best 24 Daffodils was Mrs. Gage-Hodge, of Rewe, near Exeter.

Roses in pots were well shown by Mr. C. M. Collingwood, Exeter; well-cultivated Cyclamen were exhibited by Mr. Luxmore Jones, Exeter, and the Rev. G. E. Heathcote, Rewe; good Azaleas and Cinerarias were displayed by Mr. Brock. *A. H.*

COMMONS AND FOOTPATHS PRESERVATION.

At a recent meeting of the Commons and Footpaths Preservation Society, the proposal of the War Office to conduct manœuvres on a large scale in the New Forest during the coming summer was considered. It was pointed out that the Military Manœuvres Act, 1897, was passed to facilitate, under proper safeguards, the holding of manœuvres, and that it contained special provisions regulating the use of the Forest for military purposes. The War Office, however, now claimed that it could ignore the Military Manœuvres Act, since it had received the consent of the Office of Woods and Forests, representing the Crown, to the proposed manœuvres. Strong exception was taken to this contention, and it was decided to co-operate with the verderers, commoners, and others interested in making further representations to Mr. Haldane, and in taking such other action as might be necessary to secure that due regard should be had to the protection of public interests under the Military Manœuvres Act.

It was also decided to urge the President of the Local Government Board to amend Section 7 of the Housing and Town Planning Bill, now before Parliament. Under the Bill as drawn local authorities would have power to alienate open spaces committed to their care for the purpose of providing sites for dwellings for the working classes, and it was resolved to press that common land or land dedicated to the recreation of the public should be exempted from the operation of the clause. It was reported that the Board of Agriculture had now issued draft schemes for the regulation under the Commons Act, 1876, of Towyn Trewan Common, Anglesey, 1,300 acres in extent, and Maidenhead Thicket and Cookham Commons.

It was stated that the litigation with regard to a large and valuable driftway crossing Marsden Moor, Yorks, had terminated in favour of the public, and that up to the present subscriptions and guarantees amounting to £1,552 had been received towards £1,800 needed to secure the purchase of Ludshott common and a strip of land adjoining Waggoners Wells, situate near Haslemere, and embracing 560 acres of moorland and sylvan scenery. It was decided to make representations to the Postmaster-General with regard to the disfigurement of Epping Forest by unsightly lines of telephone poles.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending April 22.

A deep fall of snow for April.—The first day of the week was moderately warm, but since then very low temperatures have prevailed. On the coldest day, Easter Monday, the temperature in the thermometer screen did not rise above 44°, which is about 12° colder than is usual in the latter half of April. On five successive nights the exposed thermometer registered from 4° to 10° of frost. The ground temperatures have consequently fallen, and are now 2° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Rain, hail or snow fell on four days, but to the total depth of only about a quarter of an inch. After one of the snow showers on Easter Monday the ground was covered to the average depth of rather more than an inch. This covering of snow had, however, entirely disappeared in less than an hour. The only previous instance of snow covering the ground to any measurable depth in the month of April during the last 21 years was on April 7, 1905, when it also lay to the depth of an inch. The percolation through the soil gauges was very slight during the week. The sun shone on an average for 6¾ hours a day, or for 1¼ hour a day longer than is usual at this period in April. On the sunniest day the sun was shining brightly for over 11 hours. Light airs as a rule prevailed, and the direction was always some northerly point of the compass. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 8 per cent. *E. M., Berkhamsted, April 22, 1908.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* ***write the names of persons and places as legibly as possible.*** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. R. Mason, for the past 4 years and 8 months Foreman at Longford Castle Gardens, Salisbury, Wilts, as Gardener to the Rt. Hon. Viscount Galway, Serlby Hall, Bawtry, Yorks. (Thanks for contribution to R.G.O.F.)

Mr. P. J. Barham, for the past 8¼ years Gardener to Col. Wm. Hall Walker, M.P., Gaiacre Grange, Liverpool, as Gardener to Leigh Goldie Taubman, Esq., The Nunnery, Douglas, Isle of Man.

Mr. Stephen Preston, for the past 9½ years Gardener to J. Harriman, Esq., J.P., Fernside, Shepshed, as Gardener to E. M. P. de Lisle, Esq., Garendon Park, Loughborough, Leicestershire.

Mr. J. R. Eastwood, for the past 18 months Gardener to The Hon. Edith Cunliffe-Lister, Patrick Brompton, Bedale, as Gardener to Colonel Parker, Brownholme Hall, Clitheroe, Lancashire. (Thanks for a donation of 1s. for the R.G.O.F. box.)

Mr. C. Evans, for the past 5 years Foreman at King's Bromley Manor Gardens, Lichfield, as Gardener to the Rev. Custance, Lowington, Burton-on-Trent.

Mr. A. F. Jones, for 2 years Foreman at Derry Ormond Park, Cardiganshire, the residence of W. Inglis-Jones, Esq., as Gardener to E. B. Compton, Esq., Monachty, Cilan Aeron, Cardiganshire.

Mr. W. H. Massam, for the past 3 years Gardener to Sir Owen Roberts, Plas Dinas, Carnarvon, as Gardener to R. Gerrish, Esq., Milford Manor, Salisbury, Wilts.

Mr. A. Simeson, for the past 5 years Gardener at The Pastures, Derby, as Gardener to E. Heseltine, Esq., The Goldings, Great Warley, Essex. (Thanks for your contribution of 2s. to the R.G.O.F.)

MARKETS.

COVENT GARDEN, *April 22.*

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Ed.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Acacia (Mimosa), dozen bunches	9 0	12 0
Anemones per doz. bunches	2 0	3 0
— double pink	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	3 0	5 0
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American various	2 0	3 0
— second size	1 6	2 0
— smaller, per doz. bunches	9 0	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0	10 0
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	2 0	4 0
— double, per dz.	2 0	3 0
— Barri	2 0	3 0
— Golden Spur per doz.	2 0	3 0
— Sir Watkin	1 6	2 0
Eucharis grandiflora, per doz. blooms	3 0	4 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz. blooms	2 0	4 0
Gypsophila per dz. bunches	3 0	5 0
Hyacinths, per doz. bunches	4 0	6 0
Iris (Spanish), per bunch	0 9	1 0
Lapagerias, per dz.	1 6	2 6
Lilac (French), per bunch	2 0	3 0
Lilium auratum	2 0	3 0
— candidum	2 0	3 6
— longiflorum	3 0	5 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	12 0	15 0
Marguerites, white, p. dz. bunches	4 0	6 0
— yellow, per dz. bunches	2 0	3 0
Mignonette, per dozen bunches	6 0	9 0
Myosotis, per doz. bunches	2 0	3 0
Narcissus, per doz. bunches	2 0	3 0
— Gloriosa	1 6	2 6
— poeticus ornatus	1 6	2 6
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches	6 0	8 0
— Zonal, double scarlet	6 0	10 0
Ranunculus, p. dz. bunches	5 0	8 0
Roses, 12 blooms, Niphetos	1 6	3 0
— Bridesmaid	2 0	5 0
— C. Testout	3 0	5 0
— General Jacqueminot	2 0	4 0
— Kaiserin A Victoria, per dozen blooms	2 0	4 0
— Madame Hoste	2 0	3 0
— C. Mermet	2 0	4 0
— Liberty	1 0	6 0
— Mad Chatenay	3 0	6 0
Statice, per dozen bunches	8 0	10 0
Spiræa, per dozen bunches	5 0	8 0
Stocks, double white, per doz. bunches	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches	6 0	12 0
— best doubles	12 0	18 0
Violets, per dozen bunches	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 9	1 6
Berberis, per doz. bunches	1 6	2 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle (English), small leaved, per dozen bunches	4 0	6 0
— French, per dz. bunches	1 0	1 6
Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c. Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri, per dz.	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	15 0	24 0
— variegated, dz.	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, dz.	6 0	9 0
— tenuissimus per dozen	9 0	12 0
Azalea indica	24 0	36 0
Boronia megastigma, per dz.	24 0	—
— heterophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
Callas, per dozen	10 0	12 0
Cinerarias, per dozen	5 0	9 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Daffodils, per doz. pots	5 0	6 0
Draciænas, per doz	9 0	24 0
Erica, per dozen	9 0	15 0
— candidissima, per dozen	15 0	18 0
— Cavendishii, per dozen	18	24 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	8 0	12 0
— in Small and large 60's	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Gemstas, per doz.	6 0	10 0
Hardy flower roots, per dozen	0 9	2 0
Hyacinths, per dz. pots	6 0	9 0
Hydrangeas, p. dz.	10 0	18 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, per dz.	18 0	24 0
— lancifolium, p. dozen	18 0	24 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*).

	s.d.	s.d.
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	8 0	10 0
Mignonette, per dozen	6 0	10 0
Pelargoniums, Zonal, per doz.	6 0	9 0
— show varieties, per dozen	12 0	18 0
— Ivy-leaved, per dozen	6 0	8 0
— Oak-leaved, per dozen	4 0	6 0
Rhodanthe, per dozen	4 0	6 0
Roses, Ramblers, each	5 0	31 0
Selaginella, per dz.	4 0	6 0
Spiræa japonica, p. dozen	5 0	9 0
Stocks (Intermediate), per dozen	6 0	9 0

Fruit: Average Wholesale Prices.

	s.d	s.d
Apples (**English**), per bushel		
— Wellington	4 0	8 0
— Bramley's Seedling	4 0	7 0
— **Tasmanian**, per box:		
— Ribston Pippin	12 0	13 0
— Cox's Orange Pippin	14 0	20 0
— Alexander	8 0	10 0
— Wellington	12 0	13 0
— Scarlet Nonpareils	11 0	13 0
— **Australian**, per case:		
— New York Pippins	12 0	15 0
— Monro Favorite	10 0	12 0
— Jonathan	11 0	14 0
— Ribston	12 0	13 0
— Cox's Orange Pippin	12 0	20 0
— Wellington	9 6	12 0
— Rymers	12 0	13 0
— Allristons	9 0	10 0
— Adams Pearmain	10 0	12 0
— **Nova Scotian**, per barrel:		
— Fallawater	18 0	19 0
— Nonpareil	12 0	13 0
— Spy	15 0	17 0
— Baldwin	13 0	14 0
— Russets	18 0	20 0
— **Canadian**, per barrel		
— Northern Spy	19 0	21 0
— Baldwin	20 0	21 0
— N. Greening	17 0	18 0
— Russets	19 0	20 0
— Newtown (U States)	24 0	30 0
— Newtown, per box	14 0	16 0
— **"Oregon"** Newtown, per box	13 0	16 0
Bananas, bunch		
— No. 2 Canary	6 0	—
— No. 1 ,,	7 6	8 0
— Extra ,,	8 0	9 0
— Giants ,,	10 0	12 0
— (Claret)	7 0	7 6
— Jamaica	5 0	5 6
— Loose, per dz.	0 9	1 3
"Custard" Apple (Anonas), per doz.	4 0	9 0
Dates (Tunis), doz. boxes	4 0	4 3
Figs (Guernsey), each	0 4	1 0
Grape Fruit, case	8 0	10 0
Grapes, (English), Gros Colmar, per lb.	2 6	4 0
— (Belgian), Gros Colmar, per lb.	2 0	3 0
— (Cape), per box (small)	2 6	4 0
— (large)	6 0	10 0
— (Almeria), per barrel	15 0	17 0
Lemons,		
— Messina, case	8 0	11 0
— Murcia, p. box	5 0	6 6
Lychees, per box	1 0	1 5
Mandarins		
— (French), 100 s per box	4 6	5 0
— (Palermo), 100 s box	3 0	4 0
Mangos (Jamaica), per dozen	12 0	18 0
Melons (Guernsey)	1 0	6 0
— (Cape)	1 6	2 0
Nuts, Almonds, per bag	15 0	—
— Brazils, new, per cwt.	55 0	—
— Barcelona, per bag	30 0	32 6
— Cocoanuts, 100	11 0	14 0
Chestnuts		
Oranges (Valencia), per case	10 0	30 0
— Denia, p. case	12 0	0 0
— Jaffas, per box	10 6	12 0
— Californian Navel, p. case	11 0	13 0
— Seville Bitters, per box	6 0	7 0
— Palermos, Blood:		
— per box (100's)	5 0	5 6
— per box (160's)	10 0	11 0
Pears (Cape), per box	5 0	6 0
— cases	7 0	8 0
Pineapples, each	2 6	4 6
Strawberries (English), per lb	1 6	4 0

Vegetables: Average Wholesale Prices.

	s.d	s.d
Artichokes (French), per dozen	2 6	3 0
Asparagus, Paris Green, bundle	2 6	3 0
— Sprue, bundle	0 7	0 8
— English	4 0	5 6
— Spanish, per bundle	1 6	1 8
— Giant, per bundle	6 0	10 0
Beans, Broad (French), p.pad	4 0	6 0
— Guernsey, p.lb.	0 9	1 0
— English	0 6	0 10
Beetroot, per bushel	1 3	1 6
Cabbages, per tally	3 0	4 6
— Greens, p. bag	1 6	3 0
Carrots (English), — washed, p. bag	4 0	4 6
— French (new), per pad	3 0	—
— French (new), per bunch	0 6	—
Cauliflowers, per dozen	2 0	2 6
— per tally	5 0	15 0
Celeriac (French), per dozen	2 0	2 3
Chicory, per lb.	0 3	0 5
Chow Chow (Seculum edule), p. dozen	3 0	—
Cucumbers, per dz.	2 6	3 0
— per flat	7 0	8 0
Endive, per dozen	2 0	2 6
Horseradish, foreign, per doz. bundles	9 0	12 0
Leeks, 12 bundles	1 0	1 6
Lettuce (English), per dozen	1 0	1 6
Lettuce (French), per dozen	1 0	1 8
— (French), Cos, per dozen	3 0	4 0
Mint, per dozen bunches	—	1 0
Mushrooms, per lb	0 8	1 3
Mustard and Cress, per dozen punnets	1 0	—
Onions (Spanish), per case	6 0	7 6
— pickling, per bushel	2 0	2 6
— Spring, per dz. bunches	1 6	2 0
Parsley, 12 bunches	1 6	2 0
Peas (French), per packet	0 6	0 8
— (French), p.pad	4 0	4 6
— (Guernsey), per lb.	1 0	2 0
Potatos (Guernsey), per lb.	0 3½	0 4
— Teneriffe, cwt.	10 0	13 0
— Algerian, cwt.	12 0	13 0
Radishes (Guernsey), dozen	0 8	0 10
Rhubarb (English), dozen bundles (forced)	1 3	1 4
— (Natural)	3 0	3 6
Salsafy, p. dz. bdls.	3 6	
Seakale, per dozen punnets	15 0	18 0
Spinach (French), per crate	1 0	4 3
Tomatos (English), per lb.	0 10	1 0
— (Teneriffe), per bundle of four boxes	8 0	18 0

Remarks.—Mushrooms are inclined to be firm in price owing to a shortage caused by the cold weather, best "Broilers" are selling for as much as 10d. to 1s. per lb. Supplies of English Tomatos do not seem to increase, largely owing, no doubt, to the cold weather. Chicory was in great demand on Tuesday last for the principal consignments had not arrived when the market was opened. Good prices were made by the salesmen who had supplies on hand, 2d. to 7d. being the average price paid for this vegetable on Tuesday morning; best samples to be obtained to-day (Wednesday) at 3d. and 5d. English Beans are inclined to be firmer this week, although up to the present time no advance in their prices has been made. The fruit trade in general is quiet, as is also business in vegetables. *E. H. R., Covent Garden, Wednesday, April 22, 1908.*

Potatos.

	s. s. per ton		s. s. per ton
Kents—		**Dunbars**—	
Up-to-Date	110–115	Maincrop (red soil)	125 130
British Queen	105–110	**Scotch**—	
Scottish Triumph	105 110	Up-to-Date (grey soil)	105 115
Lincolns—		Maincrop (grey soil)	105–115
Up-to-Date	105–115		s. d. s. d. per bag
— (Blackland)	95 100	**French**—	
British Queen	95–105	Reds	4 0 4 3
— (Blackland)	90– 95	**German**—	
Maincrops	110–115	Up-to-Date	4 9 5 0
Sir Jno. Llewelyn	95–100	Magnum Bonum	4 6 4 9
— (Blackland)	85– 90	Imperator	4 0 4 3
Royal Kidney	95–100	**Belgium**—	
— (Blackland)	90– 95	Kidneys	4 3 4 6
Evergood	95–100	**Dutch**—	
— (Blackland)	90– 95	Up-to-Date	4 6 4 9
Dunbars—		Magnum Bonum	— 4 3
Up-to-Date (red soil)	120–125	Imperator	4 0 4 3

Remarks.—Supplies are still limited and the trade still continues firm, but not quite so good as the previous week. *E. J. Newborn, Covent Garden and St. Pancras, April 22, 1908.*

COVENT GARDEN FLOWER MARKET.

The Saturday before Easter is always the busiest morning in the year for the cut flower trade, and last Saturday was no exception. The market was crowded with persons many of whom were sightseers. Although supplies were very large, the salesmen were asking high prices early in the morning, and flowers purchased for dispatch by early trains were much dearer than those bought later in the day. Lucharis appeared to be the only flowers that were not procurable. Callas realised 6s. per dozen at the opening of the market, but their value dropped later to 4s., and there was about the same difference in the prices of Lilium longiflorum. A few of these latter flowers were sold at 6s. to 7s. per bunch, but they averaged from 4s. to 5s. L. candidum made prices almost equal to the last named. L. lancifolium sold well. Lily of the Valley was very plentiful, and did not advance in prices to any great extent. There were large supplies of white Azaleas and Roses. This morning (Wednesday) Roses were selling freely, as many buyers were preparing for St. George's Day. Among Carnations are fine blooms of Francee, Windsor, Britannia, Robt Craig, and crimson and white kinds, of best quality, but all are over plentiful. Supplies of Daffodils are excessive, the varieties Madame de Graaff, double Phœnix in several shades, Mrs. Langtry, Horsfieldii, Sir Watkin, and others are all good. Statice latifolia, in blue, white, and yellow flowers, is already seen. White and pink Gypsophila elegans is abundant.

Pot Plants.

Rambler Roses are prominent, large specimens of Hiawatha, Lady Gay, Cant's Blush, and Crimson Rambler are well flowered. The dwarf Madame N. Levavasseur is very good, but the hybrid perpetuals are not of the best quality. Ivy-leaved Pelargoniums include well-flowered plants of Galilee in 48's pots, these make about 8s. per dozen. Madame Crousse in 60's are well-flowered. Rhodanthe is seen, but it requires a few days' sun for the flowers to be at their best. Spiræas are sold at reduced prices. Marguerites have been selling better. Stocks have a poor demand, but a few days warm weather will see a larger sale for them, and this also applies to other plants used for furnishing window-boxes. Zonal Pelargoniums are good in several of the most useful sorts. Mignonette is remarkably good from several growers. Lilium longiflorum may be had in plants of various heights from 1½ to 3 feet. Hydrangeas are plentiful in all sizes. Cyclamen are still procurable. Gemstas are plentiful but the flowers of some are far advanced. Supplies of Daffodils and Hyacinths hold out. Ericas are fairly abundant. Foliage plants are well supplied. Amongst Ferns I noticed good plants of Nephrolepis Todeoides in 48's pots; they were offered at 24s. per dozen.

Bedding Plants, &c.

Growers are sending in large supplies of all kinds of summer bedding plants, but the cold weather has militated against their sale. Amongst them are seen Dahlias, also Zonal Pelargoniums, Calceolarias, Lobelia, Coleus and other tender plants. The growers of hardy flower roots have large stocks on hand, which, if the weather had been favourable, would have been cleared weeks ago. *A. H., Covent Garden, Wednesday, April 22, 1908.*

TRADE NOTICES.

LIMITED COMPANIES.

Messrs. George Fowler Lee & Co., Ltd.—This company has been formed with a capital of £5,000 in £1 shares. The objects are to acquire the business carried on at Maidstone, under the name of Fowler Lee & Co., and to trade as fruit and vegetable growers, preservers merchants, &c. No initial public issue. Registered office, 70, 70a and 72, Queen's Road, Reading.

Messrs. W. Baldock, Ltd This company has been registered with a capital of £2,000 in £1 shares. The objects are to acquire the business carried on at Brighton and Portslade as W. Baldock, and to carry on the business of fruit, plant and flower growers and salesmen, nurserymen, gardeners, floriculturists, fruit and vegetable preservers, &c. There is no initial public issue, and the company has been registered without articles of association. Registered office, 19, Prince Albert Street, Brighton.

ENQUIRIES AND REPLIES.

MOTOR LAWN MOWERS.—In reply to Mr. Maiden's enquiry on page 224, I may say that we have used a 30-inch motor lawn mower in place of a 36-inch horse mower, and the former machine has proved to be very much the better implement. Not only has it done a much greater amount of work, but by its use the general appearance of the lawn has been much improved. No disfigurement is now caused by horse's hoofs, and the motor machine can be steered and turned very much more easily than the horse machine. Even in situations where the lawn is much broken up by flower beds, or sharp curves, an intelligent man after a few days' practice finds no difficulty in working the motor. It has also to be borne in mind that a man and horse can be otherwise employed. We have used the motor for rolling the turf during the winter months with excellent effect, it being necessary merely to remove the cutters and replace the wooden rollers with metal ones to give a better balance to the machine. It is important to have plenty of engine power to these motors. *W. Fyfe, Lockinge Gardens, Wantage, Berkshire.*

Answers to Correspondents

EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters 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.

ARUM LILY: *H. P. L.* See reply to *A. J. K.* in the issue for April 11, p. 240

BOOKS: *W. T.* The à la mode series of works by Mrs. de Salis is published by Messrs. Longmans, Green & Co.; the other book you mention is, we believe, out of print

COCKROACH: *G. A.* The insect is one of the foreign species of cockroach Periplaneta. This creature is now common in many herbaceous and plant stoves in this country. It may be killed by phosphorous paste or any of the other methods that are adopted for destroying the common cockroach.

CONTRIBUTIONS: *J. H.* The Editor will be pleased to consider any articles you may submit for his approval.

CORRECTION: In the address of the Stafford Road and Sunnyrise Market Nurseries Co., Ltd., given on page xii. of our last issue, for Cravenswoth read Cravenhurst.

CURLED KALE: *J. K. K. & Sons.* The leaves you send represent an excellent type of this useful vegetable, but they exhibit no advance on varieties already in commerce

CYCLAMEN: *Z. W.* (Henley-on-Thames). As we do not know the treatment your plants have been given, it is difficult for us to say why they have not flowered satisfactorily, especially as the corms are only two years old. At that stage they should be in their best condition, corms of an older age being liable to rapidly deteriorate, and eventually be capable of producing only flowers of small size and poor quality. Cyclamen plants having just passed from the flowering stage, it is quite natural for them to develop a fair amount of foliage. It may be that your plants have been kept in too hot an atmosphere, or under the shade of other taller growing plants. In any case the best thing for you to do at this stage is to arrange the plants in a cool frame gradually giving them less water at the roots, but not withholding it altogether, as this would cause some of the roots to perish. Ventilate the frame freely during favourable weather. After a period of a few weeks, during which time the plants have rested, they may be turned out of their pots and repotted, giving them a shift into larger pots if the roots are in a healthy condition, but if the soil appears sour and the roots show any evidence of decay, shake off all the old soil and re-pot them into clean pots of the same size as those which contained them previously. When they have been re-potted, return the plants to the frame, where they will need to be provided with shade from direct sunshine. Close the frame moderately early each afternoon. New growth will soon develop, when more air may be given, and as the season advances and the weather becomes warmer, the lights may be removed from the frame entirely, thus exposing the plants to the beneficial effects of night dews. Vaporise the frame at regular intervals to prevent insect pests. At the end of September it will be necessary to remove the plants from the frame and place them on a stage in a light and well-ventilated house, arranging them as near to the glass as possible. At that stage a little manurial stimulant may be applied to the roots, and the heat of the house should be about 55°, with the ventilators open just a little. This may rise to 60° or 65° under the influence of sunshine, but it should fall again to 50° at night. If it is necessary to hurry the plants into bloom, a few degrees extra heat will not harm them, but at all costs the atmosphere must be prevented from becoming excessively moist and confined.

FLOWER CULTURE FOR PROFIT: *Constant Reader.* It is somewhat late to make a start, as many subjects should by now be sown, and as you do not wish to purchase stocks of plants, your only plan is to raise them from seed yourself. You should lose no time in making a sowing of Sweet Peas, which furnish good returns as cut flowers, if you can dispose of them locally. As you have a small greenhouse, you could make a sowing of half-hardy annuals, including Asters, Zinnias, Stocks, Scabious, Centaurea, Gypsophila elegans, Gaillardias, African and French Marigolds, Silene, Verbenas, Saponarias, and the like. This need not deter you from sowing seeds of hardy annuals out-of-doors. Dahlias, of floriferous garden varieties, are useful plants for furnishing flowers for cutting, perennial Sunflowers, Rudbeckias, including R. bicolor, perennial Asters or Michaelmas Daisies, are all useful plants for furnishing flowers suitable for decoration. You must, however, remember that the trade in cut flowers is very keen, and unless you have a good local market for your produce you will not be likely to make the business remunerative. We hope you are not attempting to do so without such necessary aids as available capital and trade experience. With regard to the Tomatos, these should be planted in the warmest quarter of the garden, and, provided the summer is favourable, they should prove remunerative; but you must remember that in most localities a good crop of Tomatos out-of-doors is only obtained once in about three years; it is a very speculative crop in the open. The north border is not suitable for flower cultivation.

GARDENER'S NOTICE: *W. T.* See reply to *J. H.* in the issue for February 29 last, p. 144.

LANDSCAPE GARDENING: *Mark.* The work you mention is much the best on the subject.

LAUREL: *Correspondent.* There is no trace of fungi or insects.

LIME FOR A LAWN: *G. H.* You should not apply caustic but slaked lime to the turf. Spread it evenly over the surface at the rate of about 2 lbs. to the square rod.

LOBELIA PLANTS: *E. W.* There is no disease present in either of the plants you send. The blue colouring in the stem and leaf is a common condition in seedlings of Lobelia cornpicta.

MARKET GARDENING: *F. S.* No licence is needed to engage in the occupation of a market gardener, and no registration is necessary.

NAMES OF PLANTS: *A. M. Davy.* Chrysosplenium oppositifolium. *T. R.* Cassandra calyculata. *D. W. C.* Oleana myrsinodes. *Hortus.* Grevillea rosmarinifolia.—*H. A.* Helleborus viridus.

PEACH SHOOTS DISEASED: *W. E.* The disease affecting your Peach trees is "Silver leaf," for which no cure is known. It is important that all affected portions of the plant be cut off and burned, otherwise the disease will spread to other parts of the plant.

PEACH TREES FAILING TO FRUIT: *H. F.* We suspect the trouble is to be found in the borders, especially as the buds drop in the spring and the soil rarely requires water. If the border is properly drained, the moisture would pass away quickly, and when the trees are actively growing the soil about the roots will become quite dry. You should overhaul the borders next winter. When using paraffin as an insecticide the greatest care is necessary not to apply it in too great a strength.

STOPPAGE OF WAGES: *T. L.* We advise you to consult a solicitor on the matter, but you should first find out if your employer acquiesced in the agent's action.

THE FRENCH GARDEN: *E. K.* We are informed that for a French garden having an area of two acres, with 400 to 600 lights and 2,000 to 2,500 cloches, the necessary supply of water which should be contracted for is 1,000,000 (one million) gallons per annum. The average cost for this quantity is £40 to £60, according to the district. It must be specified in the agreement that the rate is to cover the quantity per annum, for if the contract is quarterly (as it usually is), the price would be excessive for the winter months, and an overcharge would be made for the midsummer quarter. The price of the manure will vary from 2s. 6d. to 7s. per ton, according to the distance whence the supply is obtained. No profit can be made if the cost is more than 9s. per ton. It is advantageous to obtain the manure from a contractor who keeps at least seven or eight horses. When making a contract for that item, it should be ascertained if the horses are well-fed and hard-worked, for these circumstances affect the value of the manure. Long and strawy manure is preferable. For a garden of the size indicated above the labour-bill will work out as follows:—Two well-experienced workmen, £180; two women, £60; one foreman, £100; total, £340. The rent varies considerably; for a house and garden in full working order, including all the materials, sheds, stables, &c., close to a market or a station, it would probably be about £120 per annum. These quotations are given according to the French tariff.

TOMATOS DISEASED: *M. B.* Your Tomato plants are affected with "sleeping disease," caused by Fusarium lycopersici. All diseased plants should be removed and burned, as recovery is impossible. The same soil should not be used for Tomato culture again, and in any case a free application of quicklime should be incorporated with the rooting medium.

VINES: *A. B.* Abortive bunches, such as you send, may be found in almost any vinery; but their presence in large numbers indicates enfeeblement of the plant, due either to malnutrition or age. We suspect that, in your case, it is due to the latter condition. Train in a few young rods to replace some of the older ones, and do this so that they may be taken out alternately. The soil you send appears charged with an excess of organic matter. This should be corrected by a free addition of mortar rubbish, or some other form of lime.

VINES DYING: *J. H.* The vine roots are attacked by eelworms. There is no disease present on the Azalea plant you send; the failure is due to some improper method of treatment.

VIOLETS: *R. F.* The purplish outgrowths from the centre of the flowers are petaloid stamens. This condition is the first stage in the duplication of the petals, resulting ultimately in a double flower. You should send examples of the flowers to some Violet specialist; perhaps Messrs. Cannell & Sons, Swanley, Kent, will be able to tell you if the variety is known in commerce.

WISTARIA FAILING: *J. T. L.* The inflorescence exhibits a condition due to excessive stimulation of growth, not necessarily caused by undue forcing.

COMMUNICATIONS RECEIVED.—H. J. C. (many thanks; see note in last issue).—E. D.—J. W. S.—D. H.—A. D.—W. M.—L. L. L.—T. L.—C. D.—C. B.—C. W.—H. W.—P. H.—A. J.—J. D. P.—H. C.—W. N.—G. B.—T. S.—J. M.—F. H. J.—W.—J. C.—F. M. W.—W. M.—F. W.—J. C.—D. R. W.—S. W. F.

New Plants at the Ghent Exhibition.

[See p. 257.]

CALADIUM CENTENAIRE FROM BRAZIL. COLOUR OF LEAVES ROSY-RED.
Exhibited by Messrs. F. Sander & Sons.

PTYCHORAPHIS SIEBERTIANA: HORT. SANDER, FROM THE STRAITS SETTLEMENTS.

Exhibited by Messrs. F. Sander & Sons.

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CONTENTS.

ILLUSTRATIONS.

THE ALPINE AND OTHER DAPHNES.

THE many species of Daphne introduced to gardens within recent years have not all proved of equal value to the cultivator, and a review of the several species that can with advantage be used in furnishing rock gardens will perhaps be more useful from the point of view of restrictive selection than that of a general recommendation.

Several of the rarest species are likely to remain so, owing to extreme cultural difficulties; others that are described as beautiful or showy need considerable additions to their attractiveness to really make them worth growing. Those species that are good are among our most cherished possessions, and the presence of a few uninteresting species should not be allowed to detract from the merit of others.

Fifty years ago all species of Daphne, save Laureola odora and the Mezereon, would have given trouble to cultivate: they are particularly unhappy when subjected to pot culture, needing more generous rooting conditions than pots can afford.

The steady development of well-planned rock gardens which has become such a feature of modern gardening has provided even for those Daphnes that are generally difficult of management something towards their needs, whilst for those species that are more amenable to cultivation it is now possible to provide ideal conditions in which they can revel and thrive. The Daphne is a model rock shrub. It enjoys the coolness and moisture always present where stone touches earth. It will grow in a fissure, on a mound, or in a depression provided the conditions are always cool. Those species which are not too tender for our climate will live for many years, aided by the annual top dressing of soil that every rock-plant ought to get in spring. Most of the true Alpine species have the root system of Gaultheria—a thick mat of fibrous roots just below the surface; they need a broad area of good surface soil only, but it must not be less than six inches in depth or it will dry out too readily. Although commonly cited as peat-loving shrubs, experience proves a good mellow loam well charged with grit to be excellent rooting material for the strongest species, whilst those of dwarfer stature delight in the addition of leaf-soil and stone chips in quantity to the staple. All Daphnes thrive best in slight shade; they will do without it, however, if the soil is fairly moist, but in dry districts likely to experience drought at midsummer, the provision of shade saves the plants from defoliation and check. Much has been written on the practice of covering the stems of sub-prostrate Daphnes with large stones, thereby inducing them to root afresh. In Alpine surroundings a similar system of rejuvenation is persistently going on with every prostrate plant, and on many areas of broken heather ground in this country a system of rejuvenation closely allied to the preceding teaches a kindred lesson. The species and varieties of Daphne are not numerous, and if one wishes for really attractive plants the good and desirable species are only about six in number. All are deliciously fragrant, and the few species that lack garden value may perhaps be valued for their fragrance alone.

D. alpina is a dwarf sub-prostrate species from the Italian Alps, distinctly shrubby and evergreen, the flowers of which are produced in tiny clusters of white in May and June, and much resemble those of Bouvardia. It is one of the most difficult to manage, preferring to grow in a rocky fissure in nothing but light soil and stone chips, and it will stand the fullest exposure to sunshine if only the fissure is always a little moist. Our winters sear its foliage in open beds.

D. arbuscula is a new-comer, described as closely related to D. petræa, and producing rosy-pink flowers. I have not seen its flowers.

D. Blagayana is a very charming Carniolian species, although it is one that has long proved troublesome to manage, but the general adoption of a system of layering has helped the plant forward by leaps and bounds. It is a prostrate shrub, with a lax habit, each stout branch terminating in a cluster of white or cream-tinted flowers. It delights in shade and leafsoil in plenty, but in the West of England and Scotland, and in Ireland, where moister conditions prevail, it thrives in the fullest sunshine. It is a plant for the lower reaches of the rock garden, where it can ramble at will, and where every matured shoot can be layed by placing a stone upon it, the growing and leafy points being free. This plant proves very intractable under pot-culture, many specimens perishing early when grown thus. It flowers in April and lasts till May and June.

D. Cneorum, the Garland Flower, is in many respects the most attractive of all species, and in the moister climate of the West and of Ireland it forms, in May, lovely mounds of pink that everyone must admire. It grows as a straggling bush of dark green colour, modelled on the lines of Rosemary, but dwarfer and less bright in its foliage. More than half the growths, when healthy and strong, terminate in pretty rose-pink clusters, distinctly Bouvardia-like, and very persistent. The fragrance is most marked, recalling that of most Cruciferæ (i.e., Matthiola, Malcolmia, Cheiranthus), and it is particularly powerful and refreshing in the evening and after rain. I have seen many instances where the use of peat has proved detrimental to this plant. It undoubtedly appreciates lime in limited quantities, and I can recommend mellow loam and leafmould in equal parts as the best soil for it, weighting the whole with a few pieces of soft mountain limestone. Thus treated, and given shade for a year or two, it will thrive. Like most Alpines, it resents neglect, and damage done at midsummer is often not in evidence till the next spring, when the growthless, flowerless tips of all the branches tell their tale of past neglect.

Var. majus I have seen true several times. It is a glorified Cneorum, but a clever cultivator can make all D. Cneorum typically majus, whilst a less clever cultivator can make the true variety majus a worse plant than well-grown Cneorum. I suspect the original var. majus fared better than his fellows.

D. Genkwa.—A rare and tender species that grows well in the west only, such specimens as one sees or can keep alive in the east of England being objects of utter misery and in no respect commendable as garden plants. It is a very gaunt, sketchy-looking shrub, the pale lilac flowers of which, borne in loose clusters, have earned for it the name Japanese Lilac. In Cornwall it is a passable garden plant, with the disadvantage of being quite deciduous. Generally it resembles a forced Persian Lilac whose growth had been arrested or checked by drought. It is very fragrant, but clearly a plant for the enthusiast only.

D. Laurcola, the common Spurge Laurel, is an attractive shrub, but its flowers—citron yellow and in small clusters—are not very showy. One can value the plant for its stout evergreen foliage, and it is particularly useful for filling large spaces in the rock garden in open sunshine (if the soil is moist) or under trees. The bushy habit is in keeping with the boldest rock formation, and the plant is ideal for the planning of belts of mountain scrub in connection with large rockery areas.

Var. Philippii is more dwarf and compact, rarely exceeding 2 feet in height. Its flowers are produced in April and are greenish yellow

in colour, differing but little from those of the type. It is a capital evergreen for the small rock garden, and in the hands of a skilful planter could be well grouped in a typical Alpine scene.

Var. purpurea is a dwarf Laureola whose leafage alone justifies its name.

D. Mezereum (Mezereon). I have many times tried, and am able to recommend, both the white and purple forms of the Mezereon for a novel use in the rock garden. Although they will attain the dimensions of a small tree in the course of 20 years, they are too slow of growth ever to get out of hand, and timely stopping will induce a bushy habit they are not likely to lose. They are rarely used as rock-garden shrubs, yet the rock garden offers ideal conditions for them, for the shelter a winter-flowering tree or shrub invariably needs is to be found there. A large recess in the rock garden filled with Mezereons, the soil at their feet carpeted with the Neapolitan Cyclamen and with Anemone blanda, gives a picture of happy grouping many would admire.

D. odora, the beautiful, tender, evergreen, winter-flowering Daphne from China and Japan, proves hopelessly incapable of happy growth in the east of England, even if given the protection of a south wall. Certain forms collected from colder districts, characterised by a restricted vegetative system, may survive, and one occasionally meets with a few instances of northern Japanese forms establishing themselves. They do not, however, thrive indefinitely and cannot be generally recommended as hardy, even with protection. In the west and in Ireland D. odora is in better condition, and if constantly pegged down it will survive many of the hard winters that are sometimes experienced even in the West Country. There are white and pink-flowered D. odora, and a particularly hardy form called Mazelii with white-margined leaves.

D. oleoides (fioniana hyemalis).—A very pretty evergreen less than 3 feet high, whose small, glossy leaves and rosy or lilac-pink flowers, recall those of a lax cneorum, are sparsely produced in May. It is a native of Crete, and needs a sheltered and warm site. When selecting specimens for planting, it is desirable to choose those grafted low down. This and most other species, not readily increased by layering, are grafted on Laureola, and unless the stock is well buried, and thus rendered partially inert, the scion will never root on its own account, and its life will be shortened.

D. rupestris (petræa) is one of the latest arrivals, and a very fascinating plant it is. It forms a low hillock-like bush of pretty foliage literally studded and fringed with pretty flower clusters that suggest those of a Bouvardia in shape, and are coloured a lovely rose pink. They are produced in quantity in May and June, and can be gently forced, so as to flower earlier. It is essentially an Alpine, and is more amenable to pot culture than any other Daphne. It thrives well under conditions suitable for D. cneorum, and it enjoys a similar position in the rock garden. The largest plants I have seen do not exceed a foot in height and diameter. It is a native of the Tyrol. *G. B. Mallett.*

Fig. 119.—THE GHENT INTERNATIONAL EXHIBITION: VIEW IN THE ANNEXE LOOKING TOWARDS THE ENTRANCE.

THE ROSARY.

WORK IN THE ROSE GARDEN IN MAY.

Newly-budded Roses of all kinds will require unremitting attention during May. Standard and half-standards on the Briar should be first looked after, as the tender growths will be exposed to the winds and will need securing to hazel sticks. Following these, buds on the dwarf Briar, Manettii, and De la Grifferie stocks should receive attention. When there is a difficulty in getting the dormant buds on dwarf plants to start into growth, I have found it a good plan to cut half-way through the stem of the plants just above the bud. This checks the flow of the sap at that point, and induces the buds to grow. The Rose beetle is, during May and June, very injurious to standard and half-standard Roses on the Briar; the pest is usually present during the evening and night, when it eats off the young growths. Prompt measures should be taken to destroy this pest. If the shoots of established dwarf and standard plants become too crowded by the end of May, the weakest growths should be cut off. An occasional dressing of dissolved bones applied at the rate of 4 oz. to the square yard, given during their growing season, is very beneficial to all Roses; it should be given during moist weather. Rose cuttings inserted in October, also those of Manetti and Briar stocks planted during the winter, should be given copious waterings during dry weather, and the soil about them be trodden firmly. Any vacancies in beds and borders can now be filled by plants turned out of pots. See that the plants are made secure by staking and tieing. Noisette and Tea Roses planted in borders under glass that have flowered can be pruned back to a few buds at the end of the month. They should be kept rather dry at their roots for some weeks, after which moisture and some good stimulating manure should be given, or the mulching may be renewed.

The autumn and a portion of the spring-grafted plants that have been repotted will, if sufficiently hardened, be ready for placing outside by about the 20th of May. It is a good plan to plunge the pots in beds up to their rim and afterwards to top-dress the plants with half-spent hot-bed manure. Any specimens that require a larger pot should be shifted before being plunged in the ground. Plunging keeps the plants cool during the hot, summer months, saves much watering, and enables the plants to make vigorous growth by the autumn. From

time to time during the growing season, the shoots may be pinched back a little, but straggling growths should be shortened considerably more, in order to induce the plants to make a compact and bushy growth. The early-forced Roses of both the H.P. and Tea-scented classes should be hardened off and placed outside on a bed of ashes. Those of the Tea section will furnish a supply of flowers in the autumn, but they must be kept dry at their roots so as to enjoy a period of rest for six weeks or two months. At the end of that time the surface soil can be taken out 2 inches and each pot be top-dressed with some turfy loam and bone dust. At the same time overhaul the drainage, and after moderate pruning, and waterings as required, the plants can remain outside until they break freely into new growth. When the new shoots appear, transfer the plants to a cool, light house or frame, giving an abundance of ventilation during the daytime, allowing the top ventilators to remain open a little during the night. Hybrid Perpetual Roses in pots should not be disturbed until the autumn, as no further bloom can be expected from them this season. The repotting of Roses on their own roots struck in hot-beds during the early spring, should now be completed, in order to obtain sturdy plants by the end of the season. The earliest plants should be given increased ventilation as the season advances. Fumigate occasionally in order to have the plants free from insect pests previously to taking the glass frames entirely off in the early part of next month. *J. D. C.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × CARMANIA

(O. HARRYANUM × O. LUCASIANUM THOMPSONII.)

IN 1904 this plant bloomed at Walton Grange and was given an Award of Merit at the meeting of the Manchester and North of England Orchid Society held on June 16 of that year, as O. Crawshayanum, Thompson's variety. This plant and five or six more that were raised from seeds derived from the same pod puzzled me for a long time, as they all differed greatly from my plants of O. × Crawshayanum. By chance I asked Mr. Stevens, the gardener at Walton Grange, which variety of O. Halli they were raised from: his reply was O. Halli nigrum. This plant was for a long time at Walton Grange and elsewhere considered to be O. Halli, but on examination of my specimen of it (from Walton Grange) when in bloom, I found it was not O. Halli, but O. Lucasianum, a rare and little-known natural hybrid between O. Halli and O. × cristatellum (the latter a natural hybrid between O. cristatum and O. Kegeljanii.)

Thus the difficulty at once disappeared, and the difference between the Walton Grange so-called "Crawshayanum" and my true one was at once accounted for; the difference being clearly seen when the parentage was revealed. All the plants raised at Walton Grange from this seed-capsule and called Crawshayanum must therefore be renamed by their owners O. × Carmania, the name that Mr. Thompson chose when I pointed the matter out to him and Mr. Stevens.

In addition to the variety here above-named, Mr. Thompson has shown a gigantic form of the so-called Walton Grange variety of O. Crawshayanum at Holland House Show, July 10, 1906, and another which was labelled superbum at Manchester Orchid Show, March 3, 1907, when it received an Award of Merit. Other plants are in the Earl of Tankerville's, Mr. Hanbury's, my own, and other collections, and hence they all become O. × Carmania.

Its parent, the so-called O. Halli nigrum, becomes O. Lucasianum Thompsonii, and plants of it are also in Earl Tankerville's and my own collections.

This note will enable the two errors to be corrected. *de B. Crawshay.*

CULTURAL MEMORANDA.

DISBUDDING PEACH TREES.

THE weather has been so cold this spring that much judgment will be required in the disbudding of these trees on open walls, and, although the superfluous shoots should be removed soon after the fruits are set, the work must be in a great measure regulated by the weather conditions, also upon the progress of the young shoots. The tiny fruits require some sort of protection for some weeks, independently of any artificial covering that may be provided; to remove the shoots a few days too soon, or in a wholesale manner, will result in failure. For this reason, it is best to extend the operation of disbudding over several weeks, in order that the tree may not receive too great a check at one time, as this would probably cause many of the fruits to drop.

In order to maintain a well-furnished and shapely tree, it is necessary to retain a new growth at the base of each fruiting shoot, and for choice it should be one on the upper side of the branch. Occasionally, another shoot may be left midway between this one and the leader, provided there is space for it to be trained in. This will replace the old fruiting shoot after it has furnished its allotted space, for the old fruiting shoot should be cut out after the fruit has been harvested. Should these trees when young make very strong growths, they should be transplanted annually, and this is a much better practice than root-pruning. After they have been lifted, the growths should not be disbudded too severely, but the superfluous shoots should be kept pinched during the growing season. This will tend to check the flow of sap, especially if the leading shoots are trained somewhat obliquely, although one need not hesitate to pinch them, if extra robust, when they have made about 12 inches of new growth. Peach blister, or leaf curl, is likely to be more in evidence when cold winds and a low temperature prevail, hence the advisability of retaining a few extra shoots a little longer than

FIG. 120.—CODIUM (CROTON) "FRED SANDER": AS SHOWN AT THE GHENT INTERNATIONAL EXHIBITION. See p. 258 in the last issue.

is usual, in case the selected ones are affected by this disease. Aphis must be guarded against by the use of tobacco-powder, which should be applied to the foliage directly the insects are detected. *J. Mayne, Bicton Gardens, Devon.*

FORCING TREE PÆONIES.

In the long list of hardy plants there are few subjects that can compare with the Moutan Pæony as regards easy culture, and the manner in which it adapts itself to flowering in pots. I doubt if there is any other plant having flowers of equal beauty that can be had in bloom so early in the year by gentle forcing. Undoubtedly there is a great future before it for forcing purposes, and I see no reason why it cannot be retarded in a manner similar to that which proves successful in the case of many other hardy subjects. Some of our leading nurserymen offer them in pots at reasonable prices already prepared for early flowering, but by many growers their value in this direction is overlooked.

With generous treatment they will live for years, and keep increasing in size. I have had plants in 16-inch pots with 20 magnificent flowers open at one time, and these easily obtained early in February, the flowers being little less in size than those developed in the open; ample foliage appears before the flowers expand, thereby increasing the utility of the plant for decorative purposes.

Plants growing in the open may be lifted and gently forced, October and November being the best months for their transference to pots, and when potted they should be placed in a cool Peach house. Plants, however, treated in this way seldom flower again for two seasons following. A temperature of 55° to 60° is necessary to flower them by the months of February.

Established plants may be brought into flower at the present time with little artificial heat, but a cold frame or cool house should be allotted them after flowering is over. By so doing a check is avoided, and flower-buds are formed early for the succeeding season's display. When the weather is warm, the plants should be placed outside and exposed to full sunshine. *W. H. Clarke, Aston Rowant Gardens.*

PLANTS OF POLYGONUM BALDSCHUANICUM FROM CUTTINGS.

Those who have ordered plants of Polygonum Baldschuanicum of the trade are recommended in No. 19 of the *Gartenwelt* to see that seedling plants are supplied, as plants raised from cuttings are of much slower growth. As this assertion is likely to give rise in the minds of purchasers to the impression that cutting-raised plants are inferior to seedlings, Herr Louis Spath controverts this in last week's (March 14) issue of that journal, instancing as the result of his ten years' experience that the shoots of the cuttings reached in the first year a length of 2 yards; and in the second year they formed luxuriant plants, with abundance of shoots. He believes that with the right kind of cultivation, plants from cuttings fulfil the most exacting requirements.

LAW NOTE.

A SUCCESSFUL RATING APPEAL.

A rating case of considerable interest to nurserymen was tried before the Easter Quarter Sessions for the Hertford Division of the county of Herts. Mr. George Beckwith, of the Hoddesdon Nurseries, appealed against the assessment of his nurseries, which had been increased from £240 (gross) and £180 (rateable) in 1896 to £740 (gross) and £370 (rateable) in 1907.

Mr. James Benjamin Slade, F.S.I., of the firm of Messrs. Protheroe and Morris, Cheapside, valued the glasshouses and the other hereditaments at a total of £4,881 4s., which would give a rateable value of £169 8s. Expert evidence was called by the appellant to prove that the buildings and general condition of the nursery were out of date. Mr. A. Lee Rogers, manager to Messrs. William Duncan, Tucker, and Co., Ltd., South Tottenham, horticultural builders, described the premises as a "freak" nursery, the stoke-holes were quite madness, and the boilers were "crank" boilers. He valued the buildings at £4,399.

Mr. Edmund Rochford, Cheshunt, stated the construction of the glasshouses was as bad as it could possibly be. They were the most inconvenient nurseries he had ever seen. The system of heating was wasteful. Personally, he would not have the glasshouses rent free.

The respondents called experts to prove that the assessment was equitable, the rating surveyor declaring that he first of all assessed these nurseries at £591 gross and £394 rateable, but on appeal to the committee the rateable was reduced to £370 and the gross was raised to £740.

Cross-examined by Mr. Macmorran, witness admitted that his original assessment was £524, but it was afterwards put down to £394.

After a quarter of an hour's deliberation the Court found for the appellant.

The appeal was, therefore, allowed with costs, and the figures of the assessment were reduced to £350 gross and £234 rateable, a slightly higher figure than the original amount.

NOTICES OF BOOKS.

* **"Fungus Diseases of Garden Plants and their Cure": Part I. Vegetables, Shrubs, Annuals, Glasshouse and Hothouse Plants.—For Professional and Amateur Gardeners and Nurserymen.**

The author of this little book obtained first-hand knowledge of the common fungus pests which trouble the gardener by practical experience in a nursery. He became a teacher of botany, and, three years ago, was commissioned by the Director of the Royal Botanic Gardens at Dresden to determine and give advice upon the various plant diseases sent in by correspondents. This book is well up to date in its nomenclature, and in its inclusion of recently-discovered plant-diseases. The Continental literature has been carefully searched; foreign journals, too, as is shown by the references to the *Gardeners' Chronicle*, have also been consulted.

The plan on which the book is arranged is excellent. It opens with a glossary explaining technical mycological words. This is followed by a chapter on the general microscopic structure of fungi. Herein is given the necessary amount of botanical information on such subjects as the structure of the leaf (cuticle, epidermis, stomata, &c.). The author then proceeds to a brief systematic survey of the fungi, in which the chief characteristics of the main groups are given, and also the diagnostic characters of the various genera mentioned in the book. Then come some practical hints for the beginner as to methods of examining microscopic fungi, how to cut and mount sections, how to make "hanging drop" cultures, and to carry out infection experiments, &c. Advice is given as to the price of a good microscope, and where to obtain it.

In the next chapter some sound advice is given—from the practical as well as the scientific standpoint—as to the possibility of controlling diseases by paying attention to plant hygiene in all its aspects. This chapter is one of the most important in the book, for it deals with a part of the subject that is too often completely overlooked both by the professional and the amateur gardener. Attention is directed to points concerning manuring, cultivation, supply of water, ventilation, temperature, light, &c. In an interesting chapter on "the direct control of disease without the use of chemicals," the special apparatus used in some parts of the Continent for removing single examples (scattered here and there in the bed) of diseased Tulip-bulbs, together with the surrounding sclerotium-infected soil, is described and figured.

The preparation of fungicides is then described. A preliminary warning is given against buying the often perfectly useless "sprays" that are put on the market. Directions are supplied for preparing Bordeaux mixture, soda-Bordeaux, and the ammoniacal solution of copper carbonate. Useful notes are given on the subject of soil fungicides.

The remaining part of the book (about 100 pages) is devoted to a detailed account of some 400 fungus diseases which attack those plants commonly grown in the garden, nursery, or greenhouse. These diseases are arranged in the alphabetical order of the plants attacked, and so are easily found. The general external (macroscopic) characters of each disease (such as can be seen with the naked eye or under a lens) are given first, followed by the microscopic characters of the special fungus causing the disease. Then the remedy is given; and here we find the author, by virtue of his practical experience, is able very often to give valuable advice. Thus, in the case of the bacterial disease of Hyacinths caused by Bacillus Hyacinthi septicus, the author points out that the variety "Baron von Tuyall" is more resistant than the variety "Tsar Peter." Similarly with the Heterosporium disease of Narcissi, the author is able to give a list of a number of resistant sorts. He adds that Bordeaux mixture has proved very efficacious against this disease, the sprayed plot giving 31 lbs. of bulbs, while the unsprayed plot produced only 20 lbs.

A criticism on one systematic point must be made. The author refers in two places (pp. 27 and 128) to the powdery mildew (Oidium Euonymi-japonicæ (Arc.) Sacc.), which occurs on the leaves of Euonymus japonicus, as "Microsphaera?" There is no evidence that the mildew in question belongs to this genus; from certain infection experiments which have lately been carried out, it seems probable that it belongs to the genus Erysiphe.

In treating of the Rust of Mints (Puccinia Menthæ Pers.), the author omits to state that the mycelium is perennial in the parts of the plant below ground, so that all infected plants ought to be dug up and burnt at once, special care being taken to remove all the underground parts.

It seems curious to find the Potato and its diseases omitted; we must suppose that they have been reserved for Part II.

The various general remedies to be adopted, arranged under the headings of Indirect Methods, and Direct Methods (a) without, and (b) with, the use of chemicals—are 12 in number, and are given in an Appendix. The method, or methods, applicable to the disease under consideration, are referred to by a number; this ensures a saving of space and avoids that wearisome reiteration of sentences such as "Spray with dilute Bordeaux mixture," which we find in some books on the subject.

The illustrations are good; a special word of praise must be given to the photograph of a bed of Anemones, showing the apothecia of Sclerotinia tuberosa at the places where some of the plants had been killed off in the previous season.

An English translation (at the same price) of Dr. Naumann's book, adapted for English gardeners by the inclusion of certain diseases, would be a welcome addition to the list of really useful books for gardeners in this country. *E. S. Salmon.*

* *Die Pilzkrankheiten gartnerischer Kulturgewächse und ihre Bekämpfung.* By Dr. Arno Naumann, Assistant at the Royal Botanic Gardens at Dresden. With three plates and numerous original illustrations in the text by J. Hartmann. (C. Heinrich, Dresden. 156 pp. Published at 3s.)

NEW HYBRID SAXIFRAGAS.

DURING the past year or two many hybrid Saxifragas have been distributed by Herr F. Sundermann, Lindau, Bavaria. Several are very distinct in habit and free flowering, and promise to be welcome additions to an already numerous and popular family of rock plants. With the exception of three, which emanated from the Court Garden at Sofia, viz., S. Borisii, S. eudoxiana, and S. Kyrillii, and S. ambigua, a natural Pyrenean hybrid, the others were raised by himself. Below is a list of the most distinct, with their parent species.

S. ambigua, D. C. (media × aretioides).—This is a natural hybrid, found in the Pyrenees in three forms, which have each received distinctive names. S. ambigua is nearer to media, with red sepals and petals; S. luteo-purpurea is intermediate in character, with red sepals and yellow petals; while the third, S. Lapeyrousii, has green sepals and yellow petals, and is more nearly allied to aretioides.

S. Bertolonii, Sund. (thessalica × porophylla).—By some authorities these two and S. Fredericii-Augustii are made synonyms, but there are certainly two distinct forms worth keeping up as species for garden purposes. These are the Italian S. porophylla, with its short, broad leaves, and S. Fredericii-Augustii (syn. thessalica), which is found in Greece and Macedonia, with much narrower and longer leaves, and prominent chalk pits along the margins. S. Bertolonii is nearer to the Grecian plant, with rosettes of leaves about 1½ inch in diameter, red stems, and leafy bracts tipped with green, bearing a nodding inflorescence of shortly-stalked red flowers.

S. Borisii, Kell. (marginata × Ferdinandii-Coburgii).—This more closely resembles the latter parent, with larger rosettes of silvery leaves and paler yellow flowers. The stems are 2 to 3 inches high, bracteste, glandular, and bear four or five flowers on each.

S. Burnatii, Sund. (cochlearis × Aizoon).—This is a natural hybrid, found on the Maritime Alps, more nearly approaching cochlearis in rosettes of leaves and inflorescence.

S. Elizabethæ, Sund. (Burseriana × sancta).—This was one of the first of the set to be introduced, having now been in cultivation three or four years. It is a very free-growing plant, making spreading carpets of green foliage. The glandular stems are about 2 inches high, tinged with red, and bear from three to five rich yellow flowers.

S. eudoxiana, Kell. (Ferdinandii-Coburgii × sancta).—In this plant the leaves are intermediate between the two species, with the silvery appearance of the first, and longer and more pointed as in the other. The stems are tinged with red, and bear a head of two or three deep orange-yellow flowers.

S. Kyrillii, Kell. (marginata × Ferdinandii-Coburgii).—This and S. Borisii are the results of the same cross, but the present plant is more like marginata. It has green glandular stems 3 inches high, bearing pale yellow flowers, which are as large as those of S. marginata. In the leaves the chalk pits are also more distinct than in the other hybrid of this cross.

S. Obristii, Sund. (Burseriana × marginata).—This is one of the most robust of the whole set, with the exception of S. Burnatii. It may be compared to an enlarged Burseriana, with the same pointed leaves, stems tinged with red and glandular, bearing three or four white flowers of the substance of marginata. It is certainly one of the best. A few chalk pits are evident on the margins of the leaves.

S. Paulinæ, Sund. (Burseriana minor × Ferdinandii-Coburgii).—Something after the style of S. Elizabethæ, but with more glaucous foliage and smaller rosettes. The stems are 2 inches high, tinged red, with pale yellow flowers ¾ inch in diameter. It is a neat and pretty kind.

S. Petraschii, Sund. (tombeanensis × Rochehana).—This plant (fig. 121) promises to be a great acquisition, as it is of neat habit, and very free flowering. There is not much evidence of Rocheliana, except in the flowers, which are large for the size of the plant. The illustration shows a plant in a thumb pot. It has compact glaucous foliage, red-tinged glandular stems 2 inches high, and three or four pure white flowers in each head.

S. Salomonii, Sund. (Burseriana × Rocheliana).—This has now been in cultivation for some years. It has the appearance of Burseriana, but is easier to grow than that species. The stems are tinged with red, while the flowers are pure white and more of the substance of Rocheliana. *W. I.*

HOME CORRESPONDENCE.

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

MEALY BUG ON VINES.—None of the correspondents writing on this subject mention the Hydrogas Powders sent out by Messrs. Williamson, Gemmell & Co., 263, Argyle Street, Glasgow. These fumigating powders are easily used, and they kill not only bug, but all other insect pests. I am using them exclusively for fumigating this season. *W. Priest.*

FIG 121.—SAXIFRAGA × PETRASCHII: FLOWERS PURE WHITE.

WEATHER IN NORTH CORNWALL.—This district has received a full share of the recent lapse into wintry weather. Snow commenced to fall at daybreak on Friday, April 24, and it soon came down thick and fast. By seven a.m. 1¼ inches were on the ground, and further falls of snow, interspersed with driving showers of hail, were frequent during the day. At times the storm approached a blizzard in severity. During Friday night 12° of frost were registered, and the melted snow in the rain-gauge was frozen to a thickness of nearly ¼ inch. Snow again fell during the earlier part of Saturday morning, and on Sunday evening it was still lying on the slopes of the Cornish mountains Rough Fox and Brown Willey. It is too soon to record the damage done by this unparalleled weather, but it is extensive. Early Potatos, which in many localities here are largely grown, are ruined. Apricots, Peaches, and Plums had set abundant crops: the ground beneath the trees is now littered with the tiny fallen fruits. Early Pears were in full bloom, and, although the blossoms have not yet fallen, they look deplorable. In the pleasure grounds the Rhododendrons and Camellias are badly injured. The Camellia bushes had previously suffered greatly from the severity of the early part of January, and nearly all had shed quantities of leaves. Curiously enough, last year's leaves are undamaged, but those of the previous years—and, in many cases, they had persisted for several years—have turned brown and fallen, thickly covering the ground below and around. One may well term this "the worst spring on record." *A. C. Bartlett, Pencarrow Gardens.*

"FRENCH CRAB" APPLE.—Is not Mr. Bedford who refers to this Apple as synonymous with Northern Greening on page 245, mistaken? The fruits of French Crab are so flattened, rounded, and so green that no one could confuse them with the conical fruits of Northern Greening. According to Dr. Hogg, the real and original name of the French Crab is "Winter" Greening, a name he asserts to be not only its prior name, but is far more descriptive of its character than is that of French Crab. Like many other Apples, it has been burdened with numerous synonyms. It would be well if Winter Greening were universally adopted, although there are numerous other Greenings—Northern, New Northern, Yorkshire, and Rhode Island. It is these frequent similarities in names which are apt to confuse. Easter Pippin, John Apple, Yorkshire Robin, and Ironstone Pippin are some of the synonyms of Winter Greening. *A. D.*

LILIUM NEPALENSE.—It is strange that so soon after referring to the scarcity of Lilium nepalense in my note on "Rare Indian Lilies," published in the *Gardeners' Chronicle* for February 22, page 115, I should discover a large importation of this Lily. A few days ago, on visiting a nursery, I was shown a quantity of large, well-ripened bulbs of this Lily, which, judging by their appearance, should yield a wealth of blossoms. My experience of bulbs imported in quantity is that a certain amount of variation occurs in the colour of the flowers, both the yellow and the purple portions being in some individuals of a richer hue than in others. The same firm has imported a considerable number of large bulbs of L. sulphureum (L. Wallichianum superbum), which is frequently found associated with L. nepalense. This being the case, it is strange that L. sulphureum should be so much more readily established in this country than the first-named species. The fact that these Lilies are not often sent here in quantity would appear to be due to the fact that they, as a rule, occur in widely-scattered districts in Upper Burmah, hence the expense of collecting is an important item. *W.*

SHORTNESS OF LIFE IN PRUNUS TRILOBA.—It is not an infrequent circumstance for plants of Prunus triloba cultivated in pots for early flowering under glass to die by degrees after successful flowering for several years. The causes for this mishap are remedial; generally, it is due to insufficient ripening of the shoots, and to the use of the wrong sort of Plum stock upon which the species is budded. The best stock is the St. Julien. In order to obtain perfect ripening of the shoots, the stronger ones should be cut back to three or four buds from the base, and the weaker be entirely removed. In consequence of this severe pruning, the resulting growths come away with vigour, and, the small spray being disbudded as fast as it appears, the sap is not diverted into shoots that are of little value for decorative purposes. The selected branches grow strongly, and if the plants are exposed in the full sunshine, afforded proper attention during the summer months, and are not allowed to become very dry at the root during the winter, they will live for many years. Prunus triloba requires exactly the same kind of treatment as pot Peach and other orchard house fruit trees, i.e., pots commensurate with the sizes of the plants, a fair amount of drainage, heavy loam, with plenty of rotten manure, and lastly, firm potting. *F. M.*

FRUIT PROSPECTS IN DEVONSHIRE.—The majority of fruit trees, whether against walls or in the open, give promise of a bountiful show of blossom. Apricots and Peaches have already set a good crop of fruits, but it remains to be seen whether these will be affected adversely by the cold climatic conditions of the past few weeks. Some experienced fruit growers think the fruit crops will be small this year, considering the comparatively sunless summer of last season. Morello and sweet Cherries are laden with blossom now expanding, but I fear the cutting winds from the north will prove disastrous in the case of those trees trained on northern aspects. *J. Mayne, Bicton Gardens, Devon.*

Fruit Prospects in Worcestershire.—On Thursday, April 23, snow fell in different parts of the country, and on Friday morning the thermometer on the screen registered 6° of frost. This was followed on Saturday morning by 4°, and this morning (Monday) by 3° of frost. After careful examination to-day (April 27) of the Plum blossom in the County Experimental Gardens at Droitwich, I find the following varieties injured in the order given:—Most injured.—Blue Rock, Prince of Wales, Bittern, Mallard. Less injured.—*Kirke's Seedling, Curlew, Grand Duke. Still less injured.—Jefferson & *Victoria, *Prince Engelbert, *Diamond, *Swan, Rivers' Early Prolific, *White Perdrigon, *Czar, Monarch, *Coe's Golden Drop. Least injured.—*Reine Claude de Bavay, *Pershore, *Winesour, *Transparent Gage, *Purple Gage, *Early Orleans, and *Sultan. Those marked with an asterisk still have many unopened flower buds, and, therefore, are capable of yielding good crops if the weather proves propitious. The following varieties had not commenced to open their flowers last week, and are at present uninjured.—Belgian Purple, Cambridgeshire Greengage, Belle de Louvain, Denniston's Superb, Early Transparent Gage, Leigel's Apricot, July Greengage, Oullin's Golden Gage, Orleans, Peach, Red Magnum Bonum, White Magnum Bonum, Smith's Purple Prolific, Pond's Seedling, and Washington. All these trees are grown in the open, and have no protection from north-west, north, or north-east winds; the ground on which they are planted slopes sharply to the north *J. Udale.*

The Cultivation of the Clematis.—Mr. John Smith, in his article on "The Cultivation of the Clematis" in the issue for April 4, p. 218, states:—"When the graft has started into growth, the portion of the stem where the stock and scion are joined should not be imbedded in the soil, and when shifting the plants into larger pots this junction should be raised 2 or even 3 inches out of the soil, to fully expose the union of the graft, that it may become hardened, and thus form a woody texture." I do not agree with Mr. Smith's statement that the cause of failures in young plants is due to embedding the scion. When the Clematis is grafted, the scion should be buried, to enable it to form roots, and thereby assist the plant. If a Clematis that has its graft buried be examined, there will be found a profusion of roots on the part above the union, but the stock will be found to have made little progress in this direction. It does not matter about the wood becoming hardened, for if the scion is buried, it becomes adapted to being in the soil, as is seen in the abundance of roots it produces. I graft several thousand Clematis every year, and I do not find that embedding the scion is a failure, but the contrary. *E. C. H. Westley, 7, Lindley Street, York.*

Spring Flowers at Kirkmaiden, N.B.—While Snowdrops and Crocuses were considerably later than usual in flowering this season, Daffodils have—in some instances, at least—put in an appearance before the usual time. The first to open here was Narcissus Scoticus, a very graceful and free-flowering Daffodil, which, when planted on verdant lawns or beneath venerable trees, where there is usually abundant and congenial leaf-mould, creates memorable effects, and is, perhaps, of all the fair flowers of its class, the most valuable for naturalisation in those picturesque situations. I find that such fine Narcissi as Emperor and Empress, Grandis, Maximus, and the imperial Madame de Graaff are also highly successful, and eminently ornamental, when planted in Grass. These are at present in exquisite bloom. But perhaps the most impressive of all Narcissi, when planted in such conspicuous positions and with such a lovely environment of greenery, are N. ornatus and N. poeticum, both of which are very early blooming and strikingly attractive. Here they are invariably interspersed with Tulips, of which the first-flowering forms are charmingly associated with Narcissus ornatus, the latest varieties being contemporaneous with Narcissus poeticus. In my garden at this season of marvellous floral resurrection, the predominating glories are the flowering trees, pre-eminent among which is the Persian Plum, Prunus Pissardii, with its delicate white flowers and dark, chocolate-coloured leaves. Very beautiful, in many instances, are also the virginal shoots from the Rose trees, especially those which adorn Warrior, an artistic advance upon Papa Gontier; W. E. Lippia, a lovely native of Newtownards; and Madame Joseph Combet, of which the variety last mentioned is a semi-climbing and grandly effective Rose. *David R. Williamson, Manse of Kirkmaiden.*

Forcing of Bulbs.—The following is an account of what I venture to think is a new method of forcing bulbs in this country, although it has been practised in America for a number of years. Mr. Robt. Whyte, gardener to Jno. Steward, Esq., Carlton Curlieu Hall, near Leicester, has practised the system with great and uniform success, which has led me to make public his methods. The preparation of the soil I will give in Mr. Whyte's own words—"With regard to the soil used, it is mixed in the following proportions: four barrow loads of good old turf, which has been stacked for at least nine months, and into which has been put between each layer of turves a good sprinkling of soot and fowl manure; one good barrow load of manure from a spent mushroom bed, half barrow load of leaf-mould, and a small quantity of suitable chemical manure. The turf is carefully broken up by the hand, the manure and leaf-mould is put through a sieve having a half-inch mesh, and the whole is very carefully mixed and turned many times before it is used. Care must be taken that the soil is not too wet nor too dry. With this mixture I have never had a failure. I may add, I never use pots of a less size than 6 inches in diameter, and I never plunge the pots." In potting the bulbs, unusually large receptacles are employed, a 6-inch pot being used for a single Hyacinth bulb, and other bulbs are potted in a similar proportion. One large crock only is placed over the hole in the bottom of the pot; the soil is then made very firm, and far more so than is usually the case. The bulbs are inserted with just the "necks" visible above the surface. As soon as they are potted, and without watering, the bulbs are placed on the floor and on shelves, one above the other, in an old, disused cow-shed, from which all light is excluded. Here they remain for at least nine weeks, during which time they are given no water and no attention whatever, excepting that during severe frost the pots are covered with dry hay. I visited Mr. Whyte on March 4th of the present year, and found his bulbs in all stages of forcing; some had finished their flowering, others were in full bloom, and still others were developing their inflorescence in various stages. I was impressed with the very dry condition of those which still remained in the dark shed. The surface soil was so dry and so firm that one had great difficulty in pinching a little off with the thumb and finger, while every pot when tapped rang as hollow as a bell. Yet the soil, when turned out of the pot, was not really dry; and healthy white roots ran right down to the drainage hole. The bulbs are taken out of the shed as required, and put into a cold frame, and are shaded with mats until the leaves become green. Then, and not till then, are they watered with tepid water. The mats are removed, and ventilation is given on all fine days. Here the plants remain until they have made ample foliage. It will at once be seen wherein this system of bulb-forcing differs from the method usually employed in this country. To me the most remarkable thing is the dry condition of the soil. Besides attaining uniformly good results from this system, Mr. Whyte further claims a great power of retarding his flowers, for he says that the bulbs may be kept almost at a stand-still for weeks in the darkened shed so long as water is withheld, and as soon as the leaves have become green and water is given the blooms develop just as well as if they had been brought out earlier. Bulbs are not

Fig. 122.—Cattleya Mendelii, Holford's variety, as shown at the Ghent International Exhibition. (See p. 284.)

the only plants cultivated well at Carlton Hall; one might instance Gloxinias in full bloom early in the new year, Adiantum Ferns with their new fronds fully developed on March 4th, really good Grapes produced on vines which have been grown in pots for eight or nine years, and of many others. *J. Duncan Pearson, The Nurseries, Lowdham, Notts.*

Gunneras.—Frequent references have lately been made by correspondents in relation to the hardiness and moisture-loving nature of these plants. Gunneras, however, can have too much water in winter, and it is by no means an unknown thing for a plant to refuse to grow when planted under the most approved conditions of moisture, &c. Too frequently this condition of root-moisture is regarded as the all-important item, and errors are made in consequence. It is, however, quite true that in certain soils, and especially in those of a light nature, these plants revel in abundant moisture in summer-time and are not injured by wetness at the roots in winter. In soils of a very heavy nature it will be found a good practice to excavate a cart-load of the clay soil and to replace it by some light loam and leaf-mould. In this way an incentive is given to an early and luxuriant growth. It is not every garden, however, that is possessed of a pond, lake, or stream, but it is well to remember that these giant-

Fig. 123.—Cocus nucifera var. aurea, as shown at the Ghent International Exhibition. (See p. 257.)

leaved plants can be well grown away from the water's edge. In the late Mr. Robert Parker's nursery at Tooting, a fine plant of *G. scabra*, with a leaf spread of some 15 feet to 18 feet, was for many years an object of interest and beauty. The example in question was planted in the light soil of the nursery, and below which was gravel and sand. The plant was never watered except by the rains, and the only winter protection given was a covering of loose bracken fronds placed over the crowns. *E. H. Jenkins.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

The Cattleya house is now very interesting, for many of the plants are either in flower or have their flower-buds advanced in the sheath. Amongst the showiest and most beautiful members in flower are Cattleya Mendelii, *C. Mossiæ*, *C. Laurenceana*, *C. Schröderæ*, *C. Skinneri*, *C. Warneri*, *C. Schilleriana*, and the innumerable hybrids derived from the above, such as *L.-C. Canhamensis*, *L.-C. callistoglossa*, *L.-C. Aphrodite*, *L.-C. Latona*, *L.-C. Hyeana*, *L.-C. G. S. Ball*, *L.-C. highburyensis*, *L.-C. Hippolyta*, *B.-C. Digbyano-Warneri*, *B.-C. Digbyano-Mendelii*, *Brasso-Cattleya Digbyano-Schröderæ*, *B.-C. Digbyano-Mossiæ*, *Lælia cinnabarina*, *L. purpurata*, &c. Only strong, healthy plants should be allowed to flower; weak plants of valuable varieties should never be permitted to develop their inflorescences, which should be removed as soon as they appear. Plants permitted to flower should be given sufficient water to assist the proper development of the blooms, and the rooting material should be kept moderately moist until the period of flowering is past. Specimens with their flowers fully developed are best grouped together at the coolest end of the house, as the warmth and moisture needed by the many other inmates now developing their growth often proves detrimental to the expanded flowers.

Cattleya gigas.—This beautiful summer-flowering species is one of the strongest-growing members of the genus, but it is often a shy bloomer. The plants have now developed a few inches of new growth, and a position close up to the roof glass at the warmest part of the Cattleya house, where they will receive an abundance of light and air, should be selected for them. Failure to flower these plants satisfactorily may often be traced to over-watering during their early stages of growth. Until such time that the new growths are well advanced, and the flower-buds are formed in the partially-developed growths, water must be sparingly afforded. After this time, frequent and liberal waterings may be given and continued until the flowering season is passed and the pseudo-bulbs are completely developed. The re-potting of Cattleya gigas is best deferred until after the flowering period.

Potting.—The present time is a busy season for re-potting, as many plants are now showing signs of renewed activity, and will require attention. Such species of the long-bulbed section as Cattleya granulosa, *C. velutina*, *C. bicolor*, *C. Harrisoniæ*, &c., have started into growth, and the autumn and winter-flowering hybrids, after their long rest, are also commencing to grow. Each year these hybrids become more numerous; the following are among the most desirable kinds, viz.:—Cattleya Portia, *C. Mrs. W. J. Whiteley*, *C. Mantinii*, *C. Ariel*, *Lælio-Cattleya Charlesworthii*, *L.-C. Sunray*, *L.-C. Cappii*, *L.-C. Helena*, *L.-C. Andromeda*, *L.-C. Warhamensis*, *L.-C. Ophis*, *L.-C. Epicastii*, *L.-C. Cassiope*, *L.-C. Clive*, *L.-C. Ingramii*, *Brasso-Cattleya Madame Charles Maron*, *B.-C. Mrs J. Leeman*, &c. There should be no delay in top-dressing and re-potting any of these plants that need it, carrying out the work according to the directions given in a former Calendar.

Seedlings.—In gardens where the raising of seedling Cattleyas and Lælio-Cattleyas is carried on there is much re-potting to be done throughout the spring and early summer. These young, vigorous plants are more or less active from the time they complete the first small bulb up to their flowering stage. As nearly all of them produce roots freely, and soon become root-bound, a liberal shift should be afforded them when re-pottting, and especially the stronger-growing kinds. Those that are approaching their flowering stage should be grown in the Cattleya house, but the younger plants will do better if they are kept by themselves in a small house set apart for them in which a warm, moist atmosphere can be maintained. Overhead spraying is of great benefit to these seedlings, and this should be practised both morning and afternoon on fine days, closing the house early in the afternoon to conserve the sun's heat.

PUBLIC PARKS AND GARDENS.

By James Whitton, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Games in parks.—Judging from the numerous inquiries made regarding the regulations affecting the various games permitted in the Glasgow parks, there appears to be a desire on the part of other public authorities to provide greater facilities for outdoor games in open spaces under their control. The facilities that can be afforded for the various games must necessarily be governed by the situation. In limited areas sports such as football and cricket cannot be allowed, but space may be found for tennis and croquet courts and for bowling greens. The general recreation ground must always remain the strongest feature in a public park, especially those situated in a district in which the members of the working class largely reside. The importance of this point is forcibly brought before my notice at the present time. The day is Easter Monday, which is also the spring holiday in this city. As I write I can see a great part of our largest park, extending to about 70 acres, devoted to golf, on which, perhaps, not more than three or four hundred persons are enjoying themselves at the game. On the other side of the park there is a similar area set aside for general recreation, and in this part of the park there are probably more than 10,000 children, with a few grown-up persons amongst them. It is this feeling of freedom which gives the charm to an outing in the country to town-bred children, and when they have sufficient space for their gambols they are easily controlled. This is exemplified in the instance I refer to to-day, for not more than one constable and two park workmen are keeping this large crowd of youngsters in perfect order.

Areas for special games.—No two public parks provide similar regulations for the control of games: the following are adopted in the Glasgow park. The games of golf and bowling are permitted at a charge which barely covers the cost of maintenance. Clubs are not recognised, and persons forming themselves into a club have no special privilege, but must take their chance of playing in turn with the general public. The by-laws permit the parks committee to grant to a club permission to hold a special match, but few applications are made, as the players usually arrange such matters amongst themselves. We have two 18-hole and one 9-hole courses. Bowling is provided for in 17 full-sized greens, that are distributed in six parks: as far as is practicable, the greens are arranged in pairs, but in one park there are three in a group. Bowling is a very popular game in Scotland, and the Glasgow public are agitating for more greens. In most of our parks a space is set aside for football, but no regulation is in force for this game, and the players that first take possession are allowed the ground. This system has now become very unsatisfactory, and the matter is at present under consideration by the parks authorities. Cricket is not a popular game in Glasgow, and possession of the pitches is given to cricketers in a somewhat similar way that the football grounds are given to the footballers. We are, however, experimenting with an enclosure for the game, and so far the result has been satisfactory. Tennis and croquet are not much favoured by the general public in this district, and those persons who play games generally form clubs on private grounds outside the parks.

THE FLOWER GARDEN.

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

Spring bedding.—The present is a favourable time for taking notes with a view to suggesting improvements for another season.

Seeds of Wallflowers should now be sown in shallow drills, transplanting the seedlings as soon as they are large enough in rows 1 foot apart, allowing 6 inches between the plants in the rows. A selection should be made of the choicest plants of Forget-me-nots (Myosotis), with a view to placing them in the reserve garden later, where they may be allowed to seed. If the ground about them is kept moist, the seeds will germinate freely. If this plan is not adopted, seed capsules may be harvested and hung up in some dry shed or other suitable place, and the seeds sown later in beds. The double form of the White Rock Cress (Arabis albida) is a favourite plant for spring bedding, and it is very effective when intermingled with Tulips. Cuttings inserted in gentle heat as soon now as they can be procured will root readily; this plant may also be propagated in the same manner as A. lucida, by division. Alyssum saxatile may also be increased by division. Sever the shoots from the plants with a portion of the old root-stock attached, and place them in rows in a light sandy soil, pressing the latter firmly about them. Sprinkle the plants daily in dry weather until they are well established. By this system of propagation suitable plants will be obtained for planting in the autumn. The Alyssum may also be increased by cuttings rooted in gentle heat and by seeds. Aubrietia deltoidea is a floriferous plants for spring bedding. There are many varieties, of which græca (blue), Hendersonii (dark purple), Ingrami (large rosy-pink), and variegata may be considered the best. Aubrietias should be propagated by divisions or by cuttings, for when they are raised from seeds, the flowers are very rarely true to colour. Auriculas, Double Daisies, Pansies, Polyanthuses, and Lunaria (Honesty) are other useful spring-flowering plants. The purple Honesty makes a fine subject for intermingling with Cornus sanguinea variegata, and is readily propagated from seeds sown in May. A suitable place for these plants during the summer months is a shady quarter in the kitchen garden. Phlox amœna flowers in April and May; the inflorescences are of a deep rosy-pink colour. The plants spread rapidly, and, similar to P. Nelsonii (white) and P. divaricata (lavender), is very free in flowering. After the flowering is passed, the plants can be increased by division, or by cuttings inserted in pots of sandy soil placed in a shady frame.

Sub-tropical plants intended for summer bedding should now be attended to. The strongest and best plants should be potted in 6-inch pots, in which is ample material for drainage; a good rich compost should be used as a rooting medium. The majority of these plants are benefited by overhead syringings of clear water; they must not be allowed to lack moisture at their roots, and manurial assistance should be given occasionally in applications of weak liquid manure. Fire-heat should now be dispensed with as far as possible, and the greenhouse ventilated freely whenever the conditions will admit. Aphis must not be allowed to infest the plants, and fumigations must be given whenever necessary.

Dahlias.—Shift into larger pots the rooted cuttings of these plants before they become pot-bound. Stake and tie the more forward plants, and place them in cold frames, affording protection at night time from the cold, and a free ventilation during the day. When danger from frost has passed, remove the lights entirely during the day time for the purpose of hardening the plants before they are planted in their summer quarters. The old tubers may be divided and planted in the shrubbery, the reserve or the kitchen garden, where they will furnish a supply of cut flowers. Plant the old root-stocks from 2 to 3 inches deep.

Herbaceous borders.—Ply the Dutch hoe freely to encourage growth and keep down weeds. Destroy any slugs that may be found amongst the young plants.

Half-hardy annuals.—Owing to the cold weather, these plants have still to be accommodated in heated structures, which are now needed for other purposes. Temporary structures may have to be provided for them, and, although this work requires a considerable amount of time, it will be better than risking the plants in the open.

Bedding plants.—The hardening of the numerous varieties of summer bedding plants, such as Pelargoniums, Fuchsias, Abutilons, Humea elegans, Calceolarias, &c., must now be considered, for bedding plants that are allowed to remain in warm houses after this date seldom improve thereby. Shade the plants for eight or ten days after their removal from the warmer house.

Ivy on walls.—When the foliage becomes brown and untidy from neglect and dead wood and leaves accumulate in the shoots, forming a harbour for insect pests, there need be no hesitation in cutting off the whole of the foliage, and if this is done now, the plants will soon be furnished again with bright green leaves. Opportunity should be taken, when Ivy is pruned, for cleaning out the rubbish with a stream of water from a hose or garden engine. If the latter is used, a little petroleum should be placed in the water, for this will destroy any red spider that is present; spider is the principal insect pest of ivy.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

The weather here during the past fortnight has been most unfavourable for the growth of all kitchen garden crops. Severe frost, cold, north-easterly winds, and a heavy fall of snow have prevailed, and the planting out the various crops raised under glass has of necessity been held over. Every effort will now be needed to compensate for this arrear in order to prevent the various kinds of plants from becoming ruined.

Peas cultivated under glass for an early supply should now be well set with pods, and, to assist the latter to swell, the points of the growths should be pinched out and all side growths removed. Well diluted liquid manure should be applied on alternate waterings, and an abundance of ventilation should be given whenever the weather is favourable. Successional batches of Peas in large pots or boxes may now be safely transferred from the houses to the open ground. Select, as far as is possible, a sheltered, sunny position, such as one on a south border, where the pots can be partly plunged, thus enabling the roots to penetrate into the soil of the border, from which they will receive additional nourishment. The plants should be made secure with strong stakes, and, if frost is apparent, afford them some slight protection. Peas cultivated in this manner give excellent returns, provided they are not overcrowded in the pots, at a little cost, and are available some three weeks earlier than when planted out. Such excellent varieties as Duke of Albany, Edwin Beckett, Alderman, and Quite Content are suited to this system of culture.

Continue to plant Peas which have been raised under glass, and to ensure a succession sow seeds of reliable maincrop varieties every 10 days.

Potatos.—Complete the planting of this vegetable with as little delay as possible. Early varieties in cold frames, skeleton pits, or on early borders should be moulded up immediately the growth is 2 or 3 inches high. Guard against frost injuring the tender shoots, for, however slightly the tops may appear to be damaged, the crop is bound to suffer from its effects.

Tomatos.—Plants intended for planting in the open should be grown in a temperature ranging from 50° to 55°, affording them all the light and air possible. The larger the plants are at the time of planting without being spindly, the greater will be the chance of success. Grow those varieties only which set their fruits freely and ripen them quickly. Plants in all stages of growth under glass should have abundant ventilation and a dry atmosphere about them, otherwise disease will appear. Liberally feed plants which are heavily laden with fruits, and remove the latter immediately they show signs of colouring, finishing them off in a warm plant-house or room.

French Beans.—Place three seeds in each 48 pot, and germinate them in a cool house or pit for planting out on a warm border, where shelter can be afforded towards the end of May.

Runner Beans.—I have always found these to succeed much better and with less trouble when the seeds are sown in pots or boxes under glass. By this system they are safe from danger by frost, the ravages of slugs, &c. The seeds should be sown thinly early in May, and the seedlings, after being properly hardened, should be planted out about the end of the same month.

Spinach (New Zealand).—This is a most desirable vegetable, often proving extremely useful during hot, dry summers, as the plants revel in drought and sunshine. A small bed planted on a south border will generally suffice for any medium-sized establishment. The seed is best sown in boxes at this season, and the seedlings planted out, when the weather is sufficiently warm, but it must be borne in mind that the plants are easily injured by frost. Seeds may be sown in the open garden during the first week in May.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

The late Muscat house.—All necessary work of stopping and tieing the shoots, thinning out superfluous branches, manuring and watering of the borders, should receive attention before the vines are in flower, for the plants must receive no check during their period of flowering. Muscat Grapes are not the easiest to set, and no pains should be spared to ensure effective fertilisation; this may be assisted by tapping the rods during mid-day and by introducing into the vinery pollen from some free-setting variety. An atmospheric temperature of 70° during night time, with a rise of 5° or 10° when the weather is cloudy, should be maintained, and in order that the air should circulate in the vinery the ventilators should be opened slightly, except during cold, windy weather. All necessary damping of the paths and borders should be carried out on bright sunny days in the early morning and afternoon, so that in the middle of the day the atmosphere may be dry in order that the pollen may be readily distributed. The final thinning of the surplus bunches should be delayed until it is apparent which of them have their berries fertilised, and any thinning of the berries should also be delayed for the same reason. Muscat vines should be more lightly cropped than such varieties as Alicante and Black Hamburgh.

The early Muscat house.—Vines that are well furnished with healthy foliage and whose fruits are freely swelling will be actively growing at their roots, and they will need to be supplied at intervals with copious applications of tepid liquid manure, or be stimulated by a light top-dressing of some suitable quick-acting manure that should be applied before the borders are watered. As the sun's rays become more powerful there will be a danger, particularly in badly constructed houses, of the leaves becoming scalded or burned, but this can be avoided by careful ventilation. In some cases it may be desirable to lightly shade the glass with a thin coating of limewater or some similar wash. Maintain a moist atmosphere in the vinery by frequent damping.

The early Peach house.—As soon as the fruits on early forced trees commence to change colour discontinue syringing the foliage and slightly increase the ventilation, allowing the ventilators to remain open a trifle at night time if the weather permits. This will give a slightly cooler condition in the house that will improve the flavour of the fruits and lengthen their season. The Peaches should be gathered before they are sufficiently ripe to drop, for if they are allowed to become dead ripe while on the trees their flavour will be impaired; they should be gathered at the point of ripening and be placed in a fruit room. When stable manure is employed for mulching, wood lice are often troublesome in attacking the ripe fruit. These pests may be trapped by slices of Beetroot or Mangel hollowed on one side and placed with the hollow side downwards on the borders. The traps should be examined in the morning and the insects destroyed by brushing them into a vessel of boiling water. Ants are sometimes equally destructive. The number of these pests may be lessened by placing in their haunts coarse sponges that have been dipped in sugar syrup

THE HARDY FRUIT GARDEN.

By F. Jordan, Gardener to The Dowager Lady Nunburnholme, Warter Priory, Yorkshire.

Gooseberries and Currants.—Both these fruits are usually trained in bush form, but they may also be grown as standards and cordons, under which systems they are both ornamental and fruitful. For standard plants choose healthy young trees and train the leading shoot to a straight stake, pinching back all the side growths for about a distance of 4 feet up the stem. Sufficient buds should be left to form the head, and beyond this the plants should be stopped. Young bushes should have all their bottom buds removed if these were not destroyed when the cuttings were inserted. Gooseberry bushes should have at least 1 foot of clear stem. The Gooseberry crop promises well, but these fruits are easily damaged by late spring frosts. Almost as soon as the leaves are formed they are often attacked by the Gooseberry and Currant sawfly, which commences to hatch at the end of April and the beginning of May. Prompt measure should be taken to destroy these pests before much damage is done to the bushes. It is a good plan to examine the shoots two or three times a week for the purpose of destroying any caterpillars that may be found, pinching them with the fingers. A dusting of fine lime and soot is often beneficial to the trees, as it destroys many insects on the plants and in the ground, but an application of Paris Green or some other poisonous insecticide is more efficacious, although there is a danger of some getting on to the fruits, and these poisons should not be used, except in extreme cases, and then the fruits should always be washed before they are sent to the kitchen. Green and black aphis often infest the young shoots of Currant bushes. These may be destroyed by syringing with quassia extract or with one of the many insecticides on the market. Next morning the bushes should be washed with clear water from the garden engine.

Wall trees.—None of the protective material must be removed from fruiting trees on walls unless the weather becomes warmer and more seasonable, and in the case of Peaches and Nectarines, great care must be exercised to see that they are not injured by frost. When the protective materials are removed examine the trees for insect pests; they will probably be found where branches of Spruce or similar evergreens have been used. The trees must not suffer from lack of moisture at their roots. In borders that are in a good condition, and where the roots are near to the surface, it will be almost impossible to overwater the trees in a moderately dry season.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Violets.—Plants intended for autumn and winter-flowering under glass should now be planted out in land that has been well manured and has received a liberal dressing of leaf-soil and wood ashes. These materials should be lightly forked in before the Violets are planted. Select plants with a single crown of last season's growth, and place them at a distance of 18 inches apart each way. Spread the roots well out, and should the ground be dry, afford a good soaking of water at the roots directly they are planted. Syringe the foliage every evening with a very weak solution of manure water, for this will assist in keeping down attacks of red spider. Damping overhead or syringing should be practised all through the growing season, and in hot, dry weather a syringing in the early morning will prove beneficial, placing enough liquid manure in the water to just colour the latter. Stir the soil frequently with a hoe, and never allow the roots to become dry, but rather keep the plants on the damp side during their season of active growth. By the time August arrives they should be well established and have developed many strong crowns. Six of the strongest of these should be retained to each plant, and the remaining runners removed. Lightly fork up the soil beneath the layers that are allowed to remain, and press the stems into the ground, placing a stone on them to keep them in position. Roots will soon form; the use of stones is much better than pegs, as the former will keep the soil about the crowns damp. Young established crowns should now be well rooted and ready for transplanting into an unheated frame. All the side shoots and runners should be cut off directly they appear, in order to allow the plants to receive the full benefit of air and sunshine that they may become thoroughly ripened.

Violets in frames.—A good supply of Violets may be had during the winter season by the use of an unheated frame. This should be placed in a south aspect, where the plants will receive a maximum amount of sunshine in winter. The soil should slope from the back to the front of the frame, and be within 6 inches of the glass; it should consist of three parts good loam, one part leaf-soil, and one part wood ashes and sand. When placing the plants in the frame, lift them carefully with the runners attached, but some of these rooted crowns are almost sure to become detached. Any that are broken off may be used for filling vacant places in the frame, as they will produce flowers. Upon no account allow the parent crown to become smothered with useless side shoots, as these will give no flowers, and will be the cause of damping in the plants. After they are planted in the frame, afford one good soaking of tepid water, which will be all the moisture they will require during the whole of the winter. After planting, shade the glass and keep the frame closed for a couple of days, but when they are established in their new quarters, afford ventilation freely on all favourable occasions. Guard against damping in the plants, and remove any injured leaves or flowers that have become damaged in the process of transplanting. Protect the plants from frost all through the winter.

Fig. 124.—Sophronites grandiflora, as exhibited in Major Holford's collection of orchids at the Ghent International Exhibition. (See p. 284.)

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

Appointments for May.

FRIDAY, MAY 1—
Franco-British Exhibition (Shepherd's Bush) opens this month.

SATURDAY, MAY 2—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

TUESDAY, MAY 5—Nat. Amateur Gard. Assoc. meet.

WEDNESDAY, MAY 6—
Croydon and District Spring Fl. Sh.

THURSDAY, MAY 7—Linnean Soc. meet.

MONDAY, MAY 11—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, MAY 12—
Roy. Hort. Soc. Coms. meet. Roy. Gardeners' Orphan Fund Coming-of-Age Festival at the Hotel Cecil, Strand. Nat. Rose Soc. Com. meet. Brit. Gard. Assoc. Ex. Council meet.

SATURDAY, MAY 16—German Gard. Soc. meet.

TUESDAY, MAY 19—
Devon County Agric. Sh. at Plymouth (3 days).

WEDNESDAY, MAY 20—
Roy. Bot. Soc. Exh. at Regent's Park.

MONDAY, MAY 25—
Ann. meet. and dinner of the Kew Guild at the Holborn Restaurant. Anniversary meet. of the Linnean Soc.

TUESDAY, MAY 26—
Roy. Hort. Soc. Sh. in the Temple Gardens, Thames Embankment (3 days).

WEDNESDAY, MAY 27—
Ann. meet. Brit. Gard. Assoc. in Essex Hall, Strand, 7 p.m. Bath and West and Southern Counties Soc. Sh. at Dorchester (5 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—50.5°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, April 29* (6 P.M.): Max. 63°; Min. 47°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April 30* (10 A.M.): Bar. 30·1; Temp. 55°; Weather—Raining.
PROVINCES.—*Wednesday, April 29* (6 P.M.): Max. 58° London; Min 43° Scotland N.E.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Herbaceous Plants, Liliums, Begonias, Gladiolus, &c., at 12; Palms and Plants, Coniferæ, Ferns, &c., at 3.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—
Unreserved Sale of a choice selection of Plants from the "Bank House" collection of Orchids, by order of S. Briggs-Bury, Esq., by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 1.

FRIDAY—
A selection of valuable Plants from the "Coundon Hall" collection of Orchids, by order of G. Singer, Esq., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

The Ghent Exhibition.

Our readers are already aware that the usual Quinquennial Exhibition of the "Société Royale d'Agriculture et de Botanique de Gand" is this year invested with even more than its usual interest by reason of its concurring with the celebration of the centenary of the Society's existence.

History seems to have a fascination for most people, and directly an institution or association achieves success of a noteworthy character, a special interest is shown in the circumstances which attended its birth. The history of the Ghent Horticultural and Botanical Society affords a striking instance of a great society with a world-wide reputation which has gradually developed from a most humble origin. The tale was told in an interesting manner in the article by M. Couterick which appeared in our issue for April 11 last. At the commencement of the nineteenth century an inn or publichouse (see fig. 125) in a suburb of Ghent was tenanted by a gardener, and it therefore became a favourite resort for the more enthusiastic cultivators of plants. They met there for the purpose of discussing subjects in which they were mutually interested, and doubtless the inn "Frascati," so far as the conditions of such a house would allow, served to fulfil the same functions as those which are now more perfectly provided for by the debating societies which exist in most civilised countries. Gradually the members would fall into the habit of carrying their more interesting plants and specimens to their favourite resort for comparison and criticism, thus establishing a series of informal exhibitions. But in February, 1809, after hearing from Franz van Cassel, gardener and botanist, a narration of the wonders in cultivation and the new plants he had seen during a recent visit to England, it was resolved to establish a society for the purpose of holding flower shows and promoting the culture of plants in Ghent.

But we need not pursue these details further; the circumstances which attended the carrying out of this resolution, and the continual growth of the newly-established society which afterwards took place, have been already explained. For very many years past, the Ghent Society has held quinquennial exhibitions that have attracted horticulturists from every part of the world, and the more recent shows have been attended with such success that, as was mentioned by the President, M. Callier, at the luncheon after the conclusion of the judging of the exhibits on Friday, it seemed difficult to see in which direction further progress might reasonably be looked for. It was this circumstance which led the late Count Kerchove de Denterghem to devote the greater part of his address to the jury of five years ago, to advocating the need that existed for giving increased attention to the scientific aspects of gardening. It was in this direction that the late President considered further progress could still be made, and his words may usefully be remembered at the present time, when the Society may be said to be entering upon a new era of its existence. In the immediate past this question has claimed much attention. By laboratory research and garden experiments botanists and horticulturists are endeavouring to know more of the plants they cultivate, and to understand the circumstances which attend their reproduction, variation and development. At the present meeting an important item was the botanical lecture delivered by M. Noel Bernard on the subject of the symbiosis alleged to exist between certain fungi and Orchids. He showed lantern slides and specimens to illustrate the lecture, and stated that he has proved it to be impossible for Orchid seeds to germinate unless certain parasitic fungi are present. The Society will do well to give proper attention to matters such as this, even if they may appear to have but little practical value at the moment, for they are fraught with possibilities of great importance to cultivators. At the same time the exhibitions that have done so much to popularise and develop Belgian horticulture will of course continue to be maintained at their present high level of excellence.

Turning to the present show, it is impossible for us to record all the details of such a vast exhibition. In the report which appears upon another page, the prominent features are remarked upon, and details are given so far as space will permit. The exhibit that excited most interest was probably that from M. Charles Vuylsteke, of Loochristy, whose success in the raising of hybrid Orchids has been from time to time recorded in these columns. For some years past M. Vuylsteke has devoted most of his attention to the raising of "blotched" Odontoglossums, but, notwithstanding the flowers he had previously exhibited, no one was prepared for such a display of these most valuable plants as is staged at this show. The centenary exhibition will live in the memory of those who are attending it on account of the first appearance, in such numbers, of this type of Odontoglossum.

Major Holford's exhibits of Orchids and Hippeastrums form another very prominent feature of the show. The Orchids are beyond praise, and the Hippeastrums afford further evidence of the excellence of the strain now in cultivation in Major Holford's remarkable collection. Writing of English exhibits reminds us of the beautiful Hippeastrums staged by Messrs. R. P. Ker and Sons, which have obtained the highest prizes for these plants in the competitive classes.

Of the show generally, it may be said that it is certainly as good as previous ones. The Palms, Codiæums, Cordylines, and other stove plants, also the Acacias, Azaleas, and greenhouse plants so commonly cultivated in the Ghent district are to be seen in the most perfect specimens. It is a grand exhibition, and it is displayed to the public view in a most attractive manner.

The great hall of the Casino, laid out by Mr. Charles Pynaert, very effectively contains, as usual, the stove plants, and in the galleries upstairs, including the Rotunda, are the Orchids, new plants, botanical exhibits, and batches of miscellaneous flowering and foliage plants.

The large temporary building is not placed, as heretofore, in a position adjoining the Casino, but is separated from it by the interposition of an open-air garden planted with Conifers and other hardy shrubs and trees. Owing to this alteration it is not possible to view the Azaleas from the flight of steps which formerly connected the main building with the annexe, but although this is the case, it would be difficult indeed to imagine anything more beautiful than the view obtainable upon entering the large building. Its interior design, as well as the arrangement of the exhibits, were entrusted to Mr. Fred. Burvenich, Senr., and he is to be greatly congratulated on the success that has attended his efforts. The eye would be merely dazzled by the gorgeous display of Azalea blossoms were it not for the skill displayed in their arrangement. The view extends over the beds of these plants, formed on sloping, uneven surfaces, to the further portion, where there are great banks of hardy Rhododendron and huge specimen-plants of Acacias and other hard-wood species. At the extreme end of this space there is a painted background representing a portion of the grounds that

formerly surrounded the "Coupure," thus leaving the perspective uninterrupted.

At one of the sides, a feature is made of a model of the old Inn, "Frascati," and in this building specimens of the species of plants staged at the first show the Society ever held are displayed as nearly as possible in the manner in which they were then exhibited. It is a pretty feature, and has been carried out in a very satisfactory manner. On the other side of the building a good effect has been produced by paintings of South African scenery, which are used as a background for exhibits of species of plants introduced from the Cape.

The jury consisted of 240 persons, of whom 188 are not resident in Belgium, and include 32 from Britain. A distinguished Englishman in the person of Lord Redesdale was appointed Honorary President of the Jury, Mons. A. Viger, a former Minister of Agriculture in France and President of the Société Nationale d'Horticulture de France, acting as the General President of the Jury.

FIG. 125.—THE GHENT EXHIBITION: EXTERIOR OF MODEL OF OLD INN IN WHICH THE FIRST EXHIBITION WAS HELD IN 1809.

In addition to discharging the more serious business connected with the exhibition, the jury were entertained at various "functions" in the most cordial and hospitable manner. Sunday last was a particularly busy day. In the morning the official unveiling of the monument erected to the memory of the late President took place in the Place du Comte de Flandre (see fig. 126). At noon there was an official reception by the Chambre Syndicale des Horticulteurs Belges, and in the evening the Grand Banquet took place in the halls of the Grand Théâtre, at which the President, M. Callier, presided.

BRITISH GARDENERS' ASSOCIATION. A meeting of the London branch of this society will be held at Carr's Restaurant, Strand, on May 14. A paper on "Public Gardens and their Construction" will be read at 8 p.m. by Mr. T. WINTER, Superintendent of Marylebone Parks. The meeting will be open to all gardeners.

DENDROBIUM EPIDENDROPSIS.—Prof KRANZLIN describes in the current number of *Orchis* a new Dendrobium from the Philippine Islands, which has flowered at Erlangen. It is stated to resemble the type of Epidendrum exemplified in E. umbellatum. Unfortunately, although interesting in other ways, the flowers are not attractive, being of a greenish-yellow, and are covered with a sticky exudation.

LILIES OF JAPAN.—We have received from THE YOKOHAMA NURSERY CO., LTD., a brochure containing 40 finely-coloured plates of Lilies, many of which are endemic in Japan. Besides their value from the point of view of a catalogue, the plates possess the additional one of serving as a useful pictorial reference book to some of the finest Lilies in cultivation.

A NURSERYMAN'S VISIT TO MOROCCO.—Mr. JOSEPH CHEAL, a member of the firm of Messrs. JOSEPH CHEAL & SONS, Lowfield Nurseries, Crawley, submitted to the Fruit and Vegetable Committee at a recent meeting of the Royal Horticultural Society examples of exotic fruits which he had brought from Madeira. Mr CHEAL has described this as a most beautiful island. Most of the houses are picturesque in appearance, and about them are planted Palms, Tree Ferns, Poinsettias, whilst verandahs and pergolas are covered with brilliant flowering climbers, such as Bougainvilleas, Allamandas, Passifloras (Passion Flowers), scarlet-flowered Taxonias, Roses, Wistarias, &c. Masses of Ivy-leaved Pelargoniums, with flowers of many colours, ramble over the rocks. Vines are trained to pergolas and other supports, whilst beneath are many kinds of gourds. Describing the gardens near Casa Blanca, he states that Dates, Figs, Pomegranates, and Almonds grow in profusion with a few Orange trees. At Teneriffe he saw the plantations of Potatos, Tomatos, and Bananas that are sent in great abundance to our markets. The valleys at Teneriffe are exceedingly fertile and well cultivated, and the area under culture is increased by terraces that are formed up the hillsides. At Grand Canary he visited Las Palmas, the chief industry of which is the culture of Bananas. The soil of this island is of volcanic origin, and it is carefully prepared by levelling it into terraces, and separating from the volcanic earth the larger stones which are used in forming the terrace walls. Watercourses are constructed through each plantation, large reservoirs being built on the hillsides for storing the water, which flows down cement courses to the gardens below.

NATIONAL FLOWER SHOW AT CHICAGO.—We have received the preliminary schedule of the National Flower Show to be held in Chicago, November 6-15, 1908, inclusive, under the auspices of the Society of American Florists, in co-operation with other American horticultural associations. Carnations, Roses, and Chrysanthemums are represented by their special societies. The schedule provides for 97 classes devoted to Chrysanthemums, 52 for Roses, 80 for Carnations, and others for Orchids, Palms, Ferns, and other foliage and decorative plants, cut flowers, floral devices, &c.

COMMERCIAL FERTILISERS.—The *Complete Report on Commercial Fertilisers*, issued as a free bulletin from the West Virginia University, is interesting as showing the intelligent interest which the American cultivator takes in the value he can get out of the numerous manures that are on sale in his State. The bulletin details a large number of these fertilisers, giving the name of the brand and of the company supplying it. The analysis, as conveyed in the company's guarantee, is printed, together with that actually found in the university testing laboratory. The frank notes that are appended ought to save any man who knows his business from incurring risk of loss, unless he chooses to accept it with his eyes open. A sample remark may be quoted. After giving the results for a particular fertiliser, it is added, "Phosphoric acid low, chlorine excessive, source of nitrogen equal to ground leather." In other cases the remarks are favourable, e.g., "Source of potash better than guaranteed." The bulletin contains much good advice on the use of "artificials" generally, and deprecates as a general rule the use of low-grade fertilisers. Similar analyses on a larger scale are given in *Bulletin* No. 294 of the New York Agricultural Experiment Station, at Geneva, N.Y. The results of the analyses are not always quite the same, but, of course, allowance must be made for varied degrees of completeness in the mixing of the ingredients.

"PHILIPPINE AGRICULTURAL REVIEW."—We have received the first number of the above journal, which is to appear as a monthly periodical, replacing the Press Bulletins which were previously issued at irregular intervals. The *Review* is illustrated by 14 half-tone plates, which would be improved if they bore an explanatory legend, instead of a number, which necessitates reference to the list of contents and illustrations. Another feature which might well be introduced, and too often is wanting from journals of this kind, is the addition of the scientific name to the vernacular one for the plants that are specially cultivated. It is otherwise often difficult to be sure of the species which is meant by authors. The advantages of publications such as the *Review* are too widely recognised to call for comment, and it suffices to say that the first number amply justifies its appearance, and indicates the large number of special agricultural problems which form the subjects of continuous investigation in the islands.

SOCIÉTÉ ROYALE D'AGRICULTURE ET DE BOTANIQUE DE GAND.

Quinquennial and Centenary Exhibition at Ghent.

April 25—May 3.—The proceedings of the Centenary Exhibition may be said to have commenced on Friday, April 24. The members of the jury assembled at about 8.30 a.m., and were photographed in a group at the invitation of the *Tribune Horticole*. At nine o'clock the members listened to a short address from the new President of the Society, M. Alexis Callier, the Attorney-General, and immediately afterwards proceeded to their duties of adjudications. M. Callier said that the late Count Kerchove de Denterghem had already commenced to think out the arrangements for the centenary exhibition. Many of the jurors revisited Ghent as old friends, some of them having been coming even for 50 years past. The quinquennial exhibitions had a stimulating influence upon horticulture as being the means of bringing together representatives of the peoples of different countries. The Society, although celebrating its centenary, had not even one wrinkle. It was the cherished baby of the public, and it had flourished, though in a varying degree, during its whole existence of 100 years.

The Jury was constituted as follows:—*Honorary President:* Lord Redesdale. *President:* M. A. Viger. *Vice-Presidents:* MM. A. Truffant, Noel Bernard, Baron de Grancy, Ruys de Beerenbroeck, Major Holford, Harry J. Veitch, Max Kolb, Dr. Wittmack, Chevalier Radaelli, Enrico Rovelli, F. Lambeau, and Jules Cartuyvels. *General Secretaries:* MM. Philippe de Vilmorin, Abel Chatenay, Victor Lemoine, Dr. Janse, Siebert, R. Seidel, R. W. Ker, and H. Correvon. The jury was divided into 32 groups, and the work of adjudication was accomplished in less than two hours.

New Plants.

It becomes more and more difficult as each quinquennial exhibition comes round, to obtain new plants which have been but recently introduced to Europe. Nowadays the new plants are chiefly the result of hybridisation rather than newly-introduced species. On the present occasion there are new Orchids, Azaleas, and other kinds provided for in their proper sections, and the following notes are therefore upon those plants which were exhibited in the first group of classes which were set aside exclusively for novelties without any specification as to species.

The premier class was for 12 newly-introduced plants that are not yet in commerce. Messrs. F. Sander & Sons, St. Albans and Bruges (Belgium), as on several previous occasions, have been awarded the first prize, which consisted of a Gold Medal. The species exhibited by this firm were described in our last issue, with the exception of Ficus australis variegata, which is shown as a dwarf little plant with oval-shaped leaves very freely variegated with white. The others included Ptychoraphis Siebertiana, Codiæum "Fred Sander," Pinanga Micholitzii, Pereskia Godseffiana, Bromelia tricolor, Encephalartos Woodii, Anthurium Sanderi, Philodendron Ilsemanii, Caladium Centenaire, and Nephrodium gracillimum. M. Maurice L. de Vilmorin, Quai d'Orsay, Paris, also exhibited in this class.

In the following class, M. Philippe de Vilmorin has been awarded a Silver-Gilt Medal for a collection of six new plants not yet in commerce. The species are as follow:—Clematis species (unnamed), Corylus thibetica Potentilla sp., Rhododendron chartophyllum, Sorbaria assurgens (hort. Vilmorin), and an unnamed species of Trollius. Most of these plants are not sufficiently developed for an opinion to be formed as to their qualities, and even the Rhododendron has not yet its flower-buds expanded, but its habit appears exceedingly good, and the plant may be valuable.

The best exhibit in a class for a hot-house flowering plant not yet in commerce is a group of hybrids from Gloxinia and Sinningia. The flowers are very little modified from those of Gloxinia, but the foliage shows a reddish tinge acquired from Sinningia. In some of the varieties which have red flowers it is considered an advantage to get something of the same tint in the leaves, many shades in the same tone or colour being much appreciated on the Continent. In Class 4, which demanded a greenhouse flowering plant that had not been exhibited before the Society previously, M. J. C. Schmidt, Erfurt, Germany, has been awarded a bronze medal for a group of very fine Cyclamens of a strain named "Rokoko," which reminds us strongly of the strain exhibited some years ago by M. de Laange, Brussels, though the flowers on the present occasion show considerable improvement in the colours. The blooms are so modified in form that they are almost flat, and the petals are much fringed.

In a class for a new stove plant, with ornamental foliage, a Medal has been awarded to MM. Jacob Makoy et Cie., Liège, for a very fine plant of Maranta Closonii from Brazil, having cream-coloured leaves marked prominently with olive green. In the same class M. Delaruye-Cardon, Ledeburg, has obtained a prize for a species of Anthurium.

Fig. 126.—The Ghent Exhibition. Memorial to the late Comte O. de Kerchove de Denterghem unveiled during the exhibition.

The first prize for 12 new plants obtained from seed is awarded to M. Anatole Cordonnier Bailleul, for a collection of new Codiæums (Crotons), all of which have broad leaves. The most effectively coloured variety is one named Madame Ernest Delaruye.

A pretty, large-flowered Myosotis named M. Liebestern has obtained the second prize for M. Fischer, Stuttgart, in a class for a new hardy flowering plant obtained from seed.

M. L. de Smet-Duvivier, 281, Chaussée d'Anvers, Mont St. Amand, exhibits in several of the classes in this group. In one case he has shown a variegated variety of Ardisia crenulata, and in another Phormium atropurpureum var. nana. In a class for the most meritorious flowering or non-flowering plants put into commerce since 1903, he has included those following:—Kentia Belmoreana versicolor, Davallia Lansonniana, Anthurium Rex, Maranta insignis, Heliconia imperialis, Acanthus montanus, a hybrid Anthurium, being a cross from A. Veitchii and A. Andreanum album, Dracæna Kerchovei, Sanseviera Laurentii, Buddleia asiatica, &c.

The Orchids.

That the show of Orchids in its best exhibits is infinitely superior to any yet staged at Ghent is the conclusion of all who were qualified to pass an opinion.

Undoubtedly the most remarkable of the exhibits are two groups not for competition, that from M. Chas. Vuylsteke being a most marvellous selection of new hybrid Odontoglossums, the individual merits and beauties of the plants utterly baffling attempts at description, and for which an Œuvre d'Art was awarded with congratulations.

The beautiful and finely-flowered specimens, all of M. Vuylsteke's raising, are arranged in a commodious, ornamental glass case, backed by mirrors and draped in green. About 115 splendidly-flowered specimens, all dissimilar, but many of them of such surpassing beauty as to render it difficult to decide which is the best, are arranged in the case. M. Vuylsteke has accomplished wonders in his crosses of these beautiful Odontoglossums, and violet, claret, ruby, and orange tints are produced in a manner that even the raiser himself did not expect. The first fine break with the new set was made from his beautiful varieties of O. ardentissimum, and with the introduction of the spotted O. crispums it has been followed by inter-crossing with the best varieties of all available species, and the present result, though, as the raiser believes, by no means the final achievement, appears in his magnificent exhibit at the Ghent quinquennial show. If words fail to describe the collection, they are still more inadequate to convey an idea of the beauty and the brilliance of the individual plants. One new hybrid, O. maculatissimum (maculatum × ardentissimum) is unique, and a superb novelty. Its fine spike bears nine large flowers of very distinct characters, the sepals of a bronzy claret hue, the petals heavily blotched with the same colour on the inner halves, and cream-white on the outer, the broad lip whitish, with a large, bronzy red blotch and some pink veining. The varieties of O. Gandavense, with their distinct violet tints, some of which were shown at the Temple Show last year, are more charming than ever, O. Gandavense cœruleum being of a delightful combination of blue and white, and O. G. azureum having the inner parts of the segments violet colour. O. egregium, var. Mad. Jules Ilye de Crom is almost entirely of a delightful tint of bronzy claret with white margins and tips to the segments; O. præclarum, a most beautifully-marked flower; O. Lawrenceanum imperiale, a grand yellow bloom, exquisitely marked with dark purple; O. Wiganianum Phlegon, a densely-spotted and wonderful flower; O. eminens, creamy-white, with clear, purple spotting, and innumerable others, each worthy of the highest praise. Still, among the great show of beauties the later forms of O. ardentissimum hold their own, the blooms being perfect in form and very bright in colour. The richly-coloured forms of O. Vuylstekeæ, the home-raised blotched O. crispum, O. crispum Memoria Battle of Waterloo, and varieties of O. excellens were magnificent.

Notwithstanding the splendid show made at the Casino, M. Vuylsteke is in the enviable position of having a much larger number of nearly equally beautiful Odontoglossums in bloom at his place at Loochristi, and what is to come from the tens of thousands of yet unbloomed plants can only be imagined.

The other grand exhibit not for competition, and for which the finest Œuvre d'Art was awarded, is the superb and artistically-arranged group staged at the end of the gallery by Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), who deserves the thanks of the horticulturists of Great Britain for so well representing them at this exhibition. The group occupies over 300 square

feet, and is most artistically staged by Mr. Alexander, the centre being under the oval niche of the end of the gallery, and the front curved. A tall tree Fern is in the back, with magnificent plants of Odontoglossums, Dendrobium Wardianums, and coloured hybrid Odontoglossums, fronted by an enormous plant of Cymbidium eburneo-Lowianum, many fine Cattleya Lawrenceana, &c. The following enumeration of some of the leading plants in this group will serve to convey some idea of the beauty and variety contained in it. Among the larger plants are Cymbidium eburneo-Lowianum, with 24 spikes, bearing together 124 flowers; a grand specimen of the reverse cross C. Lowio-eburneum, and fine examples of C. eburneum, C. Low-grinum, C. Lowianum, Pitt's variety, C. Lowio-grandiflorum, C. eburneo-Lowianum concolor, and C. Lowianum concolor. The Odontoglossums are represented by a grand selection of fine varieties of O. crispum, of which there are about 100 spikes. One plant has a spike of 52 flowers, and another specimen bears 86 blooms. O. crispum Queen Victoria bears a fine spike; O. c. Mrs. Lindsay, and O. c. Egret, grand white forms; and O. c. Columbine, a pretty spotted variety. Among the others, O. ardentissimum, Westonbirt variety, a real gem of exceptional beauty, bears a spike of 12 purple-blotched flowers; and O. Hallii, O. Andersonianum, the fine O. Wilckeanum, Rex, and O. W. imperiale; O. Pescatorei, with the fine O. P., Westonbirt variety, having a spike of over 50 flowers; O. crispo-Harryanum, O. loochristiense Lord Howick, a very bright flower; O. elegans, good O. triumphans, O. cirrhosum, O. Edwardii, O. Adrianæ Lady Wantage, a charmingly spotted flower; and many other fine Odontoglossums. The Brasso-Cattleyas and Brasso-Lælias contained in the group are certainly the finest and most varied selection ever shown at one time, about 60 plants, bearing an aggregate of nearly 100 large flowers, being staged. These comprise Brasso-Cattleya Mrs. J. Leemann, B.-C. Siren, B.-C. Digbyano-Warneri, B.-C. Thorntonii, B.-C. Digbyano-Mossiæ, and its pure white variety Queen Alexandra; B.-C. Digbyano-Schröderæ, B.-C. Digbyano-Warcewiczii, B.-C. Digbyano-Mendelii, B.-C. Pluto, B.-C. Madame Hye, B.-C. Cordelia, Brasso-Lælia Helen, Brasso-Lælio-Cattleya Rowena, and others all exhibiting charming tints and variety of form. Cattleyas are shown in superb condition, the species included being C. Trianæ Mrs. Ed. Sondheim, the finest white Trianæ; some varieties of C. Mendelii, the best of which are C. M. Prince of Wales, C. M. grandiflora, C. M. May Queen, a pretty, light form; and the superb C. M., Holford's variety, bearing two flowers of great beauty, fine colour, and gigantic size. C. Schröderæ "The Baron," which secured a First-Class Certificate at the last meeting of the Royal Horticultural Society; C. S. Heatonensis, a choice, light variety; C. intermedia, Fowler's variety, the finest form of typical C. intermedia, C. Luddemanniana and C. L. alba, a fine white flower with rose-tinted lip; and C. Lawrenceana, of which a dozen strong plants are shown. Among hybrid Cattleyas, the beautiful C. Dusseldorfei variety Undine (C. intermedia alba × C. Mossiæ Wageneri), which secured a First-Class Certificate at the Royal Horticultural Society, December 11, 1906, make a fine feature, 14 plants, bearing together 43 flowers, being used. Lælio-Cattleyas almost exclusively raised at Westonbirt are in fine form, their gorgeous colours being very skilfully arranged for effect among the white and light-coloured varieties by Mr. Alexander. A grand example of L.-C. callistoglossa excelsa has a fine spike of five blooms, with intense purplish-crimson labellums; L.-C. Golden Glory (L.-C. Zephyra × C. Mossiæ Reineckiana) was a beautiful plant, bearing 26 golden-yellow flowers with crimson markings on the lip. It secured a First-Class Certificate at the Temple Show, 1907, and was illustrated in the *Gardeners' Chronicle* on June 1 the same year. Others used in the group are L.-C. Dora, L.-C. Olivia, L.-C. Elinor, L.-C. Phryne, L.-C. Wellsiana, L.-C. Ganymede (L. Latona × C. Schröderæ) in quantity, its bright bronzy-yellow and purple flowers being very effective, the variety Apricot very distinct; L.-C. Dorothy, L.-C. Pizarro, L.-C. Baroness Schröder, some brilliant orange-coloured L.-C. Hippolyta, and many of the new Westonbirt hybrids, including L.-C. Cæsar, L.-C. Crœsus, L.-C. Zoroaster variety Rex, L.-C. Lustre, Westonbirt variety, &c., together with Lælia Gwennie, L. cinnabrosa, and others.

Cypripediums included many unnamed seedlings of great promise. C. Helen H., Westonbirt variety, which received a First-Class Certificate at the last Royal Horticultural Society's meeting; C. Queen of Italy, C. Beryl, C. aureum Hyeanum, C. Chapmanii superbum, and C. Maudiæ magnificum, bearing six emerald green and white flowers. In the front of the group and at salient points, brilliant scarlet colour was given by a number of fine specimens of Sophronitis grandiflora, one of which bears 80 and another 50 flowers; fine orange-scarlet Ada aurantiaca, the deep claret-coloured Masdevallia Rocking hybrid, four plants of the richly-coloured Sophro-Lælia Phroso superba, Sophro-Cattleya Chamberlainiana, &c., and others noted were good Miltonia Bleuana, M. Roezlii, the bearded yellow Dendrobium Brymerianum, the rose-scented Bifrenaria Harrisoniæ.

Competitive Orchids.

In Class 21, for a collection of the most varied and meritorious Orchids has brought another grand exhibit in the extensive collection staged by M. Lambeau, of Brussels, which has secured the King's prize of a large Gold Medal. The group occupies the whole of the central stage at one end of the gallery.

In this, as in many other classes for Orchids, there is but the one entry, but M. Lambeau's

M. Duquesnoy, treasurer Société royale d'agriculture et de botanique de Gand.

fine collection has well merited the highest award. In the group the very fine and varied selection of beautiful Odontoglossum Lambeauianum form quite a study, the colours in rich tints of rose and purple on cream-white, and always on finely-formed large flowers, being remarkable. O. L. La Tribune is a marvellously spotted form, O. L. Helleputianum quite different and superbly marked, and others so extraordinary that Mons. Lambeau should be proud to have such a charming series under his name. Varieties of Cattleya Schröderæ and C. Mendelii are well represented, pretty white varieties appearing. The hybrids of Brassavola Digbyana are shown in profusion, the richest in rose-purple tint being Brasso-Cattleya Peetersiæ (Warscewiczii × Madame Maron), which gets two parts of C. Warscewiczii. Of the yellow-tinted B.-C., Mrs. Leemann is shown in fine variety; B.-C. Warteliæ, a secondary cross with Cattleya Schröderæ alba, is a charming flower near to C. Schröderæ, but with fringed lip, and of the same section B.-C. Reneiæ var. Surprise has a flower curiously mottled with purple. Cattleya intermedia alba has four spikes, three with six flowers each; Cochlioda rosea, C. vulcanica, and C. Noezliana were in grand specimens of many spikes of rich mauve or scarlet flowers; Maxillaria luteo-alba bears scores of fragrant blooms; the selection of Odontoglossum crispum has many blotched forms, in which the deep red or purple colour has almost obliterated the white ground colour; specially noted were O. c. coloratum and O. c. eminens, two grandly-coloured forms. O. Madouxianum was a finely-coloured bloom, and the varieties of O. ardentissimum superb, the superlative being reached by the noble O. ardentissimum Memoria Lambeauiæ at the end of the group, and which secured the medal for the finest hybrid Odontoglossum, the perfectly-formed flower being almost entirely of a deep reddish-claret with narrow white margin and tips. M. Lambeau has also secured the medal for the best seedling Odontoglossum. Miltonia Bleuana latimaculata and a fine white form of the same hybrid are grandly flowered; Angræcum citratum has many sprays of pretty white flowers, Miltonia vexillaria gigantea and other forms show that species at its best; various Odontiodas and other rare hybrids and species are represented, and white Cattleyas have with them the new C. Suzanne Hye de Crom.

On the side of the gallery, M. Maurice Verdonck, Ghentbrugge-lez-Gand, gave a most interesting exhibition in four classes, viz., Orchids of Guatemala and Colombia, Orchids of Brazil, Orchids of Central America, and Indian Orchids, securing the Gold Medal in each of the four classes with Orchids from these respective districts. Specially good in the Brazilian exhibit are the Oncidium sarcodes, O. Marshallianum, Lælia purpurata, and Cattleyas; in the Colombian group, the Miltonia vexillaria, Odontoglossums, and Masdevallias; in the Guatemalan class, the fine forms of Lycaste Skinneri, Odontoglossom Uro-Skinneri, &c.; and in the Indian, the well-grown Dendrobiums and Cypripediums and scarlet Renanthera Imschootiana. M. Verdonck has also secured the highest awards for the best 12 Dendrobiums, his collection containing the new D. Bronckartii, D. nobile virginale, D. Jamesianum, D. crepidatum, D. barbatulum, D. Devonianum, D. primulinum, and others all finely flowered; and for the best 25 Dendrobiums and the best single specimen Dendrobium.

In Class 26 (amateurs) for the best collection of 50 exotic Orchids, M. Ch. Dietrich has won the 1st prize, an Œuvre d'Art, for a very meritorious selection containing good Odontoglossums, Lælio-Cattleya Dominiana, L.-C. Capt. Percy Scott, Cattleya Louis Chaton, C. Mozart, Brasso-Cattleya Mrs. Leemann, Miltonia Bleuana nobilior, Zygopetalum Perrenoudii, Cymbidium Devonianum, &c.

In Class 27, 50 Orchids (nurserymen), M. Emile Praet, Mont St. Amand, Ghent, has secured the 1st prize with a very fine lot of varieties of Cattleya Schroderæ and C. S. alba; Odontoglossums, including good varieties of O. crispum, O. Lambeauianum, O. Rolfeæ, Cattleya Lawrenceana, Phalænopsis Schilleriana, Cypripediums, &c.

Class 28, for the best collection of 30 Orchids, M. Théodore Pauwels, Meirelbeke Gand, has been awarded the 1st prize for a good group, in the centre of which is an enormous specimen of a light-coloured Cattleya Mendelii covered with flowers; good C. Trianæ, C. Lawrenceana, C. Skinneri, and other Cattleyas and Lælias, Angræcum sesquipedale, Dendrobiums, Masdevallias, &c.

Cypripediums are not well represented. In the class for 25 (amateurs), M. Maes-Braeckman, Ghent, has secured the 1st prize; in the similar class for nurserymen, Messrs. Janssens & Putzys, Merxem, the 1st prize with a selection containing a very interesting series of varieties of C. aureum; the 2nd prize going to M. Pynaert van Geert, Ghent, for a very varied selection of well-flowered plants; the same firm taking the 1st prize for a collection of Anæctochilus and allied plants.

M. De Vincke Dujardin, Bruges, has secured an Œuvre d'Art for a very fine exhibit, including a remarkable selection of Cattleya Mossiæ in great variety of tint, one form having a distinct slate-blue veining on the lip, and others of the C. M. Reineckiana and C. M. Arnoldiana being very pretty. The whole are characterised by good, broad labellums and broad petals. C. intermedia alba and other Cattleyas, Brasso-Cattleya Digbyano-Schroderæ, B.-C. Madame Maron and other Brasso-Cattleyas, a very fine variety of Lælio-Cattleya Schilleriana and some other Lælio-Cattleyas, Lælia anceps alba, and other showy varieties are included.

For the best collection of 50 Odontoglossum crispum, M. A. Muesser, of Brussels, has secured the 1st prize for a nice selection of plants arranged beneath the dome.

In Class 67, for the best group of 12 Odontoglossums raised from seeds, M. Graire, of Amiens, has secured the Gold Medal with a very handsome lot, which included O. ardentissimum Empress of India, a magnificent form with a clear mauve-purple blotching on the inner parts of the broad segments, the margins and tips being white; O. ardentissimum Cavour, a finely-marked flower; several superb forms of O. crispum raised from seeds, and all fine, well-marked flowers. Two plants of the deep blood-red Odontioda Devossiana are also in the case, and which, by an oversight, were not placed before the jury.

A very remarkable exhibit is the enormous specimen of Cattleya Lawrenceana var. Royale de Laeken (gr. M. J. de Bievre), from the gardens of His Majesty King Leopold. The plant was bought as a very small specimen from the first importation, and as now shown it bears 85 finely-coloured flowers.

Messrs. Charlesworth & Co., Heaton, Bradford, has staged a good selection, including a very fine form of the red-tinted Odontioda Vuylstekeæ, O. Bradshawiæ of a clear orange-scarlet tint, O. Keighleyensis, a grand form of Odontoglossum ardentissimum, O. sceptrum aureum, O. crispum Prince George of Wales (a grandly-blotched variety), Vanda lamellata, Miltonia Bleuana virginale, &c.

M. A. A. Peeters, Brussels, has been awarded an Œuvre d'Art for an excellent group of new and rare Odontoglossums, which include O. ardentissimum Cooksonianum and O. a. Evansianum, two superbly-coloured forms of fine shape; O. Fascinator Souvenir du Centenaire (a large and densely-spotted flower), and O. crispum Bijou d'Ucele, a distinct white flower heavily blotched with red-brown.

M. Th. Paewels has secured a Gold Medal for a magnificent lot of 50 plants of Cattleya Lawrenceana.

M. Emile Praet shows 25 forms of Cattleya Schröderæ.

M. Theodore Paewels shows the best Vanda in his fine albino V. suavis pallida.

Messrs. Hugh Low & Co., Enfield, exhibit a small selection of varieties of Cattleya Mendelii, one very large form having a broad and finely-coloured lip.

M. Van de Putte has staged a very fine group of good Lycaste Skinneri.

Masdevallias are shown by M. de Hemptinne, who won the 1st prize for the best with an enormous plant of M. Pourbaixii, and various other exhibitors contributed other interesting Orchids.

Stove Plants.

The ornamental-leaved stove plants are arranged in imposing groups in the great hall of the Casino, as on previous occasions. The best group of 25 plants, with marbled, striped, or coloured foliage, is shown by the Société Anonyme Horticole Gantoise, Ghent, and contains handsome specimens of the following varieties amongst others:—Helicomia illustris, Pandanus Veitchii, P. Sanderiana, Spathiphyllum picturatum, Philodendron Mamei, Codiæums (Crotons) M. Charon and Countess, Caladiums Mistress Laing and Raymond Lemonnier, Aglaonema Roebelinn, Alpinia vittata, A. Sanderiana, Alocasia Martin Cahuzac, Dieffenbachia Fournieri, D. nobilis, Phyllotænium Lindenii magnificum, and Pavetta borbonica. An excellent collection is also shown by the Société Anonyme Louis van Houtte, père, Ghentbrugge, containing a very fine specimen of Leea amabilis superba. This has been awarded the 2nd prize, and the 3rd prize was gained by M. Hippolyte Millet-Richard, Ledeberg.

The 1st prize in a smaller class for a collection of 22 plants has been won by M. Alexis Dallière, Ledeburg, and this exhibit also contains very beautiful specimens, indicating first-rate cultivation; 2nd, M. H. Millet-Richard, Ledeberg.

For a collection of 15 Sonerillas and Bertolonias, the 1st prize has been awarded to the Société Anonyme Louis van Houtte, père, whose excellent collection of these beautifully-marked plants is accommodated in a glass frame. All the plants are of very high cultivation, but especially the varieties Madame Bleu, Marmorata, Madame Leon Say, and Souvenir de Gand.

Marantas and Calatheas.—The exhibits of these former favourites are not quite so extensive as on former occasions. Nevertheless, there are some magnificent single specimens dotted here and there over the show, M. Draps-Dom, of Laeken, and M. Jacob-Makoy, of Liege, sharing the chief honours in the way of prizes, M. Draps-Dom being awarded a Gold Medal for the best group of 20 plants; and M. Jacob-Makoy a Gilt Medal for the best group of 10 plants.

Codiæums (Crotons).—There are some remarkably fine Crotons in the show, and the brilliant colouring and marking of the foliage adds a brightness to the exhibition, notwithstanding the changing lights and shades by passing clouds and showers. There were classes for 50, 25, and 12 plants, the winners of the 1st prizes in these classes being: M. Delaruye-Cardon (Œuvre d'Art); Société Gantoise (Gold Medal); and M. Alex. Dallière (Gold Medal).

Bromeliads.—Most of the plants have their flowers still unopened. Tillandsias (Vriesias) are the principal kinds shown, the only competitors being M. J. Moens, Lede, who has won a Silver Medal for the finest plant not in flower, and M. Poelman, St. Amand, for the best plant in flower. (Silver Medal).

Anthuriums.—Ghent nurserymen have always been famous for these brilliant aroids, and on this occasion they probably surpass all previous efforts, judging by the size and number of the specimens shown. It is impossible to describe in detail the merits of particular varieties, but they varied from the purest creamy enamel to the deepest shiny crimson; while many of the Scherzerianum seedlings are remarkable for their curly spadices and their brilliant, self-coloured or speckled spathes, hanging down like miniature flags. For the best collection of 25 Anthuriums in flower M. A. de Smet has secured the 1st prize, the 2nd prize (Gold Medal) going to the Ecole Royale de Pomologie et d'Horticulture; the 3rd (a Gold Medal of less value) to M. de Smet-Duvivier. The varieties shown are chiefly of A. Scherzerianum, A. Andreanum, and A. crystallinum.

Other prize-winners in this section include M. Maes-Braeckman, who has won a Gold Medal for Scherzerianums; while M. A. de Smet has secured the Gold Medal for speckled varieties in two classes, and medals in several others.

Palms.—Without Palms the Ghent show would look bare indeed. There were specimens of all sizes, not always in their classes, because often they were required to produce an effect as background in the buildings. The Kentias, Cocos, Phœnix, and Arecas naturally predominate, but these are well backed up with Rhapis, Livistonas, &c. For the best collection of eight Cocos, M. Jules de Cock has secured the Gold Medal; while M. van Laethem and MM. de Reusse Frères has been awarded Gilt Medals for single specimens. For the best group of eight Kentias the 1st prize has been awarded to the Société Anonyme Horticole "Flandria," Bruges, and the 2nd prize to M. G. Wibier, the plants in both cases being fine specimens; while those winning the 3rd prize of a Gilt Medal are smaller plants, from M. F. Tollenaere.

Cycads and Pandani.

Ten classes were allotted to this section, and all are filled but two. For the best lot of 12 Cycads, M. de Ghellinck de Walle, Wondelghem, has secured the 1st prize. He has some splendid specimens in his group, including Zamia horrida, Z. Vroomii, Lepidozamia Denisonii, and L. Macleayi.

For the six best Cycads, MM. de Smet, Frères, Ledeberg, have secured the Gold Medal valued at 100 francs.

There is a strong competition with Cycas revoluta. The 1st prize has been won by M. Ed. de Beule, Sinay, and the 2nd by MM. Eckhaute et Fils, St. Denis Westrem.

MM. de Smet, Freres, have easily secured the Silver-Gilt Medal as the 1st prize for a remarkable Zamia.

For a collection of 10 Pandani, the Gold Medal has been awarded to M. Pynaert van Geert, Ghent, his specimen of P. Sanderæ being particularly fine.

The Gilt Medal for the best Pandanus has been won by M. Delaruye-Cardon, Ghent, the second prize going to M. Pynaert van Geert for a fine specimen of the green and narrow-leaved P. caricosus.

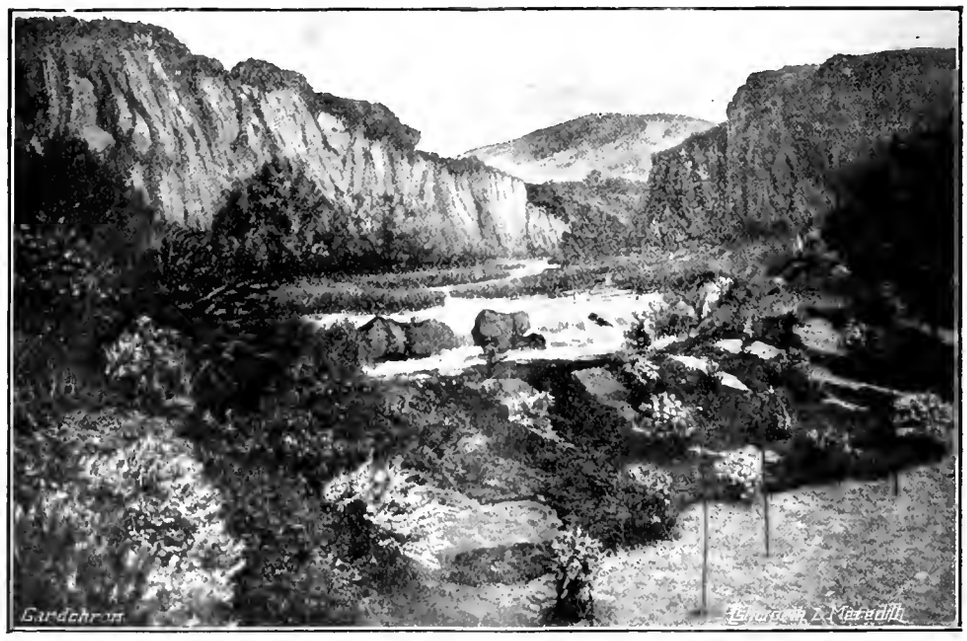


Fig. 128.—Exhibit of New Holland plants at the Ghent International Exhibition, with painted background representing natural scenery.

Ferns.

More than 30 classes were set apart for Ferns, and, on the whole, the plants brought together are good examples of cultivation and beauty. For the finest tree Fern, M. de Smet, Frères, have been awarded the Gilt Medal for a fine Dicksonia princeps, the second prize going to M. de Ghellinck de Walle.

In the same section, for amateurs, M. Maurice Duquesnoy, Ghent, has obtained the 1st prize, M. de Ghellinck de Walle, the 2nd prize, and the Ecole d'Horticulture de l'Etat, Ghent, the 3rd prize.

For 30 Ferns, M. Jules de Cock, Meirelbeke, has won the first prize, with the congratulations of the Jury, his Nephrolepis Forsteri being particularly good. M. Pynaert van Geert has secured the Gold Medal as 2nd prize, also with the felicitations of the judges.

M. de Ghellinck de Walle has been awarded the Gold Medal as the 1st prize for

a collection of 30 exotic Ferns, including good specimen Davallias, Polypodiums, Nephrolepis, &c. In the trade group, MM. Duriez, Frères, Wondelgem, has secured the 1st prize.

A very fine example of Todea superba from M. Louis van Houtte, Frères, secured the 1st prize of a First-Class Silver Medal, with the felicitations of the Jury.

Many other Ferns are exhibited, perhaps the most remarkable being a collection of 40 Selaginellas from M. Ghellinck de Walle, to whom the 1st prize of a Gold Medal was deservedly awarded.

Tree Ferns, including Cyatheas and Dicksonias figure in a few classes. M. Arthur de Smet and MM. Duriez, Frères, secured 1st prizes.

The Lomarias and Davallias were rather below the average in size and culture, and the same might be said of Adiantum Farleyense and the Platyceriums. A fine Nephrolepis, however, from the École d'Horticulture makes up for the absence of many smaller plants, and it easily secured the 1st prize.

Begonias

In a class for the most beautiful Begonia (tuberous-rooted or arborescent) a new species named B. Binoti was shown by MM. Chantrier, Frères, Mortefontaine, Plailly (Oise). This plant was discovered by M. Binot in Brazil. It has thick, fleshy leaves of very delicate texture, measuring about 1 foot across, wrinkled, with white veins, and covered over the whole surface with short, erect hairs. The leaves have a glossy appearance, are green in colour, and may be said to resemble an Anthurium more than a Begonia.

Greenhouse Plants.

Some remarkably fine plants are displayed in the classes composing this group. Probably the very finest in the show is the class in which prizes for 40 miscellaneous plants are competed for, and in which the prizes were offered to Belgian exhibitors by the English Committee, which had been appointed in honour of the memory of M. Louis Van Houtte, Père. In this class the 1st prize has been awarded to the Société Anonyme Horticole Gantoise with the "felicitations de Jury." Plants such as Davidsonia pruriens, Pritchardia grandis, Anthurium Veitchi, Heliconia illustris, and others being first-class examples of their kind. The 2nd prize of a Gold Medal, valued at 200 francs, has been awarded to the Société Anonyme Louis van Houtte, père, in whose collection there are also some very fine specimens. The same firms are in competition for a group of 20 similar plants, the struggle resulting in the same order.

For 20 ornamental foliaged plants, the Société Anonyme Horticole Gantoise has secured the 1st prize, the 2nd prize going to the firm of Louis van Houtte, père. Those are some magnificent Aroids, Palms, Crotons, Marantas, &c., in these two groups.

For 12 ornamental unflowered plants, MM. Duriez, Frères, has secured the 1st prize, the exhibit being largely composed of fine Arecas, Rhapis, Latanias, &c. An old friend in the form of a fine basket of plants of Saxifraga sarmentosa superba tricolor is exhibited by M. Morabe, Ghentbrugge, who won the 1st prize of a Silver Medal, the 2nd prize (a second-class Silver Medal) going to M. Schepens de Baets.

Flowering Stove and Greenhouse Plants.

There is not quite so many of these as one would have imagined, although every chance had been made in the schedule for a large representation.

One collection of 20 Clivias from M. V. de Bisschop, Tronchiennes, has secured the 1st prize of a Gold Medal, valued at 100 francs,

Fig. 129.—Odontoglossum wilckeanum imperiale, as shown at the Ghent International Exhibition in Major Holford's collection.

the 2nd prize, a Gold Medal worth 50 francs, going to M. Ch. Vermeire, of Ghentbrugge. A few other Clivias as single specimens and groups of 6 or 12 plants are shown, the 1st prize winners being MM. Bier et Ankersmit, Melle; M. A. Gallet, Ghent; and M. Vict. de Bisschop.

A Gilt Medal has been awarded to MM. Bonfiglioli et fils, of Bologne, for 20 Gardenias, which, however, are poorly flowered, although finely grown plants.

Acacias, Genistas, Cytisus, Brachysemas, and other plants from the Cape and Australia constitute a very important feature of the show, and there are some remarkably fine specimens, such as used to be seen in England 30 or 40 years ago. One of the most successful exhibitors of these plants is M. Firmin de Smet, of Vinderhaute, who exhibits some good specimens of culture; and M. Jules de Cock, M. Aug. Cornelis, and M. Em. Collumbien, all of Meirelbeke.

For 20 plants of Boronia elatior, finely-grown bushy plants, M. Theo. Piens, Melle, has secured the 1st prize; and M. Auguste has received a similar award for 20 plants grown as standards on stems at least 18 inches in height, although they are a long way from being in full blossom.

Greenhouse Flowering Plants.

In this section most of the plants are natives of the Cape or Australia, the principal genera represented being Acacias, Boronias, Chorizemas, Clianthus, Correas, Cytisus, Diosmas, Epacris, Ericas, Genetyllis, Grevilleas, Leptospermums, Polygalas, Sparmannias, and a few fine plants of Strelitzia Reginæ. In the various classes, M. Firmin de Smet almost swept the board, and, considering the size, culture, number and variety of his collections, he well deserved the awards for his enterprise.

Bulbous and Tuberous-rooted Plants (Greenhouse).

The most important class in this section was one for 75 Hippeastrums, and it contained two exhibits. Both were meritorious groups, but the better was one from Messrs. R. P. Ker & Sons, Aigburth Nurseries, Liverpool. This collection was remarkable for the distinct colour to be seen in the flowers, many of the tints being novel and pleasing. The 2nd prize was obtained by an exhibit from the Establishment "Labelliflos," Voorschoten.

The 1st prize in the class for 40 plants was also won by Messrs. R. P. Ker & Sons, and the 2nd prize by the Société Anonyme Horticole, L. van Houtte, père. A very large, crimson-flowered variety named Mephistopheles, shown by Messrs. Ker, was exceedingly fine.

Mr. R. W. Ker offered prizes in classes for 25 new varieties of Hippeastrums, in one case the competition being restricted to amateurs, and in the other open for nurserymen. There was no entry in the amateurs' class, but in the other class, the 1st prize was awarded to the Société Anonyme Horticole, L. van Houtte, père, for a very fine collection of choice varieties.

Messrs. R. P. Ker & Sons won the 1st prize for six new Hippeastrums, all of them having brilliantly coloured flowers of the best form; the 1st prize for six new varieties with white flowers, showing Silver King, Silver Queen, Snow Queen, White Lady, Purity and Albescens; and for the best single Hippeastrum of recent introduction.

Cyclamens.

Cyclamens were shown in several classes reserved specially for these greenhouse flowering plants. The best group of 100 plants of C. latifolium and varieties was shown by M. Ad. D. Houdt, Ghent, and the best group of 50 plants by M. D. Daarduse, Aalsmeer, who had also the best group of 25 plants, and the best group of Cyclamen of the "Papilio" type.

Forced Trees and Shrubs.

These probably form the poorest feature of the show. The plants are scarcely in blossom, and are more or less diminutive in size. Many amateurs entered in this section, and perhaps owing to the wretchedly cold weather that has prevailed, they have been unable to bring their plants to perfection for this show. Special mention, however, may be made of a well-flowered specimen of Deutzia Lemoinei compacta, shown by M. V. Vermeersch, of Evergem. The Wistarias, Prunus, Magnolias, &c., are in a backward state, but the Lilacs from M. P. de Vries, Aalsmeer, form a very attractive group.

Hardy Herbaceous Plants, &c.

These were scarcely noteworthy, and there is little doubt that some of the collections shown so regularly at Vincent Square would come as a complete revelation to our Belgian friends. A few varieties of Polyanthus, from MM. Vilmorin, of Paris, are almost all that were shown in this section. Attached to these are some very fair specimens of Primula obconica in various shades of rose, and a few forced Stocks.

Zonal Pelargoniums are also not particularly strong, the best collections coming from M. J. de Hemptinne, to whom a Gilt Medal was awarded in two distinct classes; and another medal for ten varieties to M. F. Wilryck Nagels, les Anvers.

Carnations.

These are contributed by Messrs. Hugh Low & Co., of Bush Hill Park, Enfield, in a non-competitive but very attractive group; while Mr. Engelmann, of Saffron Walden, secured the 1st prize in two distinct classes.

CINERARIAS.

A few groups of these are shown, the best being from MM. VILMORIN, of Paris, who displayed in two sections plants of the polyantha and hybrida form, and won the Gold Medal. M. FERARD, of Paris, won a Gilt Medal for a group of 40 plants; and M. WAROCQUE (of Orchid fame) has secured the 1st prize (Gilt Medal) for 20 double-flowered plants, the 2nd prize for these curious-looking things going to M. DE SAEGHER.

RHODODENDRONS AND AZALEAS.

The Ghent Shows invariably owe much of their attractiveness to the large displays of Rhododendrons that are always displayed in the temporary building. On the present occasion the varieties of Rhododendron indicum are massed together in great beds on the ground level and on slopes in the portion of the building nearest to the entrance. The plants are in pots, and the pots are placed on the surface of the ground, but the effect is that of beds planted as they would be in the flower garden or pleasure ground, and care is taken to ensure that the masses of flowers are kept well below the line of sight, in order that their effect shall be as good as possible.

All the varieties of R. indicum are termed Azaleas at this show, and we therefore retain the name for the sake of easy reference.

A very large class is that for the best exhibit of Azalea indica of any type or size, and arranged for decorative effect on a space not exceeding 50 metres. The exhibit which has gained the 1st prize was one from M. AUGUSTE HAERENS, Somerghem, and the Jury awarded the prize with acclamation, the collection being of very high quality. The 2nd prize has been won by M. RAPHAEL VERVAENE, Moerlebeke.

In the next class the exhibits consist of 40 plants, representing large specimens, and the 1st prize, valued at 500 francs, was offered by the General Secretary, M. Albert Ceuterick. This was awarded to M. D'HAENE, Nurseryman, Ghentbrugge, for a fine collection, consisting of plants about 3 to 4 feet high, and measuring from 4 to 6 feet across. Messrs. SANDER & SONS, who were awarded the 2nd prize, had also an exhibit of high merit.

In the class for 20 plants larger specimens are exhibited, and the 1st prize has been gained by the SOCIÉTÉ HORTICOLE D'HAENE, Ghentbrugge, the 2nd prize by MM. MAENHOUT, BROTHERS, Mont St. Amand, and the 3rd prize by M. AUG. VAN DAUMME, Loochristy.

It is obvious that the system of training Azaleas as pyramids is now only practised on rare occasions in the Ghent district. A class was provided for 25 plants trained in this manner, but the exhibits are not numerous, and the plants are small. The best collection of 25 plants is shown by Messrs. F. SANDER & SONS, and M. CHARLES VUYLSTEKE has obtained a 1st prize for 12 plants. In a class for 100 plants (pyramids) M. VICTOR VANDE WEGHE, Loochristy, has obtained the 1st prize. The best group of 12 single-flowered Azaleas came from the SOCIÉTÉ ANONYME HORTICOLE A. D'HAENE, and the best dozen double-flowered varieties from M. AUG. HAERENS, Somerghem. In this latter exhibit the best varieties were Ernest Eckhaute (red), Elborina plena, and Madame H. Seidée (white).

A very important class is that for 100 varieties of Azalea indica, the exhibits in which make a very glorious display. The specimens are generally dwarf, and have a diameter varying from 3 to 5 feet. The prizes have been gained in this order: 1st, The SOCIÉTÉ ANONYME HORTICOLE A. D'HAENE; 2nd, The SOCIÉTÉ ANONYME HORTICOLE DE MONT ST. AMAND; and 3rd, The SOCIÉTÉ ANONYME LOUIS VAN HOUTTE, PÈRE, The winners of the 1st prize in the class just described have also been awarded the 1st prize in a class for 50 plants.

The best collection of 100 varieties of Azalea indica which have never been previously presented at an exhibition of the Society, was shown by Messrs. F. SANDER & SONS. Most of these plants were in pots 3 or 4 inches in diameter, and, being very small specimens, the flowers in some cases appeared exceedingly large, whilst the colours were attractive and brilliant. Greatest prominence was given to a variety named Centenaire, with clear red, semi-double flowers of large size. Other attractive varieties included Sylvia (deep red), Leda (white), Thalia (white), and Juno (pink). The 2nd prize was gained by Messrs. AUGUSTE HAERENS.

The SOCIÉTÉ ANONYME HORTICOLE A D'HAENE has obtained the 1st prize for 100 plants in five varieties, and to be shown in pots not exceeding 0m 60 in diameter.

A somewhat novel effect is produced by the exhibits in a class for 50 plants of Azalea indica cultivated in the form of espaliers. The plants shown by M. AUGUSTE HAERENS are about 2 feet or so high, and present two nearly flat surfaces, the effect being as good when seen from one side or the other. Such a plant might be suitably placed in the middle of a dwelling-room, but those exhibited by the SOCIÉTÉ ANONYME LOUIS VAN HOUTTE, PÈRE, had generally but one good side, and are therefore suitable for use as screens only.

The best exhibit of 50 plants of a double, red-flowered variety came from M. WILLE-TEMMERMAN, who showed the variety Ernest Eeckhaute in very dwarf plants abundantly flowered.

The variety Julius Roehrs was shown by Messrs. F. SANDER & SONS, this exhibit being the only one forthcoming in a class for 25 plants. The variety has double flowers of extra large size, which, in colour, are of a soft but rich shade of red.

An excellent exhibit was made by MM. DE REUSSE, BROTHERS, Saffelaere, in a class for 50 plants of single and double-flowered Azaleas (pink). A large selection of varieties was shown, and two of the most effective were Prof. Wolters and Paul Weber.

The best lot of 25 plants of Azalea indica "Hexe" was shown by M. PYNAERT VAN GEERT, and this brilliant red variety being placed in juxtaposition to the variety "Vervaeneana alba," the effect was most marked. For this latter variety, which has large, semi-double, white flowers, the best exhibitor was M. AUGUSTE HAERENS, Somerghem, and he was followed by M. JOSEPH VERVAENE, Ledenberg.

In a class for 12 new varieties of Azalea indica Messrs. HAERENS & WILLE, Somerghem, have obtained the 1st prize for an exhibit in which we noted the following sorts as the most valuable: American Beauty (red, double), Mlle. Marie Antoinette (reddish-pink, single), Bay Ridge (white, double), Snowflake (white, double), and Virginal (white, double). In the 2nd prize exhibit Messrs. F. SANDER & SONS have a very fine double red variety named Major Holford.

In a class for six varieties that are not yet in commerce there are several novel shades of colour to be seen; there are La Madone (puce-purple), Centenaire (orange-red), and M. Pierre de Bielde (dull purplish-red).

The exhibits of Camellias are very good in some instances, but they do not call for special remark.

In a few classes there are groups of Azalea mollis or Rhododendron sinense; but, taken together, they are not of special quality. Some of the most remarkable are to be seen in a class for 25 plants, the specimens exhibited being standards from M. CHARLES VUYLSTEKE.

The method of arranging the hardy Rhododendrons on slopes is most excellent. The visitor approaches them as he would a carefully-planted Rhododendron garden, and the effect is one of a bank of flowers, for it matters not what height the plants may be, they are so arranged that every plant contributes its proper share to the general display. The best collections of 40 plants and 20 plants are shown by M. PYNAERT VAN GEERT, and in each case he was followed by the SOCIÉTÉ ANONYME HORTICOLE LOUIS VAN HOUTTE, PÈRE.

M. VALENTIN VERMEERSCH, Evergem, had a very fine exhibit in a class for 25 plants, and M. SPAE-VANDERMEULEN, Ghent, has won the 1st prize for 10 plants.

In a class for 30 Rhododendrons of new or little-known varieties shown by M. JEAN BRACKE, Loochristy, who has gained the 1st prize, we remarked excellent varieties in President Callier (mauve with dark spotting), M. Dierman, and Fritz Dobbelaere.

M. PYNAERT VAN GEERT has won the 1st prize in a class for 75 Rhododendrons in three varieties; and M. CHAS. VUYLSTEKE the 1st prize for 12 plants of Rhododendron "Pink Pearl." This variety, so familiar in England, especially at the "Temple" Show, is exhibited in very praiseworthy condition.

DRACÆNAS.

In addition to the Cordylines shown numerously in the groups and as specimens indoors, there are some interesting exhibits of D. Doucettii, D. indivisa, and similar species out-of-doors, where the Conifers and large plants of Sweet Bay are the most conspicuous features. The variation to be seen in D. indivisa are remarkable, and those with very broad leaves, in which the midrib is coloured more or less red, are excellent garden plants.

CONIFERS.

Most of the Conifers exhibited were planted out in the form of shrubberies in the "French" garden dividing the Casino buildings from the annexe. The largest groups were shown in Class 660, the exhibits being of 50 plants. An excellent collection was shown by the SOCIÉTÉ ANONYME HORTICOLE DE CALMPTHOUT, which was awarded the 1st prize and was highly commended by the jury.

The best collection of 25 specimens was shown by M. C. KERKVOORDE, Wetteren, and the best collection of 20 dwarf-growing Conifers by the SOCIÉTÉ ANONYME HORTICOLE DE CALMPTHOUT. There was only one exhibit in a class for 15 new varieties of Conifer, this being from the SOCIÉTÉ ANONYME HORTICOLE L. VAN HOUTTE, PÈRE. Other 1st prizes for hardy Conifers were won by the SOCIÉTÉ ANONYME HORTICOLE DE CALMPTHOUT and M. AUGUSTE VAN HEDEN.

There were several classes exclusively for Araucarias, in one of them each exhibit consisting of 25 specimens of tender varieties. The 1st prize in this class was won by M. HARTMANN, Mond St. Amand, whose collection was much commended by the Jury, and the same exhibitor was awarded the 1st prize for 15 tender varieties of Araucaria.

M. AUG. VAN HEDEN won the 1st prize for six specimens, and there were several additional classes for single specimens.

CACTI.

In some of the glasshouses erected by horticultural builders out-of-doors some interesting exhibits of Cactaceous plants are made, particularly by M. FRANZ DE LAET, Contich Nurseries, near Antwerp, who was awarded several 1st prizes.

MAJOR HOLFORD'S HIPPEASTRUMS.

Apart from his great group of Orchids, probably the finest exhibit in the show, was the display of Hippeastrums (not for competition) of the Westonbirt strain staged by Major G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. Chapman). This was probably the most remarkable and beautiful collection of these flowers ever displayed, the great number of plants in the group being of the very highest order of merit in all points. Specially noteworthy were the bright-scarlet and deep-red varieties, although the white and light-coloured forms were equally beautiful.

The following varieties were of outstanding merit:—Harvest Home (a very large, well-formed flower, nearly white), King Arthur (crimson self), Rubens (rich orange red), Harlequin (white, with bright red stripes), Marmion (white, with rose stripes), and Apollo (glistening white, with scarlet markings). A Gold Medal was awarded.

EXHIBITS FROM HORTICULTURAL JOURNALS.

Amongst the numerous non-competitive exhibits, to which we are unable to refer in detail, are several collections of illustrations of plants, garden scenes, &c., contributed by the proprietors of horticultural journals. It may interest readers to learn that the highest award of a Silver-Gilt Medal was awarded to the *Gardeners' Chronicle*, and Silver Medals were awarded to *La Tribune Horticole* and the *Revue d'Horticulture Belge et Etrangers*.

THE FIRST EXHIBITION.

In the interior of the building built to represent the old inn "Frascati" (as described on p. 283) the following plants had been got together by Mons. VICTOR HEURSEL DE MEESTER, Curator for the Society, who has been awarded a prize consisting of an Œuvre d'Art:—Sparmannia africana, S. africana fl. pl., Acacia melanoxy-

lon, A. lophantha, A. lineata, A. (semis), A. Bertiana, A. (semis), A. linifolia, A. suaveolens, A. verticillata robusta, A. grandis, Eugenia myriophylla, Ligustrum japonicum aurea elegantissima, Rhododendron Sesterianum, Hedychium Gardnerianum, Rondeletia (Bogiera) cordata, Leptospermum Scoparium (bullatum), Homaranthus (Carumbium) populifolius, Roupala Pohlii (corcovadensis), Nerium oleander, Strelitzia Reginæ, Chorizema ilicifolia, Erica herbacea, Sollya heterophylla, Diosma ericoides alba, Semele (Ruscus) androgyna, Alpinia nutans, Cestrum (Habrothamnus) elegans, Melianthus major, Ceratonia siliqua, Abutilon Thomsonii Souvenir de Bonn, Coprosma Baueriana variegata, Asparagus Sprengeri, Feijoa Sellowiana, Polygala Dalmaisiana grandifolia, Grevillea robusta, Edwardsia macrocarpa, Zieria Smithii, Eriobotrya japonica, Hedera Helix arborescens, Schinus molle, Cestrum (Habrothamnus) Newellii, Eucalyptus globulus, Abutilon megapotamicum (vexillarium), Brachysema lanceolatum, Cacti, Doryanthes Palmeri, Eupatorium deltoideum, and Lopezia miniata. These plants are of those species that were shown at the first exhibition the Society held on February 7, 8, 9 & 10, 1889. In cases where the plants exhibited are not in flower, black and white or coloured drawings have been attached to them. It is a very interesting exhibit.

THE LUNCH.

A lunch was offered to the members of the Jury at 2 o'clock on Friday in the Great Hall of the "Halle aux Draps." There were 300 guests, and the tables were prettily decorated with flowers.

The President, M. A. Callier, thanked the members of the Jury who had accepted the invitation of the Society to visit Ghent on the present occasion. He thought all would say that it is impossible for the Society to do better than it has done, but that it had arrived at its highest point of usefulness. But the success of the present was the warrant of the future. Ten years ago Count de Kerchove thought also that nothing better could be done, but progress had since been made. One could estimate the distance traversed by the Society upon comparing the plants exhibited at the first exhibition in 1809 and the Orchids shown now by M. Vuylsteke. After the lapse of another five years the next exhibition will have a special character, and it will occupy more room and a better place, as it will be held in connection with the great International Exhibition of Ghent of 1913. The President concluded by proposing the toast of "The Jury," coupling this with the name of the Honorary President of the Jury, Lord Redesdale, and the President, M. Viger.

Lord Redesdale thanked M. Callier, and he said how he was delighted again to be in the hospitable town of Ghent, the queen of horticultural towns in the world. When he went back to England five years ago he said that the last word upon horticulture had been said. But the present exhibition was far better than the last one. The horticultural riches are a revelation of the beauty which can be obtained by human science. Lord Redesdale called special attention to the Orchids shown by M. Lambeau, and, as an Englishman, he was proud of the plants exhibited by his countryman, Major Holford.

M. Viger called attention to the activity and the energy spent by the committee of organisation. He thanked the exhibitors and the committee of organisation of the exhibition, MM. Ceuterick, General Secretary, Lucien de Cock, Assistant Secretary, Arthur de Smet, who had charge of the hall, E. Wartel, who had charge of the winter garden, and Romain de Smet, who had charge of the saloons. He drank to the prosperity of the Society and to his staff.

M. Ceuterick spoke of the Committees which have superintended the work of the Society since 1808, and referred to the late Count de Kerchove, M. Fierens, and M. de Meulenaere, who prepared the whole work of the centenary exhibition. He offered his thanks to the horticultural Press, which had greatly helped the Committees.

FIG. 130.—PHILODENDRON ILSEMANII, HORT. SANDER, AS SHOWN AT THE GHENT INTERNATIONAL EXHIBITION. (See p. 257.)

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 28.—The weather conditions at the meeting of the committees held on this date were most unfavourable. Very heavy rain was falling, but inside the Hall there was a bright display of flowering plants, including Orchids, forced flowering shrubs and trees, Roses, bulbous plants—amongst which were many choice groups of Narcissi and Tulips—Carnations, and a host of seasonable hardy flowers. The Orchid Committee granted several awards to novelties, including one to an Odontoglossum, shown by DE B. CRAWSHAY, Esq. The Floral Committee granted three Awards of Merit to new plants, but no novelty was forthcoming before either the Fruit and Vegetable or the Narcissus Committees. In conjunction with the ordinary

meeting of the society, the National Auricula Society held their annual exhibition, a full account of which is given in our report below.

At the afternoon meeting 37 new Fellows were elected and a lecture on the Profession of Landscape Gardening was given by Mr. E. White.

[Owing to pressure on our columns we have no space to publish a report of the Committees. This will be given in our next issue.]

Floral Committee.

AWARDS OF MERIT.

Hippeastrum Purity.—This is a white-flowered variety that has already been exhibited, and as its albino character appears fixed, for it is now three years since it was first shown, the Committee granted it this distinction. It was shown by Mr. C. R. FIELDER, the raiser of Snowdon, a variety that has since developed a slight rose tinting.

Aubrietia Lavender.—A variety of this floriferous spring garden subject of the shade of colour indicated by its name. The flowers are rather larger than those of Dr. Mules, and they completely cover the foliage beneath them. Shown by Mr. PRICHARD, Christchurch, Hants.

Auricula Phyllis.—An Alpine of mauve and purple shading, with a cream centre of perfect outline and correct breadth. The rich purple colouring shades to a pleasing mauve tint. Shown by Mr. J. DOUGLAS, Great Bookham.

Orchid Committee.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum "Queen of the Earth," from DE BARRY CRAWSHAY, Esq., Rosefield, Sevenoaks. A very beautiful Odontoglossum, first illustrated and noted in the *Gardeners' Chronicle*, May 19, 1906, p. 309, when the fact that many experts doubted the accuracy of its description as a true O. crispum was recorded. Its flowers now produced vary very considerably from those borne by the plant when illustrated, the colour having become more red, and spread over the greater part of the sepals and petals. The heavy blot hing on the finely-formed flower is reddish-claret colour.

AWARD OF MERIT.

Odontoglossum platychcilum superbum, from Sir TREVOR LAWRENCE, Bart., K.C.V.O. (gr. Mr. W. H. White). A very interesting species from Guatemala, of which a single plant appeared and was illustrated in the *Gardeners' Chronicle*, May 7, 1892, that form having white flowers with rose spots on the labellum. The present plant bore seven spikes, generally two-flowered, and pink in colour, spotted on the lip with rose.

Cirrhopetalum Wendlandianum, from Sir TREVOR LAWRENCE, Bart. The plant bore a head of five flowers, each about 5 inches in length, yellow striped, and tinged with red, the dorsal sepals and petals being fringed. It resembles C. Collettii, but has narrower flowers and differs in colour.

Aerides Vandarum, from Mrs. BEVINGTON, Sevenoaks (gr. Mr. Huxley). The well-known terete-leated species, with blush-white flowers.

Odontoglossum nævium, from Messrs. ARMSTRONG & BROWN. An elegant little species from New Granada. Inflorescence about a foot high, branched, flowers white with reddish spots.

BOTANICAL CERTIFICATE.

Cirrhopetalum Roxburghii, from Sir TREVOR LAWRENCE, Bart. A pretty dwarf species with umbels of ovate flowers forming an almost globular head. Cream-white tinged with rose. The plant bore six spikes.

NATIONAL AURICULA & PRIMULA.

APRIL 28.—"The Auricula in May has had its day" is a saying of the Lancashire florists, and certainly in the early years of the society's exhibitions it was safe to fix a date about April 20. The Auriculas were being staged on April 19, when the news was brought in of the death of the great Earl of Beaconsfield, but in recent years it would not be difficult to make a good show of Auriculas in May, and this year near the middle of May. The season has been most trying to the plants. The continued east winds have prevented the flowers from opening freely. An Auricula pip ought to open out flat, but this season they are frequently cupped and uneven. Some growers have tried placing the most difficult varieties, such as the green-edged Mrs. Henwood, in heat; this softens the corolla, but it causes the flowers to be smaller and weakens the foliage. In the green-edged section Mrs. Henwood was well shown, also Abbe Liszt, a very correct variety; Shirley Hibberd is one of the best in this class. In the grey-edged class there were few to equal the veteran George Lightbody, which was the premier show Auricula in the exhibition. This beautiful flower was raised by Mr. HEADLEY, of Stapleford, quite 60 years ago. Marmion is a very beautiful silvery, grey-edged variety, and was shown better than usual. The old Lancashire Hero was also to the fore, but it has fallen somewhat behind of late years. Olympus, a good grey, was also finely shown, and Richard Headley was also equal to the best of the modern flowers. In white edges, Acme has been rather disappointing; the flowers opened badly. Conservative was also in fair form. The plant is weakly in growth, but it usually gives a good flower truss. Heather Bell is a large flower with a violet ground colour, but, as usual, the florets showed too much of this shade. There were several new selfs, but amongst those in commerce Mrs. Phillips and Mikado, with dark maroon margins were the best. The variety Favourite, a new violet "self," is the finest in this class. In the class for a collection of 24 show varieties of Auriculas, Mr. JAMES DOUGLAS, Great Bookham, won the 1st prize with superbly-grown examples. Abbe Liszt, Mrs. Henwood and Shirley Hibberd were the best green-edged, Acme and Encharis the best whites, and George Lightbody, Olympus and Heather Bell the best greys. 2nd, Rev. F. B. HORNER, Kirkby Lonsdale, who exhibited some very good seedlings, as he has done for some years past. Shirley Hibberd was the best green in this collection. Artemis and Eurydice were the best "selfs." Azure, violet "self," was also very fine. 3rd, Mr. W. M. SHIPMAN.

In the class for twelve sorts, dissimilar, Mr DOUGLAS again won the 1st prize. He showed a fine new self of merit named Harrison Weir; George Lightbody was also very choice.

In the class for six distinct varieties J. T. BENNETT-POE, Esq., Holmwood, Cheshunt, took the 1st prize, his Miss Prim, white-edged, being a choice example. The same exhibitor won in the class for four distinct varieties.

In the class for seedlings MARTIN R. SMITH, Esq., Hayes, Kent (gr. Mr. C. Blick), secured the first honours with The Sirdar, a green-edged show variety of excellent form. WILLIAM SMITH, Esq., Bishop's Stortford, gained the 1st prize for a white-edged seedling with Stately—a handsome well-proportioned flower.

In the class for 24 Alpine Auriculas Mr. DOUGLAS was again to the fore, having Rosy Morn, Teviotdale, Argus, Martin Smith, Mrs. Markham, and Ettrick. Orion and Mars are very fine gold-centred varieties; these two, with Majestic and others, were exhibited in this class by Messrs. PHILLIPS & TAYLOR, Bracknell. For twelve Alpines Mr. DOUGLAS was again in the premier position. His Teviotdale is a striking white-centred variety, but Mrs. Douglas is a new seedling, superior to the former, and a flower of great promise. This variety was declared the premier bloom in the Alpine section. Mr. J. J. KEEN, Southampton, took the 1st prize in the class for six Alpines.

For six Alpine Auriculas (seedlings) Mr. MARTIN R. SMITH, Hayes, Kent (gr. Mr. C. Blick), was 1st, having good plants of Miss Audrey Campbell, Emperor, Ophelia, &c.

For twelve fancy kinds Mr. DOUGLAS and Mr. MARTIN SMITH took the 1st and the 2nd prizes respectively.

For a collection of Primulas, twelve kinds, Mr. MARTIN R. SMITH was 1st. The same exhibitor was 1st for a group of Primulas or Auriculas.

In the class for a collection of Polyanthus Mr. MORTIMER, Farnham, Surrey, was 1st, with plants of a fine strain. 2nd, Mr. J. CROOK, Camberley, Surrey.

MIDLAND DAFFODIL.

APRIL 23, 24.—Never in the history of the Midland Daffodil Society has any of its annual exhibitions been opened under worse climatic conditions than those which prevailed at Birmingham on the opening day. Snow and sleet commenced to fall about 8 a.m. on the 23rd ult., and continued without intermission until 8 p.m. The weather on the second day was better, but snow fell at intervals, and the sun shone only for a short time. Owing to the very cold late spring, the display was not so extensive as the one held a year ago, but the quality of the exhibits generally was excellent, especially the flowers staged by Mr. E. M. CROSFIELD, Mr. P. D. WILLIAMS, Mr. W. A. WATTS, Mr. C. DAWSON, Messrs. CARTWRIGHT & GOODWIN, and Messrs. BARR & SONS. A feature of the show was the great increase in the number of new varieties of Daffodils raised and staged by the exhibitors themselves; it is doubtful if so many really good seedlings have ever been seen at one time upon the exhibition tables of any society. The schedule consisted of between 50 and 60 classes, including several new ones, of which one was provided for new varieties, and another for seedlings. Two Silver Challenge Cups were offered this year for the first time, one as a permanent memorial to the late Rev. S. E. Bourne, who was associated with the Midland Daffodil Society from its inception, the other being given by Mr. R. C. Cartwright, of King's Norton.

Immediately following the formal opening of the exhibition by Her Grace the Dowager Duchess of Sutherland, the Rev. G. H. Engleheart, on behalf of a number of ladies and gentlemen, presented Mr. Robert Sydenham with a handsome illuminated album, and a massive solid silver candelabra to Mrs. Sydenham. Mr. Herbert Smith, one of the hon. secretaries, was the recipient of a silver tea service and a purse of gold.

In the evening Mr. Robert Sydenham entertained the principal exhibitors, judges, and visitors to dinner at the Grand Hotel. After the usual loyal toasts had been honoured, the rest of the evening was spent on Daffodil chat, prominence being given to the classification of the Daffodil.

CUT FLOWERS (OPEN CLASSES).

The leading class was for a collection of 50 varieties of Daffodils, representing the magni-coronati, medio-coronati, and parvi-coronati types. Four exhibits were placed before the judges, who awarded the 1st prize to E. M. CROSFIELD, Esq., Cossington, Bridgwater (gr. Mr. Tomlinson), for a wonderfully fine collection of shapely flowers, beautifully arranged. Last year's winner, F. H. CHAPMAN, Esq., Rye, was awarded the 2nd prize, and Messrs. CARTWRIGHT & GOODWIN, Blakebrook, Kidderminster, the 3rd.

The last-named exhibitors and Messrs. POPE & SONS, King's Norton, were the only competitors in the following six classes, and in each instance the 1st and 2nd prizes were awarded in the order in which their names are given:—(1) Nine distinct varieties of yellow self trumpet Daffodils (magni-coronati); (2) nine distinct varieties of bicolor trumpet Daffodils; (3) nine distinct varieties of medio-coronati Daffodils (chalice crowned), with yellow or sulphur perianths; (4) nine distinct varieties of medio-coronati Daffodils (chalice crowned), with white perianths; (5) 12 distinct varieties of parvi-coronati Daffodils (saucer or flat crowned), including Engleheartii type (poeticus varieties excluded); and (6) six vases of Polyanthus or Poetaz Narcissus, not less than four varieties. The flowers staged by Messrs. CARTWRIGHT & GOODWIN were uniformly good throughout, and included several varieties of outstanding merit.

In a class for six distinct varieties of the true poeticus type, F. H. CHAPMAN, Esq., beat Messrs. CARTWRIGHT & GOODWIN. The flowers in the 1st prize stand were of excellent quality, and were much admired. The varieties were: Almira, Barcarolle, Virgil, Homer, Dante, and Horace.

Messrs. CARTWRIGHT & GOODWIN were the only exhibitors in a class provided for six varieties of double Daffodils, in not fewer than four varieties.

AMATEUR CLASSES.

A class was provided for a collection of Daffodils in 25 varieties, the bulbs not to cost more than 10s. each. Of the five contestants, the Rev.

T. BUNCOMBE, Black Torrington, N. Devon, was awarded the 1st prize. His flowers were beautifully fresh, a few of the best varieties being: Madame Plemp, Gloria Mundi, Madame de Graaff, J. B. M. Camm, Almira, Cassandra, Leonie, and Barrii conspicuus. H. B. YOUNG, Esq., Metheringham, Lincoln, who was awarded the 2nd prize, staged some choice flowers.

A well-contested class was that for six distinct varieties of Daffodils, none of which were to cost more than 3s. per dozen. The first prize was gained by H. B. YOUNG, Esq., who had splendid flowers of Maximus, Emperor, Leedsii, Minnie Hume, John Bain, Sir Watkin, and Poeticus grandiflora præcox; 2nd, W. A. WATTS, Esq., St. Asaph.

Mr. YOUNG also took the lead in a class for six distinct varieties of yellow self trumpet Daffodils (magni-coronati), and the Rev. T. BUNCOMBE beat ten other competitors in the next class provided for six distinct varieties of bicolor trumpet Daffodils.

In the class for six distinct varieties of medio-coronati Daffodils (chalice crowned), having yellow or sulphur perianths, the 1st prize was awarded to Mrs. JOHNSTON, High Lea, Bideford, for a beautiful set of flowers; 2nd, W. A. WATTS, Esq.

Another class, similar to the above, but for flowers having white perianths, brought eight exhibitors. H. B. YOUNG, Esq., was placed 1st with uncommonly good flowers of the varieties Seagull, Duchess of Westminster, Minnie Hume, Katherine Spurrell, White Queen, and White Lady; 2nd, Rev. T. BUNCOMBE.

The best six varieties of parvi-coronati Daffodils, including Englehearti type, came from the last-named exhibitor, the Rev. G. P. HAYDON being 2nd.

W. A. WATTS, Esq., won the 1st prizes in the classes provided for (1) six varieties of true poeticus, (2) three distinct varieties of double Daffodils, and (3) three distinct varieties of Polyanthus Narcissus.

THE BOURNE MEMORIAL CHALLENGE CUP.

This exquisitely-designed cup, subscribed for as a memorial to the late Rev. S. E. Bourne, was offered in a class for 12 varieties of Daffodils raised by the exhibitor. The trophy was won by P. D. WILLIAMS, Esq., St. Keverne, Cornwall, who showed pretty flowers of the following varieties:—Charles I., Agrappince, White Wax (with lovely pale trumpet), Sheba, Augusta, Hestia, Claudia, Snowbird, Lavender, Hornet (a beautiful flower, with a pale lemon-coloured perianth and a very rich orange-coloured crown), Beeswing, and Quilp. The 2nd prize went to E. M. CROSFIELD, Esq., Cossington, Bridgwater, whose collection also contained many choice blooms. The varieties were as follow:—Elnair, Red Macaw, Frost Bound, Pixie, Faction, Satisfaction, Crystal, Lolah, Shell, Circular, Divinity, and Casilda. Eight exhibitors contested in this class.

There were seven exhibits in a class provided for three distinct varieties of magni-coronati seedling Daffodils not yet in commerce, and six exhibits in the next class for the same number of flowers, all of which the schedule required to be raised by the exhibitor. Mr. E. M. CROSFIELD won the 1st prize in both classes, and Mr. P. D. WILLIAMS the 2nd prizes.

In another class for three new varieties of parvi-coronati seedlings raised by the exhibitor, the awards were reversed, Mr. P. D. WILLIAMS being 1st with shapely flowers of Mikado, Julia, and Sunrise.

THE CARTWRIGHT CHALLENGE CUP.

This was presented to the Society by Mr. R. C. Cartwright, and was offered for 12 varieties of Daffodils which have not been in commerce for a longer period than four years. Although only three exhibits were staged in this new class, the flowers were surprisingly good. The 1st prize was won by Mr. E. M. CROSFIELD, who showed Malaga, Lolah, Tiara, Penguin, Athelta, Stay Sail, Mrs. Ernest Crosfield, Radiant, Giraffe, Phantasy (with delicate sulphur trumpet), Makeshift, and Potent (pale yellow trumpet); 2nd, Rev. G. P. HAYDON.

Mr. P. D. WILLIAMS secured the premier position in a class for six varieties of any Daffodils that have not been in commerce more than four years; 2nd, Messrs. CARTWRIGHT & GOODWIN; 3rd, Messrs. POPE & SON.

AWARDS TO NOVELTIES.

Narcissus Buttercup.—A medium-sized, deep self flower of the magni-coronati type. (First-Class Certificate.) Shown by Mr. C. DAWSON, Penzance.

N. Chloe.—This also belongs to the magni-coronati type. A beautifully-shaped flower, with a broad, cream-coloured perianth, and a soft, canary or pale yellow cup. (Award of Merit.) Shown by Mr. T. BATESON, Beaworthy, N. Devon.

Saxifraga Pitton Seedling.—A dainty plant, with deep crimson flowers, borne on stiff, wiry stems, nearly 5 inches high. (Award of Merit.) Shown by Messrs. BARR & SONS, Covent Garden, London.

Viola gracilis.—This plant is dwarf, compact, and bears a profusion of small, violet-blue flowers. (Award of Merit.) Shown by Messrs. R. WALLACE & CO., Colchester.

CUPS AND MEDALS.

Messrs. Barr & Sons' Silver Daffodil Vase, offered to the most successful amateur in certain classes, was won by Mr. W. A. WATTS, St. Asaph.

The Medals offered by the Birmingham Botanical and Horticultural Society were awarded as follow:—

The large Silver Medal, as champion prize in the open classes, was won by Messrs. CARTWRIGHT & GOODWIN, and the large Bronze Medal was won by Messrs. POPE & SONS.

The large Silver Medal offered to the most successful exhibitor in the amateur classes, was won by Mr. W. A. WATTS, and the Bronze Medal in the same classes to the Rev. T. BUNCOMBE.

The large Silver Medal offered in another section was awarded to Mr. A. CRYER, and the Bronze Medal to Mr. W. H. PARTON.

HONORARY EXHIBITS.

Daffodils were well shown, especially by Messrs. BARR & SONS, Covent Garden, who secured the only Gold Medal awarded; Miss CURRY, Lismore, Ireland (Silver-Gilt Medal); Mr. C. DAWSON, Penzance (Large Silver Medal); Mr. A. M. WILSON, Keal Manor, Spilsby (Small Silver Medal); Messrs. R. H. BATH, Wisbech (Small Silver Medal); Mrs. BACKHOUSE, Hereford (Small Silver Medal); Sir JOSSLYN GORE-BOOTH, Sligo, Ireland (Large Silver Medal); Rev. G. H. ENGLEHEART, Dinton (Vote of Thanks); Messrs. HOGG & ROBERTSON, Dublin (Large Silver Medal); and Messrs. R. WALLACE & CO., Colchester (Small Silver Medal).

Exhibits of other plants were contributed by Messrs. HEWITT & CO., Solihull (Large Silver Medal); Messrs. BAKERS, Codsall and Wolverhampton (Large Silver Medal); Mr. VINCENT SLADE, Taunton (Large Silver Medal); Messrs. GUNN & SONS, Olton (Silver-Gilt Medal); Messrs. SUTTON & SONS, Reading (Large Silver Medal); Mr. ROBERT SYDENHAM, Tenby Street, Birmingham (Small Silver Medal); Mr. S. MORTIMER, Farnham, Surrey (Large Silver Medal); the Misses HOPKINS, Mere Gardens, Shepperton (Small Silver Medal); and Mr. C. H. HERBERT, Acock's Green.

DEVON DAFFODIL AND SPRING FLOWER.

APRIL 21.—The exhibition of the above society, held in the Guildhall, Plymouth, on this date, was, notwithstanding the lateness of the season, the best held under its auspices. The entries, especially in the classes limited to residents in the county of Devon, were numerous, and the competition generally was exceedingly keen. Among the best of the exhibits were six pots of greenhouse Cyclamen exhibited by Mr. T. MARTIN, and half a dozen pots of Zonal Pelargoniums shown by Mrs. BAINBRIDGE. A 1st prize was awarded to both these exhibits. Another noteworthy exhibit was a collection of unnamed Daffodil seedlings shown by Mr. J. C. WILLIAMS in the non-competitive classes.

In the class for 30 varieties of Daffodils, the 1st prize was won by Mr. G. SOLTAU-SYMONS, Chaddlewood, Plympton, and the best collection of 12 varieties of Daffodils was shown by Mrs. W. TYACKE. The best nine varieties of Narcissi of the magni-coronati type were displayed by Miss C. VIVIAN, while in the corresponding class for nine varieties of flowers belonging to the medio-coronati section the 1st prize was won by Mrs. W. TYACKE. Miss VIVIAN showed the best three varieties of parvi-coronati Daffodils, and she was also the exhibitor of the best three varieties of blooms of the incomparabilis type, the best six Daffodils having orange-coloured crowns, the best single bloom of a parvi-coronati Daffodil, and the best six bunches of Anemones. Mrs. W. TYACKE was the winner of the silver cup offered by Messrs. Barr & Sons, King Street, Covent Garden, London, for the best group of Daffodils in the exhibition, and the same lady, in addition to those already stated, excelled in the class for three varieties of N. poeticus. Other prize winners in the classes for Daffodils were Mr. H. G. HAWKER and Miss M. WILLIAMS. Mr. HAWKER also showed the winning flowers in a class for six bunches of Anemone fulgens. The 1st prize for 12 varieties of hardy spring flowers was won by Mr. H. W. GRIGG, and he was adjudged the 1st prize winner in the class for six varieties of species of Tulips. Mr. J. C. WILLIAMS showed the finest Rhododendrons and Camellias, winning the 1st prize for a group of Rhododendrons, a truss of Rhododendron bloom, six plants of Camellias, and cut flowers of Camellia.

In the class for 15 varieties of hard-wooded flowering shrubs, the 1st prize was won by the Earl of MOUNT EDGCUMBE, who had a splendid exhibit, including amongst other subjects the rare Heterotoma lobelioides, Embothrium coccineum, Cestrum Newellii, Brachysema acuminata, Clianthus puniceus, Correa bicolor, and Acacia dealbata.

There were 40 classes provided for the residents of the County of Devon only, and most of the exhibits in these were of a high order of merit. A group of Daffodil seedlings shown in this section by Mr. T. BATSON contained many interesting flowers.

Among the non-competitive exhibits, Messrs. BARR & SONS, King Street, Covent Garden, London, displayed a collection of Daffodils of all types; the DEVON ROSARY, Torquay, exhibited pot Roses; and Mr. HAYWARD MATHIAS, Medstead, exhibited Carnations.

HUNTINGDONSHIRE DAFFODIL AND SPRING FLOWER.

APRIL 21.—The third annual exhibition of this society was held at Huntingdon on this date, and the show was again a success. Many fine non-competitive exhibits were staged by nursery firms who make a speciality of the Narcissus. The quality of the flowers in the amateur classes was, considering the unfavourable weather of the past season, very good. Lady LILFORD was the winner of the cup offered by Messrs. Barr & Son, King Street, Covent Garden, London, this making the second time she has won the trophy. Other prize-winners included H. R. DARLINGTON, Esq., Mrs. HOWELL USTICKE, Miss L. L. LINTON, and Lady DE RAMSEY.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending April 29.

Remarkably heavy falls of snow for April.—The last 10 days have been very cold both during the daytime and at night, but to-day it has been much warmer. During the 10 days referred to the temperature on the coldest day did not at any time rise above 40°, which is 16° colder than is seasonable, and on the coldest night the exposed thermometer showed 10° of frost. On one day during the past week the ground was 6° colder at 2 feet deep, and as much as 9° colder at 1 foot deep, than is seasonable. Rain, snow, or hail has fallen on all but one of the last 10 days, and to the aggregate depth of over 2½ inches, which is ¾ inch in excess of the average quantity for the whole month. At seven o'clock on the morning of the 24th the average depth of the snow on the ground was 6 inches. I can only say that during the previous 22 years I have never recorded in April a deeper covering than 1 inch, and that was quite early in the month. Had none of the snow melted on reaching the ground I calculate the ground would have been covered with 9 inches of snow on the following morning, instead of 6 inches. On the 25th snow lay for a time to the average depth of 1¾ inch, and on the 26th to the average depth of 2½ inches—both quite distinct falls from that measuring 6 inches on the 24th. That the ground is now thoroughly saturated is shown by the fact that virtually the whole of the melted snow and rain of the past week has already come through the 2½ feet of soil in the bare soil percolation gauge. The sun shone on an average for only 3½ hours a day, or for two hours a day short of its usual duration at this period of the year. Three days proved altogether sunless. Light airs again, as a rule, prevailed, the direction being very variable. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 17 per cent. A swallow was first seen on the watercress beds at Berkhamsted on the 24th, or 16 days later than its average date in the previous 17 years, and later than in either of those years. *E. M., Berkhamsted, April 29, 1908.*

MARKETS.

COVENT GARDEN, April 29.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Anemones per doz. bunches	2 0	3 0
— double pink	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	2 6	4 0
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American various	2 0	3 0
— second size	1 6	2 0
— smaller, per doz. bunches	9 0	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0	10 0
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	2 0	4 0
— double, per dz.	2 0	3 0
— Barri	2 0	3 0
— Golden Spur per doz.	2 0	3 0
— Sir Watkin	1 6	2 0
Eucharis grandiflora, per doz. blooms	4 0	5 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz blooms	1 6	3 0
Gypsophila per dz. bunches	3 0	5 0
Hyacinths, per doz. bunches	4 0	6 0
Iris (Spanish), per dozen bunches	8 0	12 0
Lapagerias, per dozen	1 6	2 6
Lilac (French), per bunch	2 0	3 0
Lilium auratum	2 0	3 0
— candidum	2 0	3 6
— longiflorum	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	12 0	15 0
Marguerites, white, p. dz. bunches	4 0	6 0
— yellow, per dz. bunches	2 0	3 0
Mignonette, per dozen bunches	6 0	9 0
Myosotis, per doz. bunches	2 0	3 0
Narcissus, per doz. bunches	2 0	3 0
— Glonosa	1 6	2 6
— poeticus ornatus	1 6	2 6
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches	6 0	8 0
— Zonal, double scarlet	6 0	10 0
Ranunculus, p. dz. bunches	5 0	8 0
Roses, 12 blooms, Niphetos	1 6	3 0
— Bridesmaid	2 0	5 0
— C. Testout	3 0	5 0
— General Jacqumnot	2 0	4 0
— Kaiserin A. Victoria, per dozen blooms	2 0	4 0
— C. Mermet	2 0	4 0
— Liberty	4 0	6 0
— Mad. Chatenay	3 0	6 0
— Mrs. J. Laing, per dozen	2 0	4 0
Statice, per dozen bunches	8 0	10 0
Spiræa, per dozen bunches	5 0	8 0
Stocks, double white, per doz. bunches	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches	6 0	12 0
— best doubles	12 0	18 0
Violets, per dozen bunches	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 9	1 6
Berberis, per doz. bunches	2 6	3 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle (English), small-leaved, per dozen bunches	4 0	6 0
— French, per dz. bunches	1 0	1 6
Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri, per dz.	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, green, per dozen	15 0	24 0
— variegated, dz.	30 0	42 0
Asparagus plumosus nanus, doz.	9 0	12 0
— Sprengeri, dz.	6 0	9 0
— tenuissimus per dozen	9 0	12 0
Azalea indica	24 0	36 0
Boronia megastigma, per dz.	24 0	—
— heterophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
Callas, per dozen	8 0	10 0
Cineraarias, per dozen	5 0	9 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Daffodils, per doz. pots	5 0	6 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen	9 0	15 0
— candidissima, per dozen	15 0	18 0
— Cavendishi, per dozen	18 0	24 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0
Euonymus, per dz.	4 0	9 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*).

	s.d.	s.d.
Ferns, in thumbs, per 100	8 0	12 0
— in small and large 60's	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Fuchsias, per doz.	8 0	10 0
Genistas, per doz.	6 0	10 0
Hardy flower roots, per dozen	0 9	2 0
Heliotropiums, p. dozen	4 0	6 0
Hyacinths, per dz. pots	6 0	9 0
Hydrangeas, p. dz.	10 0	18 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, per dz.	18 0	24 0
— lancifolium, p. dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Marguerites, white, per dozen	8 0	10 0
Mignonette, per dozen	6 0	10 0
Pelargoniums, Zonal, per doz.	6 0	9 0
— show varieties, per dozen	12 0	18 0
— Ivy-leaved, per dozen	6 0	8 0
— Oak-leaved, per dozen	4 0	6 0
Rhodanthe, per dozen	4 0	6 0
Roses, Ramblers, each	5 0	30 0
— Hybrid perpetuals, per doz.	9 0	18 0
Selaginella, per dozen	4 0	6 0
Spiræa japonica, p. dozen	5 0	9 0
Stocks (Intermediate), per dozen	6 0	9 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (Tasmanian), per box:		
— Ribston Pippin	10 0	11 0
— Cox's Orange Pippin	12 0	18 0
— Alexander	8 0	9 0
— Wellington	12 0	13 0
— Scarlet Nonpareils	9 6	11 0
— Australian, per case:		
— New York Pippins	10 0	13 0
— Monro Favorite	10 0	12 0
— Jonathan	10 0	13 0
— Ribston	10 0	11 0
— Cox's Orange Pippin	12 0	16 0
— Wellington	11 0	12 0
— Rymer's	10 0	11 0
— Alfristons	9 0	10 0
— Adams Pearmain	9 0	10 0
— Nova Scotian, per barrel:		
— Fallawater	18 0	19 0
— Nonpareil	12 0	15 0
— Russets	17 0	20 0
— Canadian, per barrel:		
— Baldwin	19 0	20 0
— N. Greening	17 0	20 0
— Russets	19 0	21 0
— Newtown (U. States)	25 0	32 0
— Newtown, per box	10 0	11 6
— "Oregon" Newtown, per box	13 0	16 0
Bananas, bunch:		
— No. 2 Canary	6 0	—
— No. 1 „	7 6	8 0
— Extra „	8 0	9 0
— Giants „	10 0	12 0
— (Claret)	7 0	7 6
— Jamaica	5 0	5 6
— Loose, per dz.	0 9	1 3
Dates (Tunis), doz. boxes	4 0	4 3
Figs (Guernsey), each	0 4	1 0
Grape Fruit, case	8 0	10 0
Grapes (English, new), per lb.	2 6	5 0
— Muscats (English, new), per lb.	4 0	10 0
— (Cape), per box (small)	1 6	4 0
— (large)	6 0	10 0
— (Almeria), per barrel	15 0	17 0
Lemons:		
— Messina, case	8 0	10 0
Lychees, per box	1 0	1 5
Mandarins		
— (French), 100's per box	3 9	5 0
— (Palermo), 100's box	3 6	4 6
Mangos (Jamaica), per dozen	12 0	18 0
Melons (Guernsey)	1 6	3 0
— (Cape)	1 6	2 0
Nuts, Almonds, per bag	45 0	—
— Brazils, new, per cwt.	50 0	57 0
— Barcelona, per bag	30 0	32 0
— Cocoanuts, 100	11 0	14 0
Oranges (Valencia), per case	9 0	30 0
— Denia, p. case	12 0	30 0
— Jaffas, per box	9 0	12 0
— Californian Navel, p. case	13 0	16 0
— Seville Bitters, per box	6 0	7 0
— Palermos, Blood:		
— per box (100's)	5 0	7 0
— per box (160's)	9 0	11 0
Peaches (English) per dozen	15 0	30 0
Pears (Cape), per box	5 0	6 0
— cases	7 0	8 0
— (Australian), per box	3 0	6 0
Pineapples, each	2 6	4 6
Strawberries (English), per lb.	1 6	3 0

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	2 6	—
Asparagus, Paris Green, bundle	3 0	3 6
— Spring, bundle	0 6	0 7
— English	4 0	5 6
— Spanish, per bundle	1 2	1 6
— Giant, per bundle	3 6	4 6
Beans, Broad (French), p. pad	3 6	4 6
— Guernsey, p. lb.	0 8	9 0
— English	0 8	—
Beetroot, per bushel	1 3	1 6
Cabbages, per tally	3 0	4 6
— Greens, p. bag	1 6	3 0
Carrots (English), — washed, p. bag	4 0	4 6
— French (new), per pad	3 6	4 6
— per bunch	0 7	0 8
Cauliflowers, per dozen	2 0	2 6
— per tally	5 0	15 0
Celeriac (French), per dozen	2 0	—
Chicory, per lb.	0 3	—
Chow Chow (Sechium edule), p. dozen	3 0	—
Cucumbers, per dz.	2 6	3 0
— per flat	7 0	8 0
Endive, per dozen	1 0	1 6
Horseradish, foreign, per doz. bundles	9 0	12 0
Leeks, 12 bundles	1 0	1 6
Lettuce (English),	1 0	1 2
— (French), p. dz.	1 0	1 4
Lettuce (French), Cos, per dozen	3 6	4 0
Marrow (English)	2 0	4 0
Mint, per dozen bunches	—	1 0
Mushrooms, per lb.	0 8	1 0
Mustard and Cress, per dozen pun.	1 0	—
Onions (Spanish), per case	5 6	7 0
— pickling, per bushel	2 0	2 6
— Spring, dz. bun.	1 6	2 0
Parsley, 12 bunches	1 6	2 0
Peas (French), per packet	0 5	—
— (French), p. pad	4 0	5 0
— (Guernsey), per lb.	0 8	0 9
Potatos (Guernsey), per lb.	0 3	—
— Teneriffe, cwt.	11 0	13 0
— Algerian, cwt.	11 0	12 0
Radishes (Guernsey), dozen	0 8	0 10
Rhubarb, dz. bun. (forced)	1 3	—
— (Natural)	3 0	—
Salsafy, p. dz. bdls.	3 6	—
Seakale, per dozen punnets	15 0	18 0
Spinach (French), per crate	3 6	4 0
Tomatos (English), per lb.	0 8	1 0
— (Teneriffe), per bundle of four boxes	8 0	18 0
Turnips (French), per bunch	0 5	0 8

(*Continued on p. xii*).

ANSWERS TO CORRESPONDENTS.

CUCUMBERS FAILING: *T. D.* The unsatisfactory condition has been caused by too great an amount of moisture both at the roots and in the atmosphere, thus causing the leaves and the fruits to become charged with an excess of water. Apply water sparingly for a short time and afford as much ventilation to the house as is practicable.

HIPPEASTRUM INFLORESCENCE INJURED: *H. W.* The wound was caused in the first place by some mechanical injury, and when the epidermis or skin was broken a fungus disease gained an entrance.

NAMES OF PLANTS: *C. B.* 1, Saxifraga (Megasea) crassifolia; 2, Episcia fulgida, a plant requiring stove treatment.—*G. L. P.* Ercilla volubilis, a pretty evergreen, suitable for a wall.—*C. W.* Primula verticillata.—*E. W. S.* Dendrobium fimbriatum.—*J. M.* 1, Pteris tremula; 2, Euonymus latifolius variegatus; 3, Asphodelus luteus (Yellow Asphodel).—*Cantreyn.* 1, Dendrobium chrysotoxum; 2, Oxalis Bowiei; 3, Cerastium species.—*J. E.* 1, Begonia argyrostigma; 2, Begonia incarnata; 3, Begonia metallica; 4, Begonia fuchsioides; 5, Hibiscus Rosa sinensis; 6, Dracæna Godseffiana.—*E. C.* Cœlogyne cristata alba and Cypripedium politum.—*V. R. T.* 1, Masdevallia triaristella; 2, Pleurothallis Scapha; 3, Oncidium Iridum; 4, Epidendrum elongatum.—*O. H.* Dendrobium Dalhousianum. The plant you describe is a very fine example.

ODONTOGLOSSUM CRISPUM: *W. B.* The flower you send is one of Odontoglossum crispum, but your form would not be retained in a collection of the best varieties. For the best type of markings you should refer to the *Gardeners' Chronicle* for April 11, fig. 104, p. 239. The colours of the best-known varieties are chestnut brown, red-purple, crimson, rich chocolate, yellow, and various shades of rose.

PEACH SHOOT DISEASE: *A. E. E.* The disease affecting your Peach shoot is "Silver Leaf," for which no satisfactory remedy is known. Some authorities have recently stated that an application of lime to the soil has proved beneficial to trees affected with this complaint.

PRIVET HEDGE: *R. R.* Before your hardy annuals have had time to cover the bare stems of your Privet hedge the latter will have broken into leaf; we, therefore, do not advise your planting even temporarily any climber to hide the bare stems of the Privet.

SOIL IN VINE BORDER: *T. L.* The yellowish growth in the soil is "Flowers of Tan," a fungus that sometimes is said to cause injury to roots of plants. Dust the surface of the soil with a small amount of nitrate of potash, and afterwards give the borders a watering.

TWIN-SPATHED ARUM: *J. T. L.* Examples of double-spathed Richardias are frequently received from correspondents, and in some cases the second spathe is entirely devoid of green colouring. We do not regard the abnormality as any great advance on the ordinary plant, but it may be interesting to fix the same as a curiosity.

VINE SHOOTS AFFECTED: *J. S. L.* The branch has been injured from some cause, with the result that gumming has ensued. As the rod will not recover sufficiently to give further satisfactory results, it should be entirely removed and a new cane be trained in its place.

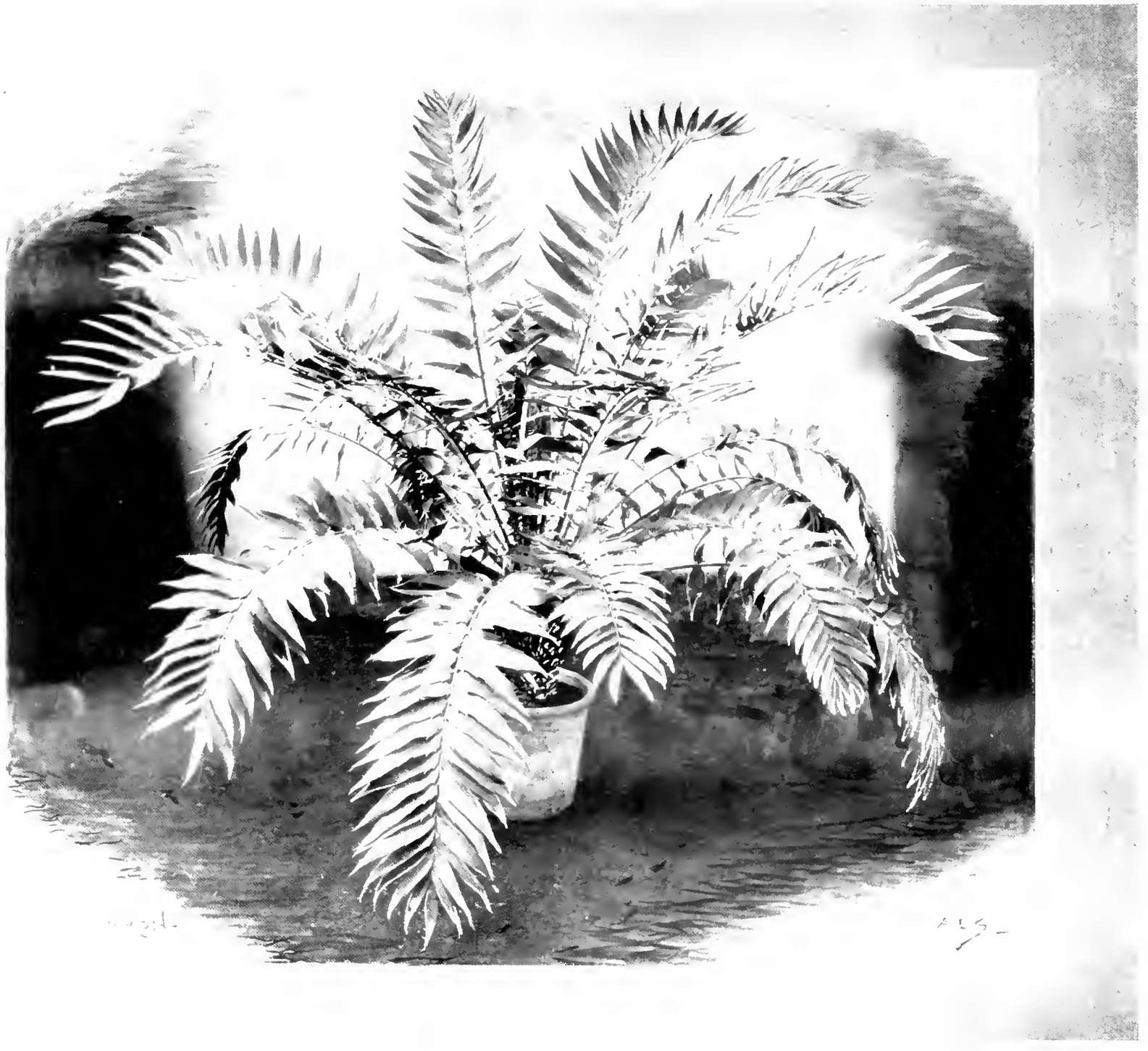
WARTS ON VINE LEAVES: *Nemo.* The pustules on the under-surfaces of your vine leaves are caused by intumescences, or undue development of the tissue, which may result from charging the atmosphere of the vinery with too much vapour and neglecting to maintain sufficient ventilation. If you correct these wrong cultural conditions the new foliage will soon assume the normal. There is no disease present in the leaves.

COMMUNICATIONS RECEIVED.—F. H. M.—J. H.—E. T. L.—H. L.—W. H. D.—J. C.—H. M.—G. B.—W. S.—H. W. W.—W. T.—W. M.—A. D.—F. M.—J. C.—T. C.—F. W. C.—E. T. L.—W. H. M.—R. H. P.—H. S. T.—E. H. J.—F. M. W.—W. H. C.—H. R. R.—T. S.—S. A.—T. W.—F. W.—G. B. M.—F. M. G.—W. D.—F. K.—W. M.—T. F.—C. S.—C. T. D.—J. C.—F. W. P.—F. B.—M.—J. R. J.—W. N.—F. J.—C. D.—The M. N.—F. M.—G. S.—B. R. D.—A. C.—J. R. P. & Co.—F. W. C. S.—H. S.—Rev. C. B.—E. K.—M. L. L.—H. C.—E. R.—Mrs. W.—F. H.—H. B.

New Plants at the Ghent Exhibition.

ANTHURIUM SANDERI: HORT. SANDER. LEAVES OLIVE-GREEN; VEINS SILVERY-WHITE.

(See description in last issue, p. 258.)



ENCEPHALARTOS WOODII: HORT. SANDER.

(See description in last issue, p. 257.)

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Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

THE STATE AND HORTICULTURE.

ENGLAND has for many years possessed high ideals as regards the methods employed in garden culture, and the attainment of these ideals has been mainly the result of private enterprise. The time has arrived, however, when something more than individual effort should be brought to bear upon the development of one of the most important industries in this country. Whilst some few British horticulturists were recently enjoying the great floral feast at the Ghent exhibition, we at home learned that the Belgian Government had just instituted a Department in horticulture. Occasionally an opportunity presents itself of comparing the support afforded by our Government in such matters as horticulture with that provided by Continental nations, and so far we have no reason to be grateful for any support given us at home. A strenuous appeal would doubtless be needed to reach Parliament, but it ought to be made, for no one can say with truth that State recognition is not merited. The State can collect and distribute evidence of the utmost value to the gardener, and the gardener still has much to learn. Rough cultural methods are seldom afterwards practised when a person has discovered that he is more than compensated by the extra care devoted to the plants under his charge. Opinions emanating from a department having Government support, with the right men to furnish the information necessary to those requiring it, would be of the greatest help to thousands. Englishmen are sufficiently responsive, and if their attention is directed to any improvement or advance in cultivation that will be remunerative, they are certain to adopt it, for there is a strong imitative tendency among cultivators in acquiring new ideas that promise remunerative results.

A good deal has recently been said and written about the French system of early vegetable culture and the large profits to be made from it. The dung frame is a very old institution in this country, and has for years served a very useful purpose, and is still doing so, in places in which more up-to-date methods in the way of hot-water pipes have not been adopted. We cannot convert the whole of our gardens into solid masses of humus, nor is it necessary to do so; but every cultivator is aware of the value of hotbed manure, for when properly prepared and thoroughly decomposed, a few inches of such material near the surface soil is of the greatest value to quick-growing, succulent-leaved plants, and even the highly-selected forms of Carrots revel in it without attempting to make strong side roots.

The dwarf Erfurt-type of Cauliflower is another example of a vegetable that requires the richest cultivation possible to yield marketable heads early. In fact, all the small types of this vegetable are useless unless a quick growth is encouraged in rich soil. Personally, I know that there is money to be made out of early vegetable culture by those who understand this business. At the present time the land in England is greedy and poor, and a few thousand pounds sterling may soon be lost in the endeavour to improve a few acres of ground, if the principles underlying the working of it are not understood. This is one reason why I am convinced that it is a mistake to cry "back to the land" too loudly. If the small holdings, of which so much is heard, are to be a real success, they must be tenanted mostly by gardeners, and gardeners of the best type, who, by years of keen observation and applied methods, know how to reach their goal in the quickest possible time. There are now plenty of such men to be found, and the opportunity for gaining knowledge on horticultural subjects of a scientific nature is every year becoming more easy to obtain. We have often been told that there are scores of gardeners working on a scientific basis without knowing it. Has not the time arrived when such sayings should be robbed of a good deal of the meaning now applied to them? It may safely be stated that there are no classes of gardeners who would not greatly benefit by a careful perusal of the principles on which all work should be carried out. Some of us are asking for better conditions for the gardener, and we are hopeful that the time is not far distant when it will be recognised that the gardeners of England are worthy of a higher social status. The results achieved in our gardens, often under the direction of one man with thousands of subjects to deal with, are not ordinary but extraordinary. Young gardeners of the present day have excellent opportunities for making progress in their calling, but they must apply themselves studiously to all that pertains to the profession. They need to follow up their school life with more matured thought, and to teach themselves what to reject and what to imitate in others. Perhaps few gardeners believe statements that appear in the lay Press concerning the profits to be made from the cultivation of the land, but all the same we desire to see the establishment of a Government department of horticulture, whose officers would need not only to disseminate valuable information but also to refute statements that may indeed be based upon facts, but at the same time contain many details that are grossly misleading. *C. F.*

NOTES FROM THE "FRENCH" GARDEN.

The experienced manager of a "French" garden has to be largely guided in his work by the weather, for almost everything is based upon the climatic conditions to which the crops are subjected. During the past week the only work of importance has been the sheltering of the plants under lights.

The cutting winds, the dull weather during the day, and the frost at night time have had an ill-effect on all the crops. The tissues of the Melons have become hard, and the young shoots which should be green, thick, and healthy, are weak and thin; the female flowers which are now appearing will be useless, and we shall have to wait for others before choosing those for fruiting. Fortunately, we have kept the plants very dry at the roots, and if sunny weather sets in we shall look for more hopeful results.

We have prepared the ground for our first batch of Endive in the open, but, although the plants are ready, we await more favourable weather before shifting them into their final quarters.

Our first batch of Cos Lettuces is nearly all harvested. We have planted Cauliflowers in their place, on the two outside rows of each bed. We can already notice an improvement in the growth of the second batch. The satisfactory forcing of Cos Lettuces depends upon the plants being all at the same stage of growth, because the Lettuces must all be removed at one time, or it would be impossible to place the cloches on the second batch.

The paths are kept at the same level as the beds by filling them with well-decayed dung. This practice facilitates the removal of the cloches, and prevents them lapping over the paths on one side of the bed.

Throughout the recent heavy snowstorms and frosty weather we have ventilated both day and night the frames in which the Carrots and Cauliflowers are growing. These plants must be well hardened, for when the weather becomes more genial we shall remove the frames and lights entirely, and use them for the Melon crop.

We are growing a few plants of "Parisian Green" Cucumber this year.

We sow the seeds in the same manner as the Melons, and they receive the same care and attention as the latter during the first part of their growth. When grown on a large scale the seeds are sown from March 20 to April 20, and they are planted in their final quarters not later than May 25. *Paul Aquatias, Mayland, Essex.*

LOPEZIA LINEATA ZUCC.

THE genus Lopezia, belonging to the natural order Onagraceæ, includes rather more than a score of species. Some of these are well worthy of wider popularity than they seem at present to enjoy, for their highly-coloured pink or red flowers and stems form a pleasing addition to the conservatory in the early spring.

FIG. 131.—LOPEZIA LINEATA: FLOWERS PINK.

Two flowers, and the pollen (in the centre) are shown on a larger scale. From specimens supplied by Messrs. James Veitch & Sons, Chelsea.

The flowers are interesting, owing to their irregular or zygomorphic character, and they exhibit remarkable structural features which are adapted to secure cross-pollination. Three of the four sepals are turned towards the posterior part of the flower, whilst the fourth lies medianly forward. The corolla consists of four petals, all of which tend to lie somewhat posteriorly in the flower. Two of the petals (antero-lateral ones) are brightly coloured and are obovate with a long claw. Those of the postero-lateral pair have undergone a remarkable modification, each being abruptly bent backwards at about 1-16th inch from the base, and one or two thickened cushions or pustules of tissue, more or less green in colour, are situated just at the place of bending at X X. (fig. 131). These pustules resemble nectaries, but as a matter of fact the real nectaries are at the base of the petals, and the pustules are in no way glandular, nor do they secrete a sugary liquid. They are perhaps comparable in this respect with the false nectaries of Parnassia.

The stamens are two in number, but only the posterior one is fertile, the other (St[e] in the figure), which lies immediately over the anterior sepal, being converted into a petal-like staminode. In some of the species the anther of the fertile stamen is gripped in the folded terminal part of the staminode, and is liberated with a jerk when an insect touches the filament. The two organs then spring apart, the staminode lying prone over the sepal, whilst the anther is moved over to the posterior side of the flower. This curious mechanism is found in L. coronata, but not in all the other species, although the stamen and staminode are constantly present.

Self-pollination is prevented in these flowers because the stigma does not become mature, nor, indeed, does the style elongate fully, till long after the dehiscence of the anther.

The usually globose, inferior ovary is four-chambered, as in so many of the Onagraceæ, and the carpels are opposite the petals.

The best-known species in cultivation is probably L. lineata (1). This plant was described by Zuccarini (2) from a specimen grown in the Botanic Garden at Munich, but the Royal Horticultural Society appears to have introduced it into this country through seeds which were sent by Mr. Hartweg from Mexico.

Lopezia lineata seems to be often confounded with another species described by De Candolle (3) in 1813 under the name of L. mineata. The latter plant, however, differs in at least one important character from L. lineata, as is shown in a series of elaborate drawings by Jacquin (4). The postero-lateral petals bear two glands in place of the single one of L. lineata, and there is also a downward prolongation of the limb of each of the two petals on either side of the pair of pustules. It has been possible to confirm this by reference to an authentic specimen of L. mineata in the Herbarium of the Natural History Museum. A further point of difference between the two species has been based on the hairy character of typical L. lineata, as contrasted with the (alleged) glabrous L. mineata, This character, however, breaks down in practice, for the latter species is not really glabrous, but shows lines of hairs running downwards from the bases of the leaves exactly like those of almost glabrous specimens of L. lineata. Probably cultivation may be responsible for the reduction of the hairs of the latter species, for wild specimens show a considerable range of variation, from nearly glabrous to pilose or almost shaggy stems.

The comparison of a number of specimens preserved in the Herbaria of Kew and the Natural History Museum leads to the conclusion that L. lineata, mineata, mexicana, and some others constitute a group of related forms, which somewhat closely resemble each other in general appearance. But the single pustule, and the absence of the downwardly-projecting spurs or horns from the right and left of the postero-lateral petals, close to the false nectaries, seem sufficient to distinguish L. lineata from L. mineata, with which it is so often confused. *J. B. F.*

1. Figured in *Bot. Reg.*, vol. xxvi., tab. 40.
2. Zuccarini, *Plant. Nov. fasc.* 2, p. 31.
3. *Cat. Hort. Monsp.*, 1813.
4. Jacquin, *Ecl. Plant., Rar.*, vol. ii., pl. 109.

SOME ANNUAL COMPOSITES.

USEFULNESS is the hall-mark which characterises the natural order Compositæ. The flowers, on the whole, do not partake of the ephemeral nature of the Papaveraceæ, nor do they ever attain to the fragrance which gives to some of the prominent representatives of the Leguminosæ their popularity.

The natural order Compositæ is well represented in gardens by species of annual duration, and these are of inestimable value for beautifying beds and borders during the summer months.

It is in supplying flowers for the adornment of the home that the annual Composites

are justly esteemed; they last well, and most of the species provide colours acceptable either in daytime or by artificial light.

Zinnias some years ago enjoyed a measure of popularity greater than they do at the present time. They are a splendid type, yielding rich, deep shades of colour, the flowers being compressed within a form which approximates to the florist's ideal. Zinnias, when well grown, are admirable subjects for furnishing flower beds and they are not infrequently employed in the more formal part of the garden. Unquestionably, the double Zinnia is superior to the single form. A beautiful Californian Composite is Cosmos bipinnata, which is a replica in miniature of a Dahlia flower, though the plant itself attains to a greater height. The flowers are produced in autumn, and are borne freely by plants growing in rather poor soil in a sunny position. It is here that reference may fittingly be made to those bright bedding Composites which are comprehensively grouped under the name of China Asters, and are varieties of Callistephus sinensis. These are alike useful for large or small gardens; they produce effective masses of colour, and are valuable for certain classes of decorative work. Although the double China Asters are the most popular, the type itself produces single flowers, and is becoming in greater request each year, as the flowering season extends well into the autumn.

The best forms of annual Helianthus are varieties of H. cucumerifolius, which produces small flowers, and H. annua, which produces very large flowers. The predominant colour throughout the genus is yellow, there being a lemon-coloured form in both sections, which contrasts well with the dark central disc. Species of Helianthus are best grown in rather poor soil, and under such conditions the flowers are produced in the utmost freedom. The Marigold section includes Calendula and Tagetes, and among these are found many plants with bright flowers, the plants being useful alike for the shrubbery margin, bed or border, and never averse to rich soil, though the flowers, as a rule, come freest in one of a medium richness.

Annual Chrysanthemums have received two notable additions recently, named respectively "Morning" and "Evening Star." They are forms of Chrysanthemum tricolor, of which it may be said that all are good garden plants, though to ensure the maximum beauty allowance must be made when planting for free lateral development. When so treated, there is almost no end to the flowers they can supply; the colours are rich, and have a large range of shades, and the blooms last well in water. To the same good purpose Calliopsis Drummondii and C. nigra speciosa adapt themselves; the flowers of the latter are of a shade of maroon which appears almost luminous under artificial light. C. Drummondii is particularly impatient of overcrowding, and when cramped the rich yellow flowers suffer in size with a corresponding weakness in the stem.

There is one fine group of these annuals which deserves special mention. I refer to the beautiful new Centaureas distributed by Messrs. Jarman & Sons, of Chard. The plants grow freely under liberal treatment, and the flowers are produced on long stems. The range of colours is restricted, though the shades are very pure, qualities that are essential in all arrangements calling for lightness and delicacy of colouring.

There is a beautiful little annual called the Swan River Daisy (Brachycome iberidifolia), which simply covers itself during summer and autumn with small flowers resembling Cinerarias. I consider the blue-flowered form to be the best. It is a tender annual, and is best raised in a cold frame and planted out in tufts. I have found it to succeed beyond expectation when employed to carpet the bare ground among shrubs.

Throughout these notes I have spoken of true annuals which require sowing during April or May. A brief reference may be made to Humea elegans, a biennial which is justly appreciated for its elegant drooping inflorescence flowered in the open garden, or, as is frequently the case, in pots. Seed must be sown about mid-summer and the plants grown in pots in a warm house through the winter to ensure suitable specimens for the garden the following year. *Thomas Smith, Walmsgate Gardens, Louth, Lincs.*

PLANT NOTES.

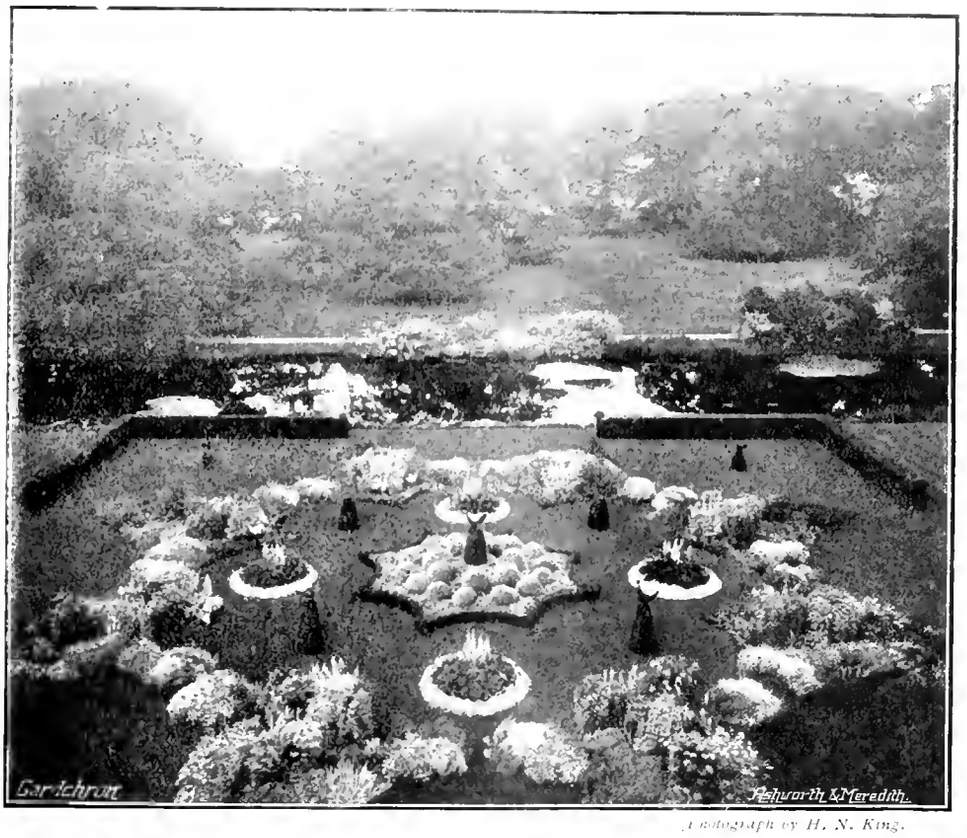
IRIS TINGITANA.

A NOTE by Herr Novik in *Moller's Deutsche Gartner-Zeitung* draws attention to the beauty of the flowers of this species of Iris, and the uses of the plant when grown under glass. In the open ground, the plant, though hardy enough to withstand a northern climate, is injured in its flowers by the dry, harsh winds of early spring. In the warmer parts of this country, if planted in sheltered positions, the flowers might not suffer in this respect. Herr Novik states in his interesting note that on the Riviera the plant flowers in the month of January, that is, two months in advance of Iris hispanica. The flower-shafts reach a height of 2½ to 3 feet. The flowers resemble those of the blue Iris hispanica, but they are twice their size. The great length of time the unopened flower-buds last in good condition, if cut before they expand, renders this species excellent for cut flowers for the market; as likewise the fact that the second bloom following that which has expanded and passed, develops perfectly, like those of I. hispanica. Cut flowers placed in water remain for two to three weeks in good condition.

The late Professor Michael Foster was the first to introduce I. tingitana to the Riviera, he having sent some rhizomes to a friend residing probably at Hyeres. The plant is readily propagated, and it will doubtless soon become cheap. It is a native of northern Morocco, and takes its name from a little town near Tangiers. *E. M.*

FLOWER BEDS AT BROUGHTON CASTLE.

IN our issue for March 7 a description was published, with several illustrations, of the gardens attached to this old residence. Fig. 132 shows an artistic design in flower beds on the lawn to the west of the castle, and bounded by the moat. This flower garden is enclosed by dwarf hedges of Yew, with wide openings at intervals. There are also a number of isolated plants of this tree clipped in a formal manner and terminating in figures of birds. The central bed is planted with Golden Yews, which are clipped in a globular form, and these are kept very dwarf over a groundwork of the common Mahonia (Berberis). The four round beds were planted last summer with Pelargonium Paul Crampel, and they were edged with Cerastium tomentosum having as a central object a clump of Galtonia (Hyacinthus) candicans. There are eight outer beds, and these are planted with hardy herbaceous plants and sown with annuals. Each of these beds is furnished alike to present a uniform colour effect. They are gay with flowers from the last week in May until the end of October.



Photograph by H. N. King.

FIG. 132.—FLOWER BEDS ON THE LAWN AT BROUGHTON CASTLE, OXON, AS PHOTOGRAPHED FROM THE ROOF OF THE CASTLE.

NOTICES OF BOOKS.

* "HEREDITY."

PROFESSOR J. A. THOMSON has already acquired a well-deserved reputation as an exponent of biological theory, and his new work on heredity will be cordially appreciated by all students of scientific natural history. From the nature of the case, it can hardly be termed a popular book, for the subject is one which can neither be understood nor profitably discussed

* By J. Arthur Thomson, M.A., Regius Professor of Natural History in the University of Aberdeen. London: John Murray, 1908. 9s. net.

except by those who have had some biological training. To all serious students of botany and zoology, however, and especially to those who interest themselves scientifically in problems of plant and animal breeding, the work should prove of great value.

The subject is treated in a strictly impartial manner. The principal theories of heredity which have been put forward at various times are briefly discussed, and special attention is devoted to the views of Lamarck, Darwin, Galton, Herbert Spencer, Weismann, Mendel, and De Vries. The inevitable question as to the inheritance or non-inheritance of acquired characters is fairly discussed, and we observe that, though the author's own views seem to incline towards the negative answer, as given by Weismann, he does not omit to refer to the Neo-Lamarckian opinion that altered conditions of life, *if continued long enough*, may possibly have a cumulative effect, which is capable of stamping itself permanently upon the organism and becoming transmissible by inheritance. This also appears to be a general opinion amongst practical breeders, though the author considers that the evidence given by breeders in support of the theory of "modification-inheritance" is, in most cases, too full of vagueness and misunderstanding to be of significance. As to the mechanism by which the transmission of "acquired characters" may be supposed to be effected, we have Darwin's theory of "Pangenesis," and Herbert Spencer's hypothesis of "Physiological Units," but we note with special satisfaction the following quotation from Sir Ray Lankester: "In fact, in place of the theory of emission from the constituent cells of an organism of material gemmules which circulate through the system and affect every living cell, and accumulate in sperm-cells and germ-cells, we may substitute the theory of transmission of force, the two theories standing to one another in the same relation as the emission and undulatory theories of light." Professor Thomson considers that in biology we are not yet in a position to utilise ideas of "modified force-centres," or "transmission of force," but we have long felt that this is a direction in which we may hope for real progress.

Perhaps the most important advance which has been made in recent years in the study of heredity lies in the increase of our knowledge regarding what is known as Mendelian inheritance. This subject is one of intense interest to horticulturists, for it is one which any intelligent gardener can follow up for himself. The importance of the experiments lies in the fact that they afford some hope of an ultimate analysis of each organism into a number of "unit-characters," which may be independently transmitted to the offspring; but it still remains to be seen how far this idea of unit-characters is applicable. Mendel experimented with the common edible Pea, by crossing varieties which exhibit constant differentiating characters, such as round and wrinkled seeds. He found that in the first (hybrid) generation one of the two contrasted characters was "dominant" and the other "recessive." All the offspring of the cross *apparently* belonged to the dominant type; but when these offspring were allowed to fertilise themselves, he found in the next generation that the contrasted characters separated out again in the proportion of three dominants to one recessive. This shows that the hybrid dominants of the first generation are "impure." Further experiment shows that the "extracted" recessives of the second generation are pure, and will never again yield dominants, while two-thirds of the dominants of this generation are again impure and one-third pure. The impure dominants, when again allowed to fertilise themselves, behave like the impure dominants of the first generation, and yield the same definite proportions of dominant and recessive offspring, viz., 1D + 2D(R) (= impure dominant) + 1R. From this it is concluded that the germ-cells of the organism, the egg-cells and sperm-cells, each contain only one of the pair of contrasted characters, while the offspring produced by the union of germ-cell and sperm-cell may contain either or both, according to the apparently quite fortuitous combination of the germ-cells. The proportions in which the offsprings are produced should therefore follow the law of chance, and this is exactly what takes place in the case under discussion. Many cases of such simple Mendelian inheritance are now known, but it is by no means certain that the law is of universal application, and it usually appears to be complicated by so many obscure factors as to be unrecognisable in the present state of our knowledge.

The experimental results of Mendel and his followers may at first sight appear not to harmonise with the statistical results obtained by Galton, according to which "the two parents between them contribute *on the average* one-half of each inherited faculty, each of them contributing one-quarter of it. The four grandparents contribute between them one-quarter, or each of them one-sixteenth; and so on" to infinity; but, as Professor Thomson says, "It is simply muddle-headedness which can find any opposition between a statistical formula applicable to averages of successive generations breeding freely, and a physiological formula applicable to particular sets of cases where parents with contrasted dominant and recessive characters are crossed and their hybrid offspring are inbred."

FIG. 133.—FLOWERING SHOOTS OF PRUNUS TOMENTOSA FROM GLASNEVIN.

The author also deals—though all too briefly, we fear—with the very important results obtained during recent years in the study of the microscopic structure of cells, and the changes in the nucleus which accompany ordinary cell-division, and the maturation and union of the germ-cells. Important evidence as to the actual existence in the germ-cells of material particles, which may be looked upon as the bearers of the transmissible characters, is afforded by such study. Other matters dealt with are the experimental study of the processes of fertilisation and development, which have lately yielded truly marvellous results, and the mutation theory of De Vries; while a final chapter deals in an extremely interesting manner with the social aspects of the problem of heredity.

The author has endeavoured to cover an immense field, and, in spite of the somewhat unwieldly size of the book, the treatment of the subject is necessarily much condensed—we regret the more a considerable amount of repetition, which, with more careful arrangement, could have been avoided. Not the least valuable feature of the work is a selected bibliography, which should save the student much trouble in his further studies. As a matter of mere human curiosity, we should like to know the reason for the introduction of the solitary "tail"-piece at the end of Chapter VI. It is certainly a good tail-piece, but why should this chapter alone be thus favoured? *A. D.*

* Les Pois de Senteur.

English authors who write in the French language on horticultural subjects are few and far between, but Mr. G. D. Clark, nurseryman, at Dover, is an exception to the rule. He has recently published a pamphlet on the Sweet Pea bearing the above title. The work consists of 32 pages, in which is given the history and culture of this popular flower for the benefit of growers on the other side of the Channel. There are nine short chapters covering such subjects as the improvement of the Sweet Pea, culture in the open, in tubs, in the greenhouse, dwarf Sweet Peas, and a list of varieties. Several illustrations are given. Mr. Clark is a member of the National Horticultural Society of France, and has exhibited Sweet Peas at several French exhibitions.

† How to Raise Daffodils from Seed.

This work is a useful little manual of about 60 pages that deals with the flower's early history, the first garden seedling, Miller on seed raising, Daffodils in the 17th century, Dean Herbert, Edward Leeds, Horsefield, Wm. Backhouse, Rev. G. H. Engleheart and their work, and then proceeds with an account of seedling raising in the various sections. It is a useful and interesting brochure for the Daffodil amateur.

‡ "Mother Earth: A Proposal for the Permanent Reconstruction of our Country Life."

Mr. Fordham has written a readable and, in many respects, a suggestive book. He has endeavoured to deal with the causes of depletion of the rural population, and to suggest remedies for a condition of things that every true friend of the highest national interests must constantly deplore. But, whilst it is not very difficult to describe the proximate cause of, and the evils that result from, the exodus from rural England of the best of the men and women who form the backbone of the nation, it seems to surpass the wit of man to find a really satisfactory

* By G. D. Clark.

† By Cartwright and Goodwin, Blakebrook, Kidderminster.

‡ By Montague Fordham, M.A., with Preface by T. A. Hobson, M.A. London: Privately printed, 1908. Price 5s. net.

cure. Mr. Fordham suggests a series of remedies, which many will regard as Utopian, and others will dismiss as little short of pure Socialism. He is fully conscious that the root of the evil lies in economic conditions, but it is very doubtful if his ideas as to a Government Department, entrusted with the management of a big co-operative business, could possibly prove a success. For such a Department, in order to be effective, would have to become a monopolist, and this would unquestionably arouse intense hostility in a body of people much too large to be safely ignored. The suggestions as to fixing land values, of giving the right of access to national capital, and many other similar proposals, may possibly constitute a "comprehensive scheme," but whether any such scheme is likely to prove workable in practice will probably appear very doubtful to the majority. Perhaps the first point to settle is whether the people at large are prepared to pay a special price to assure the cultivator of the soil a favourable market, no matter what the conditions of external competition may be.

Anyone who reads Mr. Fordham's book, with its somewhat ambitious title, will find the issues fairly plainly put, and for this reason alone it is worth a perusal. Whether it will carry conviction or not will probably depend largely on the particular bias of the individual reader.

Fig. 134.—Fruiting spray of Prunus tomentosa from Glasnevin.

"CLUB-FOOT" DISEASE.

Many gardeners confound the work of the Cabbage maggot with diseases which affect the root, and have no connection whatever with insect injury. This is noticeably true of a form of disease which frequently affects the roots of Cabbages, Turnips, Broccoli, Cauliflowers, Mustard, Rape, and, among flowers, of Stocks, Candytuft, and allied plants, causing wilting and death of the plants.

On pulling up young Cabbage plants for transplanting, the roots are frequently found to be deformed by the development of nodular excrescences of all shapes and sizes, from those of a Pea to those of a fairly large, irregular, warty Turnip. Such plants are useless, for they develop no "hearts" or "heads" for market, for all the food that would normally have gone to make new leaves and flowers is diverted into the deformed roots, making them hard and stringy, when the gardener wishes them to be soft and succulent, as in the case of Turnips. After a time these malformed roots pass into a condition of decay and the plants wither and die.

In the vast majority of cases it is found that all this disaster results from the ravages of a very remarkable organism, allied to the fungi, and called "Club-foot," or Plasmodiophora Brassicæ, a name which refers to the slime-like character of the pest.

The growing plants are attacked at all ages, but it is especially young seedlings which suffer. The first indication of the plants being affected will be their wilting during warm days and their failure to recover at night.

The vitality of the disease spores is such that manure from cows or pigs fed upon clubbed roots will be found to affect allied plants grown on land where the manure is used. Such spores, it is proved, will live for two or three years in the soil. Manure, therefore, is one of the means of infection. Soil, it is claimed, transferred from one infected piece of ground to another will carry the spores, and thus infect other soils. Seed beds are frequently a great source of "club-foot."

Rotation of Cabbage and allied crops with some other, not of the cruciferous family; care in choice of manure; the keeping down of wild Mustard and other weeds of the same kind; sowing seed of Cabbages, Broccoli, &c., in new, uncontaminated soil; discarding seedling plants whose roots show the least indication of clubbing; and avoiding the infection of new ground by the transference of soil or refuse from infested areas, are all suggested as preventive or remedial measures.

Soils subject to this disease will always be found to be more or less acid, and a broadcasting of air-slacked lime, about 75 bushels to the acre, or 14 lbs. per square pole of ground has given satisfaction. During the winter season one ton of gaslime per acre may be trenched in. I have had evidence of excellent results from this practice.

On soils subject to the "Club-foot" disease it is advisable not to use low-grade superphosphates, as these always contain a certain amount of free acid, which favours the development of the spores.

Basic slag and bone meal may be recommended in quantities varying from 4 to 6 cwts. per acre, or 2¾ to 4 lbs. per pole.

On discovery of the "Club-foot," the whole of the diseased plants should be pulled up and immediately burned, and the ground treated with lime or basic slag. *J. J. Willis, Harpenden.*

PRUNUS TOMENTOSA.

Of the earlier flowering species of Prunus, one of the rarest and least known in gardens is P. tomentosa. It is a spreading, comparatively low shrub belonging to the Apricot (or armeniaca section of the genus, and is a native of North China, and possibly of Japan. There is a fine specimen at Kew, 10 feet through and 6 feet high, just now laden with many thousands of flowers—a most beautiful object. The flowers are white, tinged with rose, each one ¾ inch or so across. The leaves (which do not appear until after the flowers are over) are oblong with a cuspidate apex, 2 inches long, and densely covered with a close, fine down. I saw a fine bush in the collection at Les Barrés a few years ago, and M. Maurice de Vilmorin gives a very characteristic portrait of it in his *Fruticetum*. In this collection there is also an interesting Prunus nearly allied to P. tomentosa but distinct, and probably a hybrid with the better-known P. triloba. The only defect of P. tomentosa as a shrub for the garden is that its flowers are somewhat fragile, and are liable to be damaged by the beating showers so common to the latter part of March and early April. But there is much to be said in favour of so beautiful a shrub which comes into bloom before the Almond. Its fruits are red, and about the size of small Cherries; they are so sparsely produced, however, that they do not count among the attractions of the species in this country. *W. J. B.* [At figs. 133 and 134 we illustrate the flowers and fruits of this species from specimens kindly sent us by Mr. F. W. Moore, Royal Botanic Gardens, Glasnevin, and sketched by Mr. Worthington Smith.—Ed.]

THE ALPINE GARDEN.

ERITRICHIUM NANUM.

The Alpine and Arctic floras admittedly contain no choicer gem than Eritrichium nanum, whose little tufts of small leaves form a pleasing setting to the exquisite azure-blue flowers, which are so beautiful that all who see them desire to possess the plant.

Notwithstanding the best of culture, the Eritrichium will not survive our seasons for long; its life in our climate is but a short one, and in most cases the first winter brings it to an untimely end. Even those persons who have tried to grow it in gardens in its native countries confess that it is one of the most difficult Alpines to preserve in cultivation, so it is scarcely surprising that in this country it should prove a troublesome subject. It is not a plant to be put in a good position on the rockery and left alone. Even where special care is taken it is not to be relied upon, and should be raised annually from seeds—the only method by which it can be propagated. I have seen it in several gardens, but all the plants were young, and some had been wintered under glass, while my own experience, and that of many whom I have consulted, is that, beautiful as it is, it is hardly worth considering as a garden Alpine. The great difficulty in this country is to keep it as dry at the roots in winter as it requires, and any cultural methods which do not take this into account are sure to end in disappointment. Even during its growing season, the foliage must not be damped, and from the beginning of September until early in February the plant must be kept at rest if possible, although it usually

begins to show growth at the end of January. The position afforded it must be such that the rain which falls is led to the roots of the plant without wetting the leaves. The best means of attaining this is as follows:—Place a stone or a sheet of glass over the plant in such a position as to shield it from rain but not from the sun, whilst allowing the moisture to reach the roots. From the end of August a stone or piece of glass must be so fixed overhead that the rain is turned from the roots also. The changes of our climate are so rapid and so extreme that even this care often fails in effecting the preservation of the plant, and the consequent disappointment is very great.

One is led to write these notes, as there are some persons who are tempted to purchase this truly exquisite plant, but who have not the least idea of how difficult it is to grow. They may well pause, and consider whether they will not be wiser to secure some Alpine plant more easily cultivated. The experience of generations of Alpine growers with Eritrichium is practically the same, and the little gem may therefore be looked upon as an Alpine flower for the few, and not for the many. *S. Arnott, Sunnymead, Dumfries.*

The Week's Work.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

The orchard house.—Pot trees, whose fruits are now swelling, should be top-dressed with well-decomposed stable manure and loam in equal parts. The pots being filled with roots close attention must be given to watering, for if the soil is allowed to become dry, especially in the case of trees bearing stone fruits, the latter will be liable to drop. Liquid manure should be occasionally given as a stimulant; it is best made by placing soot together with deer or sheep's manure in bags, and submerging them in a tank of water. This liquid manure must be freely diluted with water before it is applied to the plants. A moderately moist atmosphere should be maintained in the orchard house at this stage, and this can be provided by damping the floor and other bare surfaces in the house. In addition, the trees should be syringed daily, except during wet weather. The ventilation of the house should be in accordance with the external conditions, but it must be remembered that Apples, Pears, Plums, Apricots, and Cherries are all benefited by plenty of ventilation, including a certain amount during the night-time. The thinning of the fruits must not be hastened, though where there are very heavy crops a few may be removed early, in order that the tree may not be unduly exhausted. Attention must be given to the stopping and thinning of the shoots, and vaporising must be practised in order to keep down attacks of aphis.

Strawberries.—These plants will now require constant attention in order that the fruits may develop perfectly, but this will be greatly lessened if suitable houses for their culture are available. In these gardens a hip-roofed house, having an eastern aspect, is used for Strawberry forcing, the pots being placed on turves upon shelves suspended from the roof. The plants are not exposed to the full rays of the sun, which considerably lessens the work of watering, and red spider is not very troublesome. In addition, the fruits swell and ripen gradually, and they develop colour better than when the plants are fully exposed to the direct sunshine. On no account allow the plants to suffer from lack of water at their roots; also do not neglect to provide a stimulant in the form of liquid manure. Select a few of the most perfect berries for ripening, and remove the remainder, also any runners as they form. Ventilate the house freely whenever the weather permits, and on fine days syringe the plants freely in order to keep down attacks of red spider. The wetting of the foliage by the syringe and the application of liquid manure must be discontinued when the fruit commences to show colour. Should any of these forced plants be required for planting out, select those that were forced last, as these will give better results than those that were subjected to heat earlier in the season.

Bananas.—As soon as the young plants are sufficiently rooted, they should be planted in their permanent quarters, whether in tubs or in borders. The rooting medium should consist of rough loam that is enriched with manure or leaf-soil. Established plants should be kept actively growing, affording them an atmospheric temperature of 70 degrees at night-time, with a corresponding warmth during the day. Close the structure early on fine days, and syringe the plants freely, also damp all available places about them, and furnish copious supplies of water at the roots, occasionally enriching the water with liquid manure. Rich top-dressings should also be applied, for the Banana is a gross feeder. As soon as the fruits are formed, expose the bunches to the light, by drawing aside any leaves that obstruct the sun's rays.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Cinerarias.—Seeds of the various types of this plant should now be sown, in order to obtain plants for flowering early next season. The seed pans should be well provided with crocks for drainage, and on this should be placed a layer of rough soil, filling the remainder with a mixture of loam, leaf-soil, and sand, that has been passed through a fine sieve. Make the surface soil of the seed pan smooth, and then dip the pan half-way into a tank of water, so that the moisture will travel up the soil and thoroughly wet the whole. This is a better plan than watering with a rose, for the surface of the soil is not disturbed, as the moisture runs up by capillarity. The seeds should be sown thinly and evenly, and be covered with a thin layer of fine soil, in which has been placed some leaf-mould. Place a piece of glass over the seed pan, and shade the surface from bright sunshine. Maintain a moist atmosphere and a warmth of about 50° to 55°.

Schizanthus.—Seeds of this floriferous subject should now be sown for producing a batch of plants to flower in the early autumn. The same methods of seed sowing should be adopted as is recommended for Cinerarias.

Caladiums and Gloxinias.—The earliest plants should now be examined with a view to shifting them into larger pots should they require increased root room. These subjects should never be allowed to become potbound during their season of active growth, for if they receive a check at this stage the effects will be apparent all the season. See that the plants are not crowded on the stage, otherwise they will become drawn and develop an undesirable form.

Ferns that were not re-potted this spring and that are now growing freely should be given doses of weak liquid manure about twice a week. As the young fronds develop, the older ones should be placed towards the outside of the plants. Great care must be exercised when doing this, otherwise the young tender leaves will be damaged. Strict attention must be given to the matters of ventilating and shading, for these are essential points in the culture of Ferns as specimen plants. Place an abundance of moisture about all parts of the house, but prevent water falling on the hot water pipes, if the latter are very hot.

Stove plants that were not re-potted should be assisted by either artificial or liquid manures. In the case of coloured foliage and flowering plants, I prefer to use artificial manure, and for those with green leaves, liquid manure. When feeding plants, always err on the side of an under-dose rather than one that is too strong. Artificial manure may be distributed more easily and safely if it be first mixed with its own quantity of sand. It should be ascertained before applying these concentrated plant foods that the pot is well filled with roots, and that they can make use of the extra nourishment.

Freesias.—When these have finished flowering they should be allowed to complete their growth, and to perfect their bulbs, and, for purposes of ripening, they should be placed in a house having a sunny aspect and a cool temperature. When the leaves begin to die down, water should be withheld and the pots be placed on their sides until autumn, when the plants should be shaken out of the old soil and re-potted, selecting the largest bulbs for the purpose.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Cauliflowers.—Plants which are growing in large pots in cool houses or pits, for providing an early supply will now be forming their curds, and should receive manurial assistance in the form of liquid manure given at alternate waterings. The leaves should be tied up to exclude the light immediately the heads are visible. For the purpose of prolonging the supply of this vegetable, some of the plants may be plunged at the foot of a south wall or fence, but they must be given some protection during severe weather. Should these Cauliflowers develop faster than they are required, some of them may be cut and be placed in a cool store, where they will last in a good condition for at least a fortnight. Successional batches of this vegetable growing in cold frames should be mulched with rich, half-decayed farmyard manure, and the roots be well supplied with an abundance of moisture. Afford plenty of fresh air to the plants, both by night and by day, and as soon as it is safe to do so remove the lights entirely. Spring-sown plants of such varieties as Magnum Bonum, Early Giant, Mammoth, and Autumn Giant which have been transplanted, and properly hardened, should be planted in their permanent quarters, the ground having previously been well prepared. Make them very firm in the soil and allow them ample room both between the plants and between the rows; in the case of strong-growing varieties, 30 inches between the plants in the rows, and the latter 3 feet apart will be found suitable. Make one more small sowing of Early Giant and Autumn Giant, as these varieties will, provided they are lifted during November and placed in cold frames, furnish a supply of small heads of good quality up till mid-winter.

Vegetable Marrow.—Early plants of this vegetable, whether planted on mild hot beds or in pots in an intermediate house for training up the roof, should now be in bearing. The growths should be thinned and regulated, much in the same manner as those of Cucumbers, and in order to ensure a good crop the flowers should be pollinated by hand. Diluted manure water should be given when the fruits are swelling. A final sowing of this vegetable should be made, placing the seeds singly in small pots; these will furnish plants for cultivation in the open. Seeds of Gourds and Pumpkins, including both edible and ornamental varieties, should be sown in a similar manner Many of the larger Pumpkins are excellent for the table when they are well cultivated and properly ripened.

Ridge Cucumbers.—Seeds of these should be sown now and germinated in heat The seedlings when properly hardened will be ready for planting in the open in a sunny and sheltered position by the end of the month. Ridge Cucumbers when properly grown are of equal and sometimes superior flavour to those cultivated under glass. The chief requirements of Ridge Cucumbers are plenty of moisture at the roots and conditions that promote a clean and free growth.

Capsicums and Chillies should now be given their final potting using either 5-inch or 6-inch pots, for preference the former size, as these are more useful for placing in jardinières and other fancy receptacles used for the purpose in dwelling-rooms. Place the plants near to the glass and maintain an average atmospheric temperature of 60°.

Beetroot.—The main and final sowing of this crop should now be made. When roots of special quality are required, it is often necessary to first bore holes with a crowbar or some other implement, and to fill these with a rich finely-sifted compost. The common sparrow frequently does much damage to the young seedlings of Beetroot as soon as they appear above the surface of the ground.

THE FLOWER GARDEN.

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

Bamboos.—The present is a suitable time for planting these ornamental subjects. A thorough preparation of the soil is of the utmost importance before the work is undertaken, and the ground should be stirred to a depth of not less than 2 feet 6 inches to 3 feet, and be enriched with farmyard manure. Single specimens should be afforded an abundance of root room. Before planting the more tender species they should be gradually hardened, and their final quarters should be chosen in a warm sheltered part, such as is provided on the borders of a woodland. Bamboos are moisture-loving subjects, especially during the summer months, and they succeed by the margins of a lake or a stream. Some of the more tender species are very graceful as pot plants, and a few should be reserved for this purpose. The propagation of the hardy varieties and species including B. Metake, B. aurea, B. Fortunei, B. nigra, and B. Simonsii, is easily effected by division of the old plants. A portion of the plant should be detached just as the new growths are appearing, and this should be planted in well-prepared ground, after which a copious watering should be afforded to settle the soil about the roots. Bamboos are often objected to on account of their dying after flowering, but I have not experienced much trouble in this respect, B. Simonsii being the only one I have lost from this cause, and this plant had been established for more than 30 years before it flowered. It is interesting to record that all the stock propagated from this same plant by division flowered at the same time as the parent, and all died together. Another interesting feature was that plants of the B. Simonsii flowered generally throughout the country concurrently with mine.

Flower bedding.—Spring-flowering subjects such as Wallflowers, Forget-me-Nots (Myosotis), Polyanthuses, &c., are very free-rooting subjects, and they soon exhaust the soil in which they are growing. Therefore, it will be necessary, before the summer occupants are placed into the beds, to provide some fresh food materials in the shape of leaf-soil and horse-droppings in the proportion of three-parts of the former to one of the latter. The whole should be well-mixed and freely dusted with soot. This dressing should be well incorporated with the soil, in order to ensure an even growth of the plants. When digging flower-beds and borders it is well, if manure is added, to turn the soil twice in order that the former may be evenly distributed.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Strawberries.—In the earliest districts these plants will soon be showing their flower trusses; no time, therefore, should be lost in applying the annual mulching of strawy litter from the stables. Thoroughly cover the soil with this material, and allow some of the longest to lie loosely around the plants to afford protection from frost. There are two advantages to be obtained from applying the mulch early, namely, the stained litter gets thoroughly washed before the fruit ripens, and should a long period of drought occur there will be less evaporation of moisture from the soil. If extra fine fruits are required for any special purpose, thin out the weakest flower trusses before the blooms open, and afterwards thin out the fruits when they are properly set. Plants that were forced having been carefully cleaned and hardened off for planting as recommended in the Calendar for April 11 should be planted out as soon as possible so that they may become thoroughly established before dry weather sets in.

Figs.—If the growths upon Fig trees appear numerous and weak they should be freely thinned out. The cold summer of last year was not favourable to the cultivation of Figs out-of-doors, and it may be found that there are unmatured unfruitful shoots that may be removed to make room for younger shoots nearer the centre of the tree. Do not treat fruitless trees with any liquid manure or mulchings, a drier root-run being more conducive to the growth of short-jointed wood that will ripen properly. The chief point in Fig culture out-of-doors is to keep the roots near the surface, and the growths thinly disposed, otherwise the wood will not ripen satisfactorily. The shoots on Fig trees against walls should never be pinched, as growths from the second breaks cannot ripen before bad weather sets in.

Loganberries and Blackberries.—In northern districts where room can be spared in cold houses, the Loganberry is well worth a place, the fruits being valuable for use in the kitchen at a time when other fruits are scarce. The plants are now developing numerous suckers from the base, and only the strongest of these should be laid in for fruiting next season, all the weak ones being removed. The same remarks apply to the plants growing outside, and to the Blackberries and Wineberries. No more shoots should be allowed to remain than are required for fruiting next season.

General work.—See that all grafts are made secure as recommended in a previous Calendar, and that the ground is kept free from suckers and weeds. Continue to train on and disbud young trees as it becomes necessary, and again attend to the watering of recently-planted trees against south walls.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Lycastes.—Plants of L. Skinneri and its varieties, L. macrophylla, and the hybrid L. × Balliæ, have commenced their season's growth, and will need more water at their roots than hitherto. When the new shoots have advanced about 3 inches, the condition of the roots should be ascertained, and any plants requiring it should be re-potted. These plants should be grown in well-drained pots, because they require a plentiful supply of water during the summer months both at their roots and overhead. As a rooting medium, use equal parts of good, brown, fibrous peat, turfy loam, and chopped sphagnum moss, mixing the whole with a good sprinkling of coarse silver sand and broken crocks. Pot firmly, and place the base of the plants a little below the rim of the pot. The species L. aromatica, L. cruenta, and L. Deppei produce their flower-buds and new growths simultaneously at this season; therefore, the re-potting of these plants should be deferred until after their flowers have faded. L. Harrisoniæ is an old but very desirable Orchid when well cultivated, the plants producing their fragrant flowers at this season. After the blooms are past, and when new growths start from the base of the plants, fresh rooting material should, if necessary, be afforded. At Westonbirt this species succeeds in a basket suspended from the roof, and the plants are afforded more warmth than the other species named, these being accommodated in the cool intermediate house, where they are shaded from strong sunshine.

Anguloas.—A. Clowesii and A. Ruckeri are beautiful species known by the popular name of the cradle Orchid. These plants produce their flowers during late spring and early summer, the buds and new growths appearing together. After flowering, these plants should be examined, and if any are in need of re-potting, employ a similar compost to that advised above for Lycastes, but afford them rather more rooting space as they are strong in growth. The plants should be afforded a light position in the intermediate house, and be watered sparingly at first, but afterwards a plentiful supply of moisture may be given until the growth of the pseudo-bulbs is complete. These plants and Lycastes are subject to attacks of red spider, which infests the lower sides of the leaves. If the syringe is freely used on bright days, and an occasional spraying with some weak insecticide given, there will be little trouble with these pests.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Management of the ground used for games (continued from p. 270).—The proper maintenance of parts of the grounds which are devoted to games is an important part of park work. Daily attention to them is, in all cases, necessary during the playing season, rolling and mowing being a part of the daily routine. Parts of the park that have been altered and re-turfed during the autumn and winter months should have no games played thereon until the turf is in a satisfactory condition and the grass is growing vigorously. To give way to a clamour for the opening of any playground before the turf is in thorough order is a weakness too frequently exhibited by Committees of Open Spaces; but the Superintendent should resist as strongly as possible, and point out that a couple of months' delay in opening the ground may ensure two months' longer use before it becomes torn and worn, apart from the extra cost which will be entailed in putting it again in order. Any little pleasure afforded by the early opening is more than counterbalanced by the unsatisfactory condition of the turf in a short time. When once the turf is damaged the cause is often forgotten, and the Superintendent may be subjected to criticism and be blamed for bad management. It is assumed that all playgrounds were examined and treated according to their requirements at the end of last season's play. Should it be found, however, that parts are not so satisfactory as desired, a timely top-dressing of some light manure will materially assist matters. Lawns which have been treated regularly with some special manure—as most golf and bowling greens are—often appear sickly, due, in all probability, to an absence of lime. A slight dressing of freshly-slaked lime, which has been screened through a sieve having a ¼-inch mesh, and mixed with twice its bulk of sand to facilitate the spreading, will, as a rule, act as a corrective, especially if it is applied when new growth is starting. If a stimulant is required, there is nothing better at this season than a slight dressing of sulphate of ammonia. A safe quantity to use is about half an ounce per square yard, and it is better to apply a slight dose on two occasions than one heavy one. The sulphate may be mixed with sand in the same proportion as that for lime, to facilitate even distribution. It must not, however, be mixed and allowed to lie in bulk, as the salt readily diliquesces. It should be mixed and applied as soon as purchased. Bowling greens which were prepared last autumn will require extra attention until the roots of the grasses have spread through the adjoining turves. When mowing, dispense with the collecting box, and allow the cut grass to act as a mulch, which will tend to obviate cracking if the turves have been taken from a clayey soil. Use the roller judiciously. It is a mistaken idea that a bowling green cannot be too much rolled. The nature of the turf and the condition of the weather should regulate not only the use, but also the weight of the roller.

THE APIARY.

By CHLORIS.

Feeding.—To ensure success this year it will be necessary to maintain a supply of food for the increasing brood, and also to prevent the bees from leaving the hives during inclement weather. Should snow again fall, place a board in front of the flight hole to prevent the reflected light from the snow causing the bees to imagine that because there is a bright glare therefore the air conditions warrant their taking a flight.

Swarming.—Though few hives will be strong enough to swarm for some time, yet it is well to be prepared. Should it be desired to increase the number of hives, fit up the frames with wax foundation and have all things in readiness, so that when the bees swarm all will be in readiness. Bees are prepared for comb building when they swarm, and thus it is not necessary to fit up frames with full sheets of foundation; further, they generally build worker comb only during the first year after swarming, therefore all that is needed will be a "starter" strip of comb about an inch deep. If sections are placed above the queen—excluding zinc, the bees, having no storing space in the brood chamber, will be compelled to store in this most desirable portion of the hive, and thus, beside saving wax foundation by this method, a great quantity of excellent honey is obtainable in a very short period.

Bees deserting their hive.—Frequently bees desert a hive, as soon as they have apparently settled in their new home. There are several causes for this. The hives may be draughty, and if so the cure is apparent; the position may be too exposed; or the hive may be unclean. But for no apparent reason, as far as the most careful and thoughtful apiarist can determine, they will sometimes forsake their new home. It is well known that bees will not desert brood, therefore a comb of hatching brood placed in the centre of the new hive, will, provided the conditions otherwise are favourable, prevent them leaving.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, MAY 11—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, MAY 12—
Roy. Hort. Soc. Coms. meet. Roy. Gardeners' Orphan Fund Coming-of-Age Festival at the Hotel Cecil, Strand. Nat. Rose Soc. Com. meet. Brit. Gard. Assoc. Ex. Council meet.

SATURDAY, MAY 16—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—52.3°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May 6* (6 P.M.) Max. 60°; Min. 52°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May 7* (10 A.M.): Bar. 29·8; Temp. 58°; Weather—Fair, with sunshine.
PROVINCES.—*Wednesday, May 6* (6 P.M.): Max. 57° Colchester; Min. 50° Ireland N.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Lilies, Herbaceous Plants, Hardy Bulbs, &c., at 12; Palms, Bay Conifers, Ferns, &c., at 3, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY, THURSDAY AND FRIDAY—
Unreserved Clearance Sale of the "Elmwood" collection of Orchids, at Elmwood Park, Hill Road, Croydon, by order of J. Wilson Potter, Esq., by Protheroe & Morris, at 12.

Wax Palms and Gramophones.

The importance of the great natural order Palmaceæ from an economic point of view is sufficient in itself, without any consideration of the habits or natural beauty of the plants, to justify the term often applied to them of "Princes of the Vegetable Kingdom."

Though the uses, to which some part or other of nearly every one of the numerous species is put, are so varied, it may safely, we think, be said, that the most valuable, from a commercial aspect, are the Cocoanut (Cocos nucifera) and the Palmyra (Borassus flabellifer). Perhaps, however, amongst the most interesting, and at the same time the least known, are those species which have the habit of excreting wax, either on their leaves or stems, such, for instance, as the Carnauba Palm of Brazil (Copernicia cerifera) and the so-called Wax Palm of New Grenada (Ceroxylon andicola). The first of these is one of the finest Palms of the Brazilian forests. The cylindrical stem rises to a height of 40 feet, and measures about 1 foot in diameter at the base. The leaf-stalks are about 6 feet long, and as the leaves die and wither they fall away, leaving the woody bases, still attached to the trunk, arranged spirally for some distance down. It is on the underside of the leaves that the wax is deposited, and it is collected either by gathering the leaves and exposing them in a dry place to wither, when the wax cracks or peels off in flakes, which is further assisted by shaking, or by scraping the wax from the leaves. In either case the wax is melted by heat and poured into moulds. Another mode of collecting it is by cutting the leaves into pieces and boiling them in cauldrons of water; the liquefied wax rises to the surface, and is skimmed off. As the leaves are exhausted of the excretion they are removed and other leaves are added. The wax so obtained is still in an impure state, but it is afterwards re-melted, and after the impurities have been removed, the wax is run into moulds where it hardens, and indeed becomes quite brittle.

When first introduced to this country, about 60 years ago, it was used for mixing with bees'-wax, for which purpose it is well adapted, both on account of its yellow colour and its hardness, the bees'-wax itself being of a very soft nature. It was also used in the making of candles, for which purpose, however, it did not meet with much favour, owing to the difficulties experienced at that time in bleaching it. The annual imports did not then exceed five or six hundredweights. Of late years there has been an increasing demand for this wax, and in a recent report on the subject it is said that in the States of Pernambuco, Ceara, and Bahia, its collection has become an important industry, and according to the trade returns the quantity exported varies considerably from year to year, but in round numbers amounts to 2,000 tons, of the value of £200,000. The increase in the exports and value of this wax, we are informed, is largely due to its use in making phonograph and gramaphone records, and though it is also used in making boot-polishes, the demand is chiefly in connection with the gramophone trade.

Ceroxylon andicola, the Wax Palm of New Grenada, differs from that just described, inasmuch as the wax is deposited on the trunk and not on the leaves. The tree grows to a good height, and the trunk is usually swollen about half-way up, contracting again towards the top. The scars of the petioles of the long pinnate leaves are very distinctly marked all over the trunk, and between each scar is a deposit of wax, often so thick that it can be removed in flakes. This wax forms an article of trade in New Grenada, and is used by the people for making candles. The average yield of one tree is said to be about 25 lbs. The Kew museums contain some excellent specimens both of the trunks and leaves of these Palms as well as of the different kinds of wax.

OUR SUPPLEMENTARY ILLUSTRATION affords a view of the garden front at Compton Place, Eastbourne, showing the flower beds and borders in their full beauty in summer time. On the occasion of the death of the late Duke of DEVONSHIRE, we were enabled to publish a full-page illustration (see issue for March 28, p. 203, of another part of these gardens, and we then stated that Compton House was a favourite residence of his Grace, and that this residence was the scene of much entertaining on the part of the late Duke and the Duchess. Most of the towns on the south coast of England are particularly favoured in their situation, and as they enjoy in winter a very mild climate they are visited by many invalids during convalescence. None is, perhaps, more favoured in this respect than Eastbourne, and in summer time a holiday there is even more enjoyable, for then such beautiful homes as Compton Place are surrounded by flowers that not only adorn the beds and borders, but ramble up the sides of the residence and hang in festoons from window boxes and vases.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held in the Society's Hall, Vincent Square, Westminster, on Tuesday, May 12, at 3 o'clock. A lecture on "Gardening in the West Highlands" will be delivered by Mr. O. H. MACKENZIE.

ROYAL GARDENERS' ORPHAN FUND.—We desire again to remind our readers that the coming-of-age festival dinner of the Royal Gardeners' Orphan Fund will take place on Tuesday next, at the Hotel Cecil, at half-past six for seven o'clock p.m. The president of the fund, the Duke of BEDFORD, K.G., will preside. Our readers are asked to assist in making this event as successful as possible.

HORTICULTURAL CLUB.—We are informed that owing to the annual dinner of the Royal Gardeners' Orphan Fund being held on Tuesday, the 12th inst., and to the first day of the Temple Show being on Tuesday, the 26th inst., no house dinner will take place during May. Dinner will be served at the club, at 6.30 p.m., on Tuesday, May 26, for those members who may wish to dine together after the show.

THE "GEO. MONRO CONCERT COMMITTEE."—We are given the following details of the proceeds at the last annual concert, which was held in the Queen's Hall on February 23. Donations have been given to the following institutions:—Gardeners' Royal Benevolent Institution, £15 15s.; Wholesale Fruit and Potato Trades' Society, £10 10s.; Charing Cross Hospital (Covent Garden Committee), £5 5s.; Surgical Aid Society, £6 6s.; Royal Westminster Ophthalmic Hospital, £3 3s.; Covent Garden Lifeboat Fund, £3 3s.; The Geo. Monro, Ltd., Pension Fund £4 4s. (and outing fund), £3 3s. A balance of about £10 will be added to the reserve fund.

NATIONAL TULIP SOCIETY.—The fifteenth annual exhibition of the southern section of this society will be held on Tuesday, May 26, in the Royal Horticultural Hall, Vincent Square, Westminster. The secretary is Mr. W. PEETERS, Farcet House, Cambridge.

FRANCO-BRITISH EXHIBITION AT SHEPHERD'S BUSH.—The management of this exhibition have arranged for a show of plants and flowers to be held on May 19 and 20 next. The schedule provides for 21 classes, several of which are open to both French and English exhibitors; there are others for amateurs only, and several are open to all comers. The prizes include gold, silver-gilt and silver medals, and in almost every case a money prize will accompany the medal. Gold and silver medals for miscellaneous exhibits not specified in the schedule will be awarded at the discretion of the judges. Diplomas or certificates will be awarded to meritorious novelties, such awards to be open to exhibitors of both nations. All particulars may be obtained from Mr. J. A. ALEXANDER, the superintendent of horticultural shows, Franco-British Exhibition, Shepherd's Bush. Intending exhibitors must give eight days' clear notice to the superintendent of their intention to exhibit.

Flowers in Season.—Blooms of a very fine double Daffodil known as Primrose Phœnix have been sent us by the raiser, Mr. John Walker, Thame, Oxon. The colour is a soft primrose yellow. Not the least valuable quality of the flower is its form, which is of the rosette type, but extremely regular, with the petals well developed.

Kew Guild Annual Dinner.—The annual dinner of the Kew Guild will take place on Monday, May 25, at the Holborn Restaurant. Mr. William Pettigrew, Superintendent of Parks, Cardiff, will preside. A number of Colonial and Indian members will be present, including Messrs. G. Cave (Darjeeling), E. W. Davy (Nyassaland), R. Derry (Singapore), A. E. Evans (Gold Coast), and G. T. Lane (Calcutta).

The Perpetual Flowering Carnation.—Messrs. Hugh Low & Co. inform us that, as last year, they will be pleased to present a free copy of a work on Carnations to all horticultural and gardening societies who apply for same.

Hippeastrum "Purity."—This plant was awarded a First-Class Certificate at the meeting of the Royal Horticultural Society on the 28th ult., not an Award of Merit, as stated in our report.

The Royal Academy.—The 140th exhibition of the Royal Academy opened on Monday, May 3. The chief honours will probably go to Mr. F. Brangwyn, A.R.A., and Mr. J. S. Sargent, R.A. The former shows a very fine decorative picture entitled "The Return," gorgeous in colouring and masterly in execution; the latter several notable portraits, the finest, perhaps, being "H.R.H. The Duchess of Connaught," although the splendid full-length portrait of "The Right Hon. A. J. Balfour, M.P.," will no doubt run it very close in public favour. Mr. H. H. La Thangue, A.R.A., sends several delightful pictures, No. 282, "Ligurian Flowers," being particularly happy in its strong sunlight effect. Mr. Alfred Parsons, A.R.A., has a large landscape, a valley, with old Hawthorn bushes, Gorse, and Bluebells, all in full flower. The watercolour room contains several very pretty drawings of gardens, Mr. A. Parsons' "The Rose Garden, Poulton Briary," Miss M. Nixon's "The Herbaceous Borders, Drakelowe," "The Wild Rose Tangle," by Woodbine Hinchliff, "Summer," by Miss A. Bauerle, will all make us long for summer to be here. One of the pictures that will attract most attention is a very large canvas by Sir Hubert von Herkomer, R.A., "The Council of the Royal Academy, 1907," a cleverly-arranged group, rather coarsely painted, but full of life. Mr. Tuke's "Midsummer Morning," No. 197, should on no account be missed; and Mr. J. J. Shannon's "The Infant Bacchus," and his portrait of "H.R.H. Princess Patricia of Connaught," are very worthy specimens of this painter's delightful work.

The Nursery and Seed Trade Association, Limited.—The annual general meeting of this association was held at the offices, 32, Gresham Street, London, E.C., on April 27. Mr. G. Bunyard (Messrs. Bunyard & Co., Ltd., Maidstone) presided, and there were also present the following members: Mr. Arthur W. Paul (Messrs. William Paul & Son), Mr. William Bull (Messrs. Bull & Sons), Mr. G. H. Barr (Messrs. Barr & Sons), Mr. H. W. Nutting (Messrs. Nutting & Sons), Mr. A. E. Protheroe (Messrs. Protheroe & Morris), Mr. B. B. Maller (Messrs. B. Maller & Son), Mr. A. E. Silberrad (Messrs. R. Silberrad & Son), and Mr. C. W. Nieuwerf (the Harrow Nursery Co.). The report of the committee submitted to the meeting showed that the financial position of the association was improving yearly; the amount standing to the credit of the association on December 31 last was £169 7s. 4d., consisting of £121 5s. 10d. at the bank and outstanding subscriptions, commission, and status enquiry fees amounting to £48 1s. 6d., part of which has since been paid. The members present at the meeting stated that the association had been of great service to the trade, as it had during last year answered 870 status enquiries and had collected accounts amounting to £5,515 11s., principally in small sums, after the members had done all in their power to obtain payment by letters. The association had expended £19 3s. 8d. in making special enquiries relative to persons seeking credit. Mr. N. N. Sherwood (of Messrs. Hurst & Son) was re-elected president of the association; Mr. W. J. Nutting was re-elected treasurer, and Mr. G. H. Barr and Mr. H. Simpson (Messrs. Cooper, Taber & Co., Ltd.) were re-elected trustees.

A New Privet.—Prof. E. Heinricher some years ago discovered a plant of Ligustrum vulgare growing near Innsbruck that bore deep, creamy-yellow flowers. He found that cuttings, when they flowered, retained the peculiarity, as was, indeed, to be expected. He has succeeded in raising young plants from seed, and finds that they come true as regards the floral characters. Prof. Heinricher considers the plant of horticultural value, and designates it as Ligustrum vulgare mutatio flore lutescente. This rather cumbrous name might perhaps be conveniently replaced by L. vulgare var. lutescens.

Publications Received.—*The Vegetable Growers' Guide*, by John Wright, V.M.H., and Horace J. Wright, with 30 coloured plates and upwards of 200 diagrammatic drawings illustrative of practical points. Vol. 1 (London: Virtue & Co., 7, City Row, City Road).—*The Royal Gardens, Kew* (illustrated), by E. J. Wallis and H. M. Spooner. Price 1s.—*Dahlias and their Cultivation*, by J. B. Wroe. Published at the *Amateur Gardening* Office, 148 and 149, Aldersgate Street, E.C.—*Studies in Fossil Botany*, by D. H. Scott, F.R.S., Vol. 1 (second edition). Published by Adam and Charles Black. Price 6s.

CONTINENTAL NOVELTIES.

ACACIA BAILEYANA.

A beautiful species of "Mimosa" Acacia is mentioned in *Möller's Deutsche Gartner-Zeitung* for March 21, which is equally good for producing cut bloom in the open on the Riviera as for pot culture in more northern climates. This fine species was obtained some years ago from California, and it succeeds in light soils on its own roots on the Riviera, whilst in the heavier loamy soils of the San Remo district it must be grafted on A. floribunda. The foliage is very pleasing, it being twice feathered, and of a silvery-blue tint that harmonises splendidly with the pendant golden-yellow risps of flowers. At San Remo, Paul Brauer, the writer of the note accompanying the figure of the plant, states that the plant begins to flower in the middle of the month of November, and continues in bloom till the beginning of February, at which time A. dealbata is in full bloom. The flowering shoots of A. Baileyana bear carriage well and fetch good prices, varying from 3 to 5 francs per kilo. As a market plant for the Christmas season, at which period the flowers are at their best, it is sure to find favour with the public.

TRIDAX BICOLOR ROSEA.

As a suitable annual for affording cut blooms, Tridax bicolor rosea may be warmly recommended. The plant, unfortunately, is but little known in gardens, although it possesses handsome flowers, which surmount tall stalks and are of a clear, distinct pink colour not found in many other species of plants. In regard to soil the plant is not particular. It should be raised in the same manner as Asters, Phloxes, Salpiglossis, and the like. The flowers are suitable for furnishing vases, &c. The plant is not injured by 2° to 3° of frost.

BEGONIA HYBRIDA ELSMERI.

In this fine winter-flowering plant we have a highly decorative subject for the warm greenhouse and winter garden, and one that commences to produce its flowers in October and continues to do so till March. The growth is vigorous and candelabra-like in form, and produces numerous flower stalks carrying fresh-coloured stellate blooms of a large size. The only fault that can be urged against it is the readiness with which the heavy blooms fall off the succulent stalks when carelessly handled. As a market plant, except when quite young, and before it flowers, it is for this reason not to be recommended. An admirable illustration of a specimen plant in full bloom is given at p. 244 of *Die Gartenwelt* for February 22. *F.*

THE FERNERY.

PLATYCERIUMS (STAG'S-HORN FERNS).

The genus Platycerium is represented in gardens by relatively few species, although many that are not generally cultivated possess good features that render them useful decorative objects in the Fern-house. The best-known species is P. alcicorne, from which, by sporting, P. a. var. Hillii was derived. Both are excellent Ferns for use in dwelling-rooms. In former times it was generally believed that Platyceriums were difficult of culture and that their growth was slow and unsatisfactory, but these opinions, as a better knowledge of the requirements of the plants have shown, are groundless. If the plants can be accommodated in a glass-house by themselves, the cultural conditions can be better adapted to their needs than when they are included in a mixed collection of stove plants.

The propagation of Platyceriums in general is difficult and slow when it has to be carried out by means of offsets, a method of reproduction which cannot be adopted in the case of all species of Platyceriums. P. grande, for example, develops no offsets, and it was one reason why this species was formerly so little grown in gardens. But as soon as the possibility of the propagation of Ferns by means of spores became known, it was easy to raise this particular species in thousands. When Ferns are raised from spores, they may differ in several desirable points from their parents; moreover, the young plants are actually new plants, with individual characteristics, and do not represent, as in the case of divisions, merely vegetative succession. Herr Fieb, of the Botanic Garden, Groningen, published his method of increasing Platyceriums in a communication in the *Revue Horticole*, p. 209, for 1899. This method succeeding, the experiment has since been repeated by him with other genera and with good results.

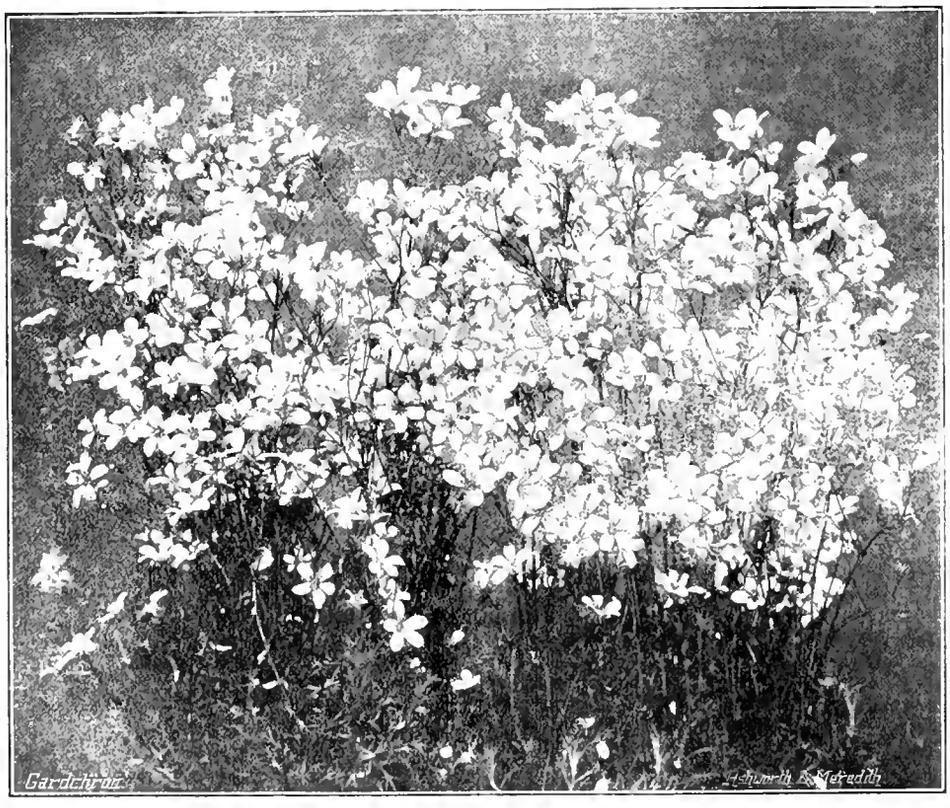
Platyceriums are epiphytal on trees in the tropics, and they are near allies of the genus Acrostichum, of which they form a sub-family. They possess two forms of fronds, the normal and the so-called Nischen or nest, the barren fronds. The latter bear no spores, but in the space between the barren frond and the stem of the tree there accumulates a collection of dead leaves and a variety of other vegetable substances, and this débris furnishes the plant with nutriment. The barren frond is thickened at the base, and furnished with strong veins or ribs, whilst the lamina is thin above, sometimes branching and expanding, so as to

catch the refuse and hold it fast. At the base of the barren fronds are found the roots of the plant. The fronds are less intended to serve the purpose of assimilation than the collecting of this humus and moisture, functions that they exercise, even when they are dead. Not every normal frond is fertile, the spore-bearing leaves appearing only when the plant has reached a certain age, and provided the conditions of life are favourable. Both forms of fronds are similar in appearance when young, and in a young plant the fertile fronds may be missing entirely. The normal fronds often possess a rachis, and they are finally shed by the plant, which is not the case with the barren fronds. On both forms of leaves there is a felt-like covering of stellate hairs, which indicate that the plants in their natural habitat enjoy a moist atmosphere, but they must not be subjected to heavy syringings, for these would spoil the felty covering of the plant.

The spores are formed in masses on the first or second branchings, or at the tips of the fronds, and on their under surface.

need the highest degree of warmth, and even in the resting period the warmth must not be much below the normal.

Tree stems have been mentioned as the objects to which these Ferns are attached in their habitat, but they readily cling to cork slabs, soft sandstone, and porous brick and tiles; P. Hillii makes a capital room plant when grown in a flower pot. The best kind of soil for the culture of Platyceriums is a mixture of the fibrous parts of loam, charcoal, cow dung collected from the pastures when dry, and sphagnum-moss; light kinds of turf should be soaked in cow-dung water. In the spring, when growth begins, a quantity of this soil should be inserted behind the old barren frond or shield, under which the roots by upheaval can be seen. Behind the very young barren fronds no roots will be found, and no soil must be introduced behind them or they will be decayed and the plant injured. Many gardeners imagine that epiphytal plants need no sort of solid food, but if this is withheld, the growth is checked and the plant presents a generally miserable appearance.



[Photograph by Chas. Jones.

Fig. 135.—Saxifraga hypnoides: flowers white with faint pink dots.

Some botanists have described 13 species of Platycerium, but most of these are regarded by other authorities as garden forms or varieties. Experience has shown that very frequently one and the same mass of spores will afford varied forms of plants; for example, spores of P. Willinckii, obtained from the Marburg Botanic Garden by the authorities of the Botanic Garden at Groningen in January, 1899, produced a batch of plants in which were two individuals which differed from the rest, in the form, branching, and habit of the fronds.

Warmth and moist air are the chief cultural requirements of these Ferns, and, as stated above, not much syringing must be given, as this ruins the felted covering of the fronds. Water must be afforded sparingly at the roots in the winter, this being the resting period of the plants. It may here be remarked that P. alcicorne is content with less warmth than any other species. P. angolense and P. æthiopicum need the highest degree of warmth, and even in the resting period the warmth must not be much below the normal.

When applying water to Platyceriums, it should be poured behind the barren fronds, where the roots are to be found. *M.*

SAXIFRAGA HYPNOIDES.

The accompanying illustration (fig. 135) shows one of the mossy Saxifragas, S. hypnoides, a section well known to the gardener by reason of the free-growing nature of the plants, the dense carpet of foliage produced, and the myriads of blossoms that almost hide the foliage during the early summer months. For the surfacing of beds as "carpet" plants for edgings, for cool or moist positions in the rock garden, and for many another position in the garden where a free-growing plant of the easiest culture is desired, a selection of these mossy Saxifragas invariably gives satisfaction. For the most part the species and varieties included under the head of "mossy" are of an evergreen character, the exceptions being such usually deciduous kinds as S. Maweana, S. gibraltarica, &c. Not infrequently this deciduous character is not recognised, and the tufts are as a result discarded. This is unfortunate, as the first-named is one of the finest white-flowered species in the group, and it is also interesting as being one of the parents of the handsome and popular S. × Camposii, which is also known as S. Wallacei. The species forming the subject of our illustration has, in common with its variety elegans, white star-like flowers that are very faintly dotted with pale pink spots near the base of the petals. The inflorescences rise to nearly a foot in height, and when they are fully grown they make a most effective display. Other good species with white flowers are in commerce, including S. Sternbergii, S. Stansfieldii, S. Whitlavii and its variety compacta, S. aquatica, one of the largest-leaved kinds, S. cæspitosa, &c. Apart from the white-flowered varieties mentioned, a new and increased interest has been added to the group under notice by the introduction a few years ago of that richly coloured variety known as "Guildford Seedling," presumably a chance seedling from S. Rhei, and which originated in the garden of the late Mr. Selfe Leonard at Guildford. Since the introduction of this excellent plant many varieties possessing coloured flowers have appeared, but none of these equal the "Guildford Seedling." S. Rhei and S. R. superba have pale pink and rose-pink flowers respectively. A distinct plant is S. muscoides purpurea. It is one of the most profuse in its flowering, and much the dwarfest in habit of those mentioned. All the kinds delight in moisture, some, indeed, as the British species now illustrated, being frequently found in bogs and swamps, but such wet conditions are not absolutely essential for plants under cultivation. *E. H. Jenkins.*

FLORISTS' FLOWERS.

GOLD-LACED POLYANTHUSES.

During the earlier years of the National Auricula Society's existence, good, named varieties of gold-laced Polyanthuses were fairly common. Now they are not seen at the southern shows of the society. Presumably these gold-laced Polyanthuses are dying out with the old florists, and whilst one cannot too greatly deplore the disappearance of that race of men who were enthusiastic florists, yet the decadency of the gold-laced forms of Polyanthus is to be little regretted, because even at their very best they were not striking flowers. To secure their special points in perfect form, they need the cool atmosphere of the north; in the south it is found difficult to produce them to perfection because of their sensibility to summer heat and insect attacks. As garden plants they have been displaced by the large-flowered and far more beautiful type represented by the fancy or border section. These, indeed, are amongst our most pleasing early spring flowers, and can be relied upon to reproduce from seed all the features of the finest strains. Unfortunately for the gold-laced forms, the best of the named varieties appear to have attained to a degree of perfection in marking beyond which no seedling could advance, and from which the majority are vastly inferior. The thrum or cluster of anthers set in a round golden cup, the centre of a pure yellow or golden colour, into which the lacing, fine or broad, which most perfectly margined the red or maroon ground, cut into clearly, made a combination of markings, when found as in Exile or Cheshire Favourite, not easily excelled. One may see thousands of seedlings of so-called gold-laced Polyanthuses to-day, but not one will bear comparison with the flowers of the old varieties once so cherished of the florists. *A. D.*

EVIL EFFECTS OF TIGHT LIGATURES.

It may be readily observed that if the branch of a tree is "ringed" by the removal of an annular piece of the bark cut down to the living tissue lying at the periphery of the wood, that a swelling occurs at the upper edge of the ring. This swelling is produced by the excessive growth of the living cells close to the margin of the tissue that has been severed. A similar swelling may sometimes be seen at the lower edge of the ring, but usually it is only trifling in extent. The chief reason why the cells at the upper margin develop in this luxuriant fashion is to be sought in the accumulation, above the ring, of the complex nutritive substances that are unable to wander further down the stem owing to the severance of the conducting tissues of the bast. For the substances in question are largely produced by the activity of the leaves, and normally traverse the bast or "phloem" of the stem, distributed to all parts of the plant wherever tissue wastage, or cell formation, is going on.

Every practical man is aware that a wound caused by the removal of a branch heals over more quickly and effectively the more cleanly the living tissues are cut, and the more closely it is severed to the trunk, or to a leafy branch of the tree. The reason is to be sought in the fact that in this way the proliferating living cells are not interfered with by leaving them covered with the remains of lacerated dead tissues, and furthermore the cells in question are thus situated close to the tracks along which nutriment can be readily conveyed to them.

The subject of our illustration clearly shows how undesirable it is to bind a growing stem too tightly. For the ligature not only causes a malformation of the shoot above it, but, by compressing the conducting channels in the bast, it may result in the starvation of the parts situated below it, and even the roots will also be affected if the main stem is thus ill-treated. The insidious character of the evil becomes obvious when it is remembered that the ill results will not be manifested for some time, inasmuch as it is not the water channels, but those conveying the

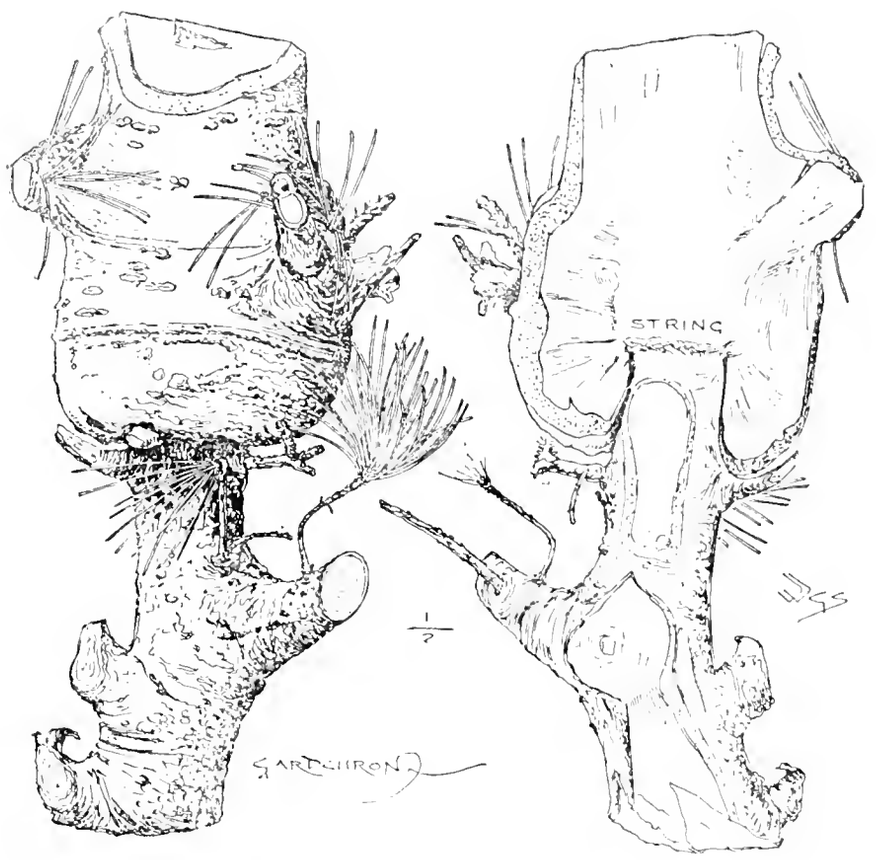


FIG. 136.—A CEDAR STRANGLED BY STRING.

This excessive cellular development normally occurs wherever the continuity of the rind is interrupted, provided that the necessary nutriment can reach the cells which are stimulated as the result of the injury, and so the healing of wounds in a tree is provided for by means of this reaction to the conditions introduced by the injury.

The illustration (fig. 136), shows an example, not very uncommon, where the conducting channels of the bast have been choked by a tightly-drawn string. The cells above the ligature have responded to the changed nutritive conditions by vigorous growth—by proliferation, as it is sometimes termed. Then, as the tissues began to differentiate in the cellular mass, a local increase of wood resulted, which gradually grew down along the twig, enveloping it in a sort of cylindrical pocket, exactly as the healing tissue may be observed to do when growing over a bit of exposed wood that may have been left as a snag when a branch has been broken off. manufactured food, which are thus choked. Hence the withering of the foliage, which at once directs attention to such damage as that caused by a check in the water supply does not occur, and so no timely warning of the mischief is given. *J. B. F.*

HOME CORRESPONDENCE.

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

CYANIDING PLANT HOUSES.—Mr. Donoghue states (p. 269) "the strength of sodium cyanide compared with potassium cyanide is as 130 98." This statement is certainly misleading, because these figures are calculated on two totally distinct principles. The one is simply a commercial term; the other a true chemical expression. I fail to see any necessity for using the commercial term, apart from one thing, viz., to make the sodium cyanide appear to possess a much higher value over the potassium cyanide than it really has. If the percentage of sodium cyanide is expressed on the same basis that the potassium cyanide always is, and which is the correct one in chemistry, the 130 per cent. will be found to equal 98 per cent. purity. It is obvious that, if 100 parts of the salt is found to contain 100 parts of the compound, the salt must be absolutely pure, but when it comes to 101 per cent. there is no meaning in the statement. This high state of purity, viz., 100 per cent. cannot be expected in commercial salts, because it is a very expensive process to prepare the salt absolutely pure. If there is 95 to 98 per cent. it is as pure as can be expected, indeed, there is no need for further purity. Of the two compounds of equal purity, the sodium cyanide is one-third stronger than the potassium cyanide, but before the relative value of the two can be arrived at, the cost of each must be considered. The analytical data before me now of two samples, one of sodium, the other potassium cyanide, received from Mr. Luster, Nostell Priory, will serve as a good example for comparing the value. The sodium compound contained 92.49 per cent. actual sodium cyanide, and the cost is 4s. 6d. per lb.; the potassium salt contained 95.88 per cent. actual potassium cyanide, the cost being 3s. per lb.; 3 ozs. of sodium cyanide, at a strength of 92.49 per cent., yields 1.27 cubic feet of hydrocyanic acid: a similar quantity of potassium cyanide (95.88 per cent.) produces 0.99 cubic feet of the same gas. From these figures 2¾ ozs. of sodium cyanide (92.49 per cent.) would yield as much gas as 3 ozs. of potassium cyanide (95.88 per cent.). Then 2¾ ozs. of sodium cyanide at 4s. 6d. per lb. costs 7¾d.; 3 ozs. potassium cyanide at 3s. per lb. costs 6¼d.; 2¾ ozs. of sodium cyanide 98 per cent. would yield as much gas as the 3 ozs. potassium cyanide, and would cost 7½d. According to these figures, the potassium cyanide is the cheaper source of the gas. It is quite an easy matter to obtain from any chemist potassium cyanide at a strength of 95 per cent. I have been asked several times whether it is necessary to open the house three-quarters of an hour after closing. No, it is not. I leave the house closed all night with perfect safety. We have neither bug nor scale now, and it is a pleasure to look round and see the clear, healthy growth the plants are making. I have seen the same result in other gardens. I have letters from both gentlemen and gardeners on cyaniding from Wiltshire and Somerset to Glasgow. The results in nearly every case have been most gratifying. Little difficulties have been encountered by some, but they have been easily surmounted. Only two cases have come to my notice where any harm has been done—one in Northumberland where the gardener syringed his houses shortly before cyaniding, and there was no excuse for this, as the essential conditions have been stated again and again; the other case was in Yorkshire, where the gardener considered it unnecessary to weigh or measure his materials. *W. H. Dobson.*

WEATHER AT BERKSWELL IN RELATION TO THE FRUIT PROSPECTS.—Since writing my last note (see p. 268), we have experienced very wintry weather. Snow fell continuously on April 23, 24, and 25, forming the grandest sight of the kind I ever remember. The weather was so calm that every twig of bush and tree carried its complement of snow and represented fantastic appearances, but the weight broke the branches of many valuable trees. During the two days following the snowfall we had heavy rains, which quickly washed the snow away and at the same time caused our rivers, brooks, and streamlets to overflow their banks and flood all the low-lying meadows. On Saturday, May 2, we experienced a day of abnormal heat, and we were hopeful that a few days of such warm weather would prevail during the flowering and setting period of the respective hardy fruits, which are quite 10 days later than those of the Vale of Evesham. During the night, however, thunder, lightning, and torrential rain prevailed, and these conditions continued for the greater part of Sunday the 3rd inst. This again lowered our hopes for a good set of fruits, as the blossom is now at its most critical stage, and we have still to fear the early morning May frosts, should they unfortunately appear. Writing from memory, I think it is four years since we have had a general heavy crop of Apples in this county, and during that year many of these fruits were sold at £2 5s. 8d. per ton—i.e., at a

farthing per lb.; yet during that season American and Canadian (including Nova Scotian) Apples arrived in great quantities in this country, and found a ready sale, to the almost total exclusion of English-grown fruit, and they have held their hold on the British markets ever since. A few evenings ago I was at a public meeting when a speaker declared that in a few years this country would be entirely independent of supplies of Canadian or American Apples. I remember the late Mr. Barron telling me exactly the same thing nearly 30 years ago. Unless the climatic conditions of the British Isles change very much for the better, our position in the world as regards the cultivation and fruiting of the Apple is likely to remain very much the same as it always has been. Besides America and Canada there are other countries, including Tasmania, that in time will send an appreciable supply of Apples to our markets. Scientists are endeavouring to find some way of safeguarding the Apple crop through the frosts of April and May, and we have every reason to hope that they may succeed. *W. Miller, Berkswell.*

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 28.

(Concluded from page 290.)

Floral Committee.

Present: W. Marshall, Esq. (in the chair), and Messrs. Chas. E. Shea, C. R. Fielder, Jas. Douglas, W. J. Bilney, John Green, T. W. Turner, G. Reuthe, John Jennings, J. W. Barr, Walter Ware, Chas. Dixon, Arthur Turner, Chas. E. Pearson, Wm. Cuthbertson, J. T. Bennett-Poe, Herbert J. Cutbush, W. P. Thomson, E. H. Jenkins, W. J. James, Chas. T. Druery, R. C. R. Nevill, R. C. Notcutt, and Jas. Hudson.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, displayed an extensive exhibit of Dracænas, Arahas, Bertolonias, Anthurium Scherzerianum, Ficus radicans, variegated variety, and other foliage plants of exotic species. As a separate exhibit, Mr. RUSSELL displayed a group of forced flowering shrubs and trees, all brightly and freely flowered. (Silver-Gilt Banksian Medal.)

Messrs. H. B. MAY & SONS, Upper Edmonton, showed miscellaneous flowering plants, including Roses, Herbaceous Calceolarias, Petunias, Cinerarias, Salvia splendens, "Pride of Zurich," and other species. (Silver Flora Medal.)

Messrs. HUGH LOW & Co., Enfield, Middlesex, made a bright exhibit with heavily flowered plants of Meterosideros floribunda, interspersed with which were plants of Genista elegans, while along the front hung long flowering shoots of Lotus peliorhynchus. Small Roses in pots were also included in this exhibit. (Silver Banksian Medal.)

Messrs. W. CUTBUSH & SONS, Highgate, London, N., showed many flowering shrubs, Roses, Carnations, Heaths, Spiræas, &c. In addition was a magnificent display of Carnations, staged with much taste (Silver-Gilt Banksian Medal.)

Mr. GEORGE MOUNT, Canterbury, made another charming display with cut Roses, every bloom of which was shown in first-class condition. (Silver-Gilt Banksian Medal.)

Messrs. R. & G. CUTHBERT, Southgate, showed a batch of forced flowering shrubs and other plants, which exhibited excellence of culture. The usual subjects were included in the display. (Silver Flora Medal.)

Messrs. WILLIAM PAUL & SON, Waltham Cross, Herts, showed plants of Roses, amongst which were many new introductions. One labelled Lyon Rose (H.T.) is of a beautiful shade of salmon-red; another named Albatross somewhat resembles the celebrated variety Frau Karl Druschki. (Silver-Gilt Banksian Medal.)

A display of pot Roses, all of which were climbing varieties, were shown by Messrs. FRANK CANT & Co., Colchester. (Silver Banksian Medal.)

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, showed flowering plants in variety, including Schizanthus, Cinerarias, Azaleas, Hydrangeas, the red-flowered Primula Cocklournia, &c. (Silver Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, made one of their characteristic displays of brilliantly-flowered Zonal Pelargoniums. (Silver Banksian Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, showed ornamental-leaved plants of stove and greenhouse species.

Mr. C. F. WATERS, Balcombe, Surrey, displayed a pretty exhibit of Carnations, in a setting of Asparagus Sprengeri and Adiantum Ferns. (Silver Banksian Medal.)

Another exhibit of these popular flowers was put up by Mr. W. H. PAGE, Tangley Nurseries, Hampton. The pink variety Mrs. T. W. Lawson was exceptionally fine. The same exhibitor showed varieties of trumpet Lilies. (Silver Flora Medal.)

A large semi-circular group of Cinerarias was displayed by Messrs. JAMES CARTER & Co., High Holborn, London. (Silver Flora Medal.)

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, showed varieties of Lilacs and branches of flowering shrubs.

A small but pretty exhibit was made by F. GODMAN, Esq., Horsham (gr. Mr. Moody). It was composed of the pretty Posoqueria longiflora, with Cantua dependens on either side, and trusses of greenhouse Rhododendrons.

Messrs. PAUL & SONS, Old Nurseries, Cheshunt, showed pot plants of Rhododendron Handsworthii "Early White," also Roses, Philadelphus in variety, &c.

Messrs. CARTER, PAGE & Co., 52, 53, London Wall, London, exhibited Violas in variety (Silver Banksian Medal), and another collection of these bedding flowers was shown by Messrs. DOBBIE & Co., Rothesay, N.B., who had also Pansies and a collection of named varieties of Polyanthuses. (Silver Banksian Medal.)

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, showed bulbous plants grown in moss fibre.

Clivias of improved varieties from the ordinary type were shown by W. SHUTER, Esq., Hampstead (gr. Mr. T. Armstrong). One labelled Hampstead Glory was carrying an exceptionally large truss of bloom, but the colour was not so deep as in the variety labelled Fire King. Inflorescences of several interesting plants were shown by H. J. ELWES, Esq., Colesbourne Park (gr. Mr. Walters); they included trusses of Cantua dependens, Alpinia nutans, Bomarea Caldasiana, &c.

Mr. JAMES DOUGLAS, Great Bookham, Surrey, showed three large plants of Myosotidium nobile, known by the popular name of the Chatham Island Forget-me-not.

A plant of Echium callithyrsum, about 6 feet tall, with woody stems, was shown by Mrs. BRIDGET TALBOT, Berkhamsted (gr. Mr. E. Pinnock). The flowers are of a brilliant Borage blue.

Collections of hardy flowers were shown by Messrs. T. S. WARE, LTD., Feltham; Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester; Messrs. GEORGE BUNYARD & Co., Maidstone (Silver Banksian Medal); Messrs. JOHN PEED & SON, West Norwood, S.E., who also showed Gloxinias (Silver Banksian Medal); Mr. M. PRICHARD, Christchurch, Hants (Silver Banksian Medal); GUILDFORD HARDY PLANT NURSERY COMPANY, Guildford; Mr. G. REUTHE, Keston, Kent (Silver Banksian Medal); Messrs. J. R. BOX, West Wickham; Misses HOPKINS, Shepperton-on-Thames (Silver Banksian Medal); Messrs. G. & A. CLARK, Dover; Messrs. GEORGE JACKMAN & SON, Woking; and the Misses E. & M. KIPPING, Hutton, Essex.

Narcissus Committee.

Present: H. B. May, Esq. (chairman), and Messrs. W. Poupart, Chas. T. Digby, John Pope, J. Jacob, E. A. Bowles, H. A. Denison, E. Willmott, A. R. Goodwin, W. T. Ware, F. W. Currey, R. W. Wallace, Alex. W. Wilson, P. R. Barr, P. D. Williams, Chas. Dawson, W. A. Milner, Jan de Graaff, G. W. Leak, W. F. M. Copeland, J. T. Bennett-Poe, J. D. Pearson, H. B. Young, and C. H. Curtis (hon. secretary).

There were many fine groups of new Narcissi staged at this meeting, and novelties, beautiful, chaste and striking, were on all sides. No new variety, however, received an Award of Merit on this occasion.

A collection was staged by Messrs. BARR & SONS, Covent Garden, London, the group being rich in new varieties. (Silver-Gilt Flora Medal.)

Messrs. R. H. BATH, LTD., Wisbech, staged an interesting collection of good commercial kinds. (Silver-Gilt Banksian Medal.)

Messrs. CARTWRIGHT & GOODWIN, Kidderminster, had many delightful flowers in a nicely-arranged group. Chloe is a nearly pure-white, straight-crowned flower of the Queen of Spain type. Rising Sun has fine colour and substance. (Silver-Gilt Banksian Medal.)

Messrs. POPE & SON, Birmingham, showed many unnamed seedlings of merit. White Elephant (poeticus) is a very remarkable flower of great size and fine proportions. (Silver Flora Medal.)

Messrs. R. W. WALLACE & Co., Colchester, arranged a capital display of Tulips and Narcissus in many distinct kinds. (Silver Banksian Medal.)

Messrs. R. & G. CUTHBERT, Southgate, staged many vases of self-coloured Tulips in excellent condition. (Silver Banksian Medal.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, W. Boxall, G. F. Moore, R. G. Thwaites, J. Cypher, J. Forster Alcock, W. Cobb, W. P. Bound, A. Dye, W. H. White, H. A. Tracy, Gurney Wilson, and J. Wilson Potter.

A remarkable display of specimens of Oncidium Marshallianum was made by J. GURNEY FOWLER, Esq., Glebelands, South Woodford, and for which a Silver Flora Medal was awarded; a Cultural Commendation was awarded to the gardener, Mr. J. DAVIS, for the same exhibit. The enormous plants were on rafts, and one specimen bore four branched spikes with innumerable large, bright yellow flowers. The finest in colour was the variety Davisii, which also had dark, red-brown blotches on the petals. A plant of Cypripedium (callosum Sanderæ × bellatulum album) was also shown, the yellowish colour was slightly marked with rose, the albino characters of the parents not being perpetuated.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), was awarded a Silver Flora Medal for an effective group, in which were some good Lælio-Cattleya Hyeana, a plant of the variety splendens having nine flowers, &c.

Messrs. JAS. CYPHER & SONS, Cheltenham, received a Silver Banksian Medal for a group, in the centre of which was a large and intensely dark Lælio-Cattleya Dominiana.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, were voted a Silver Banksian Medal for an artistically-arranged group, in which were noted the rare Lycaste plana, Temple's variety.

Messrs. HEATH & SONS, Cheltenham, staged a group, which included a selection of Cypripediums, &c. (Silver Banksian Medal.)

Messrs. HUGH LOW & Co., Enfield, showed an effective group of Cattleyas, &c. Two of the best were C. Mendelii Virginius, a large, pure white variety with faint blush tint on the lip; and C. Percivaliana "Little Gem," white, with orange base to the lip. (Silver Banksian Medal.)

R. G. THWAITES, Esq., Chessington, Streatham (gr. Mr. Black), showed two plants of his large, pure white Cattleya Dusseldorfii Undine, Chessington variety; Lælio-Cattleya Wellsiana, Chessington variety, with white sepals and petals and violet front to the lip; and a small hybrid Odontoglossum.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford, sent Cypripedium Lawrenceanum Marjorie, a fine green and white variety resembling Hyeanum, but with a tinge of colour on the lip and sides of the dorsal sepal.

Mr. C. RAVENS, Odense, Denmark, sent Cattleya Schroderæ Mathii and C. S. var. L.-C. Ravens.

Sir TREVOR LAWRENCE, Bart., K.C.V.O. (gr. Mr. W. H. White), showed a pretty small West African Megaclinium with four spikes of very singularly formed flowers.

Fruit and Vegetable Committee.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, showed a collection of 58 varieties of Apples and two dishes of Pears. (Silver Knightian Medal.) The same firm was granted a Silver Banksian Medal for an exhibit of Lettuces and Radishes.

The Rt. Hon. Lord HILLINGDON, Uxbridge (gr. Mr. A. R. Allan), showed three boxes of fruits

of Royal Sovereign Strawberry and a fruiting plant of the same. (Silver Knightian Medal.)

A Cultural Commendation was awarded to Mr. W. A. Cook (gr. to Sir EDMUND LODER, Bart., Leonardslee, Horsham) for an exhibit of Seakale.

Scientific Committee.

APRIL 28.—*Present*: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the chair), Dr. A. B. Rendle, Messrs. W. Cuthbertson, J. T. Bennett-Poe, J. W. Odell, H. J. Elwes, A. Worsley, W. Hales, and F. J. Chittenden (secretary).

Daffodil seedlings.—Rev. G. ENGLEHEART, V.M.H., sent the following communication concerning the white seedling Daffodils shown by him at the last meeting:—"During the past 20 years I have several times, in successive years, cross-fertilised Narcissus M. J. Berkeley ♀ on a considerable scale in order to obtain a race of early coloured N. incomparabilis, and in this I have been successful. But in each set, when it reached the flowering stage, there have appeared some of these white trumpets, virtually M. J. Berkeley itself, except in colour. There has always been also a sprinkling of yellow trumpets, i.e., M. J. Berkeley itself, reproduced from seed of a few flowers which escaped being totally disanthered, and the whites, I am convinced, originated in the same way. They were not produced by pollen of any white trumpet being conveyed to the stigma of M. J. Berkeley, and my reasons for this statement are: (1) no white trumpets were grown near, and few, if any, were in bloom so early as M. J. Berkeley; (2) early white trumpets, such as N. cernuus, invariably, in my large experience, modify the form of the ♀ parent; and (3) the appearance of flowers of this same character in every batch of seedlings points to a uniform internal cause in M. J. Berkeley itself. Not only the form of the flower, but the foliage, stature, general habit, and precise period of bloom are M. J. Berkeley in counterpart.

"The variety M. J. Berkeley was raised by Messrs. Backhouse about 1840, and is pretty obviously a self-fertilised seedling from N. maximus, which in its turn is a wild species indigenous on the French side of the lowland Pyrenees. I have had bulbs direct from the wild habitat, and have been in correspondence with a good botanist who has seen the plants in bloom there, but I have never heard of any white wild variety of N. maximus. I have myself raised from self-fertilised seed of N. maximus, a flower somewhat similar to M. J. Berkeley, and that form has no appearance in any single feature of being the result of a cross with one of the white trumpet section. Personally, I have no doubt whatever that this is a sudden 'spontaneous' break to white from yellow.

"The nearest analogy I can adduce is the occasional appearance of a pure white form in wild beds of the yellow Pyrenean N. muticus, quite reproductions, in every feature but colour, of muticus itself. No white trumpet Daffodil exists in the same zone as N. muticus, the little wild white N. moschatus being thousands of feet higher in a remote valley.

"I have no reason whatever to suppose that there is any white hybrid blood in the ancestors of M. J. Berkeley, i.e., that these white seedlings exhibit a reversion to ancestral character. It seems more likely to be an instance of a sudden 'mutation' from yellow to white in colour progress. It is interesting to note that precisely the same thing has been noticed in New Zealand in seedlings of M. J. Berkeley."

Seedlings of Gnetum.—Mr. W. HALES showed seedlings of Gnetum Gnemon grown at the Chelsea Physic Garden, exhibiting the foot which absorbs the food stored in the seed for the nourishment of the growing seedling; this foot is developed only to a very slight degree in some other Gymnosperms such as Ephedra.

Delayed flowering of Amaryllis.—Mr. ODELL showed some flower buds of Amaryllis Belladonna which were now appearing. The flowering had been delayed in many cases in the autumn, apparently through the short suitable season. Mr. Baker states that the normal period of flowering was in April in the native habitat, but this statement was called in question.

Floral malformations.—Mr. Bowles showed on behalf of Messrs. HOGG AND ROBERTSON, of Dublin, a malformed flower of Narcissus J. T. Bennett-Poe. The parts of the perianth and the stamens were each nine, and springing from the base of the style was a narrow tubular growth embracing what appeared to be a secondary style. This flower, and a double spathed Caladium, L. A. Van Houtte, somewhat similar in structure to the double spathed Richardia shown at the last meeting, exhibited by Messrs. J. VEITCH, of Chelsea, were referred to Mr. W. C. Worsdell for further examination.

Pyronia John Saden.—Messrs. J. VEITCH showed fruits of one of the hybrids previously exhibited before the committee in the autumn. The fruits of this hybrid were Quince-like in appearance, and had a remarkably pleasant aroma, but were still quite hard.

Snowdrop bulbs.—BRODIE of Brodie, Brodie Castle, Forres, sent two Snowdrops with the newly-formed bulbs produced at a distance of 2 inches above the original bulbs, with which they were connected by means of a tube formed by sheathing membranous leaves.

NATIONAL AURICULA & PRIMULA.

(MIDLAND SECTION.)

APRIL 29.—The ninth annual exhibition promoted by this Society was held at the Botanical Gardens, Birmingham, on this date. The weather was beautifully fine, and the attendance of members and visitors constituted a record.

The show was the largest and best ever held under the auspices of the Society, which is very gratifying to the committee, who are doing their utmost to increase the popularity of the Auricula in the Midlands.

Some choice flowers of both new and old varieties were shown; especially good were those sent by Mr. JAMES DOUGLAS, Edenside, Great Bookham, who won the Silver Medal offered by the Birmingham Botanical and Horticultural Society to the most successful exhibitor in the show. The Bronze Medal offered by the same Society to the exhibitor who had the second best results was awarded to Mr. C. WINN, Selly Park, Birmingham (gr. Mr. T. Sheppard). Two Silver Medals, viz., "The Willmott" and "The Brookes," were offered to local growers. The first of these was offered to the exhibitor gaining the greatest number of points in the show classes, and the other to the most successful exhibitor in the Alpine classes. Both medals were won by Mr. C. WINN. Of maiden growers in the section devoted to show varieties, Mr. G. D. FORD, of Acock's Green, was the most successful; and Mr. S. E. WILLIAMS, of Brierley Hill, took the lead in the Alpine classes. Honorary exhibits were contributed by Messrs. W. H. SIMPSON & SONS, Edgbaston, who showed Daffodils, and Mr. C. WINN, who staged an exhibit of Schizanthus.

SHOW VARIETIES.

The leading class was one for eight varieties, dissimilar, and this was contested by six exhibitors. The 1st prize was well won by Mr. JAMES DOUGLAS, who staged vigorous plants bearing large trusses of shapely flowers. The varieties were as follows:—Eucharis, Charm, Mikado, Abbé Liszt, Amy Robsart, Favourite, Mrs. Henwood, and George Lightbody. 2nd, Rev. F. D. HORNER, Kirkby Lonsdale, whose best varieties were Minnie Horner, Magpie, and Favourite.

In a class for six varieties, dissimilar, Mr. DOUGLAS again won the 1st prize with choice examples of Abbé Liszt, Greybag, Mrs. Phillips, George Lightbody, Shirley Hibberd, and Richard Headley. 2nd, Mr. C. WINN, Selly Park.

A class for four varieties, dissimilar, brought five contestants. Mr. W. H. PARTON, Hollywood, Birmingham, and Mr. T. M. EGLINGTON, Birchfields, Birmingham, being awarded 1st and 2nd prizes respectively.

In the similar but smaller class for two varieties, dissimilar, Mr. G. D. FORD, Acock's Green, was awarded the 1st prize for splendid plants of George Rudd and Gerald. 2nd, Mr. W. C. G. LUDFORD, Four Oaks.

SINGLE PLANTS.

Competition was keen in the classes provided for single plants, as many as 23 exhibits being staged in one class.—

Green-edged—1st, Mr. W. H. PARTON, with Mrs. Henwood. 2nd, Mr. W. M. SHIPMAN, Altrincham, with Shirley Hibberd.

Grey-edged.—Mr. W. M. SHIPMAN won the 1st prize with a grand plant of Richard Headley.

White-edged.—The 1st and 2nd prizes were won by Mr. DOUGLAS with Conservative and Acme respectively.

Selfs.—Mr. DOUGLAS again won the 1st and 2nd prizes in this class with Vanguard and Victor respectively.

In a class for a plant of either a Self, yellow Primrose, or orange buff colour, Mr. DOUGLAS was again placed 1st, with the variety Orient.

ALPINE AURICULAS.—These were well shown. Mr. J. DOUGLAS won the 1st prizes in classes provided for eight Alpines, and for six Alpines, whilst Mr. W. H. PARTON took the lead in the classes for four Alpines, and for two Alpines. Mr. PARTON also showed the best single specimen possessing a light centre. Mr. RICHARD HOLDING, Bournville, exhibited the best plant having a gold centre. Mr. HOLDING'S variety was named "Unexpected."

SEEDLING SHOW AURICULAS.—The Rev. F. D. HORNER showed the best pair of Show Auriculas, his examples being Flora and Orient. 2nd, Mr. W. SMITH, Bishop's Stortford, with Sunrise and Geraldine.

The Rev. F. D. HORNER'S Orient was adjudged the best green-edged variety, and Mr. W. SMITH'S Stately beat the last-named exhibitor's Graything in a class arranged for grey-edged varieties. The best Self was shown by Mr. DOUGLAS, who had Harrison Weir in superb condition.

FANCY AURICULAS, POLYANTHUSES, AND PRIMULAS.—Mr. W. C. G. LUDFORD, Four Oaks, gained the 1st prizes for (1) six fancy Auriculas, (2) six fancy Polyanthuses, (3) six hardy Primulas. Mr. J. STOKES, Harborne, was awarded the 1st prize in a class for single plants of gold-laced Polyanthus with the variety George IV.

AWARDS.

First-Class Certificates were awarded to each of the under-mentioned Auriculas:—

Vanguard (dark Self), *Harrison Weir* (red Self), *Orient* (yellow Self), *Mrs. James Douglas* (light centred Alpine), *Phyllis* (light centred Alpine). All the above varieties were shown by Mr. JAMES DOUGLAS.

Mrs. Sheppard (green-edged), shown by Mr. C. WINN, Selly Park, and *Jack Parton* and *Mrs. Parton* (both gold-centred Alpines), shown by Mr. W. H. PARTON, Hollywood.

PREMIER BLOOMS.—The premier Auricula was the example of George Lightbody, shown by Mr. J. DOUGLAS; the premier Alpine, Mrs. Danks, shown by Mr. C. WINN; the premier seedling Auricula, Harrison Weir, shown by Mr. J. DOUGLAS; and the premier seedling Alpine, Jack Parton, shown by Mr. W. H. PARTON.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

APRIL 16.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Ashton, Cowan, Cypher, Keeling, Parker, Shill, Warburton, Leemann, and P. Weathers (hon. sec.).

R. ASHWORTH, Esq., Ashlands, Newchurch (gr. Mr. Fletcher), staged a collection of Odontoglossums. Odontoglossum crispum var. "Our Queen of the Snows," a choice white form, was given an Award of Merit. O. × Lambeauianum var. Brittanica, and O. × L. var. vivians received similar awards. Cypripedium × Brittania (C. × Gowerii × C. nitens) was also granted an Award of Merit. (Silver Medal.)

H. J. BROMILOW, Esq., Rainhill, Liverpool (gr. Mr. Morgan), again staged a good collection of Cypripediums, prominent plants being C. × Baron Schroder, C. × bingleyense var. magnificum, C. × triumphans, Bank House var., C. × Wootonii and C. × majesticum, a new hybrid, the parentage of which is not recorded. The first-named plant was granted an Award of Merit, and C. × majesticum was awarded a First-Class Certificate. (Silver Medal.)

J. MCCARTNEY, Esq., Hey House, Bolton (gr. Mr. Holmes), was awarded a Bronze Medal for an exhibit of Cattleyas and Lælias and a Silver Medal for a miscellaneous collection of Orchids, in which were several good Cattleyas. A choice form of Cattleya Harrisoniæ was given an Award of Merit.

Mr. JOHN ROBSON, Altrincham, exhibited Dendrobium Wardianum var. Ochroleucum and Dendrobium nobile, Hardy's var.

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), is a new exhibitor at these meetings. He received an Award of Merit for Brasso-Cattleya × Dorothy, the white form of Cattleya Warneri being the second parent.

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), exhibited Brasso-Cattleya × Queen Alexandra, a plant that has been previously certificated.

A. WARBURTON, Esq., Hashmgden (gr. Mr. Dalgleish), exhibited Cypripediums in variety (Bronze Medal) and a group of Cattleyas and Lælias (Bronze Medal). Cattleya Schroderæ "His Majesty" and Cypripedium villosum "The Premier," the latter a flower of fine shape and size, were given Awards of Merit.

H. ARTHUR, Esq., Blackburn, exhibited two well-cultivated plants of Cymbidium eburneo-Lowii, and the reverse cross, the previous awards being confirmed.

J. H. CRAVEN, Esq., Kershley (gr. Mr. Corney), staged a collection of Miltonia Bleuana, all the plants being well flowered.

Mr. E. G. MITCHELL, Sale, staged a small exhibit of Dendrobiums.

E. ROGERSON, Esq., West Didsbury (gr. Mr. Price), exhibited Dendrobium × Dalhon-nobile, which the committee desire to see again. *P. W.*

SOCIÉTÉ D'AGRICULTURE ET DE BOTANIQUE DE GAND.

THE GHENT EXHIBITION.

(Concluded from page 289.)

We reproduce at fig. 137 a further illustration of the International Exhibition at Ghent, showing King Leopold and his suite, accompanied by the President of the Society (M. Callier), and others, traversing the garden which separated the Casino buildings from the temporary Annexe. His Majesty, who has visited these exhibitions for a period of 50 years, examined the exhibits with much care, his visit extending over two hours.

[Photograph by W. J. Lacey.

FIG. 137.—THE GHENT EXHIBITION. SHOWING KING LEOPOLD AND SUITE LEAVING THE ANNEXE. THE PRESIDENT, M. CALLIER, MAY BE SEEN DIRECTLY ON THE LEFT HAND OF THE KING.

THE BANQUET.

The banquet took place on Sunday, April 26, at five o'clock, in the great square hall of the Grand Theatre of Ghent, and this event closed the festivities organised for the entertainment of the members of the jury. More than 300 guests were present. Behind the chairman's table was placed a bust of the King, surrounded with Palms and other ornamental foliage plants. All the tables were decorated with flowers. The banquet was presided over by M. A. Callier, who was supported by M. Hellepute (Minister of Agriculture), M. Viger (Paris), Lord Redesdale, Van den Heuvel (late Minister of Justice), Lt.-General Delée, Chevalier Radaelli, M. Ruijs de Beerenbrouck, Dr. Kolb, MM. Braun (Mayor of Ghent), Cooreman (President of the House of Representatives), Begerem (late Minister), &c.

It was a great honour to Belgian horticulture that three Ministers of the Crown were present at this banquet!

M. Callier, on rising to propose the toast of "The King and Royal Family," alluded to the King having described himself as "an old gardener." He also spoke in very appreciative terms of the splendid collection of plants cultivated in the Royal Gardens at Laeken. It is for us, said he, the greatest patronage our Sovereign can give to horticulture. For many centuries our country was, unhappily, the battlefield of Europe. The nations of Central Europe very often came here to settle their disputes. Since 1830, however, Belgium had lived free and happily. The Ghent Horticultural Society was born whilst Belgium was under French rule. After Waterloo the Society still prospered under the Dutch Government. In its youth the Society had a powerful protector in King William, who visited the Ghent exhibition, and it should be remembered that the last act of the Society before 1830 was to vote a Gold Medal to King William as a mark of gratefulness. The Society's indebtedness to France and Holland was plain, and he (M. Callier) begged those pre-

sent to drink the health of the President of the French Republic and the Queen of Holland.

The band then played the French and Dutch National Anthems.

M. Callier afterwards made an allusion to the new Horticultural Department lately instituted by the Minister of Agriculture. He said that for years horticulture had no official guide, but that she had now a generous Minister to care for her. He was proud to speak of M. Helleputte's good qualities, and had the honour to propose the toast of "The President of the House of Representatives, the Members of Parliament for the Province, and the Authorities of the Town of Ghent." He drank to the health of M. Helleputte, to M. Braun, and the district authorities.

M. Helleputte thanked the eminent president for his kind words, and specially for the mention he had made of the Government's action in regard to the horticultural question. He was happy to be in such a company and in the city of flowers. Horticulture was a great industry, and, as understood at Ghent, it provided work for a greater number of men than agriculture. Horticulture would solve a great economical problem by occupying on a small piece of land many more hands than agriculture, and consequently by bringing the people back to the land. It was to the rural populations that Belgium owed its national prosperity. The considerable development of horticulture that has taken place has afforded me the opportunity of arriving at the decision to give horticulture what she most required, namely, a proper organisation. There is a Flemish proverb which says, "A man that gives what he can is an honest man," and I declare that I will do all I can in favour of horticulture. M. Helleputte then proposed the toast of "The President of the Society, M. Callier," and of "The Foreign Visitors."

M. Ceuterick (secretary) proposed the health of Lord Redesdale and M. Viger.

Lord Redesdale thanked M. Ceuterick for his kind words respecting England, and, turning his thoughts backward, spoke highly of the work accomplished by the late Count de Kerchove (president) and M. Fierens (secretary). The president had said that horticulture had not said its last word, that might well be the case, but his lordship thought it impossible for the Society ever to treat its guests more cordially than on the present occasion.

M. Viger proposed the toast of "Ghent and Ghent Horticulture."

M. Ruijs de Beerenbrouck thanked the President for reviving the memory of King William and for his reference to the present Queen of Holland. He referred to the work done in Holland by eminent horticulturists such as MM. Rodigas, Millet, Burvenich, Van Hulle, &c., and concluded by proposing the toast, "Belgium, Happy and Free, and the Societe d'Agriculture et de Botanique de Gand."

M. Braun (Mayor of Ghent) thanked M. Viger for the promises he had made to encourage France to exhibit at the Ghent International Exhibition of 1913. He would not say "Adieu" to the guests, but "*Au revoir*."

ABERDEEN NATURAL HISTORY AND ANTIQUARIAN.

HISTORY OF SCOTTISH PEAT MOSSES.

THE history of the Scottish Peat Mosses and their relation to the glacial period was described recently in Aberdeen University by Mr. Francis J. Lewis, F.L.S., lecturer in geographical botany, University of Liverpool, to the members of the Aberdeen Natural History and Antiquarian Society. Professor Arthur Thomson, of Aberdeen University, presided. With the aid of beautiful slides and diagrams, Mr. Lewis proceeded to point out that the present distribution of peat deposits in the British Isles showed a general tendency to follow the maximum rainfall, the deposits being comparatively scanty on the eastern side of England and Scotland, and increasing in area and thickness as the western coasts were approached: the greater development occurring in the Hebrides, the western part of the Scottish mainland, and the west of Ireland. In the hill districts they reached their greatest development upon smooth, flat-topped hills like the Pennine chain in England, the elevated plateau of the Grampian Mountains, and in elevated districts surrounded by mountains. The Highland mosses began their history at a later stage than the peat examined in the southern uplands. In the north, none of the beds below the Arctic plant zone of the southern uplands are present. As the valley glaciers and local ice-sheets in the Highlands began to pass away, a tundra-like vegetation spread over the ground, represented at the base of the peat in Caithness-shire, East Ross-shire, and Inverness-shire by thick beds. Later, the climate appeared to have become more genial; this was indicated by a widespread growth of shrubby Betula alba, well developed on some of the watersheds in Inverness-shire. Just before the pine zone was reached, the sphagnum remains began to contain abundant traces of the stems of Calluna, and this continued in the Scots Pine layer. After a time the Pine forest in its turn passed away, and was replaced by moorland plants, which had continued in the several areas down to the present day.

In the course of the discussion which followed, Mr. John Michie, His Majesty's factor at Balmoral, said he had wandered over the peat mosses of various parts of Scotland, and more especially on Upper Deeside. He mentioned the interesting fact that quite recently he had occasion to trench a piece of peat bog, and in the bottom he came across an Oak, usually called a Black Oak. It had fallen into soft ground, the underneath part being perfectly entire, while the upper half was covered with masses of peaty growth. The lower portion was solid Black Oak.

Mr. Alexander Copland, Aberdeen, said the Oak grew very abundantly in Buchan (the name given to the north-east district of Aberdeenshire) centuries ago, and had been found in some peat mosses there. Strange to say, the Scots Pine did not occur in the mosses in Buchan to any considerable height above sea-level—for example, on the slope of the Hill of Mormond.

DARLINGTON HORTICULTURAL.

APRIL 29.—The spring show of this society, held on this date, was one of the best seen for many years. The Society's silver challenge bowl is the premier prize of the exhibition, and it is offered for a collection of eighteen varieties of Narcissi blooms (not to include Polyanthus Narcissi), fairly representing the three groups—Magni-coronati, Medio-coronati, and Parvi-coronati. The possession of this trophy has alternated between Mr. E. OWEN and Mr. CARSON, the former securing it last year. On this occasion the competitors were Mr. W. MOORE, of Cleasby, whose exhibit was considered the better, and Mr. EDWARD WILKIN, of Croft. In the open class for cut flowers, Mr. J. Lester (gr. to SIR JONATHAN BACKHOUSE) received the 1st prize for a decorated dinner-table. Mr. A. A. HARROW, son of the hon. secretary of the Society, won 14 prizes, of which 11 were firsts, and he also exhibited, not for competition, two boxes of choice Alpine Auriculas. Another successful exhibitor, who is also a young member, was Mr. J. P. BENNISON.

The inclusion of many handsome non-competitive exhibits contributed not a little to the success of the exhibition.

LINCOLNSHIRE DAFFODIL.

APRIL 30.—The annual exhibition of this Society was held at Spilsby on the above date. The exhibition was first arranged for an earlier date, but the weather proved so unpropitious for the development of Daffodils that it was necessary to postpone the event.

The popularity of the Society's exhibition was manifested by the entries, which numbered no fewer than 112 as against 93 last year, and 80 the year before.

The three premier awards went to Mr. SHARP, Rev. H. G. HALES, and Mr. STAFFURTH, respectively. Mr. SHARP was closely contested by Mr. C. MILLER. There were 21 classes, but no entries were recorded for seedlings and Tulips.

DEBATING SOCIETIES.

ADDLESTONE, CHERTSEY, & OTTERSHAW GARDENERS'.—A meeting of this association was held on Tuesday, April 7, when Mr. W. Carpenter, of West Hall, Byfleet, read a paper on "Successes and Failures in Gardening." The chair was occupied by the president, Mr. G. M. Edwards. During the evening the secretary read some interesting correspondence which he had conducted with Mr. F. J. Chittenden, of Wisley, concerning the cause of, and remedies for, spot disease in Violets. Mr. T. Stevenson offered a criticism of a recent show of the Royal Horticultural Society, at Westminster, and Mr. Grant read some useful excerpts from a paper dealing with the culture of Japanese dwarf plants, published in the last issue of the Royal Horticultural Society's *Journal*. Messrs. Barrett and Costin, under gardeners, were awarded the 1st and 2nd prizes respectively offered for an essay on "Summer Bedding."

BRISTOL AND DISTRICT GARDENERS'.—The tenth annual meeting of this association was held on Thursday, April 23; Mr. I. C. House presided. The hon. secretary and treasurer, Mr. J. Scott, of Downside, read a very encouraging report of the year's proceedings; this was followed by the financial statement which records a balance in hand for the first time in the Society's existence. It is largely owing to the energetic services rendered by Mr. Scott that the Society is now in such a flourishing condition. Lt.-Col. Carey-Batten, high sheriff of Bristol, was unanimously re-elected president, and Mr. Shelton (Redland Lodge Gardens), and Mr. Shaddick were respectively elected chairman and vice-chairman for the ensuing session, the other officers being also elected. Five new members were elected. *H. W.*

CROYDON & DISTRICT HORTICULTURAL.—At the meeting held on Tuesday, April 7, Mr. Seabrook, of the Chelmsford association, gave a lecture on "Growing Peaches and Nectarines." The lecturer advocated shallow planting, and said the subsoil must be well drained. Young trees do not require a rich soil, but good fibrous loam with the addition of a little bone-meal. It is very essential to plant firmly. The rods should be of medium length and trained 4 to 6 inches from each other, which will allow sufficient space for the light and air to pass around the fruit. Disbudding when growth is about an inch long is productive of good fruit. Just before the flowers open the trees should be sprayed with quassia and soft soap at intervals to destroy aphis and other insect pests. As soon as the leaf-buds commence to expand soak the roots well with water. Thinning the fruit should be done on two occasions, leaving a space at the final thinning of 1 foot square between each fruit. Manuring should be moderate till stoning is completed, then more liberal feeding may be gradually given. Trees growing under glass require syringing several times a day, whilst those on walls outside should be sprayed with clear water twice a day.

——— At the meeting of this association, held on March 21, Mr. H. Withers, South Croydon, delivered a lecture on "Insect Pests of the Garden." In a previous lecture he dealt with the external formation of these small animals, and on Tuesday he confined his opening remarks to the internal structure. Like some birds, insects may be found bearing a close resemblance to the bark of trees, whilst some caterpillars closely resemble the twigs of trees, and this forms a protection to them against birds who feed on them. There are also insects which, at first sight, one would take for moss, for they are fashioned in structure and appearance very like the mossy haunts they frequent. Oftentimes one hears a remark that cold easterly winds bring with them blight, but this is not so; the cause is simply very slow growth in vegetation, which renders it more susceptible to attacks from insect pests.

GUILDFORD AND DISTRICT GARDENERS'.—A meeting of this association, presided over by A. R. Upton, Esq. (president of the association), was held on Tuesday, April 21, when Mr. J. Clark, of Bagshot, gave a lecture on "Hardy Trees and Shrubs." The lecture was divided into five sections, embracing woodland or ornamental deciduous trees, evergreen trees, small flowering trees, deciduous flowering shrubs, and evergreen shrubs. A large number of new and choice varieties of trees and shrubs, in addition to many of the commoner kinds, were mentioned. *J. G.*

SALISBURY AND DISTRICT GARDENERS'.—This Society concluded the session, 1907-08, on April 29, with the annual dinner, when considerably more than 100 members and friends assembled. In the unavoidable absence of the president, Col. Sinclair presided. The Society may be congratulated upon the success of the past session both in respect of increased membership and the high quality of the lectures given. *W. Y.*

WARGRAVE AND DISTRICT GARDENERS'.—At the last meeting of the above association another of the successful competitions organised by the committee took place. A large number of members were present to witness the contests which were very keen. Ten entered in the Journeymen's class for arranging a large vase with Daffodils and foliage for effect. The 1st prizewinner was Mr. E. Collier. In the Head Gardeners' and Foremen's class six persons entered. The competition was for the arrangement of five vases for a table decoration. Mr. J. Goddard's (Parkwood Gardens) arrangement was declared the best. The flowers were afterwards forwarded to the Royal Berks Hospital.

CATALOGUES RECEIVED.

DICKSON & ROBINSON, Cathedral Street, Manchester—Dahlias, Chrysanthemums, herbaceous and bedding plants.

JOHN E. KNIGHT, Wolverhampton—Dahlias.

ABBOTT BROTHERS, Southall, near London—Bee Hives and appliances.

JOHN R. BOX, West Wickham, Kent—Begonias.

CHEERANS, Hale, Manchester—Dahlias.

LEWIS HILLIER & SONS, The Nurseries, Winchester—Nursery Stock.

THOMAS S. WARE, LTD., Feltham, Middlesex—Bedding Plants.

DICKSONS, LTD., The Nurseries, Chester—Bedding Plants, Dahlias, &c.

JOHN PEED & SON, West Norwood, London, S.E.—Begonias' Caladiums, Gloxinias.

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending May 2, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* varied greatly. During the major part of the period it was rainy and cold, but late in the week it became fine and unusually warm over England and Ireland. Quite at the end of the period, however, it again fell into an unsettled condition, and thunderstorms were experienced in several parts of north-western and central England, as well as at Guernsey. An aurora was observed at Shaftesbury on the 26th.

The *temperature* continued generally low in Scotland, but over England and Ireland a very sudden rise occurred on Friday. The mean for the week was below the average in Scotland and the northern districts of England, above it elsewhere. The highest of the maxima were recorded on May 1 or 2, except at a few stations in Scotland. In the English Channel and in England N.W (at Jersey and Bettws-y-Coed on the 2nd) the thermometer rose to 78°, while in the other districts the maxima ranged from 76° in England S.E. and the Midland Counties, and 75° in England E. and S.W. to 56° in Scotland N. During the early days of the week the readings were below 50° in many parts of England and Ireland. The lowest of the minima, which were registered on the 27th at a few stations, but generally on the 26th, ranged from 22° in Ireland N. (at Markree) and 24° in Scotland W. and Ireland S. to 31° in England N.E., and to 34° in the English Channel district. The lowest readings reported on the grass were 12° at Markree, 17° at Cambridge, 18° at Douglas, 19° at Llangammarch Wells, and 20° at Birmingham, Colmonell and Armagh.

The *mean temperature of the sea*.—The water was again colder than during the corresponding week of last year on almost all parts of the coast, the difference being at least 2° in many places and nearly 4° at Cromarty. The actual figures for the week varied from about 49° at Newquay and Ballyglass to 41·5° at Cromarty.

The *rainfall* exceeded the normal except in Scotland N., and in all districts except Scotland E. the excess was either considerable or very large. Falls of more than 0·5 inch were common in the western and north-western districts, the heaviest reported being 1·0 inch at Pembroke on Monday, 1·0 inch at Liverpool on Tuesday, 1·1 inch at Roche's Point, and 1·0 inch at Douglas and Valencia on Wednesday, and 1·2 inch at Birmingham (during a thunderstorm) on the night of Saturday.

The *bright sunshine* was less than the average, the deficit being rather large in most districts. The percentage of the possible duration ranged from 41 in the English Channel and 38 in England S.E., to 20 in England N.E. and to 13 in Scotland E.

THE WEATHER IN WEST HERTS.

Week ending May 6.

A leap from midwinter to midsummer.—During the recent cold period at the end of April the temperature in the thermometer screen on two successive days never rose higher than 41°, whereas on the 1st and 2nd of the present month the same thermometer registered respectively 76° and 77°—a difference of 36°. In explanation of the above heading I may state that a maximum temperature of 41° represents a cold day in the middle of January, and a maximum temperature of anything above 71° a warm day in the middle of July. Since the two warm days above referred to the day temperatures have rapidly declined. All the nights during the week, however, proved very warm for the time of year, the exposed thermometer never falling lower than 40°. The temperature of the ground is now about seasonable, both at 1 and 2 feet deep. Rain, snow, or hail has fallen on all but two of the last 17 days, and to the aggregate depth of 3¼ inches—equivalent to a fall of 16½ gallons on each square yard in this district. Of that amount 11 gallons has come through the percolation gauge on which short grass is growing, and 13½ gallons through the bare soil gauge. The sun shone on an average for 3¾ hours a day, or for 1¼ hour a day less than a seasonable duration for the beginning of May. The winds were again light—the mean velocity in the windiest hour being only 11 miles. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 14 per cent. A wild Cherry tree growing in my garden came first into blossom on the 1st, which is 14 days later than its average date for the previous 22 years, and later than in any year since 1891, or for 17 years.

April.

Exceptionally cold and wet. Snow six inches deep. This was the coldest April since 1891, or for 17 years. The days were, as a rule, more unseasonably cold than the nights. In fact, there were only five warm days during the month. On the warmest day the temperature in the thermometer screen rose to 62°, and on the coldest night the exposed thermometer registered 14° of frost. Both of these extreme readings are very low for April, and more particularly the highest day temperature. Rain, snow, or hail fell on as many as 20 days, and to the aggregate depth of 3⅔ inches, which is 1¼ inch in excess of the April average, and making this the wettest April since 1882, or for 26 years. During the last 12 days of the month, which proved exceptionally cold, wet, and sunless, the ground was covered with snow on four days to the average depth of 1 inch, 6 inches, 1½ inch, and 2½ inches respectively. Only on one previous occasion in the last 22 years has the ground been covered to any measurable depth in April, and then only to the depth of an inch. The record of sunshine, taking the month as a whole, was about average. This was rather a calm April. During the windiest hour the mean velocity reached 21 miles—direction west. For as many as 342 hours, or for 14 days, the direction was some point between north and east. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by as much as 10 per cent. Indeed, I have no previous record of the atmosphere being as generally humid in April during the last 22 years. *E. M., Berkhamsted, May 6, 1908.*

Answers to Correspondents.

Aquilegia ecalcarata: *C. D.* This name is merely a synonym for the common Columbine, A. vulgaris. There is no authority for the name, which is one of garden usage only.

Begonia Tubers: *B. R. D.* The tubers are affected with the Tulip mould, Sclerotinia parasitica. The varieties you mention as having been attacked are probably more susceptible to the disease than are the others of your stock. Burn all those that are infected, and dust the apparently sound tubers with sulphur.

Employment in the London Parks: *M. T.* In the case of the Royal parks, application forms may be obtained from the respective superintendents. For employment in the parks and open spaces under the control of the London County Council, apply to Colonel Sexby, Parks Department, London County Council, 11, Regent Street, London. With regard to the prospects of advancement in public gardening, this, as in other branches of the profession, will largely depend upon a person's ability and aptitude in that direction. Most towns of any considerable size have one or more parks, and their number will no doubt be increased, for they are very popular with the public.

French Horticultural Journals: *M. L. L. Revue Horticole*, published at Rue Jacob, 26 Paris, is a high-class paper issued fortnightly; its illustrations of plants, many of which are coloured, have a high reputation. The yearly subscription is 22 francs, post free. *Le Jardin* is published weekly, and in style more generally resembles our weekly gardening papers than the former. It is published at 84 bis, Rue de Grenelle, Paris. The yearly subscription is 14 francs, post free.

Fruit Buds Injured: *C. D.* The blossom buds were very much withered when they arrived, and as no pest has been found it is difficult to account for the trouble. It may perhaps be due to frost. If you will send us examples of the insects we will endeavour to oblige you. Meanwhile, as you suspect it to be the work of insects, spray the trees with some insecticide such as Extract of Quassia or one of the poisonous arsenical compounds, such as Paris Green.

Fuel for a Range of Greenhouses: *H. S.* If you will furnish us with the length of each of your five houses—which, you say, are heated by 400 feet of 4-inch piping, giving the number of hot-water pipes in each house, and the type and size of the boiler—we shall be better enabled to give you a correct estimate of the quantity of fuel you will require.

Japanese Plums: *F. H.* Allow the plants to remain in the cool house in which you have placed them until they are well established. In the meantime prepare a site for them at the foot of a wall facing to the south or south-west, by excavating holes 2 feet deep and sufficiently wide to accommodate the roots without crowding. Place in the bottom of the hole, for drainage purposes, a layer 6 inches deep of brickbats or coarse gravel, covering this with thin turves, placed grass-side downwards, for the purpose of preventing the finer soil from choking the drainage. Fill the hole with a compost consisting of three-parts rich fibrous loam and one-part horse-droppings, with a quantity of old mortar rubble or wood ashes, the whole to be well mixed together. When the young trees are well established, plant them outside in their permanent quarters. The varieties you mention—Red June, Abundance, Satsuma, Burbank, and Ogon—are all to be recommended, their fruits ripening (with the exception of those of Satsuma) in June and July. The fruit of Abundance (syn. Botan) is oblong, the yellow colour being flushed with cherry-red; the flesh is orange-yellow and perfumed. Burbank is cherry-red in colour mottled with yellow; in shape usually globular. Satsuma, or Blood Plum, is the best of all the Japanese varieties for cultivation in this country, being hardiest and most vigorous; the fruit is large and delicious, and, unlike the majority of Plums, the flesh is red; the fruits ripen in September. These Plums, like our own, are of the genus Prunus, and have nothing whatever to do with Diospyros.

Names of Flowers, Fruits and Plants.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

Plants: *A. C.* Sphaeralcea Munroana (Malva Munroana)—*J. N., Dublin.* Both are forms of Dendrobium Pierardii.—*Hortus.* Dendrobium stuposum.—*T. T.* Skimmia japonica, male form.—*R. T. H.* Dendrobium Devonianum.—*A. B.* 1, Dendrobium transparens; 2, Dendrobium primulinum; 3, Eria convallarioides; 4, Aerides virens.—*T. T.* 1, Oncidium flexuosum; 2, Brassia verrucosa; 3, Oncidium triquetrum.—*R. J. F.* Dendrobium transparens—*R. W.* 1, Primula verticillata; 2, Begonia hydrocotylifolia; 3, Begonia incarnata.—*A. D. W.* Sagina procumbens [Creeping Pearl wort].

Paris Horticultural Exhibition: *M. L. L.* (1) The Spring Show of the National Horticultural Society of France will be held on May 22 to 29, in the Cours la Reine, Paris. (2) The Fellows' pass of the Royal Horticultural Society does not admit to shows other than those announced on the card.

Rust on Mint: *F. W. C. S.* The red pustules are caused by a fungus known as Puccinia Menthæ. Cut the plants down to the ground and burn all the shoots removed. Spray the soil about the plants with a rose-red solution of permanganate of potash and repeat this at intervals.

Strawberries Attacked by Grubs: *G. P.* The insects attacking your plants are larvæ of one of the weevils, which are voracious pests to many plants. The perfect grub is just as injurious to plants, and you should therefore make every effort to extirpate them. They may be trapped by pieces of Potato, Carrot, or similar vegetables placed in their haunts. A dressing of Vaporite should be given if the area of your Strawberry beds is large, and when the ground has been grubbed of the plants afford a dressing of gas lime.

Tomato with Yellow Leaf: *F. P.* There is no disease present in the leaves. Afford the plants some nitrogenous stimulant at the roots; an occasional dose of liquid manure and soot water should prove beneficial.

Tulips diseased: *J. H. R. N.* The plants are attacked by the mould disease, Sclerotinia parasitica. Burn all the diseased bulbs, and do not plant Tulips on the same ground again until it has been treated with quicklime, after which it will require to lie fallow for a period.

Vegetables for Market: *P. W. F.* We have no knowledge of the writer of the article you mention, but would suggest your writing to the editor of the paper in which it appeared. It is our opinion, however, that it is much easier to write about making £500 a year per acre by growing vegetables than to do so in practice. Articles similar to this often appear in the lay Press, but are not seriously regarded by practical men.

Communications Received.—J. O'B.—W. E. G.—W. P.—G. L., W. W.—Correspondent—A. E.—F. M.—W. K.—W. H.—W. J. V.—H. R. W.—A. D.—C. T. D.—W. M.—H. S. T.—H. W. W.—F. M. W.—F. J.—W. E. B.—T. C.—C. R.—Société d'Hort. Commerciale (Egypt)—F. B.—M. L. Vilmorin—T. A.—T. A. B., Cairo—Yorkshire Gala Floral and Musical Exhibition—T. H.—W. W.—I. F.—C. W.—W. P.—H. W. G. A.—J. M.—T. D.—J. B.—E. S.—T. G.—S. & Co.—T. T.

For Market Reports see page x.

Photograph by H. N. King.

COMPTON PLACE, EASTBOURNE, SHOWING THE GARDEN FRONT IN SUMMER TIME.

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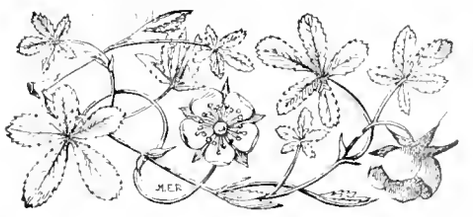


THE

Gardeners' Chronicle

No. 1,116.—SATURDAY, May 16, 1908.

CONTENTS.

ILLUSTRATIONS.

BOTANICAL INSTITUTIONS OF GENEVA.

THOUGH the whole scientific world has associated the name of de Candolle with Geneva, and although many botanists are aware that Edmond Boissier, the author of the *Flora Orientalis*, lived and died at Chambésy, just outside of the town, it is not generally known that in no other place in the world are there so many botanical institutions with fine herbaria and libraries as at Geneva, and that at the Conservatoire Botanique there are now collections of dried European plants which compare favourably with those at Paris, Berlin, Vienna, or London.

It may be interesting, therefore, to say a few words about the four establishments, together with some remarks upon the new botanical gardens and fine Alpine rockeries.

The famous de Candolle Herbarium and Library is situated in the picturesque Cour de St. Pierre, facing the facade of the cathedral and a few of the fine old Elms, which help to give additional beauty to some of the streets and squares of Geneva. The original 14th century house was bought about 1785 and added to by August de Candolle, the father of Pyrame, the world-renowned author of the *Prodromus*, grandfather of Alphonse de Candolle, the authority on geographical botany, and great-grandfather of Monsieur Casimir de Candolle, the present head of the family, who was so good as to give the writer a few particulars concerning the history of the house. He pointed out a corner window which his great-grandfather had put into the back wall, so that he could see the Hôtel de Ville (Town Hall), and in case of disturbance, signs were exchanged between de Candolle as Premier Syndic or Chief Magistrate, and the other authorities, the times being very much disturbed. Geneva was at that time a republic, but in 1796 it was annexed to France for a period.

It may be mentioned here that Pyrame de Candolle, who began the *Prodromus* (continued by his son and finally finished by his grandson), was Professor of Botany at Montpellier University in the South of France, and Director of the ancient botanical garden there, and afterwards he laid out a garden at Geneva according to the natural system of classification.

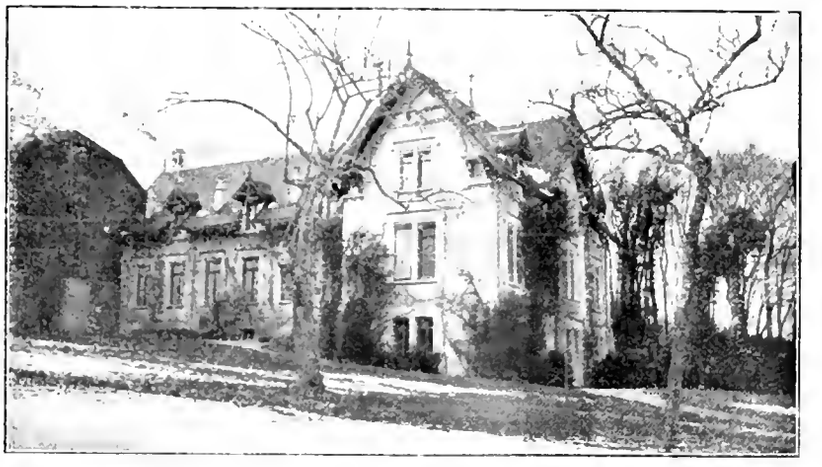


FIG. 138.—THE "BOISSIER" HERBARIUM NEAR GENEVA.

The Candollean Library ranks with that at Kew in being one of the best and largest botanical libraries in existence. It contains more works on general botany than are found at Kew, but is not so rich in works on pure systematic botany as either Kew or the British Museum.

There is a smaller but very good library of botanical books and works of travel at l'Herbier Boissier at Chambésy, two miles out of the town on the road to Lausanne. We give a view of a portion of the pretty house called Les Jordils, which was built by Mons. William Barbey in memory of his father-in-law, Edmond Boissier, a few years after that great botanist's death. The situation of the building on a grassy slope above the blue Lake Leman, with the most superb view of the Mont Blanc *massif* and several smaller but very imposing ranges in front, leaves nothing to be desired; and he is a fortunate man who has had the pleasure of working as a visitor in this comfortable building and with such surroundings to appeal to his artistic taste.

L'Herbier Boissier probably contains the finest collection in the world of plants from the Orient, and most of the type-specimens of the *Flora Orientalis* are naturally found there. Boissier's herbarium remains just as he left it, as does Pyrame de Candolle's herbarium referring to the *Prodromus*. At Chambésy, all modern additions have gone to form what is called the Barbey-Boissier Herbarium.

The excellent monthly *Bulletin de l'Herbier Boissier*, edited by Mons. Gustave Beauverd, the keeper of the herbarium, is printed and published in Geneva, and it is the only work of its kind in Switzerland.

It is a most fortunate thing, not only for Genevese botanists, but for botanists all over the world, that these two great private institutions should belong to wealthy families, who realise the responsibility of wealth, and are ever ready to lay the resources of their botanical establishments at the disposal of serious students of any nation.

We hope on a future occasion to say a few words about Mons. Wm. Barbey's Alpine garden at Valleyres in Canton Vaud, for most of the rockeries were the work of Boissier himself, and some of the plants are of great interest.

Half-way between Les Jordils and the town of Geneva is the Conservatoire Botanique and the new Botanical Gardens, which are placed under the able directorship of Dr. John Briquet, already a voluminous writer and a great traveller, who was responsible more than any other man for what are known as the "Vienna Rules" of botanical nomenclature agreed to at the 1905 International Congress at Vienna.

The Conservatoire Botanique is not a picturesque building like Les Jordils, although it is improved in appearance by the head gardener's little house adjoining. It is a massive rectangular erection of three floors and basement, admirably arranged for its purpose. The main portion of the building consists of wide galleries on each floor surrounding an open area or well, as is the case at the Kew Herbarium.

The new conservatoire was opened with great éclat in September, 1904, the inauguration being attended by botanists from many countries.

The chief jewel in the crown of Geneva's public botanical establishment is the great Delessert Herbarium, which was given to the town in 1869 by Benjamin de Lessert's sister-

in-law and her two daughters, the Baroness Hottingner and the Baroness Bartholdi. A fine portrait of Benjamin de Lessert has recently been given to the town by Mons. Emile Burnat, of Vevey, the author of the *Flore des Alpes Maritimes*, together with a striking portrait, by the same artist, of the generous donor.

Last winter Mons. Burnat's magnificent European herbarium was installed at Geneva, so that now the conservatoire has absolutely no rival, as far as its European collections are concerned.

But, like similar institutions in other countries, it lacks funds, and it was sad to see so large and finely-fitted a building with only a Director and one skilled assistant; but the staff has quite recently been increased by the addition of a cryptogamic specialist.

A remarkable collection of photographs and other portraits of botanists of various nations adorns some of the corridors. The library is as yet a little disappointing, but students are always free to consult the great Candollean Library, or that at l'Herbier Boissier, if they cannot get the book they want elsewhere.

The Botanical Gardens occupy about 75,000 square mètres—perhaps 16 acres—of land,

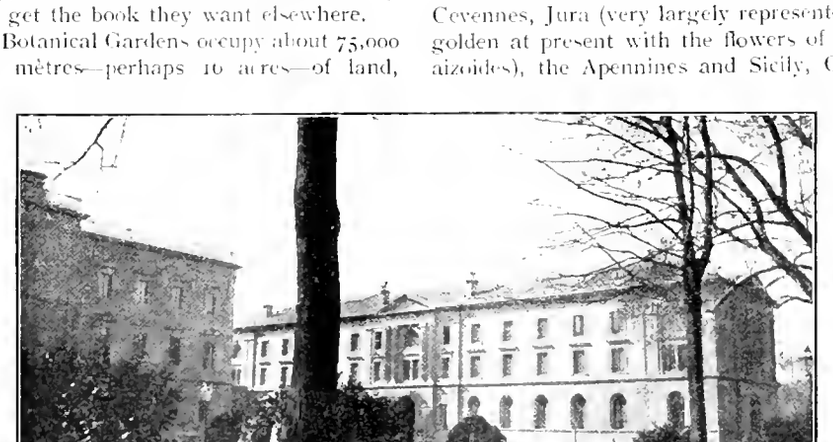


Fig. 139.—University and Natural History Museum at Geneva.

overlooking the lake and separated by the railway from the Ariana Park. They comprise a systematic garden, with the plants arranged according to Engler and Prantl, a young arboretum, and a very fine Alpine garden arranged in geographical groups.

I have seen many botanical gardens in Central and Western Europe, but never an Alpine garden arranged in such thorough geographical order as the Geneva garden; but, for beauty and neatness, I know nothing that equals Kew Gardens or Messrs. Backhouse's Alpine rockeries at York, or even the Edgbaston Botanical Gardens at Birmingham.

In fact, landscape gardening, as practised in England, seems hardly to be understood on the Continent, though Geneva has made a good start, and there is great need for it, particularly in France. Even a good lawn or a well-drained field of fine old turf is a rare thing on the Continent. On the French Riviera, a landscape gardener understanding his business and knowing a little French, would do a thriving trade just at present, for much land is being developed for building purposes, particularly in the Bay of Cavalaire.

But to return to Geneva, it may be interesting to give an outline of the arrangement of the Alpine garden. The culminating rocks are those of the Swiss Alps, three groups comprising the flora of calcareous regions, and two granite masses representing the crystalline rocks. Large clumps of Erica carnea give colour to these rocks just at present. Passing in a south-western direction, we observe several rockeries for the Western Alps (Savoie, Dauphiné and Piedmont), and then one for the Maritime Alps, and a large mass for the Pyrenees, with various endemic species. Near them come the Spanish Peninsula and Atlas Mountains. To the north-east, we find the following groups: Eastern Alps, Carpathians, and Balkans, with the curious Thlaspi cochleariforme in full bloom, the Caucasus (Helleborus caucasicus, Symphytum grandiflorum, &c.), the Orient, the Himalayi, Altai and Siberia, Thibet and China, with the pretty Primula sibirica in both the last two rockeries, and Japan.

Among the less important groups are the Central Plateau of France, the Vosges, Cevennes, Jura (very largely represented and golden at present with the flowers of Draba aizoides), the Apennines and Sicily, Corsica and Sardinia. Towards the lower end are the isolated masses of the New Zealand Alps, with their shrubby Veronicas, the Andes, and North America, the plants of North America being richly represented.

During the first week in April there were not many plants in bloom, but, in addition to the few already mentioned, were fine patches of Anemone Halleri from the Vosges, &c., Pulsatilla pratensis, Helleborus viridis and fœtidus, as well as the prickly-leaved H. caucasicus, Potentilla micrantha from the Jura, and the pretty yellow flowers of the Siberian Adonis amurensis.

A stream of water emerges from a grotto amidst the highest rocks of the Swiss Alps, and descends in zigzags across the Alpine garden to a small lake, where various aquatic plants are grown.

Altogether, the designer of this Alpine garden has shown very great skill, with the result that it is the most interesting, natural and picturesque I have seen abroad, and in a few more years it will doubtless improve.

At fig. 130 is a photograph of a part of the University with the Natural History Museum on the right. Dr. Chodat is the Professor of Botany, and lucky are the students—Swiss, Russian, Roumanian, Armenian—who, for the smallest of fees, come under the influence of so remarkable a man and so enthusiastic a botanist! At the present time, the Professor is conducting a party of energetic students among the wilds of Spain. A journey of this character, undertaken at a minimum cost, is an annual occurrence for Prof. Chodat and some of his fortunate pupils. *H. S. Thompson.*

RHODODENDRONS AT THE GLEN.

There are few gardeners in the northern part of this country who are not acquainted with the magnificent specimens of Azalea indica and greenhouse Rhododendrons that have been exhibited frequently at the shows of the Royal Caledonian Society in Edinburgh from the Glen Gardens, Innerleithen.

Those who have seen these plants have doubtless been impressed not only by the enormous quantity of bloom borne by each shrub, but also by the number of flowers composing each truss, and the size and superiority of the individual flowers.

The following are the cultural methods which were practised by the late gardener, Mr. MacIntyre:—The potting compost is for the most part peat, but there is also one-third fibrous loam, and a little sharp sand. The principal manures used are ground bones and Thomson's fertiliser, the latter being employed principally as a top-dressing. Several years are allowed to elapse before the plants are repotted. This operation is carried out during the early spring, previous to the formation of the young roots. A general top-dressing is given occasionally, but not oftener than once in two years. The reason they are not top-dressed oftener is to secure a very large plant in a particularly small pot. Manurial stimulants are, however, afforded in the form of liquid cow, sheep, guano, and soot manures. Liquid sheep manure and soot together are unequalled for the purpose of feeding, and this manure is applied copiously during the growing season and while the flower-buds are swelling, more especially at the former period, for this is one of the secrets of successful cultivation. After flowering the plants are stripped of all seed-vessels. The house, which is obscured from the direct rays of the sun, is closed in the afternoon, when the plants are given a heavy syringing, and the temperature allowed to rise to 75°, falling gradually to a night temperature of 63°.

A little warmth is maintained in the hot-water pipes during the night. After six or eight weeks of this treatment, the plants develop an even and vigorous growth. The temperature is afterwards lowered gently, and in the autumn the house is kept as cool as possible.

Sufficient warmth to prevent frost is preserved in the house during the winter months. Careful watering must be practised, for sour soil means disaster. Too much drought causes the shrubs to be infested with thrip. This pest may be destroyed by fumigations with the XL-All compound. Most of the plants at the Glen are about 6 feet in height, except one of R. Countess of Haddington, which is from 7 to 8 feet, and about 7½ feet in diameter at the bottom. This plant was awarded a Silver Medal in 1895 at Edinburgh. The best varieties of greenhouse Rhododendrons in these gardens are fragrantissima, Veitchianum, Princess Alice, Edgworthii and ciliatum. The Azaleas include the varieties Bernhard Andreas, of which there are two very large plants, Dr. Moore, Souvenir de François Vervaene, Paul Weber, Niobe, Empress of India, Mammoth, and others. *James P. Dickson.*

VEGETABLES.

CELERIAC OR TURNIP-ROOTED CELERY.

I WAS glad to observe an article in the issue for April 25 last, calling attention to Celeriac as a winter salad, well suited to our climate, in so far as regards our warmer counties, and on south borders in most of the others. With reference to the time of the main sowing, and the information afforded by the note to which I have alluded concerning the manuring of the soil, transplantation from the seed bed or seed box to the nursery bed or boxes, there is but little need to add anything; for if the directions there given are carried out in a workmanlike manner, the gardener will have sturdy plants for transplanting permanently in the month of May.

There is a malady which affects the plants after being laid-in in their winter quarters in October or November, viz., a browning of the substance of the tuber, a malady that is not uncommon on the Continent. In order to prevent the occurrence of this serious disfigurement, there is one radical remedy, namely, thorough applications of water, so that no check may happen in the chief season of growth, but manure water must be afforded with the utmost caution. The smallest sorts of Celeriac may not be injured in tenderness and good keeping quality by one early application—say in June or July—of fairly strong manure water. If the soil has been well dressed before digging, and afforded strong manure water before planting out the plants, it will need only clear water afterwards to assure their full development.

I have not found that the removal of the oldest leaves is of benefit to the tuber, as it is mostly carried out at a period when the nutriment manufactured by the plant is commencing to accumulate in the tuber.

The Prague Giant variety is one that is less inclined to become brown in the flesh, and it is generally cultivated in Austria-Hungary for its long-keeping property. When Celeriac is removed from the land the tubers should be laid in light cellars or cold pits or frames, bedding them in fine soil to half their depth, a few inches apart, and affording water once to settle the soil about them. Before laying in, the chief leaves should be cut off close down to the tuber, the heart leaves only being preserved in order that a slight amount of growth may be maintained in the plants for several months.

In planting the Celeriac in the open air the 5 feet wide bed and the spaces between the plants of 1½ feet to 2 feet accordingly, as the variety is a moderate grower or a robust one, is preferable to long-row planting.

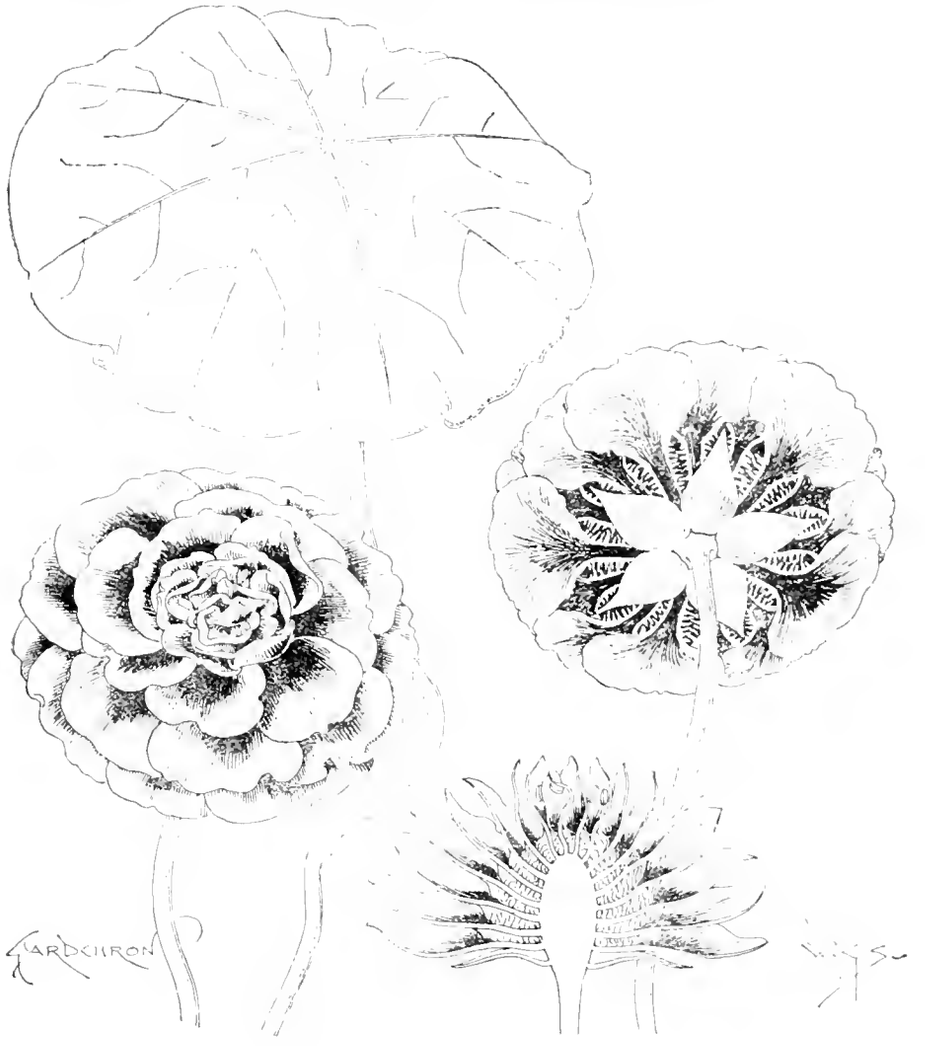


FIG. 140. TROPÆOLUM "DARMSTADT."

RAISING POTATOS FROM SEED.

THE sexual organs of the Potato flower are so arranged that they may be manipulated with ease. The essential organs consist of the five anthers, which form a cone, and the style or stigma which projects beyond the anthers that encircle it, but on reaching maturity the stigmas divide so as to expose their receptive surfaces. Select a truss of bloom on the plant intended for seed bearing and remove the anthers immediately the bloom opens, as by this process of emasculation the flowers are rendered incapable of self-fertilisation. By the aid of a lens the top of the stigma should be closely observed. In some flowers it will be found to be quite dry, and in others moist; the latter condition is when they are in a receptive stage. Pollen from the plant selected as the mate parent should be applied to the protruding stigma of the seed-bearing flower. A camel-hair brush is often used for this operation, but it is better to shake the ripe pollen on to a sheet of glass and to dust the stigma with this. The stem bearing the flowers thus treated should be carefully secured to a stake, and a label should be attached giving particulars of the date of pollinating and the parentage. Cover the whole truss with a piece of thin muslin to prevent the intrusion of insects that will, unless they are excluded, introduce foreign pollen. The muslin may be removed after a period of four or five days. The seed pods or "plums" should be allowed to remain on the plant for as long a period as is possible, but should the weather prove unfavourable to their ripening, and especially if the autumn is well advanced, the fruits should be taken off and hung up indoors to mature. When seeds are ripe, cut open the pods to extract them; they will be found to resemble not inferior Tomato seeds. They should be carefully dried and stored until the following spring, and then be sown in gentle heat. By the end of March or the beginning of April the seedlings should be ready for transplanting into larger boxes or pans, or, better still, singly in 60-pots. The seedlings should be ready for planting in the open in June, but no risk must be taken if the weather is unfavourable, for few plants are more susceptible to injury by frost than the Potato. *William Mallett.*

FLORISTS' FLOWERS.

AMERICAN AND OTHER TREE CARNATIONS.

WHEN the flowering season of these plants is past, it is not advisible to keep them in the glasshouse for the sake of a few flower-buds which may be unopened, as by this practice the cultivator will lose more than he gains, owing to the potting being delayed, and next season's flowering made later. If new stock is to be purchased, it is advisable to give the order to the nurseryman without delay. The purchase of rooted cuttings is not to be recommended, these being taken out of the propagating house once as they are very soft, and their roots are easily broken, so that many of them come to hand rootless. It is better to buy pricked-off cuttings, which bear transit and packing better, and soon make a good recovery. When the plants arrive, pot them without delay in light, sandy soil in small pots; keep them close and shaded from the sun, in a pit or garden frame having a temperature of 55°, and afford little moisture. As soon as new roots have begun to form, remove the shading gradually, and ventilate the structure freely. Unrooted cuttings should readily be procured by those who have had much experience in the propagation of Carnations. *E. M.*

TROPÆOLUM "FLORE PLENO DARMSTADT."

THE beautiful double-flowered Nasturtium represented in the accompanying illustration (fig. 140) was raised by Herr Henkel, of Darmstadt, and distributed by him last year. The flower is quite double and of an intense yellow colour, with scarlet feathering at the base of the petals. A more brilliantly coloured flower does not exist even among such a family as the Tropæolums. It has also the great merit of being exceedingly free-blooming, even in recently-rooted cuttings, and the flowers remain a long time in beauty. For covering a trellis during the summer season out of doors I do not know anything more brilliantly beautiful. I am indebted for the possession of this lovely plant to my friend, Mr. R. H. Beamish, who imported it last year direct from the raiser. It can be easily and quickly increased by cuttings, which make roots very readily, and when better known it will be seen in every good collection of ornamental flowering plants. *W. E. Gumbleton.*

BELGIAN HORTICULTURE.

MESSRS. SANDER & SONS, BRUGES AND ST. ALBANS.

THE establishment of Messrs. Sander & Sons at Bruges continues to extend. Block after block of plant houses, generally in several divisions, and extending 300 feet, have been added, and yet additions are contemplated, although the establishment in its present state employs over 100 hands. Kentia Palms occupy a large proportion of the houses, and visitors invariably ask what becomes of such an enormous stock? The answer is always the same. "No matter how many thousands we have, we never have enough and are continually running short of one size or another." And yet there are large numbers, apparently of every size, from the seedling just sprouting to the 12 feet high specimen.

Azaleas form another great culture with Messrs Sander, and it is very interesting to see in the different departments the process from striking the stock, to grafting it and developing the plants into specimens for sale. The fine display of flowers at the Bruges establishment, and at the Ghent show, well indicate the success attained in the raising of new varieties which is being done by Messrs. Sander, although this is no easy task, the already existing named varieties being so numerous and beautiful that it is very difficult to get new ones sufficiently distinct.

Camellias are grown in large quantities, and Messrs Sander have had great success in securing quite new types which we have seen in flower, though they will not be ready for distribution for several years to come. Camellia reticulata and its its white and double forms, all very difficult to propagate, are increased successfully. The stock of each can, however, never be great as the plants are of slow growth. Anthurium Scherzerianum with its showy scarlet, or mottled spathes; Bromeliads, with ornamental foliage and quaint flowers; stove and greenhouse plants such as Cordylines, Draccenas, Codiæums (Crotons), &c., (of which the bright green and yellow C. Fred. Sander is regarded as the acme of beauty in its class), Aralias, and some of the elegant smaller Palms occupy many houses, and all are in perfect condition.

In the open ground are a very large number of Bay trees in tubs, many of the specimens having large and finely formed heads; pyramids and standards are equally well represented, and in the standards a new feature is introduced by shaping some of them into conical heads instead of the globular form generally seen. Let the cultivator try how he may, it takes a long time to produce a really fine lot of Bays, and consequently the larger specimens secure proportionately high prices. Rhododendrons, Hardy Azaleas and other hardy market plants are grown in great quantities.

THE ORCHIDS

Ranges, apparently endless, of these plants were traversed during a recent visit to Bruges, some of the blocks containing quantities of Odontoglossum crispum for providing flowers for cutting and for market purposes. The Bruges establishment, rather than that at St. Albans, receives the freshly imported plants, and at present there are long ranges of houses filled with recently imported batches of Cattleya labiata, C. Schröderæ, C. Mossiæ, C. Mendelii, and C. Warscewiczii. Of the last-named species there was a singular illustration of the fine quality and floriferous character of C. Warscewiczii Sanderiana as compared with the original form, which was undoubtedly shy-flowering, both in its native habitat and under cultivation. The recently imported batch of C. Warscewiczii Sanderiana showed stout old flower spikes from nearly every growth, and the new growths are plentifully furnished with flower-sheaths. Some of each of the species named are in bloom, except the autumn-flowering C. labiata, and great variety is displayed in the blooms, especially of the C. Schroderæ, which ranges from blush-white with orange disc to the lip, to lilac with rich violet-purple labellum. Most of the showy species are in great quantities, such as Cattleya intermedia, C. Leopoldii, Lælia purpurata, Lælia-Cattleya elegans, L.-C. Schilleriana, and with all these kinds the demand for their flowers ensures a return for their cost and care, and the occasional fine variety supplies the profit.

Vanda cærulea of the very finest type is grown to perfection at Bruges, a long span-roofed house being filled with this species. The house is of cool, intermediate temperature, and the plants root freely, and as freely produce their spikes of sky-blue flowers. The contents of some of the other houses were Cypripedium bellatulum in large numbers, some very nice varieties being in bloom; C. Charlesworthii and the varieties of C. insigne, which are very profitable for supplying flowers for cutting; a house of hybrid Lælio-Cattleyas, Brasso-Cattleyas, Brasso-Lælia Digbyano-purpurata, Brasso-Cattleya Digbyano-Mossiæ, and

FIG. 141.—POLYSTICHUM FALCATUM VAR. MAYI.

others of that class; Lælio-Cattleya Baroness Schröder, L.-C. Dominiana of fine colour, varieties of L.-C. Myra, &c.

In one range is a fine lot of the scarlet Renanthera Imschootiana, Vanda Kimballiana, V. Parishii, V. Amesiana and V. Watsonii, in another V. Sanderiana, Aerides Houlletianum and other Aerides; Rhynchostylis retusa, a large batch of Dendrobium Phalænopsis, Cymbidium Lowianum, C. Sanderi and other Cymbidiums; Lycaste Skinneri of a very fine type; Ada aurantiaca, Cochlioda vulcanica, C. Noezliana, &c.

Specially noteworthy are the fine lot of Phalænopsis which thrive admirably. The best for all purposes on account of its free growth and the profusion with which it produces its large white flowers is that known as P. Rimestadtiana.

The block of houses set apart for the best types of Odontoglossum crispum have the innumerable specimens in fine condition. They are "grown cold," and with what some would regard as excessive ventilation, for the leaves are often stirred by the breeze. Some very good white forms of fine shape and substance are in bloom; several light rose-tinted varieties and a sprinkling of blotched flowers, of which were remarked a clear white O. crispum xanthotes with occasional deep orange spots, O. c. Thompsonii with deep purple blotching, and others.

One of the houses is devoted to the crossing and raising of Odontoglossums, and in it are a goodly number of plants with mature and bursting seed-capsules; and thousands of little seedling Odontoglossums in the earlier stages of growth.

In an adjoining house are a number of Odontoglossums raised at Bruges, a few of which are in flower, and a large proportion of the others in spike. Among those in flower is a very bright and distinct hybrid between O. crispum Thompsonii and O. Vuylstekei, and which is almost entirely of a glowing tint of chestnut-red with an orange shade, and tipped with white. This is not only handsome in itself, but should produce fine results for crossing.

Another pretty novelty is Odontoglossum Harryano-elegans with flowers equal in size to those of O. Harryano-crispum, but with rather narrower segments, as might be expected from the influence of O. elegans, which it resembles in the pretty purple spotting over the whole of the white, acuminate petals. Of the sepals, which are lanceolate, the upper one is the broadest; they are yellow, irregularly blotched with chocolate-purple, except on the tips and margin. The front of the lip is white, the base being spotted with violet.

All these seedling Odontoglossums have large bulbs and fine foliage, and evidently develop very rapidly under the treatment given them. *J.*

POLYSTICHUM FALCATUM VAR. MAYI.

At the meeting of the Royal Horticultural Society, held on April 14 last, Messrs. H. B. May & Sons, Edmonton, exhibited a new crested form of the Fern, known in gardens as Cyrtomium falcatum, but which is placed by Dr. Christensen in his *Index Filicum* under Polystichum. The plant has been the subject of change of nomenclature many times. It is placed by Hooker in his *Synopsis filicum* under Aspidium, and it has also been classed in other genera than those instanced.

Notwithstanding this confusion of names, the Fern is a valuable species for garden purposes, and there are few that surpass it for the decoration of dwelling rooms. The species is perfectly hardy in favoured parts of England, Wales, and Ireland, but when grown out of doors the leaves are shed in the winter. The plant, however, soon recovers when warmer weather prevails, and quickly develops a new crop of its handsome leaves. Besides the new variety "Mayi," there are many other forms and varieties of Polystichum falcatum.

AN ORCHID PARASITE.

Orchids imported from Brazil, chiefly Cattleyas, Lælias, and Sophronitis, very often have their leaves covered with small white spots, about one or two millimetres in size, due to the disappearance of chlorophyl at the place where punctures have been made by an insect. This parasite, Tenthecoris bicolor, belongs to the Hemipterous family of the Capsides. It may cause very serious damage, as I have seen in 1906 in the plant houses of the Parc de la Fête d'Or at Lyons. The continual punctures exhaust the plant, which decays and dies if remedies are not applied. The perfect insect, which is a fairly large one measuring 4 millimetres in length, lives underneath the leaves of the infested plant.

Its brilliant colouring of red and blue renders the insect easy of detection. It flies from plant to plant, and is very prolific in the plant houses. The larvæ also puncture the leaves of the plant and suck the juice upon which they live. All plants imported from Brazil should be washed with a brush charged with a good insecticide. If the insects should become established in the plant house, they may be eradicated by appropriate fumigations repeated each week for a month. The drawing (fig. 142) was made by my friend, Doctor Chobaut, of Avignon, from one of the insects caught in my hothouse about 11 years ago on one of the recently imported plants of Sophronitis. The following is a short description of the insect:—Tenthecoris bicolor, Scott, 1886, synonym Euritotarsus orchidearum, Reuter, 1902. Head, pronotum, and external edge of the upper wings of a pronounced brick-red colour; thorax and the rest of the upper wings bright blue; antennæ and legs yellow. The upper side of the body and antennæ covered with short, fine hairs. Head conical in front, with well-developed eyes. Antennæ more than half as long as the body. Pronotum constricted (*étranglé*) with a deep ridge in the centre of the constriction. The under part of the body is of a reddish-yellow. The length, excluding the antennæ, 4 millimetres, the breadth rather less than 2 millimetres.

Vanda cœrulea is often imported infested by a parasite allied to Tenthecoris, but its larvæ lives in the interior of the leaves, where it burrows out galleries. This latter insect is very probably a new one. I have only been able to secure specimens in poor condition, and I should be grateful to any readers of the *Gardeners' Chronicle* who may be able to kindly forward me some good specimens. *F. Denis, Balaruc les Bains, Hérault, France.*

THE ALPINE GARDEN.

THE SOLDANELLAS.

Among the choicest of the Alpine flowers which succeed in our climate are the Soldanellas, little gems of the Alps of Central Europe, which have few to surpass them in their delicate beauty in our gardens, and which merit and receive the unstinted admiration of those who take pleasure in the smaller flowers of the rock-garden. They may, indeed, be said to be ideal plants for the rock-garden, so neat are they in their growth, and so beautiful in their flowers.

That they are frequently unrepresented in collections of Alpines is not the fault of the plants themselves, but is due to the fact that many persons take little pains to meet their requirements, with the result that they are either shrivelled up by some dry and warm summer, or are found in a flowerless condition from year to year. These failures can easily be remedied, and there are some sound principles, which, if followed, will solve the difficulties which many have experienced with these Soldanellas.

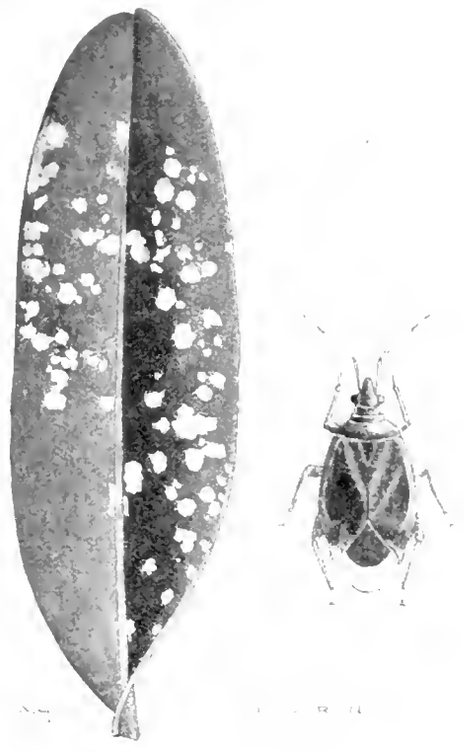


Fig. 142.—An orchid parasite. (Much magnified.)

In their native habitat the Soldanellas enjoy different conditions from those which prevail here, and it is the lack of these which is largely responsible for their failure in this country.

They like moisture in summer, but they abhor it above their heads in winter. At home they are shrouded in snow for a long period in winter, and in spring and summer they enjoy the water which flows from the same in melting; but in our gardens they are frequently planted on a dry rockery, and in winter are exposed to the rain, snow, and sleet, which, with too swift alternations, they have to encounter. The summer drought is disastrous to the health of the plant; the winter's changes are the cause of their non-flowering. Another cause of failure is the absence of a top-dressing.

The Soldanella should be given a moist soil, and in the drier parts of the country a position by the edge of a bog garden, but slightly above it, and with some stones packed about the crowns, will suit them splendidly.

In wet neighbourhoods they do not require so much moisture at their roots, and there they thrive best in a half-shaded place at the base of rockwork, but in a freely-drained soil, composed of peat, or leaf-soil, loam, and a little sand, water being occasionally applied in the shape of copious soakings, in continued dry weather only. A few stones placed about the plants will help to keep down drought. The contrast of plants which are thus accommodated and those which are perched on a ledge of a rockery, and are soon shrivelled up with summer sun, is great. Under the former conditions they develop crowns which flower, provided the precautions above-named are followed.

In order to induce regular flowering, there is nothing to equal the assistance of a piece of glass or a handlight raised a few inches above the plant, and put on from October until the flowering begins. It may, however, be allowed to remain until the flowering is past, but afterwards the sun is apt to become too strong, and the glass should be removed. I have experimented with this for some years, and have found the covering of the plant with glass an almost infallible factor in producing flowers. Some four or more species of Soldanella are in cultivation, and all are very beautiful and worth cultivating in gardens.

Soldanella alpina.—This, the Blue Alpine Moonwort, is a lovely plant, with roundish, rather kidney-shaped leaves, that are leathery in substance, and producing beautifully fimbriated bell-like flowers. These depend two or four together from a stem some 3 inches high, and appear about April. This species is one of the best of the genus, and there are a few varieties of it which differ but little from the type, although some are more floriferous than others. S. a. pyrolæfolia is one of the best varieties: S. a. alba has white flowers.

Soldanella minima.—The smallest Alpine Moonwort is a beautiful little plant, flowering about the same time as S. alpina, but producing flower-stems some 2 inches high only. Each bears one flower only; the blooms are cut to about a third of their length, and they are more spreading than those of S. alpina, while the colouring is pleasing, the flowers being suffused with lilac. If the interior is examined, it will be found to be striped with purple. The leaves are rounded, and the whole appearance of the plant is gem-like in its beauty.

Soldanella montana.—This is a favourite plant with many persons, with its purple blossoms, which are developed two to four on scapes 3 inches high; the petals are prettily cut to about the half of their length. The leaves of the Mountain Moonwort are almost round, with a few crenations at the margin.

Soldanella pusilla.—This is said by some authorities to be synonymous with S. Clusii, but there is some confusion on the subject, and it is to be feared that it will be difficult for the gardener to clear up this point. According to the *Kew Handlist of Herbaceous Plants*, S. Clusii of F. W. Schmidt is synonymous with S. montana var. hungarica, but it appears from other sources that S. Clusii of Gaudin is synonymous with S. pusilla, which is the one generally sold under this name. It is a lovely little plant, bearing from one to two bell-shaped blue flowers on the scape, these not being fringed, but only neatly notched around the margin. The blooms appear about April. This is a charming little Soldanella, and not at all difficult to cultivate. There is also a white variety of it.

Soldanella × hybrida.—This is said to be a natural hybrid between S. alpina and S. pusilla, and is apparently cultivated at Kew, but I have not come across it there, and cannot say anything about its features. It has been in commerce but at a high price, like another not in the Kew collection S. × Gauderi, a hybrid of S. alpina and S. minima. *S. Arnott.*

IN A FRUIT PLANTATION.

THE sudden rise in the temperature which took place on May Day caused such a burst of vegetation as is seldom witnessed. Never before have I seen fruit blossom come out so suddenly. At the end of one of the most wintry Aprils on record the expansion of blossom on fruit trees of every kind was extremely backward. Gooseberries, of course, were in full bloom before the end of the month, while Red Currants were about level with them, Black Currants being later to bloom than I have ever seen them before. The only Plum in my plantations in the extreme south of England in full blossom by April 30 was Black Diamond, while Monarch and Coe's Golden Drop were nearly or quite full on May 1. But by May 3 there had been so sudden an expansion that Early Rivers and Czar were fully out, while Victoria was nearly abreast with them, as also were Old Greengage, Denston's Superb Gage, and Oullin's Golden Gage.

Early-flowering Pears were in full blossom by May 3, and the buds of some later varieties were beginning to open. The only variety of Apple showing any considerable open blossom on that day was Irish Peach, though Beauty of Bath, Duchess of Oldenburg, and Early Julien were close behind it.

It is a curious fact that the blossoming of fruit trees and bushes in districts 100 miles to the north of my farm is earlier than it is here, probably because proximity to the sea and exposure to wind keep my fruit backward. This circumstance bears upon the question of damage from frost. Here we had 6° of frost on the night of April 20, measured 5 feet from the ground by an exposed thermometer. Everything was extremely dry then, and the few blossoms of Plums already expanded on exceptional trees did not appear to be harmed. A small number of my Gooseberries in the lower level of one field appear to have been touched, and some Red Currants in a small orchard, grown only for home use. But no considerable damage was done. The more severe frosts of the last week in April, 8° or more in many districts, did not trouble us here, as we had only 3° on one occasion, and we had comparatively little snow. The great damage to Gooseberries and Currants, and partial injury to Plums, reported from most fruit districts, we were fortunate enough to escape.

With respect to the shows of blossom, that of Plums is partial, some trees of a variety being fairly covered, while others are nearly bare. This is the case with Rivers' Early Prolific and Monarch. Victoria is more regular, there being about half a show, while Czar is fuller. Pond's Seedling has very little blossom, and Gisborne hardly any signs of it. Black Diamond and choice dessert varieties, except on a small lot of Coe's Golden Drop in a field, have only a sprinkling. Apart from possible damage hereafter, the Plum yield can hardly exceed half an average crop. Pears are about as densely covered with blossom as they could be, and Apples and Cherries are very well furnished. Gooseberries here promise well, but Black Currants, I fear, will be scarce.

Except where the tender shoots on the tops of Plum trees were banged about by the blizzard of the last week of April, the foliage and blossom of all kinds of fruit have a strikingly healthy appearance. Having been late in developing, there has not been any check to growth since the expansion of leaf and blossom. But aphis on Apples and Plums, and scab on Apples and Pears, will probably spoil this pleasing appearance. A search with a magnifying glass on several trees of nearly every variety of Apples grown, just after the trusses of blossom buds were fringed with spring leaves, led to the discovery of only one aphis, while not one was found among the Plums. Nor were any eggs noticed. Yet, in all probability, both Apple and Plum trees, as usual, will be smothered with the pest by the time that these remarks are in print. Last year there was a sudden and profuse infestation a few days after a search, in which only two or three aphides were found. Whence do they come? No one seems to know. I searched among some Myrobella Plums planted to thicken hedges, and among Blackthorns also, without finding a green fly. Some entomologists declare that the visitations of aphides always come from eggs on the trees, or from insects that have hybernated on them; but this in my case seems to be out of the question, as I have found neither eggs nor insects up to the present time. The aphis does more damage here than all other insects together, as, when once its attack has begun, the leaves curl around it, protecting it from spray.

There are no signs of the Apple sucker here at present, and it would be showing if it were in the plantations. Three years ago my Apple plantations were badly infested, but they have been clear in the last two seasons. Whether or not the pest was annihilated by summer or winter washes, or by the two in combination, is uncertain, but the fact remains that it disappeared, and there has been no reappearance. The Codlin moth does not trouble me, while leaf-eating caterpillars can be kept down by spraying, and the pith-moth maggot is relentlessly pursued year after year, and thus kept within moderate bounds.

Next to aphis, my great enemy is scab. As a preventive, the Apple and Pear trees were sprayed with a weak solution of copper sulphate alone, just before the fruit buds began to burst. After the blossom has fallen, they will have two sprayings of weak Bordeaux mixture—weak, because the ordinary strength scorches the foliage of some varieties. This treatment did good last season. Let us hope that the summer will not be as wet as the spring has been, so that there may be a chance of suppressing this damaging disease.

Mildew on Apple foliage has become more and more serious on some varieties in the last two seasons, and nothing has been found to be an effective cure but the plan of persistently cutting off and burning affected portions. Already it is showing on a shoot here and there.

To revert for a minute to the question of crops, there is one variety of Apple which is the exception to the rule as to a good outlook, and that is Charles Ross. I think my trees are six years from the budding, and they show hardly any signs of blossoming. The variety seems to be as slow in coming into bearing as Blenheim Pippin is, and the fruit is inferior in flavour to that of Peasgood's Nonsuch, the parent which it most resembles. In my opinion, Charles Ross is a spoilt Peasgood—less prolific, and of inferior flavour. It would be interesting to learn whether the experience of other growers in relation to it is the same as mine. My trees were raised by budding from one of the first lot sent out. The trees are fairly sturdy, and particularly shapely, and this is all that can be said in their favour at present. Possibly they may bear well in course of time. *A Working Grower.*

NEW INVENTIONS.

A TELESCOPIC PLANT SUPPORT.

SEVERAL devices for the supporting of plants have recently been placed before the public; particulars of the latest have been sent us by Messrs. Smith, Fletcher and Co., 172, High Street, Edinburgh. This support has an iron prong, with a sheath for inserting into the ground, and into this sheath the stand slides, thus enabling it to be raised as the plant increases in height. A small pin passes through the sheath and through the support, which is pierced with several holes, thus enabling it to be raised or lowered.

The Week's Work.

THE FLOWER GARDEN.

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

Summer bedding.—Tastes in regard to the planting of the flower garden are very dissimilar, but in all cases it is necessary to consider harmony and contrast in respect to colour. For example, an oblong bed planted with standard Heliotropiums, and having a groundwork of the new dwarf variety of the scarlet Salvia splendens known as Pride of Zurich, may be described as planting for the purpose of contrasting the colours. This variety of Salvia is very compact in habit, free flowering, and early. It does not grow more than 12 inches in height, has erect spikes of bloom, and produces early in June a quantity of the most brilliant scarlet flowers. It may also be expected to continue in flower until autumn. For an instance: in the harmonising of colours, a bed in the form of cross keys planted with Calceolaria amplexicaulis of soft yellow colour, with a groundwork of Salvia Pride of Zurich, would be pleasing. The Calceolarias should consist of plants taken from 6-inch pots, being specimens 5 to 6 feet in height, having large heads yet being lightly branched up the stems, and they should be planted about 2 feet apart each way. Salvia Horminum grandiflorum violacea, with bright violet-coloured heads interspersed with Galtonia (Hyacinthus) candicans and Tuberoses planted in a diamond-shaped bed, was pretty. Beds which are crowded together in geometrical designs are not suited for this type of planting. The three beds I have mentioned stand apart from each other, and have double Box edgings, filled in with white marbled chippings upon gravel. A noble-looking bed, if cut out of the grass and made sufficiently large to give a good effect, is one planted with Nicotiana sylvestris, having large, sweet-scented, pure white flowers, intermixed with Ricinus Gibsonii, which has dark stems and foliage. A border measuring 60 yards in length and from 3 to 4 feet in width planted in the following manner was admired by many:—A excellent strain of Antirrhinums containing a good proportion of salmon-rose or coral-red varieties was planted, and the dwarf-growing plants were intermixed with those of a taller habit. A similar border planted with Dianthus Heidewigii in numerous shades of colour mixed with patches in distinct colours of such varieties as Salmon Queen, Diadem, Queen of Holland, and The Bride, at regular distances, and dotted with standard plants of Iresine Herbstii, I. Lindenii, and Veronica Andersonii, with a background of Pelargonium "Madame Crousse" in tubs, and Agapanthus umbellatus, was effective.

Herbaceous borders.—Such plants as Delphiniums, Pæonies, Aconitums, and Sweet Peas should have stakes put to them before the growths fall over and become deformed.

Roses against walls.—These plants should now be treated with some approved insecticide, such as quassia extract.

Garden paths.—Choose a dry day and apply a dressing of some weed killer to the garden paths, but do not let the mixture be applied within a distance of 6 inches from the edges of grass or Box.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Acacia Riceana.—This species is now passing out of bloom and should be re-potted into a compost consisting of loam, leaf-mould, and sand. Place the plants afterwards in a position where they will be fully exposed to the light. The plants would succeed very much better if planted out in a border where the roots would have plenty of room to extend. The shoots may be trained up the rafters under the roof of the house, so that they may afterwards droop from the roof, and thus display their flowers to the best advantage.

Lapageria alba and L. rosea.—These plants are now growing freely, and care should be taken to see that the shoots do not get twisted together. If the plants are trained on a balloon-shaped trellis, the young shoots should at first be trained on single strings tied out to stakes extending from the balloon, and after the shoots

have become well-ripened and flower buds are appearing, the strings may be cut away and the shoots trained evenly over the balloon. Apply weak liquid manure to the roots at frequent intervals, and syringe the plants each day. Lapagerias succeed excellently when cultivated in a border and their growths trained up the roof of the greenhouse, from which they may be allowed to hang loosely. When thus grown in a border, slugs are very destructive to the young shoots as these latter emerge from the soil. I have found it to be a good practice to keep a sharp look-out for these shoots, and directly they emerge from the soil to cover them with glass bottles from which the necks have been knocked off.

Chorizema Lowii.—This species is now growing freely, and if the plants are found to require larger pots the re-potting may be undertaken at once. A compost of peat and sand, with a few pieces of charcoal, will be suitable. This species being of a very free-growing habit requires plenty of root-room, and the soil should be made only moderately firm. The shoots should always be trained so that they will incline slightly upwards, for if this is not done they will die back to the position of a shoot which does point in an upward direction. Much care is needed in tieing in the shoots, and if they have been allowed to get hard they will be likely to break off at the joint, for when thoroughly ripened they are very brittle. If cultivated in the same house as Azaleas, and given similar treatment, the plants will succeed. Propagation may be effected at the present time by inserting cuttings prepared from the young unmatured shoots. Insert them in a compost of peat and sand only, making this compost very firm about each cutting. Place the pots in a brisk heat and keep the atmosphere close until the cuttings have made roots.

Rhododendron (Azalea) indicum.—Plants that are growing freely and have their pots well filled with roots should be given slight sprinklings of Peruvian guano at intervals of three weeks, until it is seen that the flower buds are formed for next season. Syringe the plants twice each day during favourable weather. Maintain a moist atmosphere and shade the plants from fierce sunshine.

Brunfelsia (Franciscea) calycina major.—As soon as these plants have flowered they should be re-potted into a compost consisting of loam two parts, leaf-mould one part, and peat and sand one part. Place them in a house having an intermediate temperature and syringe the plants frequently. Any plants which will not be re-potted should be given applications of liquid manure. As soon as the plants have completed their growth remove them into a cool house where they may rest until next spring. If this species is flowered in the atmosphere of the greenhouse the blooms develop a much deeper colour and have better lasting properties than is the case when they are developed in a greater degree of heat.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Fig trees in pots.—If the trees are expected to ripen a second crop of fruits, every encouragement should be afforded them directly the first crop has been gathered. It would, however, be better not to obtain a second crop if it is intended to force the trees again early next season. In any case, the second crop should be only a moderate one. Take measures to cleanse the trees of any insect pests that may infest them. Afterwards remove the top-dressing from the pots and afford a fresh top-dressing consisting of loam and crushed mortar rubble, with a little concentrated manure added. On no account allow the roots to suffer from drought even for a short period. Apply occasional waterings of diluted liquid manure. Keep the growths regularly stopped. Ventilate the house freely, and syringe the trees thoroughly at least twice each day during fine weather.

Fig trees in borders.—These trees having been started early enough to yield successional crops to those Figs cultivated in pots, will now be swelling their fruits, and therefore the roots should be given applications of liquid manure. It will be necessary to keep the atmosphere rather drier than formerly as soon as it is seen that the fruits have commenced to ripen. Afford increased ventilation during the day, and a little ventilation during the night. Let each fruit be exposed to the rays of the sun as much as possible. Later trees in separate houses should have their shoots thinned out and pinched, so that the leaves will not overcrowd each other. By attending to the pinching of the shoots at intervals of a few days and continuing this practice for as long a time as practicable, the ripening season may be thereby prolonged. Ventilate the houses freely, especially when the sun is powerful, taking care to prevent the leaves suffering injury from scalding. Syringe the trees thoroughly each day, maintaining a moist atmosphere. Remove all suckers from young trees, and thin out the shoots sufficiently to enable those which are selected for forming the tree to grow sturdily and firm.

Planting vines.—Young vines raised from eyes early in the present year may be planted at any time during the next few weeks. Plants of this description should be planted in borders wholly contained in the house, but an outside border may be added thereto at a subsequent period if it is considered desirable. If borders have been made according to the directions printed in the Calendar in the issue of this journal for February 1, and a sufficient length of time has elapsed for the soil to become warm, such borders will now be in a suitable condition for planting. If the young vines have been so far cultivated upon turves instead of in pots, their planting will consist simply in placing them in position on the border and carefully covering the roots with a warm, turfy compost, or in making shallow holes in the border for the reception of the turves. But if the vines are in pots, turn out the roots carefully, remove the crocks and firmly plant the roots in some specially prepared compost. Complete the operation by applying a light mulch of short horse manure and a watering with tepid water. If the vines have to be procured from a distance, allow them sufficient time to recover from any ill effects they may have received during transit before subjecting them to the check caused by planting. Permanent vines should be planted at distances of 4 to 6 feet apart, with supernumaries ("cut backs" being best for this purpose) planted between each pair for providing immediate crops.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Celery.—There is no more important kitchen garden crop than Celery, neither is there any crop that responds more readily to good cultivation. Indifferently grown Celery is of little value, therefore cultivators should do all that is possible to obtain the most perfect crop. In the first place it is essential to cultivate the best varieties, and afterwards it is necessary to take every care to prevent the plants suffering any check during the whole season of their growth. Directly the plants which have already been pricked out are ready for transplanting to the trenches, which have been prepared in the open gardens, let them be removed to this position. If these trenches were prepared according to the directions I have previously given, the soil is likely to be in a good workable condition. In order to obtain a continuing supply from August until April, several plantings are necessary, but in all cases where it is possible, the trenches should be taken out and prepared several weeks previous to planting. There is no advantage to be gained by putting the plants at a great distance from the surface of the ground, but, on the contrary, it is detrimental to plant them at such a depth in gardens where the soil is of a heavy and tenacious character. In such cases, the plants should be kept as near the ground level as possible, allowing only sufficient space for the reception of water. Make the soil about each plant very firm, and apply a dusting of fresh soot during the evening or early in the morning once a week. Do not allow the Celery plants at any time to suffer from drought. Lettuces in various stages may be cultivated on the ridges of soil between the rows of Celery.

Celeriac or Turnip-rooted Celery.—To ensure good specimens of the Turnip-rooted Celery, strong plants should be put out at the present time into deeply-tilled, rich ground, preferably on a border facing to the south. Allow a distance of 2 feet between the rows and 18 inches between each plant. During the season of growth it is difficult to apply more water than is needful for this crop, and liquid manure containing a little soot should be frequently given.

Brussels Sprouts.—Plants raised from the earliest sowings under glass, which were duly pricked out, should now be ready for planting into their permanent quarters. Choose a well exposed piece of ground which was prepared during the winter. Lift the plants with as much soil adhering to the roots as possible. Use a garden trowel in the process of planting, and make the soil very firm. As a preventive against slugs, place a good handful of finely-sifted cinder ashes around the stem of each plant.

Turnips.—The earliest plants are looking very well. Attend to the thinning out whilst the plants are still quite small. Frequently stir the surface soil and apply a dusting of soot at intervals of ten days. Make small sowings at frequent intervals to maintain a supply. Desirable varieties for sowing at this season include Snowball, Jersey Lily and Red Globe.

Carrots.—Make a liberal sowing on a south or west border, choosing varieties of the intermediate and stump-rooted types. Attend to the thinning out of earlier batches and sprinkle soot and wood ashes liberally between the rows. If green fly appears, syringe the plants with quassia extract or dust them with tobacco-powder.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Peach blister.—This disease is generally known to be brought about by north and east winds, and this being the case, it is likely to be more than usually prevalent this season. It may be guarded against in some measure by using protective material over the trees during the presence of such winds. I have tried many so-called remedies, but none has proved either a cure or preventive, and the best thing to be done therefore when the disease is present is to divest the trees of any curled leaves and the shoots bearing them, removing them at once to the fire. Cultivators, however, may be recommended to try the specific known as "Medela," which is highly recommended for use during the season when the trees are dormant. At the same time, every attention should be given to such matters as root-pruning, watering, and the training of the shoots thinly so as to do all that is possible to induce the shoots to become thoroughly ripened each season (see also note by Mr. Fife in the *Gardeners' Chronicle* for February 15 last).

Apples and Pears.—The Apple blossom weevil (Anthonomus pomorum) is one of the worst pests that infest Apple trees. The larvæ or caterpillars destroy the blossoms before they expand, and they afterwards feed upon the young leaves. Sprayings during winter are the best means of combating this pest, but at this season of the year means must be taken to destroy any grubs already contained in the flower-buds, and their presence may be detected by the petals rolling up and turning brown. The caterpillar of the winter moth (Cheimatobia brumata) also feeds upon the young leaves and flowers, and a strict watch should be kept for these.

The Pear midge (Diplosis pyrivora).—The female midge deposits its eggs on the Pear blossoms, and the fruits become deformed and fall to the ground, containing as a rule one or more caterpillars. Such fruits should be gathered together and burned without delay. Trees that are subject to attack from Pear midge should be sprayed every winter without exception, for sprayings applied during the growing season are of little avail. The only effective remedy then being to pick the caterpillars off the trees by hand. Apply a dressing of kainit to the ground during winter.

Apricots, Cherries and Plums.—Examine the trees for any pests which are destructive to the foliage. Quassia extract is a good and cheap insecticide, and may be most economically used as a preventive before the foliage becomes curled. If this is delayed until an attack is present, it will be necessary to remove all the curled leaves and caterpillars and syringe the trees with Richard's XL-All insecticide. In this case the trees should be thoroughly washed on the following morning with clear water applied by means of the garden engine.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MAY 16—German Gard. Soc. meet.

TUESDAY, MAY 19—
Devon County Agric. Sh. at Plymouth (3 days).

WEDNESDAY, MAY 20—
Roy. Bot. Soc. Exh. at Regent's Park.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—53.9°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May 13* (6 P.M.): Max. 62°; Min. 47°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May 14* (10 A.M.): Bar. 29.6; Temp. 55°; Weather—Raining.
PROVINCES.—*Wednesday May 13* (6 P.M.): Max. 52° Colchester; Min 47° Scotland N.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Bedding Plants, Bulbs, Palms, Rhododendrons, Conifers, Ferns, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

THURSDAY AND FRIDAY—
Clearance of large quantities of Palms, Ferns, Orchids, Carnations, Azaleas, &c., by order of Messrs. Heath & Son, at the Royal Exotic Nurseries, Cheltenham, by Protheroe & Morris, at 12.

FRIDAY—
Choice Imported and Established Orchids in large variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Artificial Production of New Species.

Professor MacDougal, who has been for some years engaged upon the problem of the artificial production of new species of plants by injecting various salts into the ovaries of the flower, claims to have obtained novelties in several genera. The most notable one is a form derived from Œnothera biennis, which he calls "F. 206," in which the new plant has remained true for several generations. It is easily distinguished from the parent species, and, furthermore, does not readily hybridise with it. Experiments are in progress on the effects of calcium nitrate, zinc sulphate, methyl blue, in various strengths of solution, on a considerable list of plants, e.g., Cereus, Nicotiana, and Pentstemon. Of course, the failures are numerous; that is only to be expected, not only on the grounds of the difficulties of manipulation, but also because the organism might altogether fail to respond to the substances used. The point of view from which the work is being carried on may be most easily grasped by the following quotation from a lecture delivered a few months ago in Chicago by Professor MacDougal: "The forms and qualities exhibited by organisms represent the total effect of environment, but it cannot be shown that this has been brought about by direct adaptation; many of the most highly specialised and useful structures bear only an indirect relation to the factors to which they bear a useful relation. Neither has it been demonstrated that an individual adjustment made by the soma is impressed upon the germ-plasm, and transmitted unchanged. . . . Various agencies experimentally applied in such manner as to affect the germ-plasm only have caused the origin of forms bearing fully transmissible qualities not presented by the parental type. The new characters have been found to be fully heritable, and the induced forms do not always hybridise with the older types. The induction of such new forms in plants may be accomplished by re-agents applied to the generative nuclei carried by the pollen-tube, and probably by action on the embryo-sac, in the period following reduction division. Mutations have been taken, on hypothetical grounds, to be based on changes occurring previous to these divisions. The various agencies used in inducing new forms in this manner may have a stimulating effect, or may cause direct disturbances in the chemical balance of the substances in the chromatin and plasma. [Substances found in the cell.] Similar action may result from unusual intensities of various environmental conditions, or to accidental intrusions on germ-plasm of many kinds. The alterations in question may well lie beyond detection by cytological, or by any direct method of examination. When the nature of the induced changes is once ascertained, the inductive agents might be applied in such manner as to guide the course of development and thus actually control the evolution of organisms. By such methods, man, the conscious organism, might assume a dominating rôle in the world of organisms and create relations among living things not now existent."

If further research should substantiate the claims made by Professor MacDougal, it will readily be seen that a powerful instrument is within our reach for inducing variation. But it must be clearly understood that the variations are likely, if producible at all, to be empirical. There can hardly be any question of "adaptation." What will have been effected is an alteration of those chemical processes which finds expression in the particular character of any individual plant, and if we can really alter these we shall at the same time doubtless modify the whole organism. For this chemical machinery, germ-plasm, physical basis of inheritance, or by whatever other name we call it, is the really important thing. If once this can be got at and changed, then variation must inevitably follow, and if the change were permanent in its character, the corresponding variation may also be expected to be stable. But it will be wise not to expect too much, at any rate, for some time to come. Even if it should turn out to be possible to induce variation in this way at all, it of course does not follow that the new forms would be improvements upon the old. In the world around us we see variation enough brought about by natural causes, as we say, but the real advances, from the economic or aesthetic point of view, are few enough. In stimulating the formation of new varieties, as now practised, we have the advantage of dealing with processes such as crossing, the rules governing the results of which are gradually becoming better appreciated. Whether a similar outcome is to be anticipated from injection methods still remains to be seen.

Some doubt may perhaps be legitimately felt as to the correctness of the interpretation of the change which has been found to occur in the case of the plants experimented on. We know already that Œnothera Lamarckiana is constantly throwing off more or less stable variations, and Œ. biennis is closely related to it. May it not be possible that natural variation may have occurred in the experimental plots, and have been mistaken for an artificially-induced one? Criticism is, however, premature at the present time. The future will soon show how far the new variations are the result of natural conditions, and how far they are to be attributed to the effects of a direct action of the substances employed upon the germ-plasm of the species.

OUR SUPPLEMENTARY ILLUSTRATION.—Of the numerous Japanese Lilies flowering in British gardens none are more delicately coloured than the flowers of Lilium japonicum (syn. L. Krameri). In the winter of 1871-72 coloured drawings of three beautiful forms of this Lily were received by the late Dr. WALLACE, of Colchester, from his collector, Mr. KRAMER, in Japan. Varying so much in colour the suggestion was at once made that it was a hybrid, and the species L. japonicum × L. auratum, or L. japonica × L. speciosum, were mentioned as the probable parents. Under the name of L. Krameri, Hook., the rose-tinted form is figured in the *Botanical Magazine*, tab. 6058. Subsequent investigation proved this plant to be identical with L. japonicum, Thunb., a species found growing in abundance in Southern Japan. The bulbs are small, 1 inch to 2 inches in diameter, the stem 1 foot to 3 feet high, rarely 4 feet; leaves scattered linear-lanceolate, 5 inches to 6 inches long; flowers variable from white to deep mauve, scented, 1 to 4 on a stem, sometimes 5. In the *Gardeners' Chronicle*, August 11, 1877, Mr. J. H. KRELAGE, of Haarlem, mentions having flowered a purple variety amongst a recent importation. No great degree of success has attended the cultivation of this Lily in our gardens, and were it not for a plentiful supply of imported Japanese bulbs this beautiful member of the genus Lilium would be very rare. The late Mr. WILSON in his garden at Wisley, now the home of the Royal Horticultural Society, grew it successfully in a bed of Rhododendrons. The most suitable soil is an open compost of peat and sandy loam. Imported bulbs flower well in the first, and sometimes the second year. They should be laid on soil in a frame, and started into growth previous to planting them out of doors, taking care not to over-water the plants until they are well rooted. It would be worth while trying to establish this Lily in our gardens by raising plants from seeds, it being just possible that seedlings raised in this country would be more amenable to cultivation.

MEMORIAL TO SIR THOMAS HANBURY, K.C.V.O.—On Sunday, May 3, a bronze bust of Commendatore Sir THOMAS HANBURY, K.C.V.O., was unveiled at La Mortola in the village square. There was a representative gathering of thousands of people from the neighbouring towns and villages. The Government was represented by the SOUSPRÉFET of SAN REMO and the MAYOR of VENTIMIGLIA. After the inaugural speech by Mr. ALWIN BERGER, curator of the garden, the bust was unveiled and the English National Anthem was played by the Ventimiglia municipal band. The MAYOR of VENTIMIGLIA spoke in high terms of Sir THOMAS HANBURY, and acknowledged the good the community owed to Sir THOMAS HANBURY's kindness. The SOUSPRÉFET and PROF. CALVINO, from Porto Maurizio, also paid eloquent tribute to the memory of Sir THOMAS, and CECIL HANBURY, Esq., returned thanks in the name of his family. The cost of the bust was defrayed by subscriptions from the Mortola population.

THE BOTANICAL MAGAZINE.—The current number of this periodical contains figures and descriptions of the following plants:—

TILLANDSIA BLOKII, tab. 8192.—The origin of this fine plant is not known, but it seems to have been regarded as a form of T. regina. It was shown under the name of T. Blokii at the Ghent Quinquennial Exhibition in 1898, and the specimen was then described in the *Gardeners' Chronicle* as being "as tall as a man." The specimen from which the illustration in the *Magazine* was taken, was grown by Mr. F. W. MOORE, who purchased it in 1903 as a seedling of the original plant shown at Ghent.

PHILADELPHUS × PURPUREO-MACULATUS, tab. 8193.—This plant is stated by LEMOINE to have arisen from P. Lemoinei "fantasie," a hybrid of which P. Coulteri was one of the parents. It is a beautiful plant with a purple red blotch at the base of each petal. It is said to be hardy and easily propagated by cuttings, which, when made of young shoots and placed in a brisk bottom heat, readily strike root. In cultivation the shoots that have flowered should be cut away after the blossoms are over, the young growths which are thus stimulated forming the flowering shoots for the following year.

PUYA VIOLACEA, tab. 8194.—A Bromeliad with stiff, linear leaves about 20 inches long. The flowers have green sepals and deep violet petals. The plant requires dry, sunny conditions, such as suit Cacti and Agaves.

LIPARIS TABULARIS, tab. 8195.—This handsome orchid probably came from Penang, and was sent to England by Mr. C. CURTIS, of the Forest Department, Penang. It is closely allied to L. macrantha, differing from it in the orbicular lip. The flowers are large and of a reddish-purple colour.

PRUNUS TOMENTOSA, tab. 8196.—Figures of this plant, representing flowering and fruiting sprays, were published in our last issue, on pp. 296, 297.

A NEW VARIETY OF CAMPANULA. M. MAX GARNIER, writing in the *Revue Horticole*, describes a dwarf variety of Campanula glomerata, which seems likely to prove a good rock plant. The plant forms sessile rosettes, from which rise dense clusters of violet-blue flowers, borne on stems about 3 or 4 inches in height. The plant flowers in June and July, and in favourable seasons bears another crop of flowers in the autumn.

PEA NUTS IN AMERICA.—The Pea or Monkey nut is the fruit of a leguminous plant, and it is said to grow wherever the Indian Corn will flourish. A writer from Kansas gives an account of the cultivation of these nuts in a recent number of the *Garden Magazine* (New York). The nuts are planted by hand in well-worked soil early in May, and plenty of room is given for each plant to develop. After the flowers have set, the fruits bury themselves in the ground, and they are dug up with a Potato fork as soon as the first killing autumn frosts begin. After drying, the nuts are shaken from the trailing branches with light sticks.

UDO, A JAPANESE SALAD PLANT.—In a lecture on the work of the Department of Agriculture in America, Dr. DAVID FAIRCHILD mentions, under the above name, a vegetable that is in much favour in Japan and also now in America, as a salad plant. It is described as forming a welcome change from Lettuce and other salad plants, and the thick shoots, the blanched portions of which are 2 feet long or more, are shaved into thin strips and served with French salad dressing. It is said to possess a distinct and agreeable flavour, and a pleasant crispness. It succeeds well in the experimental grounds at Washington and proves a heavy yielder.

"THE JOURNAL OF THE BOARD OF AGRICULTURE."—The fifteenth volume of the *Journal of the Board of Agriculture* begins with the issue for April, 1908, and arrangements have been made for the introduction of several new features. In the first place, the size of the *Journal* will be increased from 64 pages to 80 pages each month. The additional space will be filled with a monthly article on the course of trade in agricultural produce during the past month, and a comment on the tables of prices that are printed at the end of each number. An attempt will also be made to print from time to time reports on the condition of crops abroad, especially on the Continent, and on the trade in those articles of agricultural produce which compete with home-grown produce. In the April number two other series of articles will be begun, the first on weeds, fungi, and agricultural pests, illustrated each month with a coloured plate, the other, on the agriculture of small holdings, showing what methods have been adopted by those who have been successful, with suggestions for those who are about to take up new holdings. As it is intended that these articles shall be of service to all classes of agriculturists, the price of the *Journal* will not be raised, but it will continue to be issued at 4d. per monthly number. A valuable article on manure is contributed by Mr. A. D. HALL, Director of the Rothamsted Experimental Station, in which he shows how farmyard manure deteriorates under the ordinary conditions under which it is stored. Seeing how important an adjunct to proper cultition this material is, one can only be surprised at the way its value is almost thrown away in many cases by those whose pockets it ought to help to enrich. Comparatively few people realise how widely the manure of animals under different conditions of feeding varies in value, and we have ourselves known many instances where prices quite out of proportion to value received have been paid. It is, of course, generally recognised that cake feeding improves the land, so much so that an allowance for expenditure on this item is very generally allowed to an outgoing tenant farmer. But the market gardener who uses manure is often not nearly careful enough to ascertain the conditions under which it is made, and when he buys it, not seldom follows the bad example set by many farmers, and through ignorance, allows it to very seriously deteriorate. Mr. HALL'S article ought to be read by those who use manure for the garden no less than by those who require it for the farm.

AN AMERICAN FROST ALARM CLOCK.—An inventor at Kennewick, Wash., has produced what is termed a "frost killer" for orchardists. The device is a combination of an alarm clock and a thermometer. On the approach of frost the thermometer registers and sets off the alarm, which is placed in the house. Tanks of crude oil are kept in the orchard, 40 to 60 small cans being required to the acre. When the alarm is given the orchardist goes to his oil cans and starts them burning, and the temperature of the atmosphere surrounding the trees is raised from 2° to 6°, making the threatened danger nothing to be feared. *American Florist.*

BANANAS IN BARBADOS.—It appears that the Banana industry, which seemed so full of promise a few years ago in Barbados, has almost disappeared owing to difficulties connected with shipping the produce. It has been stated that there are some 5,000 acres of good land in the island capable of producing Bananas at a profit, and all that is needed is the possibility of getting them properly exported. The Barbados fruit is of good quality, and its cultivation might well take its proper place beside that of cotton and sugar.

PERPETUAL-FLOWERING CARNATIONS.—We have received a little treatise on *The Cultivation of the Tree or Perpetual Flowering Carnation*, by Mr. C. H. TAUDEVIN, and published by Messrs. YOUNG & CO., Hatherley, Cheltenham. The treatise contains a few simple directions on the propagation, potting, stopping of the shoots, housing, disbudding, and manuring of these plants. The remaining pages consist of a calendar of operations, in which the details of the work are given under each month. The pamphlet contains 24 pages, and the published price is 1s.

TESTIMONIAL TO MONS. FRED. BURVENICH.—On October 12 last M. FRED. BURVENICH was appointed for the fiftieth time principal of the classes on arboriculture and vegetable culture at the Ghent School of Horticulture. To mark the occasion of this event, a number of his colleagues, former pupils and friends have decided to present him with a testimonial. Thanks to the teaching of this venerable master, many of his old students now occupy honourable and lucrative positions, or have become important cultivators of trees and plants on their own account. There is no one in Ghent who, for fifty years, has given such a regular course of instruction in this subject as M. BURVENICH, and he has also lectured at Courtrai, Roulers, Lokeren, St. Nicolas, Eecloo, Alost, Ninove, and in many other agricultural centres. M. BURVENICH has also earned for himself great praise by the activity he has displayed as an horticulturist. He is the author of a work on arboriculture in the Flemish language which has seen its tenth edition. His book on the subject of vegetable culture, published in the two languages of the country, has reached its fifth edition. Several editions of other works of his have been published, and all the numerous books are ample testimony to the indefatigable activity of their author. M. BURVENICH was the founder and one of the principal members of the staff of the *Revue de l'Horticulture Belge et Etrangère* and of *Bulletins d'Arboriculture* (from 1864), and in the last years of their existence he edited these bulletins. The committee in charge of the testimonial consists of over a hundred members, the hon. president of which is M. BRAFFORD, Directeur-Général au Ministère de l'Agriculture, with M. A. COLUMBIEN as president, and M. LEON DE LOOF as secretary and treasurer. To many Englishmen Mons. BURVENICH will be known in connection with the Ghent Quinquennial Exhibitions, and no greater testimony to his skill as a landscape gardener could be offered than the scenic effects obtained in the annexe at the exhibition so recently held in that city, the designs of which were those of M. BURVENICH. Subscriptions may be sent to either of the gentlemen mentioned above or to the assistant secretary, Mons. E. SLEEWAEGEN, Rue d'Argile, Gentbrugge.

LIZARDS AS INSECT EXTERMINATORS.—In Georgia fruit-growers buy lizards in large quantities and turn them loose in their orchards. These lizards are the especial foes of the short-horned grasshoppers, a common farm pest. Examinations of the stomachs of dozens of lizards at the State zoological laboratory shows their diet to have been composed entirely of grasshoppers, beetles and other destructive insects. *American Florist.*

FLOWER SHOW AT THE FRANCO-BRITISH EXHIBITION ABANDONED.—We are informed that owing to arrangements that it has been necessary to make in connection with the opening of the exhibition and the visit of HIS MAJESTY THE KING and the President of the French Republic, the Executive Committee of the Franco-British Exhibition have been reluctantly compelled to abandon the Horticultural Show, which was to have been held on May 19 and 20.

FLOWER SHOWS AT BIRMINGHAM.—The Birmingham Botanical and Horticultural Society have decided to again hold two extra flower shows as in 1906 and 1907. They will be held at the Botanical Gardens, Edgbaston, on June 11 (Orchids and early-summer flowers) and July 15 (Roses and midsummer flowers). Honorary exhibits of flowers, fruits, and other products will be welcomed. Schedules may be obtained from the hon. secretaries at the Botanical Gardens, Birmingham.

POLYANTHUS "BRONWYLFA."—At the exhibition of the National Auricula and Primula Society held in the Royal Horticultural Hall on April 28, this variety of yellow-flowered Polyanthus was granted a First-Class Certificate. It was shown by Mr. W. A. WATTS, Bronwylfa, St. Asaph, who was a successful exhibitor in the competitive classes for Polyanthuses.

Publications Received.—*Country Queries and Notes.* No. 1, Vol. I. (April). This is a new monthly journal, and is stated by its promoters to be for the interchange of knowledge and ideas between students of nature and lovers of country life. Published at the price of 4d. per copy.—*The Summer Garden of Pleasure*, by Mrs. Stephen Batson, with 36 illustrations in colour by Osmund Pittman. (London: Messrs. Methuen & Co., 36, Essex Street, W.C.) Price 15s.—*Vegetables for Home and Exhibition*, by E. Beckett. (London: Messrs. Simpkin, Marshall, Hamilton, Kent & Co., Ltd.) Price 5s.

NOTICES OF BOOKS.

* "DAHLIAS AND THEIR CULTIVATION."

CULTIVATORS will be likely to welcome this brightly-written book on the Dahlia. It contains chapters on the evolution of the Dahlia, propagation of the plants for exhibition, potting and re-potting, preparation of the ground out-of-doors, also information upon the matters of watering, training, feeding, protecting the flowers, staging the flowers, and judging. Part 2 is devoted to the culture of Dahlias for garden decoration exclusively, and will therefore be useful to the numerous cultivators of the Dahlia who do not wish to exhibit their flowers at competitive exhibitions. In the case of such a variable flower, amateurs frequently find the question of selecting varieties a matter of considerable difficulty, and therefore the lists of varieties suitable for various purposes, contained in this book, will form a useful guide.

† "ROSES IN POTS."

A BOOK which has reached its ninth edition should require no further testimony to commend it to the notice of our readers. Messrs. Simpkin, Marshall and Co. have recently issued the ninth edition of the late William Paul's book, entitled *Observations on the Cultivation of Roses in Pots*. This work contains all the information given in previous editions, and the list of varieties has been brought up to date. It is an invaluable guide to those who cultivate Roses in pots, whether for forcing or otherwise. The concluding chapter, entitled "The Autobiography of a Pot Rose," is as interesting as it is instructive.

‡ "THE WILD RABBIT."

WE have frequent complaints from gardeners of the damage caused by rabbits, and their efforts are more frequently directed to the capture of these vermin than to their cultivation. Mr. J. Simpson's book, entitled *The Wild Rabbit*, is especially addressed to those who make it their business to cultivate rabbits in properly-formed and enclosed warrens. If rabbits could only be kept to such warrens, the gardener would be the better pleased. The book contains a vast amount of reliable information upon the habits of rabbits, their methods of feeding, and how they may best be cultivated and bred for commercial purposes. There are chapters upon the diseases to which rabbits are liable, and upon trees and plants that rabbits appear not to eat. Not only is the industry of rabbit-rearing recommended to farmers, but it is contended that the business would prove a lucrative one for allotment holders.

* By J. B. Wroe. Published by W. H. & L. Collingridge. Price 1s.

† By W. Paul. Published by Messrs. Simpkin, Marshall, Hamilton, Kent & Co. Price 2s.

‡ *The Wild Rabbit*, or Rabbit Warrens combined with Poultry Farming and Fruit Culture, by J. Simpson. Third edition, revised and enlarged. Published by Pawson & Brailsford, Sheffield.

HOME CORRESPONDENCE.

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

THE STATE AND HORTICULTURE.—I read in an article by *C. F.* on page 293, under the above heading that "Land in England is greedy and hungry, and a few thousands of pounds might soon be lost in the endeavour to improve a few acres of ground." (If the principles underlying the working of it are not understood.—ED.) That presents itself to me as an astonishing statement. Average English land is neither greedy nor poor, and by an expenditure upon it of £20 per acre to deeply work it, and a further £20 to manure it, any average land will soon become profitable. To write of expending "thousands of pounds" on a few acres is absurd. Such a sum might cover the whole area with glass. An expenditure of £100 per acre on animal manure would convert the land into a literal dung bed, fit perhaps to grow coarse leafy vegetables, but quite unsuitable for ordinary crops. Any good gardener, with but moderate financial assistance, can convert land from being comparatively barren into land that is satisfactorily productive. When Mr. Beckett went to Aldenham he was told it was not possible to grow good vegetables on the stiff soil there. But for some years past he has produced there the finest vegetables seen in the kingdom, whether grown by Frenchmen or any one else. When Mr. Mortimer settled at Rowledge, Farnham, he did go on what seemed to be, by its production of poor heath and gorse, the hungriest soil in Surrey. But now it is splendidly fertile and will grow anything well, yet he has not squandered thousands of pounds in improving his few acres. There seems to be growing up a belief that our gardening, especially of certain vegetables, is a long way behind that of other countries. That is far from being proved. Later on, I trust, opportunity will be offered at Shepherd's Bush to compare English, with French-grown fruit and vegetables. If we have anything to learn, we will learn willingly. *A. D.*

IRIS (XIPHION) TINGITANA, BOISS.—Xiphion tingitanum is an old inhabitant of our gardens, having been introduced about 1880 by Mr. G. Maw, though in Baker's "Handbook of Irideæ," p. 46, I am given the credit of having introduced it. It is figured in the *Bot. Mag.*, 6775. Another plant figured as X. tingitanum in *Bot. Mag.*, 5981, is now considered to be a form of I. filifolia, which was found on the Rock of Gibraltar by Mr. G. Maw and by myself in 1895, and is, in my opinion, a finer plant. I have had both of them in cultivation for more than 20 years, and have found that they both require rich soil and the protection of a frame to get them into flower. Both increase fast by offsets, which must be taken off in order to get flowering bulbs. I may add that they have bulbs and not rhizomes, as stated by *F. M.*, on p. 295, and that the name is not taken "from a little town near Tangiers," but from the town of Tangiers itself. *H. J. Elwes, Colesborne.*

FRUIT PROSPECTS IN SOUTH-EAST ESSEX.—The prospects of a good fruit crop are most promising. With the wind almost constantly in the east and north-east during the month of April, and the uniformly low temperature that prevailed throughout that month, the fruit blossoms of the Pear, Plum, and Cherry were retarded until the first week in May, when a favourable change in the weather took place, followed by the expansion of a profuse display of large blossoms. A week hence the Apple trees will be clothed with the expanded blossoms of pink and white. Small fruits, including Strawberries, Raspberries, Gooseberries and Currants, also promise to be plentiful. *H. W. Ward, Lime House, Rayleigh, May 12.*

GUNNERA SCABRA.—I read with interest Mr. Jenkins' article on p. 279 relating to this species. Three years ago I was engaged in the gardens at Cherkley Court, Leatherhead, and used to water one of these plants every evening during the hot season. It was planted at the head of the Lily tank in the Italian garden there. The bed was circular, and the surface soil was light, while underneath was chalk, but this plant made good growth and would easily have a leaf spread of 15 to 18 feet, as Mr. Jenkins mentions. The only protection it was given during severe weather was that afforded by mats placed over arched poles driven in the bed. The plant was a great attraction to the many people who visited those gardens when they were thrown open for promenade concerts, by the kindness of the late Mr. Abraham Dixon. *H. Heath, Hylands, Chelmsford.*

APPLE FRENCH CRAB.—If *A. D.* (see p. 277) had read the article on p. 245 more carefully he would have seen that the synonyms were not mine. In my original note (see p. 244) the word gathered should not have been placed after "varieties" on line 25. I may here say that our Apple crop has been severely injured by the inclement weather, many of the embryo buds being killed. *Fredk. Bedford, Straffan House Gardens, Co. Kildare, May 6.*

APPLE PSYLLA.—As there is still time for growers to spray their trees for this pest, they may be interested to know that the results obtained at Woburn by the use of tobacco have been as satisfactory this season as they were last year. The liquid used on this occasion was a 7.5 per cent. solution of nicotine, obtained from W. Vass & Co., Glengall Road, Millwall, which was diluted with 100, 75 and 50 times its volume of water in the various experiments. Standard trees were sprayed with the two weaker of these dilutions on the morning of May 7, and in both cases 95 per cent. of the pysila were killed. The stronger solution was not used till the afternoon of the same day, and the results were not so good, the mortality being only 60 per cent. This was due to the fact that rain fell for an hour and a half later in the same afternoon. Various other insecticides which were applied at the same time as these nicotine solutions proved comparatively ineffective. *Spencer Pickering.*

HIPPEASTRUMS AS CUT FLOWERS.—One never hears of Hippeastrums being used as cut flowers for table decorations! Yet they are the finest flowers available for such purposes, and they are capable of providing excellent effect in arrangements for banquets and other large entertainments. I have been using them as cut flowers for room decoration in tall vases. If some unopen blooms should be cut with the open ones, the former will expand in water. Those who hybridise Hippeastrums and grow them on a large scale will always have a number of flowers which are not up to the standard of show plants, but which would be invaluable for cutting and table decorations, and other uses that might be suggested. If planted in the ground under glass, and grown in sufficient heat, they would in a few years make fine clumps by throwing up offsets. I do not know of any other plant that in any way comes near the Hippeastrum for size and variability of colour. There are scarlet and crimson selfs; the same colours with striped petals, forming a conspicuous star; whites splashed, streaked, and veined with crimson, and other innumerable variations—not two alike. Where can one find such superb colouring and variation? Yet they are never seen as cut flowers at exhibitions! There seems to be a reluctance to show flowers that are not of the orthodox shapes of florists, yet no one denies the wonderfully fascinating form of the Sprekelia. I send herewith a second bloom of Hippeastrum, which has turned out to be much spotted. It is named "Spotted Angelina," and differs somewhat from the "Queen of Spots" [shown in the Supplementary Illustration to the issue for April 27, 1907], and is of the same cross, namely, *H. pardinum* and a show Hippeastrum. It has two flowers, and the flower-stem has come up before the leaves. The flower is pale in colour and profusely spotted. The photograph (not reproduced) shows the flower at natural size. Some flowers of the same cross are not spotted at all, thus they are more like the female parent. *E. Bonavia, M.D.*

SOCIETIES.

ROYAL HORTICULTURAL.

MAY 12.—There was an unusually large display of plants and flowers at the meeting of the Committees held on this date, notwithstanding the nearness of the Temple Show, which will be opened on the 26th inst.

Floral exhibits were most numerous, but there were also many fine displays before the Orchid Committee. Exhibits of outstanding merit included Ferns of hardy species, Auriculas shown by the veteran raiser and cultivator, Mr. JAMES DOUGLAS; Roses, greenhouse plants, Carnations, Gloxinias, and hardy garden and Alpine plants in great variety. Several novelties were presented to the Floral Committee, and of these five received Awards of Merit. The Orchid Committee granted no fewer than four First-Class Certificates and four Awards of Merit, and for the remarkable plant of Odontoglossum crispum "Leonard Perfect," which first appeared before the public at the Temple Flower Show, 1906, was granted the highest award—a Gold Medal. The fruit and vegetable section was poorly represented.

At the afternoon meeting a lecture on "Gardening in the West Highlands" was given by Mr. O. H. Mackenzie.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Druery, W. A. Bilney, R. C. Notcutt, Jno. Green, T. W. Turner, G. Reuthe, R. Hooper Pearson, W. Howe, W. Bain, Chas. Dixon, Arthur Turner, Jas. Douglas, C. E. Pearson, W. P. Thomson, W. Cuthbertson, E. H. Jenkins, W. J. James, F. Page Roberts, Jas. Hudson, Jno. Jennings, C. R. Fielder, J. W. Barr, Chas. E. Shea, Ed. Mawley, and R. W. Wallace.

Messrs. H. B. MAY & SONS, Upper Edmonton, set up a very large exhibit of Ferns of hardy species, amongst which were many crested and plumose varieties. No fewer than 350 varieties were included in this fine exhibit, which represented all the best kinds of Polystichums, Cyrtomiums, Aspidiums, Osmundas, Scolopendriums, &c. The crested forms of Scolopendriums were especially remarkable, and the Osmundas included many choice plants, noticeably some fine examples of Osmunda gracilis. A prominent plant in the centre of the exhibit was a beautiful variety of Polystichum angulare labelled P. a. divisilobum plenum. Messrs. MAY also exhibited flowering plants including Pelargoniums, Violas, Petunias, Salvias, and Calceolarias. (Gold Medal.)

Mr. JAMES DOUGLAS, Great Bookham, Surrey, furnished one of the large tables with a collection of Auriculas that embraced Alpine and show varieties in about equal numbers. The collection totalled 350 plants, and better cultivated Auriculas have never been presented at an exhibition. Mr. DOUGLAS not only possesses in his collection all the best varieties, but he is the raiser of many of the finest kinds in both sections. It is impossible to find space to enumerate all the varieties of outstanding merit, but we may instance the yellow Daffodil, Olympus, a beautiful flower of the grey-edged section, Bronze, George Lightbody, still unsurpassed as a grey-edged flower, Mrs. Henwood, a green-edged Auricula that occupies in its section the same position as does the last-named in the grey-edged class, Abbé Liszt with green margin on a black ground, Thetis, an Alpine of maroon-purple shade with a well-defined cream centre; The Bride, with large inflorescence, each pip being set off by its gold centre; Shirley Hibberd, a green-edged variety; Old Gold, Sunset, Mayday, Mikado, Argos, Dido, and a host of other beautiful kinds. (Silver-Gilt Flora Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, London, N., had a striking exhibit of blue and white-flowered Hydrangea Hortensia, Gerbera Jamesonii, Metrosideros floribunda, Brachysema Drummondii, with scarlet-coloured, pea-like blossoms, and long pendant shoots; Roses in variety, and a display of Carnations. (Silver-Gilt Banksian Medal.)

Messrs. JOHN PEED & SON, The Nurseries, West Norwood, London, S.E., showed an extensive collection of Gloxineas and an exhibit of Maples interspersed with flowering plants. (Silver Flora Medal.)

Messrs. R. & G. CUTHBERT, The Nurseries, Southgate, showed extensively Azalea sinensis, A. rustica, &c., and Cytisus purpureus incarnatus. (Bronze Banksian Medal.)

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, filled the table they usually furnish at these meetings with an exhibit of greenhouse flowerings plants, and, as a separate exhibit under the wall they showed a group of trees and shrubs in flower, and several of their new Primulas, Meconopsis, and other plants from China. The greenhouse subjects were especially attractive, and included a batch of Schizanthus, another of Cinerarias, and a mixed collection including Richardias, Statice Suworowii, Gerbera Jamesonii, Begonias of the semperflorens type, and Malvastrum grossulariæfolium. The most interesting, however, was a cut bloom of a rose-pink coloured Hippeastrum named "Doris"; the colour being distinct from any previously seen in the Amaryllis. (Silver-Gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, again made one of their bright displays of Zonal Pelargoniums which appeared to be even more beautiful than ever. Carmania (rose), Cevic (flesh pink), Arabic, a scarlet flower of very large size, Duke of Bedford (crimson), and Lucania (orange, shaded with cerise) are a selection. In addition Messrs. CANNELL showed bunches of show Pelargoniums, the best of which were labelled King Haakon, Queen Alexandra, Mrs. H. Spence, and alba fimbriata. Adjoining the Pelargoniums were small plants of Hydrangeas in 5-inch pots with remarkably large inflorescences. A display of Verbenas and Roses completed the exhibit. (Silver Flora Medal.)

Messrs. JOSEPH CHEAL & SONS, Crawley, Sussex, showed sprays of interesting trees and shrubs in flower. Many of these were laden with their blossoms, especially such floriferous subjects as Pyrus Malus floribunda, Cytisus præcox, Rhododendron indicum, Daphne pontica, Lilacs, Elæagnus longipes, prunus padus, &c.

Mr. L. R. RUSSELL, Richmond, Surrey, showed a group of forced flowering shrubs which included Lilacs, Cytisus, Azaleas, Weigelas, Laburnums, &c. (Silver Banksian Medal.)

Messrs. WILLIAM PAUL & SONS, Waltham Cross, Herts., showed climbing varieties of Roses, the best of which was Tausendschon, whose clusters of pink blossoms hung in great masses from the drooping side branches. We also noticed the beautiful Aimée Muller, Hector Mackenzie, Waltham Bride, &c. (Silver Flora Medal.)

Messrs. T. ROCHFORD & SONS, Turnford Hall Nurseries, Broxbourne, Herts., showed column-trained Roses of well-known varieties, such as Lady Gay, Hiawatha, Tausendschon, Crimson Rambler, Cant's Blush, and a double-flowered sport from the last-named, shown under the name of "Gertrude Rochford." The plants were exceptionally well cultivated and were much admired. A row of Astilbe (Spiræa) japonica with fine inflorescences formed a pleasing finish to the exhibit. (Silver Flora Medal.)

Mr. G. MOUNT, nurseryman, Canterbury, showed H.P. and T. Roses in great numbers and of fine quality. The exhibit had a backing of tall plants of Rambler Roses in variety. There were arranged in huge bouquets cut blooms of C. Testout, Frau K. Druschki, C. Mermet, Capt. Haywood, Ulrich Brunner, the new H.T. Joseph Lowe, &c. (Silver-Gilt Flora Medal.)

Messrs. BENJAMIN CANT & SONS, Colchester, set up a pleasing exhibit of Polyantha and other similar types of Roses of small sizes; also cut blooms of Teas, Hybrid Teas, &c. Of the Polyantha varieties mention may be made of Edouard Proust, a white flower, with a cream-coloured centre. (Bronze Banksian Medal.)

Mr. W. H. PAGE, Tangley Nurseries, Hampton, exhibited Carnations of the American and English types, including Enchantress, Governor Roosevelt, Britannia, White Perfection, Lady Bountiful, Helen Gould, &c. (Silver Banksian Medal.)

Mr. C. F. WALTERS, Deanland Nursery, Balcombe, Sussex, showed a considerable collection of varieties of winter or perpetual-flowering Carnations. (Silver Banksian Medal.)

A very fine display of Carnations was put up by Mr. H. BURNETT, Guernsey. This was a remarkably pretty exhibit, and, in addition, the flowers were well cultivated. Suitable greenery was furnished in sprays of Asparagus and Smilax. Outstanding varieties were Mrs. Lawson, Mikado, Enchantress, White Perfection, and Robert Craig. (Silver Banksian Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, N., showed miscellaneous greenhouse plants, all of decorative flowering varieties, and choice blooms of Carnations. A new Carnation, of very large size, with creamy-white petals, was shown under the name of Mrs. Bridgeman Simpson. In the general collection of these flowers were some exceptionally fine blooms of the variety Robert Craig. (Silver Flora Medal.)

A not inconsiderable portion of the exhibition was comprised of exhibits of hardy and rock garden flowers. Messrs. BARR & SONS, King Street, Covent Garden, showed many plants of a hardy nature, including some choice forms of Iris pumila, of which the variety named after Count Andressy, with pale blue flowers, is one of the best. A gaudy scarlet Anemone, Viola pedata, Myosotis "Ditton Blue," which, as we saw it in the nursery a few days since, is a variety of much merit and valuable for spring bedding; Aubrietias, including the new A. Lavender, A. Dr. Mules, and A. tauricola, are deserving of mention.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed miscellaneous hardy plants, and among them were several novelties. Cytisus "Butterfly" has showy yellow and orange-coloured blooms, Aubrietia Souvenir de W. Ingram, Hydrangea arborescens grandiflora alba, with pure white flowers, appearing in large corymbs, Philadelphus purpurea maculata, Cerasus Watereri, and Pyrus japonica cononarius are all worthy of mention. Several new Roses were shown by Messrs. PAUL. (Bronze Banksian Medal.)

Messrs. G. & A. CLARK, Ltd., nurserymen, Dorset, showed some miscellaneous hardy, herbaceous plants, including Trollius, Tulips in variety, Iris, &c. This firm showed Zonal Pelargonium Mrs. W. Bealby, a bright scarlet bloom, the plant a dwarf in stature, and excellent for bedding; and Pelargonium Clark's Superb, a very large flower of a shade of cerise, an excellent variety for cultivation indoors, as we learned from the exhibitors.

Messrs. G. BUNYARD & Co., Ltd., Maidstone, showed hardy spring-flowering plants and cut blooms of such species. Aubrietias were well shown, A. tauricola being one of the brightest in colouring. (Silver Flora Medal.)

Mr. AMOS PERRY, The Hardy Plant Farm, Enfield, showed hardy plants in variety. We noted Anemone blanda, Trillium erectum, with flowers of a dark brown colour and having a green calyx; Ribes tenuiflora, having small flowers of scarlet and yellow hues, Perry's var. of Phlox canadensis, &c.

Mr. S. MORTIMER, nurseryman, Rowledge, near Farnham, showed 100 plants of Polyanthus, with flowers of four different colours.

Messrs. HEATH & SON, Cheltenham, showed Alpine plants, amongst which was a remarkably fine specimen of Ramondia pyrenaica in a pot.

Mr. JOHN R. BOX, West Wickham, showed Alpine plants and flowers of tuberous-rooting Begonias.

The Misses HOPKINS, Mere Nurseries, Shepperton-on-Thames, made a very pretty display of rock-garden plants (Bronze Banksian Medal), and a similar collection was staged by the Misses KIPPING, Hutton, Essex, who showed a very fine white form of Primula japonica in their collection.

Mr. G. REUTHE, Keston, Kent, had many rare subjects in an exhibit of hardy plants, and shown trusses of Rhododendron blooms. The flowers of Primula nivalis are blue, but the foliage has a mealy-white appearance. Mr. REUTHE also had many recently-introduced Primulas, including P. pulverulenta, P. Cockburniana, &c. (Bronze Banksian Medal.)

A selection of Polyanthus Primroses was shown by F. BOSTOCK, Esq., Springfield, Northampton (gr. Mr. J. Hollands), and a larger collection of these flowers was shown by Mr. W. A. WATTS, St. Asaph, N. Wales. Mr. WATTS had also many Auriculas, in addition to the Polyanthuses and Primroses.

Messrs. T. W. WARE, Ltd., Feltham, showed Alpine flowers. Their selection of hybrids of

Primula japonica contained many varieties of merit. In the centre of the display was a pan containing some fine plants of Cypripedium spectabile in flower.

Messrs. Dobbie & Co., nurserymen, Rothesay, N.B., made an extensive display, chief of which were fine plants of Polyanthus in variety, Pansies, and Violas. The show of Violas was a representative one. (Bronze Flora Medal.)

Mr. R. Gill, Falmouth, showed a number of trusses of Rhododendon flowers from the open garden. (Silver Banksian Medal.)

Mr. R. Upton, Guildford, showed seasonable hardy flowers in variety.

Mr. Chas. Turner, Royal Nurseries, Slough, exhibited Violas in variety, densely-flowered shoots of Ceanothus rigidus, and many plants of Primula Sieboldii. (Bronze Banksian Medal.)

Mr. M. Prichard, Christchurch, Hants, had pink, white, and blue-coloured Bluebells, in a collection of other hardy garden flowers. (Silver Flora Medal.)

An exhibit of Violas and Pansies was put up by Messrs. Carter, Page, & Co., 52 and 53, London Wall, London, E.C. We may instance Archie Grant (indigo blue), Maggie Mott (mauve), Pembroke (deep yellow), and Countess of Hopetoun (white), as varieties that are especially pleasing. (Silver Banksian Medal.)

An interesting exhibit of species of Fritillarias with other plants was shown by H. J. Elwes, Esq., Colesborne Park, near Cheltenham. The largest and showiest inflorescence was that of Fritillaria imperialis gigantea. The other species included F. acmopetala, F. latifolia, F. Kotschyana, F. obliqua, and F. pallidiflora. Other subjects shown in this exhibit were Amaryllis solandriflora, inflorescences of Bomaria edulis, and a number of beautiful Irises.

Mrs. Burns, North Mymms Park, Hatfield (gr. Mr. Fielder), again showed several well-grown white-flowered Hippeastrums, raised from seeds sown in 1905.

Awards of Merit.

Auricula "May Day." A very large, yellow flower, with white paste, each bloom being 1½ inches in diameter.

Auricula "Coronet."—A good, green-edged show variety.

Auricula "Mildred Jay."—A very large Alpine variety, purple, with lighter margins, and yellow in the interior of tube. The flowers were 1¾ inch in diameter. All these Auriculas were shown by Mr. J. Douglas.

Aubrietia "Paul's Pink."—A very effective variety, with large flowers of a rich shade of pink, shown by Messrs. Paul & Son, Cheshunt.

Asparagus filicinus. Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. Bain), exhibited a plant of this Himalayan species, which he obtained from Mr. Chas. Sprenger, Naples, two years ago. It has since been cultivated in a cool greenhouse, and the species is believed to be hardy or nearly so. We hope to refer to this plant in an early issue.

Narcissus Committee.

Present: H. B. May, Esq. (Chairman), and Messrs. J. T. Bennett Poe, A. R. Goodwin, G. W. Leak, H. A. Denison, J. D. Pearson, Alex. M. Wilson, R. W. Wallace, E. M. Crossfield, W. T. Ware, W. A. Milner, J. Jacob, F. H. Chapman, E. A. Bowles, W. Poupart, R. Sydenham, E. Willmott, W. Goldring, Jas. Walker, and Chas. H. Curtis (hon. sec.).

Exhibits of Narcissus were not numerous, and the flowers that were shown had not the freshness and beauty of the blooms seen earlier in the season.

Messrs. Barr & Sons, King Street, Covent Garden, London, had a rather extensive group, in which Tulips and Narcissus were about equally displayed. Of good Poeticus Narcissus, we noted Cassandra, The Bride and Horace. Also two white-flowered novelties possessing the drooping grace of N. montanus, and named respectively Sylvia and Robbie Jenkins. The Tulips included both cottage and Darwin kinds, also many good bedding sorts in single and double varieties. (Silver Flora Medal.)

Mr. Alex. M. Wilson, Post Keal Manor, Spilsby, had some very choice varieties of Narcissus. The flowers were fresh and good; indeed, nothing finer has been seen this season than the blooms of Will Scarlett, while others, such as Eoster (white, with lemon cup), Bernardino (a lovely Leedsii with big apricot-tinted crown), Concord (a very shapely flower with large, flattish crown), and Mrs. Vincent (a good white Ajax) were almost equally fine. Some excellent late Poeticus varieties were shown by this exhibitor. (Silver Flora Medal.)

Messrs. Wallace & Co., Colchester, in addition to a variety of choice Narcissi, had a still greater variety of Tulips. Amongst the Narcissi, Pride of Haarlem, Fanny (soft pink), Scarlet Emperor, Orange King, Elegans alba, Feu Ardente, and Flame are deserving of mention. Several choice Alpine plants were also shown. (Silver Flora Medal.)

Bedding and cottage Tulips in many showy varieties, staged by Messrs. Jas. Veitch & Sons Ltd., Chelsea, constituted a fine display.

Mr. F. Herbert Chapman, Rye, Sussex, had a small exhibit of choice Narcissus, a large number being of the Poeticus varieties, including Cassandra, Horace, The Bride, Glory, &c. Brass Bell is a large, self, yellow kind with bold crown of a uniform tone of colour. Mr. Chapman also showed several unnamed seedlings of merit.

Miss K. Spurrell, Manor House, Babbington, had a small exhibit of choice varieties, the blooms of F. C. T. Spurrell, a lovely white flower, with flame-scarlet Englehearti crown, being perhaps the finest among novelties. (Bronze Flora Medal.)

A display of Tulips and Narcissi was shown by Messrs. R. H. Bath & Co., Wisbech, the exhibit including many good sorts, such as Wemdale Perfection, Mme. de Graaff, Cassandra, Glory, Homer, &c. (Bronze Banksian Medal.

Award of Merit.

Narcissus poeticus Snowshoe.—A shapely and handsome variety of the Poeticus group, valuable for its late season of flowering. Shown by Mr. Walter Ware, Bath.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, De B. Crawshay, H. Little, W. Boxall, R. G. Thwaites, F. Sander, A. A. McBean, J. Cypher, H. G. Alexander, A. Dye, F. J. Thorne, W. H. White, H. Ballantine, Gurney Wilson, W. Bolton, Norman C. Cookson, W. Cobb, J. Wilson Potter, Stuart Low, F. M. Ogilvie, F. J. Hanbury, C. J. Lucas, and H. A. Tracy.

The event of the meeting was the showing of a magnificent plant of the noble Odontoglossum crispum "Leonard Perfect" (see fig. 144) by Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), and for which a First-Class Certificate was unanimously awarded, and also the Society's Gold Medal,

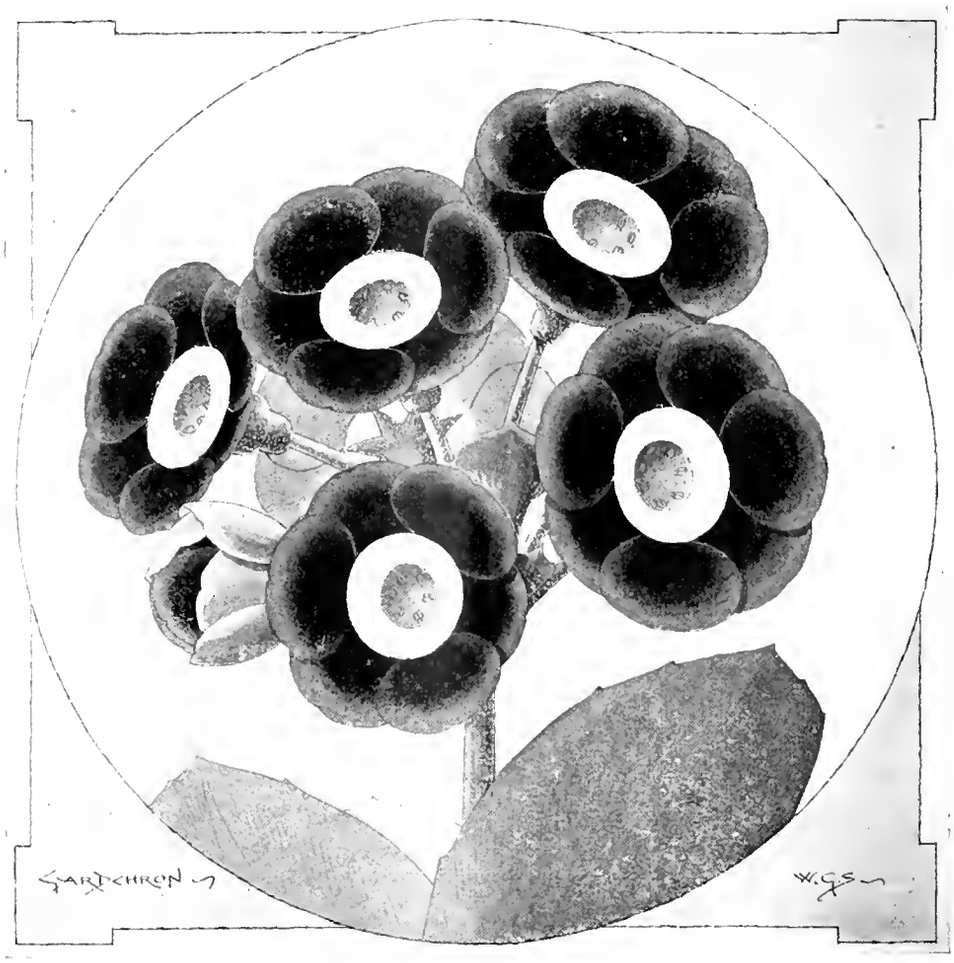


Fig. 143.—Alpine auricula "Phyllis," which received an award of merit at the meeting of the royal horticultural society on April 28. The centre of the flower is cream-coloured; segments purple shading to mauve.

(See report in the issue for May 2, p. 290.)

in recognition of the high merit of variety, and the very fine state of cultivation in which it was presented, the stout inflorescence bearing many flowers, each 4½ inches across of perfect shape and of very fine substance. The plant was originally shown by Messrs. Sander & Sons at the Temple Show, 1906, and illustrated in the *Gardeners' Chronicle*, June 2, 1906, pp. 348-9, and it is interesting to note that the broad segments and the large size of the flower is sustained on the heavily-flowered spike now on the plant. It is generally conceded that among blotched O. crispum there is nothing like O. c. "Leonard Perfect," and it is difficult to conceive an advance beyond it, the masses of bright violet-purple colouring, which take up the inner halves of the segments, being very characteristic. Moreover, it has a showy labellum, and is of the highest order of merit at all points.

Sir Trevor Lawrence, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), staged a select group, in which were a finely-flowered plant of Brasso-Cattleya × nivalis, with very pretty white flowers; a very handsome form of Dendrobium crepidatum, with wax-like rose-tinted flowers; the pure white Cattleya Dusseldorfei var. Undine; the little yellow Maxillaria variabilis; and others. (See Awards.)

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), Odontoglossum crispum var. Zoroaster, very strongly grown, and bearing a fine spike of large rose-tinted flowers with some small spotting on the inner parts of the segments.

J. Gurney Fowler, Esq., Glebelands, South Woodford, showed the finely-blotched Odontoglossum crispum Britannia and the handsome O. Ossulstonii, Glebelands variety, which gained an Award of Merit.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), staged a neat group, in which were a very fine variety of Cælogyne pandurata, Brasso-Cattleya Digbyano-Mossiæ of fine colour, Cypripedium Maudiæ, C. callosum Sanderæ, Masdevallia Veitchii, M. ignea, and other brightly-coloured Masdevallias, &c. (Silver Banksian Medal.)

Messrs. J. Cypher & Sons, Cheltenham, had an effective group, the back of which was of excellent varieties of Lælia purpurata, with good white Odontoglossum crispum, &c., the front being composed of bright scarlet and purple Masdevallias, Cattleya intermedia alba, very finely-coloured Lælio-Cattleya Hyeana, a distinct rose-coloured form of Brasso-Cattleya Digbyano-Mossiæ with deep yellow disc to the lip, and other plants. (Silver Flora Medal.)

Messrs. Jas. Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, staged an effective group, in the centre of which was a specimen of their beautiful Brasso-Catlaelia Veitchii, for which they received a First-Class Certificate April 16 last year. It was obtained between Brasso-Cattleya Digbyano-Mossiæ and Lælia purpurata, and may be likened to a fine Cattleya Warscewiczii with a deeply-fringed lip. In the group the many plants of Odontoglossum Pescatorei were of an exceptionally good strain, the labellums being large and variously decorated with purple. Good Odontoglossum crispum and various Lælio-Cattleyas were also in the group, which secured a Silver Flora Medal.

M. Maurice Mertens, Mont St. Amand, Ghent, showed a selection of good hybrid Odontoglossums, Cattleya Schroderæ alba, &c., for which a Silver Banksian Medal was awarded.

De B. Crawshay, Esq., Rosefield, Sevenoaks, (gr. Mr. Stables), showed a selection of Odontoglossums, including O. crispum, Mrs. de B. Crawshay, and O. c. Isolde, two of the finest white forms yet shown and both magnificent plants; O. Queen Alexandra var. fulgens of very rich colour, O. Nerissa (nævium × crispum), white, densely spotted with red; O. Urania (crispum × cristatellum) and one other. (See Awards.)

Pantia Ralli, Ashtead Park, Epsom, sent Dendrobium Rallianum (Hildebrandii × splendidissum grandiflorum) and its variety album.

Miss Willmott, Warley Place, Great Warley, showed Maxillaria porphyrostele, a pretty dwarf species of the M. picta section.

H. J. Bromilow, Esq., Rann Lea, Rainhill, Lancashire (gr. Mr. W. J. Morgan), sent Cypripedium bellatulum album and C. bellatulum var. Queen of Spain, a remarkable variety, which was imported as C. bellatulum album, which it resembles except that its flowers are cream-white with a slight rose shade and with very obscure pale rose spotting.

The Hon. Mrs. Foley, Packham, Fordingbridge, Hants, sent a fine spike of the rosy-lilac coloured Lissochilus purpuratus, illustrated in the *Gardeners' Chronicle*, May 13, 1905, p. 290.

Mr. A. W. Jensen, Lindfield, Haywards Heath, showed several forms of his best strain of Odontoglossum and Cattleya Mendelii Lindfieldensis, a fine flower with magenta-rose front to the lip.

Messrs. Hugh Low & Co. showed varieties of Cattleya Mendelii, Dendrobium Bronckartii, D. thyrsiflorum, &c.

Reg. J. Farrer, Esq., Clapham, Yorks, sent Odontoglossum crispum Anne Boleyn, a pretty white variety with several reddish-purple blotches on the sepals, and Cypripedium Queen of Italy, pale yellow, with small purple spots on the petals and dorsal sepal.

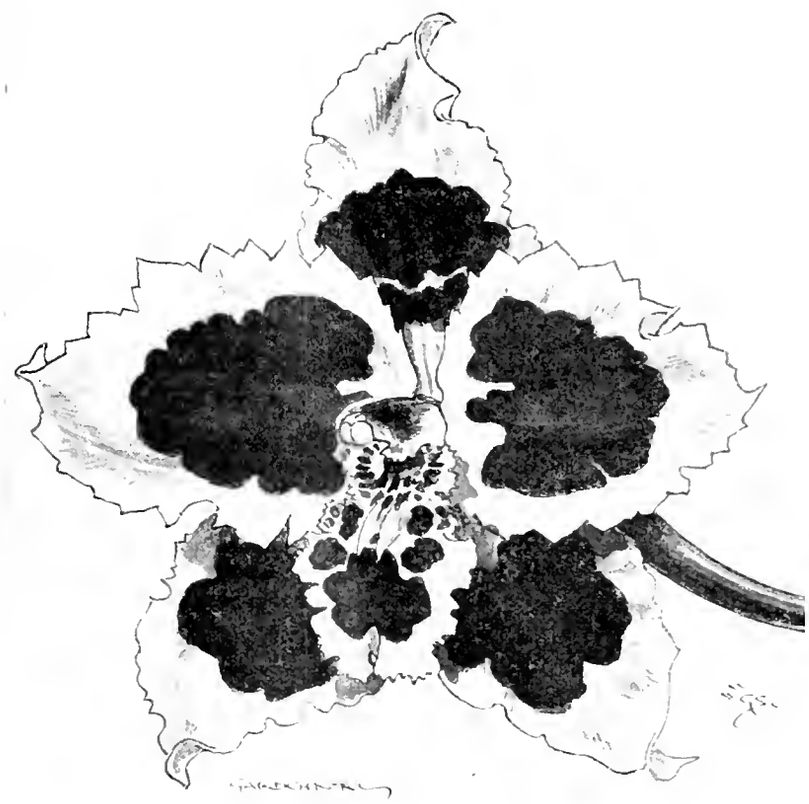


Fig. 144.—Odontoglossum crispum "Leonard Perfect," awarded a gold medal and first-class certificate on Tuesday last.

Awards.

First-Class Certificates.

Odontoglossum crispum "*Leonard Perfect*," from Norman C. Cookson, Esq. (gr. Mr. H. J. Chapman). Flowers 4¼ inches across and very broad in all the segments, white with bright violet-purple blotches covering the inner two-thirds of the segments (see fig. 144).

Cattleya Mossiæ Gerasiana, from Sir Trevor Lawrence, Bart., K.C.V.O. (gr. Mr. W. H. White). A superb and very distinct form which has been in the Burford collection for many years. It is nearest to C. M. Reineckiana, but the sepals and petals are pearly white, the fine, crimped lip deep reddish-violet, with white margin.

Brasso-Cattleya Heatonensis, *Westonbirt variety* (*B. Digbyana* × *C. Hardyana*), from Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). A charming flower of a yellowish ground colour tinged with pale rose, the large, fringed, trumpet-shaped labellum having the disc of a delicate yellow colour tinged with emerald green. This well-grown plant bore a spike of three blooms.

Odontoglossum Wilckeanum Schroderianum, from Baron Sir H. Schroder, The Dell, Egham (gr. Mr. H. Ballantine). This is the superb variety which received an Award of Merit on December 19, 1905. Its large, light yellow flowers are of fine substance and heavily marked with chestnut-red, the petals and lip being fringed. The specimen shown was very finely developed by good cultivation.

Awards of Merit.

Odontoglossum Ossulstonii, *Glebelands variety* (*Pescatorei Charlesworthii* × *crispo-Harryanum*), from J. Gurney Fowler, Esq., Glebelands, South Woodford. A very distinct and handsome variety, with the clear white ground colour of O. Pescatorei, richly marked with claret colour. The plant bore a very strongly-branched spike of many flowers.

Odontoglossum illustre var. Theodora (*Vuylstekei* × *ardentissimum*), from De B. Crawshay, Esq. (gr. Mr. Stables). A pretty new departure in colour, the younger flowers being of a light bronzy hue tinged with pink and changing when approaching maturity to rosy-mauve, with a silver-white margin to the segments.

Odontoglossum nebulosum Mossiæ, from J. S. Moss, Esq., Wintershill Hall, Bishops Waltham. Flowers of fine shape, pure white, with yellow crest to the lip. It is the best white form of the section of O. n. candidulum.

Angræcum Germinyanum, from Sir Trevor Lawrence, Bart., K.C.V.O. (gr. Mr. W. H. White). A very elegant dwarf species bearing white-lipped flower with slender petals and longer twisted spurs gracefully arranged. The little plant bore four flowers.

Botanical Certificate.

Epidendrum leucochilum, from Sir Trevor Lawrence, Bart. A singular plant, with leafy stems bearing flowers having greenish sepals and petals and white trilobed lip.

Eria amica, Rchb. f., from Sir Trevor Lawrence, Bart. Flowers in closely-arranged racemes, each furnished with a bract; whitish striped red; lip yellow.

Megaclinium velutinum, from Sir Trevor Lawrence, Bart. A West African species, with flat, purple rachis, bearing singularly-formed flowers.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman), and Messrs. Jos. Cheal, J. Willard, A. Dean, H. Parr, A. R. Allan, Jas. Vert, O. Thomas, Chas. Foster, Geo. Wythes, Jno. Harrison, C. G. A. Nix, A. H. Pearson, Ed. Beckett, H. Markham, Geo. Kelf, W. Poupart, and J. Davis.

The only noteworthy exhibit before this committee was a collection of vegetables staged by Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea. The collection included some well-developed Cabbages of the variety Incomparable. The seeds were sown on July 1, 1907, and the heads were regarded by the Committee as representative of an excellent type of this vegetable. The other vegetables included Early Forcing Carrot, Veitch's Climbing French Bean, Tomatos, Lettuces, &c. (Silver Banksian Medal.)

ROYAL GARDENERS' ORPHAN FUND FESTIVAL DINNER.

MAY 12. The festival dinner of the friends and supporters of this charity, held on the foregoing date, had additional interest in that it was the 21st anniversary of the establishment of the fund. To properly celebrate the "Coming of Age," every effort was made to augment the funds of the Charity, and we are glad to be able to announce that the result is a very satisfactory one.

The dinner took place in the Victoria Room of the Hotel Cecil, London, and His Grace the Duke of Bedford, K.C., President of the Fund, occupied the chair.

The guests numbered 176. As is usual on these occasions, the tables were beautifully decorated with flowers, contributed by various friends of the charity. After the observance of the usual loyal toasts, the President proposed that of "The Royal Gardeners' Orphan Fund." His Grace referred to the importance of the gathering as representing the 21st birthday of the fund. Proceeding to speak of the objects of the Charity, he said no darker shadow could hang over a man than the knowledge that he might at his death leave children for whom there was no provision. It was customary to regard the children of gardeners as encumbrances, simply because they did not tend to the convenience of the employer, but it was wrong to penalise a man because he was a husband and a father. It was unwise from a national point of view to do anything that was calculated to encourage a low birth rate. The fund was at present supporting 116 children, and he appealed for increased financial help, and especially for more annual subscriptions. The cost of management being fully met by the income from the invested capital, all revenue arising from subscriptions was directly available for relief purposes. He therefore made an appeal for increased support in order that the benefits of the institution might be extended over a still larger area.

The hon. treasurer, Mr. Edward Sherwood, thanked his Grace for presiding that night, and stated that a great effort had been made to make the festival a record one. He himself had brought the objects of the charity before the notice of many friends in the more distant parts of the provinces. In doing this he was impressed with the fact that the Charity was little known among the smaller horticulturists in the country. The fund had distributed during 1907 £100 more than in any previous year. He had pleasure in announcing that in commemoration of the 21st anniversary of the fund, his father, brother and himself had decided to contribute a sum of £300 to provide a special section of the Fund to be known under the name of "Maybud Campbell."

The toast of "Gardeners and Gardening" was given by the Mayor of Westminster, John W. Dennis, Esq., J.P., who declared that successful gardening demanded much knowledge, not only of the sciences connected with it but also of commercial principles. Dr. J. B. Farmer, F.R.S., who responded to this toast, urged the necessity of adopting modern methods and for acquiring technical knowledge. He advocated the claims of horticulture at the universities, and stated that it rested with gardeners themselves as to whether their demands should be recognised in the same manner as those of agriculture. A neighbouring country had recently recognised horticulture officially in the creation of a special department for the profession.

The toast of "The Visitors" was given by Mr. W. Pompart, who compared the fund to a "sport" which had originated in 1887, and which began fruiting at once, but contrary to some plants the early fruiting had done it no harm. The "sport" needed increased nutriment in the shape of more funds. Mr. Arnold White, who responded to the toast, spoke of the duties of employers to gardeners and of those of gardeners to their employers. He advocated a better status for the gardener, whose position was at present often below that accorded to other employés on an estate.

The secretary, Mr. Brian Wynne, announced that the attendance at the festival was a record one, and that the contributions far exceeded those obtained on any previous occasion. Some of the principal subscriptions were as follow:—The Duke of Bedford (President), £250; and Messrs. Leonard Sutton, £100; G. H. Cuthbert, £63 10s.; Geo. Reynolds, £60 10s.; J. F. McLeod, £55; R. B. Leech, £22 10s.; R. Hooper Pearson 14 guineas, including £5 5s. from the *Gardeners' Chronicle*, Ltd.; D. W. Thomson, £14 18s. 6d.; T. W. Sanders, £14 3s. 6d.; Harry J. Veitch, £10; W. P. Thompson, £9 8s.; and the Thames Bank Iron Company, six guineas. Supporters at Covent Garden Market had contributed £260 13s. 6d. The popular shilling collection had resulted in £229, representing 4,580 shillings, and he had hopes of receiving more donations from this source, as money was still arriving from collectors in this country. The above subscriptions, together with smaller sums, amounted to a grand total of £1,385, but this did not include the £300 contributed by Messrs. Sherwood to found the "Maybud Campbell" Fund.

SCOTTISH HORTICULTURAL.

MAY 5.—The monthly meeting of this association was held on the above date, Mr. Whytock, the president, being in the chair. There was a large attendance. Mr. Wm. Austin, Comely Bank Nurseries, Edinburgh, read an interesting paper on "Alpine Plants," the major part of which dealt with the cultivation of some of the more difficult subjects, such as the varieties of Saxifraga Burseriana, Gentiana bavarica, various Primulas, Ramondia, Aphyllanthus, Bryanthus, Shortia, Schizocodon, Andromeda fastigiata, Rhodothamnus Chamæcistus, Haberlea, Ranunculus glacialis, Lewisia, &c. The subsequent discussion was taken part in by the president and Messrs. James Grieve, R. Morris, T. Hay, G. P. Berry, and C. Comfort.

The following plants were exhibited at the meeting:—Flowers of Bruntelsia violacea, from Mr. T. Hay, Hopetoun; 17 species and varieties of Primula, three species of Saxifraga, and Androsace pyrenaica, from Messrs. CUNNINGHAM, FRASER & CO., Edinburgh; three seedling plants of Primula Cockburniana, from WM. ROBERTSON, Piling House, Edinburgh; 14 varieties of Gloxinia to show strain (highly recommended) and Spiræas (Astilbe) "Peach Blossom" and "Queen Alexandra," from Mr. JOHN DOWNIE, Nurseryman, Edinburgh; twin flower of Richardia africana (Calla æthopica), from Mr. R. DAVIDSON, Kinloch Castle, Rhum; seedling White Daisy (flower about 2 inches across), from Mr. C. COMFORT, Broomfield, Davidson's Mains; eight varieties of Sweet Peas, and Souvenir de la Malmaison Carnation "Duchess of Westminster," from Mr. J. CONNOCHIE, JUN., Ayton; 12 vases of Narcissi in 10 varieties, from plants naturalised in grass, from Mr. JAS. LITTLE, Saughton House, Edinburgh; Cattleya citrina, Cypripedium callosum, C. Sallieri, C. Pitcherianum, C. signatum × C. Sanderianum, and Polystichum angulare var. Grimmondii, from Messrs. JAMES GRIEVE & SONS, Nurserymen, Edinburgh (highly commended).

Fifteen new members were elected.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

APRIL 30.—*Committee present:* Messrs. J. Ashworth (chairman), R. Ashworth, Cypher, Upjohn, Ward, Keeling, Shill, Cowan, Warburton, Parker, P. Smith and Weathers (hon. sec.).

A. WARBURTON, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), displayed an exhibit of Cattleyas and Lælias. C. Mendelii var. "The Monarch," having segments of a pale colour, received an Award of Merit, a similar distinction being conferred on C. Schröderæ var. "The Don." A Silver Medal was awarded for the collection, and the same exhibitor obtained a Bronze Medal for an exhibit of Cypripediums.

J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), was awarded a Silver Medal for a mixed group of Orchids and a Bronze Medal for a collection of Cattleyas and Lælias. Cattleya Mendelii var. Alice McCartney was granted an Award of Merit.

Z. A. WARD, Esq., Northeaden (gr. Mr. Weatherby), was awarded a Silver Medal for an exhibit of Odontoglossums, in which were several choice varieties, including Odontoglossum × Phœbe, Ward's var., a hybrid between O. cirrhosum and O. crispum var. punctatissimum. This plant received an Award of Merit.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), exhibited Dendrobium × Dalhou-nobile, a distinct plant, well grown, and pleasing in character. A Cultural Certificate was given for a specimen of Lycaste × Balliæ var. Mary Gratrix exhibited in this collection.

H. J. BROMILOW, Esq., Rainhill, Liverpool (gr. Mr. Morgan), is a strong competitor in the "Sander" Cup competition, and on this occasion he was awarded a Silver Medal for a good group of these Orchids and an Award of Merit for Cypripedium × Hopkinsianum var. Bromilowæ.

S. GRATRIX, Esq., Whalley Range (gr. Mr. Shill), obtained a First-Class Certificate for Cattleya Mendelii var. "Mrs. Joynson Hicks," a fine variety with white sepals and petals, and a slight colouring in the lip. Dendrobium × Leeanum var. magnificum received an Award of Merit.

Messrs. CYPHER & SONS, Cheltenham, staged a meritorious group of plants, consisting of Cattleyas, Dendrobiums, Odontoglossums, &c. Especially fine was a plant of Miltonia vexillaria with 15 spikes of flower. (Silver Medal.)

MR. W. SHACKLETON, Great Horton, Bradford, was awarded a Bronze Medal for a miscellaneous collection, and a similar award was made to Messrs. KEELING & SONS, of West Gate Hill, Bradford, for a small group.

Mr. J. BIRCHENALL, Alderley Edge, staged a few plants of interest, among which was Cycnoches pentadactylon. *P. H.*

BRITISH GARDENERS' ASSOCIATION.

(LEEDS BRANCH.)

MAY 2.—The Committee of this branch intend to make the Grand Central Hotel, Leeds, their headquarters, and to hold bi-monthly meetings during the summer.

A successful start was made on Saturday, May 2, when Mr. H. J. Clayton, of Ulleskelf, York, gave a lecture on "Gardeners and Gardening." Mr. Clayton dealt chiefly with the training of young gardeners.

An appeal was made for the popular shilling fund of the Royal Gardeners' Orphan Fund, which met with much support from those present.

Mr. John Donoghue, Bardon Hill Gardens, Leeds, will give the next lecture on July 4, 1908, at 7.30 p.m., the subject being "The Carnation, its History and Cultivation." The lecturer will also exhibit many varieties of this flower. All gardeners are cordially invited to attend.

CROYDON SPRING FLOWER SHOW.

MAY 6.—The eighth annual spring flower show of the Croydon and District Horticultural Society was held at the Horniman Hall, Croydon, on this date. Admission was free to the general public, and in consequence the number of visitors attending the show was very large. No prizes were offered to the exhibitors. From the gardens of the president, J. J. REID, Esq. (gr. Mr. F. Oxtoby), came a grand exhibit of Schizanthus, Azaleas, and Mignonette. Mr. A. Edwards (gr. to J. PASCALL, Esq.) showed a miscellaneous group of plants, including well-grown Calceolarias and double-flowered Cinerarias. Mr. C. Lane (gr. to C. H. COLES, Esq., Caterham) exhibited well-grown Hippeastrums and Caladiums. An effective display of Cineraria stellata, also Cyclamen and White Stocks, was arranged by Mr. A. DYER. SIR WALPOLE GREENWELL (gr. Mr. W. Lintott) sent cut flowers including double and regal Pelargoniums, Cypripediums, and two fine sprays of Cymbidium Lowianum. A very fine plant of Azalea, measuring about 2 feet 6 inches in diameter, was shown by Mrs. MATTHEWS (gr. Mr. C. Trower). A pretty exhibit was made by Mr. Wateridge (gr. to Mr. OTTO HEHNER) with Cineraria stellata. Spiræas and Hippeastrums from the gardens of F. ALLEN, Esq., were also much admired, and the Society welcomed a new exhibitor in his gardener, Mr. Beacon. Mr. J. R. FOLCE showed well-grown Auriculas, and Mr. R. CLEVELAND a collection of Cacti. Trade exhibits were well represented. Messrs. J. PEED & SON, West Norwood, showed a collection of Alpines and Carnations. An exhibit of Alpines was also shown by Mr. J. R. BOX, West Wickham, who also staged Tulips and Narcissi. Mr. P. CHAFF arranged a miscellaneous group of plants, and the staged was decorated by Mr. T. BUTCHER. Messrs. E. W. & S. ROGERS showed Hyacinths

DUTCH BULB GROWERS.

APRIL 22.—At a meeting held on this date the following awards were made by the committee appointed to judge Narcissus and other bulbs:—

FIRST-CLASS CERTIFICATES were awarded to: Narcissus General Baden Powell (a deep yellow trumpet Daffodil); N. Sulphur Beauty (having a white perianth and clear sulphur-coloured trumpet); N. bicolor "Dick" (white perianth and yellow trumpet); Astilbe Queen Alexandra and Astilbe Peach Blossom, both of a handsome rosy-pink colour and good free-flowering varieties for early forcing.

AWARDS OF MERIT were given to Narcissus E. H. Krelage, a very early free-flowering trumpet Daffodil with light yellow perianth and pure yellow trumpet; N. "Mr. van Noort," a cross between Emperor and Golden Spur, a large flower with broad yellow trumpet and light yellow perianth; N. "Sir Henry Campbell-Bannerman," having a deep yellow trumpet and yellow perianth with rather pointed petals; N. bicolor "Giant," with fine broad trumpet and creamy-white perianth, a large flowering, strong-growing variety; N. bicolor "Miss Ellen Terry," with clear yellow trumpet and white perianth; N. "Snow Queen," a white trumpet Daffodil with curling petals; and N. "Tom," with dark yellow trumpet and yellow perianth, a large flowering variety. In addition to the awards mentioned above, a Gold Medal and other awards were made to various exhibits in recognition of high culture.

LAW NOTE.

TRADE NAME DISPUTE.

IN our issue for April 11 last, p. 236, we referred to a law case in which Messrs. Alexander Dickson & Sons, Ltd., the well-known Rose growers, carrying on business in Dublin, Belfast, Newtownards, and in England, claimed an injunction against Mr. Alexander Dickson, of Dublin, trading as Alexander Dickson & Sons, restraining him from using the plaintiffs' trade name without taking reasonable precautions to distinguish the business carried on by him from the plaintiffs' business.

The Master of the Rolls, in delivering judgment, said: The plaintiffs have a trade name, and they have the right that no man shall wrongfully interfere with their name. I consider that the words of Lord Esher contain in the clearest manner the right to use a man's real name, but Lord Esher says that no man has the right to pass off his goods as the goods of another. I am of opinion that the defendant has used, for the purposes of advertisement, a name to which he has no right, and I think that in advertising his goods under the name of Alexander Dickson & Sons he was advertising them under a false name, or at all events under a name which was assumed for the purpose of attracting business which belonged to another man. The defendant describes himself as possessing "the home of the Rose" and "Dickson's choicest selections." If the words "Ashbourne Agricultural Co." had appeared at the bottom, I do not think that the slightest objection could have been made; but as it stands, I do not entertain any doubt that the advertisement was framed with the object of representing to the public that the plaintiffs, the world-wide Rose growers, were the owners of the Woodlawn Nurseries, Dundrum; and the fact that some members of the public were so deceived has been placed beyond doubt. My order will not be one which will prevent the defendant using his own name, or prevent him entering into partnership and calling himself Alex. Dickson & Sons, but it will prevent him using that name without taking reasonable precautions to distinguish business carried on and goods sold by him from those of plaintiffs, or for carrying on business so as to mislead the public.

MARKETS.

COVENT GARDEN, May 13.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s. d.	s. d.
Anemones per doz. bunches	2 0	3 0
— double pink	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	2 6	4 0
Camellias, per dz.	1 6	2 0
Carnations, per dozen blooms, best American various	2 0	3 0
— second size	1 6	2 0
— smaller, per doz. bunches	9 0	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0	10 0
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	1 0	2 0
— Sir Watkin	1 6	2 0
Eucharis grandiflora, per doz. blooms	4 0	5 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz. blooms	1 6	3 0
Gladiolus Colvillei vars., per doz. bunches	7 0	10 0
Gypsophila per dz. bunches	3 0	5 0
Iris (Spanish), per dozen bunches	4 0	8 0
Lapagerias, p. doz.	1 6	2 6
Lilac (French), per bunch	2 0	3 0
Lilium auratum	2 0	3 0
— candidum	2 0	2 6
— longiflorum	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	12 0	15 0
Marguerites, white, p. dz. bunches	3 0	4 0
Marguerites, yellow, p. dz. bchs.	2 0	3 0
Mignonette, per dozen bunches	2 0	5 0
Myosotis, per doz. bunches	2 0	3 0
Narcissus, per doz. bunches	1 0	1 6
— poeticus ornatus	1 0	1 6
— Double varieties	4 0	6 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per d.z. bunches	5 0	6 0
— Zonal, double scarlet	5 0	8 0
Ranunculus, p. dz. bunches	5 0	8 0
Roses, 12 blooms, Niphetos	1 6	3 0
— Bridesmaid	2 0	5 0
— C. Testout	2 0	4 0
— General Jacqueminot	1 6	2 6
— Kaiserin A Victoria	2 0	4
— C. Mermet	2 0	4 0
— Liberty	2 6	4 0
— Mad Chatenay	3 0	6 0
— Mrs. J. Laing	2 0	4 0
Statice, per dozen bunches	5 0	6 0
Spiræa, per dozen bunches	5 0	8 0
Stocks, double white, per doz. bunches	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches	6 0	12 0
— Darwins	9 0	12 0
Violets, per dozen bunches	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 9	1 6
Berberis, per doz. bunches	2 6	3 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Grasses, per dozen bunches	2 0	3 0
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle, per dozen bunches, English		
— small-leaved	4 0	6 0
— French	1 0	1 6
Smilax, p. dz. trails	3 0	5 0

Plants in Pots, &c. Average Wholesale Prices.

	s. d.	s. d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Mosert	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, p. dz., green	15 0	24 0
— variegated	30 0	42 0
Asparagus, p. doz., plumosus nanus	9 0	12 0
— Sprengeri	6 0	9 0
— tenuissimus	9 0	12 0
Azalea indica	24 0	36 0
Boronia Elatior, per dozen	15 0	24 0
— heterophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
Callas, per dozen	8 0	10 0
Cinerarias, per dozen	4 0	6 0
Clematis, per doz	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen	9 0	15 0
— candidissima	15 0	18 0
— Cavendishii	18 0	24 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	8 0	12 0
— in small and large 60's	12 0	26 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz	6 0	8 0
Fuchsias, per doz.	6 0	9 0
Genistas, per doz.	5 0	8 0

Plants in Pots, &c.: Average Wholesale Prices (Contd.).

	s. d.	s. d.
Hardy flower roots, per dozen	0 9	2 0
Heliotropiums, p. dozen	4 0	6 0
Hydrangeas, per dozen	10 0	18 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen	12 0	18 0
Lilium longiflorum, per dz.	18 0	24 0
— lancifolium, p. dozen	18 0	24 0
Lily of the Valley, per dozen	18 0	30 0
Lobelia, per dozen	4 0	6 0
Marguerites, white, per dozen	6 0	9 0
Mignonette, per dozen	6 0	10 0
Pelargoniums, per doz., Zonal	5 0	8 0
— show varieties	12 0	18 0
— Ivy-leaved	6 0	8 0
— Oak-leaved	4 0	6 0
Petunias, per doz., (double)	6 0	8 0
Rhodanthe, per dozen	4 0	6 0
Roses, Ramblers, each	5 0	3 0
— Hybrid perpetuals, per doz.	9 0	18 0
Saxifraga pyramidalis, per doz.	15 0	18 0
Selaginella, p. doz.	4 0	6 0
Spiræa japonica, p. dozen	5 0	9 0
Stocks (Intermediate), per dozen	5 0	8 0
Verbenas, Miss Willmott, per dozen	6 0	10 0

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples (**Tasmanian**), per box:		
— Kibston Pippin	8 0	10 0
— Cox's Orange Pippin	12 0	18 0
— Alexander	8 0	9 0
— Wellington	12 0	13 0
— Scarlet Nonpareil	9 6	11 0
— **Australian**, per case:		
— Esopus	9 0	11 0
— New York Pippins	8 0	12 0
— Monro Favorite	10 0	12 0
— Jonathan	8 0	12 0
— Kibston	9 0	11 0
— Cox's Orange Pippin	12 0	17 0
— Wellington	11 0	12 0
— Kymer Pippin	9 0	11 0
— Allriston	9 0	10 0
— Adams Pearmain	9 0	10 0
— French Crab	8 0	10 0
Nova Scotian, per barrel:		
Ballawater	17 0	19 0
— Nonpareil	12 0	14 0
Canadian, per barrel		
Baldwin	20 0	21 0
Bananas, bunch:		
— No. 2 Canary	6 0	—
— No. 1 ,,	7 6	8 0
— Extra ,,	8 0	9 0
— Giants ,,	10 0	12 0
— (Claret)	7 0	7 6
— Jamaica	5 0	5 6
— Loose, per dz.	0 9	1 3
Cranberries, case	8 9	9 0
Cherries (French), per box	1 0	1 6
Dates (Tunis), doz. boxes	4 0	4 3
Figs (Guernsey), per dozen	2 0	8 0
Grape Fruit, case	8 0	10 0
Grapes (English, new) per lb.	2 6	4 0
— Muscats (English, new), p. lb.	3 0	10 0
— (Cape), per box (small)	2 0	6 0
— (large)	5 0	12 0
— (Almeria), per barrel	14 0	18 0
Lemons:		
— Messina, case	7 6	10 0
Lychees, per box	1 0	1 5
Mandarins (Palermo), per box (100)	3 0	4 0
Mangos (Jamaica), per dozen	12 0	18 0
Melons (Guernsey)	1 3	2 6
— (Cape)	1 6	2 0
Nuts, Almonds, per bag	45 0	—
— Brazils, new, per cwt.	50 0	57 6
— Barcelona, per bag	30 0	32 6
— Cocoanuts, 100	11 0	14 0
Oranges (Valencia), per case	10 0	25 0
— Denia, p. case	11 0	25 0
— Jaffas, per box	10 0	12 0
— Californian Navel, p. case	15 0	16 0
— Palermos, Blood:		
— per box (100)	5 0	6 6
— per box (200)	10 0	11 6
Peaches (English) per dozen	15 0	30 0
Pears (Cape), per box	5 6	7 0
— cases	5 0	8 0
— (Australian), per box	4 0	7 0
Pineapples, each	2 3	4 0
Strawberries (English), per lb	1 6	3 0
— seconds	0 8	1 0

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Artichokes (French), per dozen	2 6	3 0
Asparagus, Paris Green, bundle	1 0	2 0
— Sprue, bundle	0 6	0 8
— Toulouse, per bundle	1 0	1 9
— English	1 0	1 6
— Spanish, per bundle	0 6	0 8
— Giant, per bundle	2 6	4 0
Beans, Broad (French), p. pad	2 0	3 0
— Guernsey, p. lb.	0 6	0 9
— English	0 8	0 9
Beetroot, per bushel	1 3	1 6
Brussels (Kent), p. bushel	2 6	4 6
— seconds, per hamper	1 6	2 6
Cabbages, per tally	3 0	4 6
— Greens, p. bag	1 6	3 0
Carrots (English), — washed, p. bag	2 6	—
— French (new), per pad	2 6	3 0
— per bunch	0 7	0 8
Cauliflowers, per dozen	1 0	2 0
— per tally	4 0	8 0
Celery, per roll	0 8	1 0
Cèpes (French), per dozen	2 0	2 6
Chervil, per lb.	0 3	0 5
Chow Chow (Sechium edule), p. dozen	3 0	—
Cucumbers, per dz.	1 6	3 0
— per flat	4 6	8 0
Endive, per dozen	1 0	1 3
Horseradish, foreign, per doz. bundles	9 0	12 0
Leeks, 12 bundles	1 0	1 6
Lettuce (English), p. dozen	3 0	3 6
— (French), per dozen	3 0	3 6
Lettuce (French), Cos, per dozen	3 0	4 0
Marrow (English)	2 0	4 0
Mint, per dozen bunches	1 0	2 0
Mushrooms, per lb.	1 3	—
— broilers	0 8	1 0
Mustard and Cress, per dozen pun.	1 3	—
Onions (Spanish), per case	6 6	7 6
— (Egyptian), per bag	6 6	7 0
— pickling, per bushel	1 6	2 6
— Spring, dz. bun.	1 6	2 0
Parsley, 12 bunches	1 6	2 0
Peas (French), per packet	0 3	0 5
— (French), p. pad	2 6	3 0
— (Guernsey), per lb.	0 6	0 8
Potatos (Guernsey), per lb.	0 3	—
— Teneriffe, cwt.	11 0	13 0
Radishes (Guernsey), dozen	0 10	1 0
— round, p. doz.	0 8	0 10
Rhubarb (Natural)	1 6	2 0
Salsafy, p. dz. bdls.	3 6	—
Seakale, per dozen punnets	9 0	12 0
Tomatos (English), per lb.	0 8	1 0
— (Teneriffe), per bundle of four boxes	16 0	22 0
Turnips (French), per bunch	0 5	0 8
Watercress, p. doz.	0 4	0 6

REMARKS.—The last consignment of Nova Scotian Apples for the season has arrived. Oranges of best quality continue to sell freely and at good prices. Esopus Apples from South Australia are now arriving in good condition, but the

supply is very limited; the variety represents one of the best dessert Apples on the market, and the fruits have a quick sale. Strawberries are still plentiful, and the demand is poor, 3s. per lb. being the top price for best berries; those of second quality in ½ lb. punnets have a quick sale, but at low prices only. Grapes from Australia are expected to arrive this week. Mushrooms are a little firmer. Trade generally is quiet. *E. H. R., Covent Garden, Wednesday, May 13, 1908.*

Potatos.

	s. s. per ton		s. s. per ton
Kents—		**Dunbars—**	
Up-to-Date	110-115	Maincrop (red soil)	125 130
British Queen ...	105-110	**Scotch—**	
Scottish Triumph...	105-110	Up-to-Date (grey soil)	105-110
Lincolns—		Maincrop (grey soil)	105-110
Up-to-Date	105-115		s. d. s. d. per bag.
British Queen ...	100-105	**French—**	
— (Blackland) ...	90- 95	Reds	3 9-4 0
Maincrops	105-115	**German—**	
Sir Jno. Llewelyn...	95-100	Up-to-Date ...	4 9-5 0
— (Blackland) ...	90- 95	Magnum Bonum	4 6-4 9
Royal Kidney ...	95-100	Imperator... ...	4 0-4 3
— (Blackland) ..	90 95	**Belgium—**	
Evergood	95-105	Kidneys	4 3-4 6
— (Blackland) ...	90- 95	**Dutch—**	
Dunbars—		Up-to-Date .	4 6-4 9
Up-to-Date (red soil)	120-130	Magnum Bonum	— 4 3
		Imperator... ..	3 6-4 0

Remarks.—Trade is very quiet and prices are not so firm. Supplies are equal to all demands.—*E. J. Newborn, Covent Garden and St. Pancras, May 13, 1908.*

COVENT GARDEN FLOWER MARKET.

During the past week trade has improved. Flowering plants have been in demand and bedding plants are selling freely. The demand for cut flowers varies considerably; since the advent of warmer weather supplies have been excessive.

Pot Plants.

Ivy-leaved Pelargoniums, of the type used for furnishing window boxes, have a ready sale. Extra fine plants of Galilee realise from 12s. to 15s. per dozen; these are used for floral decorations; smaller plants for window boxes are worth from 6s. to 8s. per dozen. Of Marguerites, some of the plants have sold at 12s. to 15s. per dozen, but 8s. per dozen is about their average value. Zonal Pelargoniums are now at their best, especially the single varieties, including Mrs. Cannell (salmon), Mrs. Brown Potter (pink), and Snowflake (white). Of the semi-double-flowered section are seen Mrs. Lawrence, King of Denmark, Ville de Portiers, and Madame Rosaine. Spring-sown Mignonette is to be had, but the plants are scarcely forward enough. Lobelia is now well in flower. Harrison's Musk, Rhodanthe, and Petunias are good. Plants of Erica ventricosa, E. magnifica, E. hybrida, and E. translucens are well flowered. Verbena Miss Willmott is a prominent subject on the stands. At Messrs. H. B. May and Sons' nurseries I recently noticed several other varieties, but there will probably never be another more popular than the lovely pink variety named after Miss Willmott. Spiræas include S. multiflora compacta, S. astilboides floribunda, and the ordinary type of japonica, the last-named is still favoured by many growers, as the flowers are pure white and they last for a considerable time as cut blooms. Boronia elatior and B. heterophylla are good, but B. megastigma is almost finished. Ferns are not so plentiful. Palms are well supplied. Acer Negundo variegata is very good; there appears to be no fixed prices for this useful plant, which averages from 2s. to 5s. each.

Cut Flowers.

Carnations are over abundant, but best blooms have been making advanced prices; the border variety, Duchess of Fife, is now beautiful, but the flowers appear small when compared with those of the winter-flowering varieties. Roses are very plentiful, and growers must be disappointed with their returns. Smaller blooms of varieties such as General Jacqueminot are more profitable than finer blooms with long stems. Daffodils have suffered from the bad weather. Spanish Irises are abundant, and their prices have fallen considerably. Gladiolus The Bride and other hybrid varieties are seen. Darwin Tulips are very fine, and the weather has not damaged them to the same extent as the ordinary sorts. Stephanotis, Tuberoses, and Gardenias are plentiful. White Azalea is nearly over for the season, and Camellias are of doubtful quality. Lilium longiflorums of the best quality are very cheap. Supplies of Callas are excessive. Coloured Sweet Peas are more valuable than "whites." Statice sinuata can be had in white, blue, and yellow colours. *R. H., Covent Garden, Wednesday, May 13, 1908.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* ***write the names of persons and places as legibly as possible.*** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. E. Hodgson, for the past 10 years Gardener to Miss Mortimer at the Royal Crown Hotel, Sevenoaks, as Gardener to F. A. Forbes, Esq., Godden Green, Sevenoaks, Kent.

Mr. M. Loasby, for the past 2 years Gardener at "Lechlade Manor," Glos., previously 6 years Gardener to Sir B. Samuelson, Bart., "Bodle de Grange," as Gardener to Lady Maud Hastings, "The Manor," Ashby-de-la-Zouch, Leicestershire. (Thanks for contribution to R.G.O.F. box).

Mr. George Bristol, for the past 10½ years Gardener to Charles Edward Lambert, Esq., Manor House, Effingham, Surrey, as Estate Bailiff and Gardener to the same gentleman. (Thanks for your donation of 2s. 6d. which has been placed in the R.G.O.F. box.)

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending May 13.

A week of "growing" weather.—During the past week there have been only two cold days and one cold night, but the nights, as a rule, have been much more unseasonably warm than the days. On the one cold night the exposed thermometer registered 4° of frost. The ground is now at about a seasonable temperature, both at 1 and 2 feet deep. Since the month began some rain has fallen on all but three days, but to the total depth of only about 1 inch. The percolation through both the soil gauges is now slackening, and only small quantities are each morning recorded. The sun shone on an average for 5¾ hours a day, which is about a seasonable record for this period in May. The winds were rather high at the beginning of the week, but since then light airs alone have prevailed. In the windiest hour the mean velocity amounted to 16 miles—direction W.S.W. There was a seasonable amount of moisture in the air at 3 p.m. *E. M., Berkhamsted, May 13, 1908.*

ENQUIRY.

Sunflower Seeds for Feeding Game.—Can any reader inform *A. C.* the best methods of cultivating Sunflowers on a large scale for producing seeds for feeding game?

ANSWERS TO CORRESPONDENTS.

Carnation Failing: *Correspondent.* There is no fungus disease present in the plant, but the lower portion of the stem has been hollowed by some boring insect. Soak the soil with a solution of nitrate of potash, using 2 ozs. of the salt in each gallon of water.

Caterpillars Destroying Cabbage Plants: *L. Fosbrooke.* One of the so-called "surface caterpillars" being the larva of the Heart and Dart Moth (Agrotis exclamationis). The methods of control generally recommended are to apply dressings of soot and lime and to hoe the crops frequently, thus encouraging the presence of rooks and starlings. You might try spraying the stems of the plants with Paris Green (poison) at the rate of one ounce to 20 gallons of water.

Caterpillars on Currant Trees: *Trinity.* Larvæ of the common Magpie or Currant Moth (Abraxas grossulariata). The larvæ of this insect hibernate through the winter in or near the plants—often in the dead leaves attached to the branches; they reappear in spring, and when fully developed usually crawl away from the plant, and often spin their cocoons under window-sills, projecting coping-stones, &c. The cocoon consists of a loose network of silk enclosing a black chrysalis with yellow abdominal bands. Spray the infested trees with Paris Green (poison) at the rate of one ounce to 20 gallons of water. Caution.—Use this with great care as it contains a fair amount of free arsenic. Keep the water constantly agitated, and apply the liquid with a spraying nozzle fitted to a syringe. Two applications may be found necessary. You could also collect the caterpillars quite easily by jarring the branches over an inverted umbrella.

Cucumber Gumming: *P. F.* The fruit contains no trace of fungus disease. The injury has been caused by some error of culture, and most probably by an excess of moisture causing a water-logged condition in the soil. Afford increased ventilation to the house in order that the air may circulate more freely.

Double-spathed Arum: *W. P.* The example sent by *J. T. L.* (see p. 292 in the last issue) was Richardia Elliottiana. The abnormality is as common in this species as in R. africana, but you must remember that this latter plant is very much more extensively grown in gardens than R. Elliottiana. It is probably due to intensive culture.

Figs Diseased: *G. S.* The Figs are attacked by Botrytis cinerea, a fungus that can only attack plants in the presence of an excess of moisture. Burn all the affected fruits and afford increased ventilation to the house in which the trees are growing. The insect you indicate is certainly not the Peach weevil, but probably some harmless beetle. If you will send us a specimen we will endeavour to name the creature for you.

Gardening in Australia or New Zealand: *W. R.* We have shown your letter to Mr. James McIndoe, who, having visited the Antipodes, has especially studied the conditions of horticulture from the point of view of the private gardener. Mr. McIndoe states that anyone emigrating to Australia or New Zealand in the hope of obtaining a good situation as head gardener there incurs a great risk of being disappointed, no matter how good his testimonials may be. Large private garden establishments are few. With regard to public parks, a stranger may have to wait for years before he attains a superintendent's position. The gardeners in demand are good spademen and handy men who are not particular in turning their hands to anything that comes in the way. Such men have no difficulty in getting situations in the neighbourhood of large towns at wages ranging from 40s. to 50s. per week.

Goose-tongue: *J. Y D.* This popular name is applied to two plants, viz.: Galium Aperine and Achillea Ptarmica.

Grape Vine: *T. G.* There is no disease present caused by fungi or insects. Such injury to the foliage is very frequent near the top of a vinery, and is due to the dryness and comparative impurity of the air. Top ventilation, judiciously applied, will put the matter right

Maggots in Soil: *C. Weaver.* These are the larvæ of a two-winged fly belonging to the genus Bibio. They are often found in the earth in great numbers feeding upon decayed vegetable matter, but are apparently quite harmless to cultivated plants.

Melon Plant: *W. P.* Gumming in Melons and Cucumbers is generally the outcome of an excess of nitrogenous manure. When the plants are almost fully grown there is but little chance of remedying the injury.

Names of Plants: *E. S.* 1, Azara microphylla; 2, Phlox subulata; 3, Iberis sempervirens; 4, Alyssum sp. (cannot name more definitely in the absence of flowers); 5, Saxifraga cordifolia; 6, Helianthemum vulgare.—*Alpine.* 1, Erysimum ochroleucum; 2, Salix serpyllifolia; 3, Aubrietia deltoidea "Dr. Mules"; 4, Aubrietia deltoidea var.; 5, Saxifraga muscoides var. atropurpurea; 6, Berberis Darwinii.—*A. H.* Fritillaria pyrenaica.—*T. D.* Acer rubrum.—*Derwydd.* 1, Nephrolepis tuberosa; 2, Asplenium bulbiferum biforme; 3, Streptosolen Jamesonii; 4, Berberis stenophylla; 5, Cydonia (Pyrus) Maulei; 6, C. japonica.—*J. E.* 1, Pelargonium Lucie Lemoine; 2, flowers dropped; 3, P. Triomphe de St. Amande; 4, P. Rose Celestial; 5, P. Mme. Thibaut; 6, Rose Mrs. W. J. Grant.—*Vitis.* 1, Orobus vernus; 2, Epimedium Perralderianum; 3, Trollius asiaticus; 4, Corydalis nobilis; 5, Fritillaria meleagris alba; 6, Diplacus glutinosus.—*H. R.* 1, Calanthe veratrifolia; 2, Cœlogyne ochracea; 4, Isochilus linearis; 5, Oncidium Harrisonianum; 6, Odontoglossum Lindleyanum.—*L. H., Han's.* 1, Cardamine pratensis; 2, Helxine Solieroli; 3, Epimedium diphyllum; 4, Oxalis rosea.—*W. E. S.* 1, Cattleya Mossiæ; 2, Cattleya Mendelii; 3, Cypripedium Harrisianum superbum; 4, Odontoglossum Andersonianum.—*W. P.*—Dendrobium Loddigesii, commonly known in gardens as Dendrobium pulchellum.—*K. A* Litobrochia biaurita.—*C. H.* Heuchera sanguinea.—*H. M.* We are unable to identify the plant from such a specimen.

Nectarine Tree: *J. M.* The injury is caused by the air being too dry when the young shoots are growing. The result being the shoots lose too much moisture on the warmest side, and the skin contracts and dies.

Peach Tree: *H. W.* The fruit shows symptoms of gumming. If a pound of common salt be sprinkled on the soil round the root in such cases, at intervals throughout the year, it often checks the disease.

Communications Received.—G. B., Copenhagen (we do not undertake the publication of books. Write to one of the London publishers)—W. W. P.—T. H.—L. G., Brussels—W. H.—J. C. N.—H. N. K.—T. A.—J. G. W.—Maurice L. de V.—B. T. Vaux—F. D.—S. T.—Interested—F. M.—H. R. W.—W. P. R.—W. S., Messina—G. W. B.—Linnean Soc.—W. M.—G. W.—F. L.—Bath and West and Southern Counties Show—G. A.—E. H. K. (with thanks)—J. H.—de B. Crawshay—H. W. W.—P. A.—F. J.—W. H. D.—W. H. C.—W. G. D.—A. J. W.—Crispum—Geo. T. (next week)—W. T. B.—T. T.—R. G.—W. P.—Stanley & Co.—Vitis—W. E. S.

LILIUM JAPONICUM (SYN. L. KRAMERI); FLOWERS WHITE, TINGED WITH PURPLE ON THE OUTSIDE.

Printed by Temple Press Ltd., London, E.C.

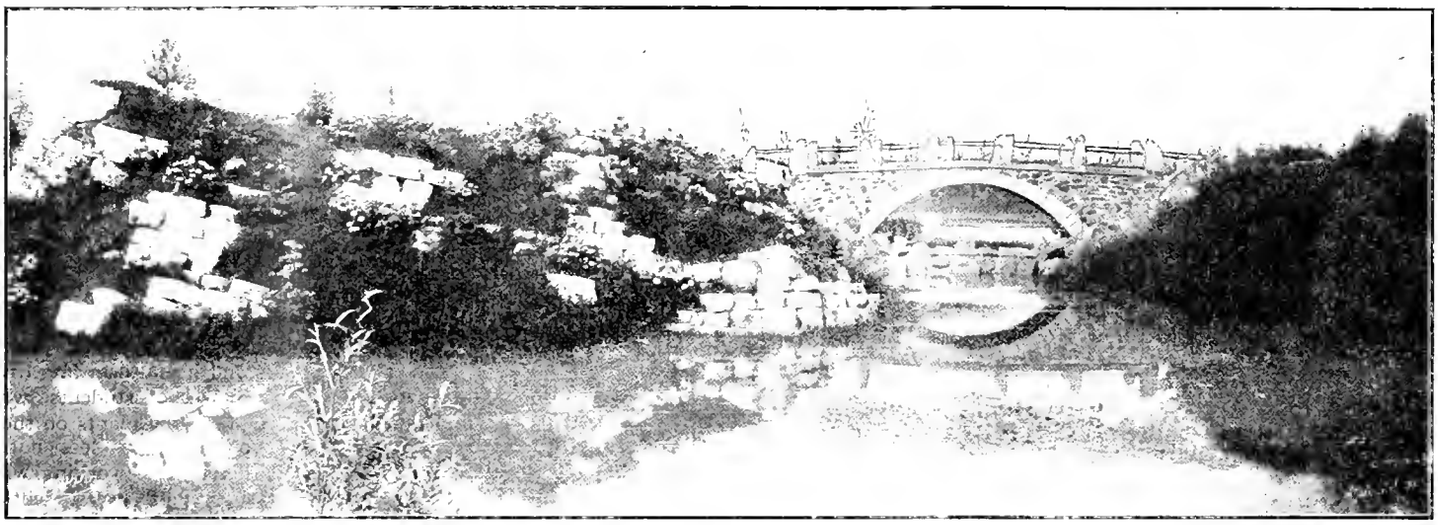


Fig. 145. View of bridge spanning the lake in the Berlin Botanical Gardens.

up the vegetation becomes gradually dwarfed until the summit is reached, where only the smallest of Alpines are to be seen nestling between the stones, or lying flat on an otherwise naked surface. The art of the gardener is needed to maintain something like the natural proportions, otherwise a full-grown Larch would overtop the highest points. This is accomplished by simply cutting out the trees when they get too large, and substituting smaller ones. The most imposing of these ranges is that of the Swiss Alps, the Matterhorn, Mont Blanc, and the other noted peaks being there represented. Each range stands out quite clearly from the rest, and they have all been kept as near as possible to scale. Consequently Mount Everest and Kanchanjunga, in the Himalayas, are the highest points of all. Torrent and stream flow down the mountains, across and under the rocky paths, over falls, and into lakes in a way that should delight the Japanese artist. While there are plenty of paths to enable the visitor to inspect every feature of the Alpinum, they are so cleverly placed and constructed as to be quite unnoticeable.

To keep this department supplied with plants to replace those that die, a large nursery with unheated houses and frames is maintained. Even a collection of mosses is grown for the purpose of showing them as they occur in nature. They are grown on tiles, bits of stone, pieces of wood, &c., in a small house devoted specially to them.

A special department is devoted to hardy plants from North America and Japan. This includes a little mountain range, and the plants are grouped geographically, quite an interesting collection being displayed. Another feature of interest, to the German student at any rate, is an assortment of trees, &c., planted and arranged as in a German wood. As someone observed: "It is a chunk of wood cut out of a German forest to show what the vegetation is like."

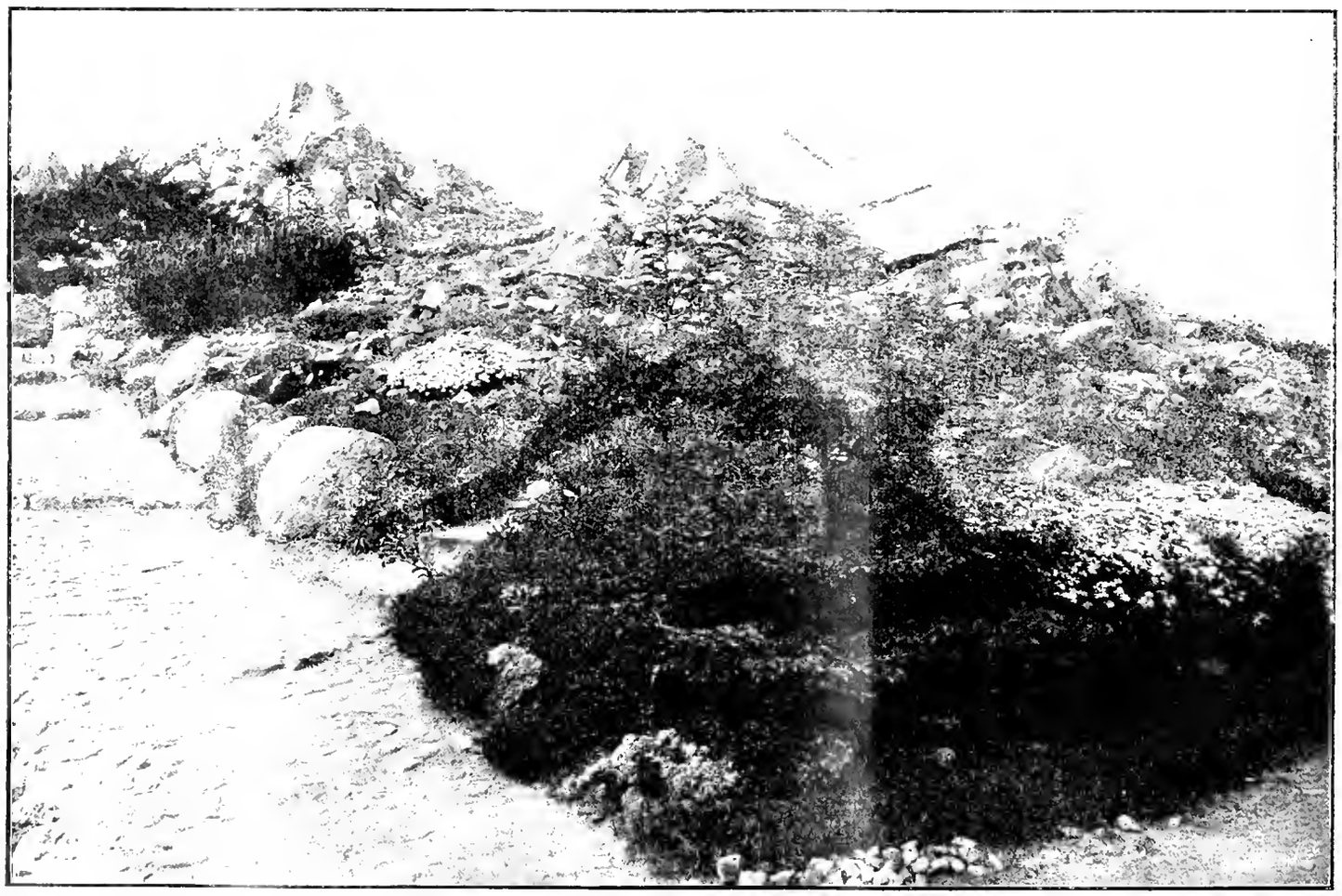


Fig. 146.—Portion of the rockery in the Berlin Botanical Gardens.

There is no decorative department worth speaking of, a few formal beds near the two principal entrances representing the sole attempt at flower gardening. Mention may also be made of a formal Italian garden, which in my opinion is singularly out of place, although perhaps the intention is to show a sample of what is considered art in the garden. *J. G. W.*

(To be continued.)

NURSERY NOTES.

DAFFODILS AT LOWDHAM NURSERIES.

A visit to Messrs. J. R. Pearson and Sons' Nurseries at Chilwell is always interesting, and especially when the Daffodils are in flower. This season we have experienced the worst weather in spring I ever remember, but the Narcissi have withstood the ordeal successfully, and they are in a better condition at these nurseries than ours at Belvoir Castle, although the climatic conditions are almost the same, the two places being only 15 miles apart. The soil in both cases is a retentive and deep one, but the trade grower must have good shaped bulbs for sale, and he is therefore bound to re-plant every year, or at the latest every second year; the private grower, however, does not cater for the sale of his bulbs, and therefore does not practise frequent transplanting. This shifting, however, enables the plants to better withstand severe weather, because the flower stems are developed more stiffly, and do not become so drawn, and in many instances the flowers are larger.

Amongst the new varieties to be seen at Lowdham is Florence Pearson; this belongs to the Ajax section, the flowers being white faintly tinged with cream. Although large, they are of refined form and appearance, while the growth of the plant is remarkably vigorous and free.

Hon. Mrs. Franklin has a white perianth and a centre of pale lemon colour; this is also a strong growing variety, with flowers of excellent form and colour. Another of merit is that named after Mrs. Bretland Farmer; this is also a very large flower of the Ajax type; the perianth is pure white, and it has a long, straight trumpet.

Pearl of Kent is also a large pure white, trumpet variety. The corona is much reflexed, being of good substance, and splendid in form; it is quite one of the best of all the race. Weardale Perfection is a bicolor variety with a very large pale yellow trumpet. At Chilwell a large stock of this kind is grown; the plants were flowering well, and growing vigorously. King Alfred is a favourite with all who know it, for the flowers are large, of a beautiful rich yellow colour, and are developed high above the foliage. The whole growth is vigorous and healthy, and it is certainly one of the best Daffodils raised. Glory of Noordwijk is a large bicolor variety, vigorous in growth, and with distinct and good flowers.

A vigorous, free-flowering variety is Golden Bell, the perianth being pale yellow, and trumpet of a deeper yellow. The season of flowering is earlier than in many other varieties. Lord Roberts has flowers of large size; the perianth is yellow, with a deeper shade in the trumpet. It is a strong growing variety, having flowers of good form.

Alert belongs to the "Tenby" class, and, in common with N. obvallaris, it flowers early. Alert has much vigour, and grows where the older variety fails. Apricot is an interesting variety, as it is the first of a new race possessing a reddish colour in the trumpet. The plant is not a vigorous grower, and the flowers are small.

Varieties with medium and small corollas include Lowdham Beauty. This variety has white segments that are broad and flat, and in the centre is a deep, wide, pale yellow cup that changes to white. The growth is extremely vigorous, and the plant is one of the best of its section.

Marguerite Durand is similar in form to the last-named variety, but the flowers open white and change to pale yellow. This also has a strong constitution.

Branston is a white sport from the well-known Barrii conspicua, and possesses all the good qualities of that excellent variety, with its pretty red eye; a large breadth of this Daffodil was in flower at the time of my visit.

Gipsy Queen has a large flower and broad cup: the segments are creamy-white, the cup yellow, edged with orange. Horace, one of the Poeticus varieties, has large, pure white segments, which open quite flat, and a deep red eye. The habit is tall and robust. Heroine is also a white variety, with a broad cup that is greenish-yellow and edged with red. Gloria Mundi is not a new variety, but it is one of the choicest. In common with many other gardeners, I find this variety a difficult one to keep in health, but it was growing freely at the Lowdham Nurseries.

Lady M. Boscawen is a suitable variety, either for the garden or for furnishing cut blooms. It may best be described as a giant Nelsonii major; the perianth is pure white, and the long, straight cup lemon-yellow.

Scarlet Eye is a pleasing variety, having a perianth of pure white, the segments forming a star; the cup is an intense scarlet colour. A good breadth of this plant was in flower, and amongst other varieties it had a very distinct appearance.

Scarletta is a somewhat similar flower to the preceding variety, but the perianth is slightly tinted with lemon, which to some persons would appear a desirable addition. White Lady has a white perianth, the segments being large and flat; the cup is large and coloured lemon-yellow. This variety is valuable to florists for making floral decorations.

Prima Donna is a remarkable flower, unlike any other variety. The perianth is flat, with broad, overlapping segments; the cup is straw coloured, with a red edge. The flower is 4 inches in diameter, and the cup measures 1¼ inch across. In a collection containing about 50 of the best kinds in vases, this was the one which caught the eye first. The plant is apparently of a good constitution.

In addition to the above varieties, I was shown many unnamed seedlings of promise. Mr. J. D. Pearson is well known as an enthusiastic cultivator and a raiser of new varieties, including Florence Pearson, Lowdham Beauty, and Marguerite Durand. Amongst the older varieties, I especially noted the following: Madame de Graaff, of which a thousand bulbs were in flower, forming a grand display; Glory of Leyden; J. B. M. Camm, still one of the most beautiful Daffodils grown; it stands bad weather well, and is later in flowering than many; Maximus, a species which does not succeed on light soils, but the plants were doing well in these nurseries; Duchess of Westminster, still one of the best "whites"; Flora Wilson, a sweetly-scented Daffodil; Lucifer, with long white segments and a bright orange-coloured cup; Lulworth, with segments of creamy-white and a cup of orange-scarlet; Sir Watkin (a large stock of this well-known variety is grown); Argent, after the style of the Phœnix varieties, but of much stronger growth, having flowers that remain erect. The collection occupies 3 acres of ground. Some beds of Muscari conicum "Heavenly Blue" growing near the Daffodils gave a beautiful contrast of colour. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

DAFFODILS AT SURBITON.

It has been our pleasure for several years to visit the nurseries of Messrs. Barr & Sons, at Surbiton, to see the Daffodils in flower, but we have never until this season received the invitation so late as in May. The flowers have bloomed abnormally late, and small wonder, when one remembers the arctic weather that has characterised the spring of 1908. Not only did the cold retard the flowering of the bulbs, but the heavy rains of April caught them when in bloom, and then, when a few warm days did appear the flowers were quickly over. Thus, in a measure, we were disappointed, but these flowers are cultivated on such a large scale at Surbiton that there still remained abundant material of interest, and it was an easy task to find some late flowers of the majority of the varieties. In addition, a late duplicate planting of all the best early kinds is practised by Messrs Barr in order to furnish material for hybridising with later-blooming sorts. The weather on the occasion of our visit was glorious, and in addition to the Daffodils, the great breadths of May-flowering Tulips, with Irises of the pumila type, Polyanthuses, Ranunculuses, and a host of other hardy spring flowers made a beautiful picture. The principal entrance to the fields of Daffodils is through a small rock-garden, to which we have often referred in former notes, but we have never before seen it so prettily furnished with flowers, including Spiræas, Cydonias, Aubrietias, Muscaris, Drabas, Primulas, Jonquils, Fritillarias, and similar subjects, with dwarf shrubs and Conifers interspersed.

Of varieties of Daffodils it may be said that their number is almost endless, and Messrs Barr's latest list enumerates nearly 400 distinct sorts, which, of course, does not represent all the varieties in commerce, although most of the best varieties are included in it. The first of which we have note is the variety named Evelyn Hodge. It was raised from N. montanus × N. biflorus, and possesses a white perianth set off with a small, pale-coloured corona.

Merry Maid was raised at Surbiton in 1907. This is a tall, late-flowering Narcissus of the Barrii section, with a pure-white perianth, tapering in its segments, and crowned by a corona that is yellow and tipped with orange. Bianca is a Leedsii Daffodil that has its white perianth set off with a lemon-coloured cup, the latter being prettily fluted. Agnes Harvey is a variety of rather delicate growth; this is another of the Leedsii section. It often develops two or more blooms on a scape, and is to be recommended for its charming form. Egret has the large, flattened corona of the Englehearti section, to which it belongs, and beneath its crown the broad, white segments form a perianth of the finest type.

Amongst the best of recently-raised trumpet Daffodils is C. H. Curtis. This is a bold flower having a handsome corona that recurves somewhat at the mouth. The perianth is a deep shade of yellow, but not so intense as the golden cup. Another flower of the C. H. Curtis type is George Philip Haydon. The mouth of the trumpet also expands in this variety, and it is finely fluted, but the colouring in both perianth and cup is paler than in the flower named after C. H. Curtis, and its appearance is stiffer. Both varieties were raised in 1905 by the Rev. G. P. Haydon. Knight Errant is another of Mr. Haydon's raising: this is also a trumpet Daffodil, but with white perianth and sulphur-coloured trumpet. Its parents were probably Mad. Plemp and Cernuus. A beautiful white Daffodil is seen in Eileen Mitchell, and, as one of its parents was N. triandrus, the character of producing more than one flower on a scape is perpetuated in the hybrid, and twin

flowers are common. The white of its floral parts is of remarkable purity, and the habit is very graceful. The variety Beauty is not new, but it cannot be passed over without comment. It is a fine, bold flower of the Incomparabilis type, with a pale yellow perianth and a large cup that is tinged with orange. This variety may be recommended for any of the purposes to which the Daffodil is utilised, and is especially valuable for cutting. It is one of the cheapest of Daffodils, and should be largely grown wherever these beautiful spring flowers are planted. White Lady is characterised by a broad perianth of beautiful form the cup being slightly tinged with yellow. It has the advantage of being a free bloomer, and deserves inclusion in a selection of the best varieties. Silver Moon, Sylvia, May Dew, and Fantasie are varieties of a similar type, and valuable for naturalising in grass and woodlands. All these, save Sylvia, were raised at Surbiton last year. They bear their inflorescences well aloft, and have starry, white perianths. Rosalind is one of the Dolly-Cup Daffodils, one of the best in its section. The cup is bright yellow, and it is tinged with scarlet. The habit is very robust. Autocrat is a choice flower of the Incomparabilis type, one of the cheapest of Daffodils to purchase. Una is remarkable in its foliage, which appears to droop. The perianth is creamy-white, its bold corona being suffused with citron colour, which deepens to apricot at the edge. A fine star-shaped Daffodil is the variety named after Frank Miles; it is to be recommended as a late variety for planting in grass land. The beautiful white trumpet Daffodil Alice Knights was past its best condition, but enough remained to show what a lovely flower it is. This may be regarded as the best of the early white trumpet section. Czarina, a giant Leedsii, is certainly among the finest of its class; it is quite new. The yellow trumpet Daffodil Lord Roberts is a flower of large size, massive in both corona and perianth, which are coloured golden-yellow. This variety was raised at Surbiton. Our list is still incomplete, but we have no space to describe the many other varieties of which we made note, including Loveliness, Monarch, Gloria Mundi, Duchess of Westminster, Cloth of Gold, Cassandra, Blackwell, Ariadne, Cygnet, Glory of Leiden, Hamlet, Lady Margaret Boscawen, Janet Image, Peter Barr, Salmonetta, Queen Christina, Stella superba, Victoria, Weardale Perfection, and Blood Orange. Most of these are well-known varieties, and all are worthy of a place in a collection of the best kinds.

NEW OR NOTEWORTHY PLANTS.

ODONTOGLOSSUM × VULCAN.

(VUYLSTEKEI × CRISPUM.)

WHEN at Bruges on May 2, 1908, I saw the two first plants in bloom of this new hybrid, which was raised by Messrs. Sander. The plants varied considerably, but the better variety is a good addition to the already numerous progeny that have been raised from O. × Vuylstekei.

The sepals and petals are both grounded with brownish rose; and upon the sepals heavy brown blotches occupy almost the whole surface, the petals having in addition a pretty margin with white marbling at the base.

The lip is intermediate in form between the parents; it is white, heavily blotched over almost all its area with red-brown. The column is heavily coloured with purplish-brown, indicating that the column of the male parent was a very handsome one.

This plant will make a fine female parent whereon to cross any O. Harryanum hybrid that contains a large amount of rose colouration. *de B. Crawshay, Rosefield, Sevenoaks, May 12, 1908.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM LAIRESSEI

(O. CERVANTESII ROSEUM × O. EDWARDII).

OUR illustration (fig. 147) represents a spray of this pretty hybrid Odontoglossum taken from a plant which recently flowered in Messrs. Sander & Sons' collection at St. Albans. The blooms are pale pink, with the inner parts of the segments purplish-violet, almost of the same tint as that of Odontoglossum Edwardii, the male parent of O. Lairessei, which first flowered with the raiser, M. A. de Lairesse, of Liege, early in 1905. It is difficult to conceive two more widely separated species than the dwarf O. Cervantesii and the large-growing O. Edwardii, which latter has very tall branched spikes of violet-purple flowers, and the plant under notice, which is fairly intermediate in every respect between the two species used in its production.

Odontonia Lairesseæ (see fig. 148), another very interesting cross made by M. A. de Lairesse between Miltonia Warsewiczii and Odontoglossum crispum, was recently seen in Messrs. Sander & Sons' nurseries at Bruges, with three fine spikes of blush-white flowers prettily marked with rose colour.

FIG. 147.—ODONTOGLOSSUM LAIRESSEI: FLOWERS WHITE, MARKED WITH ROSE COLOUR.

LÆLIO-CATTLEYA MARLBURIA

(LÆLIA BOOTHIANA × CATTLEYA SCHRODERÆ).

FLOWER of a pretty hybrid raised from the above-mentioned cross is sent by the raiser, Eustace F. Clark, Esq., Chamonix, Teignmouth. In its fine shape it resembles one of the light forms of L.-C. Fascinator (L. purpurata × C. Schroderæ), but evidence of L. Boothiana (commonly known in gardens as Cattleya lobata) appears in the lilac-tinted sepals and petals, and the distinct veining of the light purplish-rose front of the lip. The base of the lip is white, the disc but faintly tinged with yellow, and the fragrance of C. Schroderæ can be detected in the hybrid. It is a very good and delicately-coloured flower and a distinct improvement on Lælia Boothiana.

CYPRIPEDIUM (PHRAGMOPEDILUM) LINDLEYANUM.

A STOUT-BRANCHED inflorescence of this remarkable species, 5½ feet in height, comes from the Royal Botanic Gardens, Glasnevin, Dublin, where it must have been a fine object rising above the broad, shining green leaves which render the plant ornamental even when not in flower. The numerous flowers, which are about 2 inches across, have a tawny yellow ground colour tinged with and striped with red-brown, the wavy margins of the sepals and petals being ciliate and the sepals downy on the reverse side. It is a native of British Guiana, and P. Sargentianum, of Pernambuco, is closely allied.

NOTES FROM A "FRENCH" GARDEN.

DURING the past two weeks we have formed ridges of dry manure 5 feet apart, and on the end of each ridge have been placed the lights that formerly covered the Carrots and Cauliflowers. Trenches were next dug for the planting of Melons, the hole being made 2 feet wide by 1 foot deep. This we filled with the dry manure, to which had been added one-third its bulk of fresh manure. As soon as each bed is completed the frames are removed from the Carrots and placed on the new bed. The soil removed from the following trench is spread evenly in the frames, care being taken to place some rich soil in the centre of the light wherein to plant the Melons. When planting is finished, the lights are placed on the frames, and the plants are then ready for forcing. The work is proceeded with in the same manner until the whole of the ground allotted for the culture of Melons is planted.

The Melons are well established in pots, and have been stopped to the second leaf. These plants are set in their final quarters two or three days after the bed has been made. Before planting the Melons, all shoots growing at the base of the Cotyledons, and any close to the main shoots, must be cut off with a sharp knife. This precaution is essential, as these shoots often rot and cause the main stem to decay. When the plants are set, a slight watering is given, which is sufficient for two or three weeks. During the first week of planting the Melons must be shaded from bright sunshine with mats, but when they are established this shading is not necessary.

The Melons planted at the end of March have been benefited by the warmer weather of the past week, and their young leaves, which curled during the inclement weather at the end of April, have again assumed a healthy appearance. They have recently been watered. When Melons require a thorough watering the application is spread over two days, in order that too great a quantity of cold water be not applied at once, and thus cause a check to the young roots.

We are making our final sowing of Melons for the season, the varieties being Improved Prescott, Cantaloup, and a lesser quantity of "Kroumir." Plants of the latter variety are very hardy and strong in growth, and in

great demand amongst the French working classes. We allow two fruits to each plant instead of one, as is the case in the Cantaloup type.

The Carrots and Cauliflowers are now in the open; great care is taken in the watering of these vegetables, and it is done at regular intervals. We generally use 250 gallons of water per bed of 15 lights, three or four times a week, according to the weather. This is the season when nurserymen or gardeners will appreciate a well-laid irrigation system where they can obtain a supply of 2,500 gallons of water per hour.

Our Carrots will be ready for marketing in a fortnight. They are of the "Carrot Bellot" variety, a cross between the Early Parisian and the Half Horn. It is not so early as its first-named parent, but it is of a much bigger size, and consequently more valuable.

Next week we shall sow a batch of Endive "La Rouennaise" to take the place of the Cauliflowers at present growing amongst the Carrots. We sow them on a specially prepared hot-bed. The seeds are sown thinly, being spread broadcast in the frame. The seedlings are planted directly into their final quarters.

Our second batch of Cos Lettuces under the cloches is ready for the market. The plants have suffered somewhat from the recent wet and dull weather.

We are now cutting "Passion" Lettuces, which have been grown entirely in the open since January 20. They were sown in October and cultivated during the first part of the winter under cloches. They have received more ventilation than the other varieties, for they are stronger and hardier in growth. We planted them out at the end of January at distances of 10 inches apart. *Paul Aquatias, Mayland, May 13.*

VEGETABLES.

RUNNER BEANS.

Many improved varieties of Runner Beans have been presented to the public during the past few years, and improvement is also to be noticed in the dwarf-growing varieties, and those that are intermediate between the runner and the dwarf kinds. A great gain has been made in the shape of the pod which, in these improved kinds, is shapely, long, has small seeds, and is of excellent edible quality. The plants are, in addition, more fruitful than the older kinds. A shapely pod can be easily prepared for the table, and several of these newer varieties are almost "stringless" in a young state. The new climbing French Beans are a distinct gain to the cultivators who have not a large space at their disposal, for the longer growth enables the plants to bear continuously until the end of the summer, and three or four times the quantity of Beans can be had from them than is produced by plants of the dwarf section. It is the practice in this country to cook Beans when they are almost mature, but their flavour is delicious when cooked whole in a young state, and by this system of serving them there is no waste. By gathering the Beans when young, the plants are enabled to produce other pods freely, and there is no expenditure of the plant energies on the formation of seeds.

Beans require a rich rooting medium and abundant supplies of moisture during hot weather, especially when the plants are in full bearing. On heavy, clayey soils I have obtained excellent results by growing Beans in trenches. No great gain is made in sowing Beans too early, as the plants, being tender, are readily injured by cold or excessive moisture. Their season of fruiting may be hastened by sowing them under glass and planting them out at the end of May. I advise two sowings of the climbing French Bean, the second one to follow at an interval of six weeks or two months. These later-sown plants will carry on the supply until the autumn frosts cut down the plants; whilst the earlier batch can be cleared away in time to make room for a winter vegetable crop. Amongst the best of the Runner Beans are the following: Prize-winner: This is a very distinct Bean and a valuable one for exhibition purposes; the pods, even when young, often measure 1 foot in length; they are tender, and are borne profusely; the variety has received a First-Class Certificate from the Fruit and Vegetable Committee of the Royal Horticultural Society. Best of All is another fine Runner Bean, equally valuable as an exhibition variety; the growth is robust, and its fruiting is prolific, the pods being produced in large clusters; its edible qualities are devoid of all coarseness. Both these varieties are very distinct from the old Scarlet Runner Bean, and they well merit a trial in gardens. I was last season much impressed with the qualities of the new Scarlet Runner Bean "The Emperor." This is a prolific cropper, producing a finely-shaped pod 12 to 15 inches in length, of a pleasing dark green colour. The long, straight pods are suitable for exhibition purposes, and a good dish of this Bean is a feature in any exhibit of vegetables. Apart from all these qualities, it makes a fine dish for the table, as the flavour is delicious, and it is free from coarseness of texture. Another fine Runner Bean is Jubilee Runner. The Beans are

Fig. 148.—Odontonia × Lairesseæ.

See p. 328.

produced in great clusters, and are even larger than those of The Emperor, being thicker and more fleshy.

These remarks on Runner Beans would be incomplete without reference to Hackwood Park Success, raised by Mr Bowerman of that place. The long handsome pods are quite straight, from 9 to 10 inches in length, and of the best edible quality. The pods are produced in clusters. I have counted more than 30 in various stages of growth on a single raceme. This variety is one of the earliest of Runner Beans to fruit, and, in every respect, it is a great advance on the old Scarlet Runner.

The newer climbing French Beans include Veitch's Climbing, and Tender and True. The growths need only stakes from 5 to 6 feet in length, and they are capable of furnishing a supply of Beans until they are cut down by frost. Both are free-bearing, and the Beans are excellent for consumption in a young state. Excelsior is slightly taller than these two, which may be considered an improvement, and it is equally prolific as those just named. Epicure is distinct from the three I have mentioned; the pods are very thick and fleshy, and are suitable for cooking whole, owing to the seeds being very small. Princess of Wales reaches about 5 feet in height; this also is a great cropper, the pods being of first-class flavour. Earliest of All is valuable for its early cropping; the pods are fleshy and excellent when cooked whole. Among the new type of "stringless" Beans may be mentioned Carter's July and Successor. The growths of the first-named variety are 3 or 4 feet in height, and produce long, straight, stringless Beans. It is a free cropper, and provides a supply of Beans early. Successor is a later Bean, but very prolific, and of first-class quality. *G. Wythes.*

COLONIAL NOTE.

YLANG-YLANG CULTIVATION.

The flowers of this tree give, on distillation, an essential oil, very valuable for perfumery purposes. The tree belongs to the same family as the Sour sop (Anonaceæ), and appears to flourish in many of the botanic gardens of the West Indies, where specimens have been planted.

The tree is largely grown in Reunion for the production of its essential oil, the price of which has steadily increased in value of late years. It is also cultivated in the Philippine Islands.

Recent U.S. consular reports from Cochin China state that planting of the Ylang-ylang has been taken in hand on several estates in the province of Bienhoa with satisfactory results. The high price obtained for the essence makes the cultivation highly remunerative. It is stated officially that two acres planted with 300 trees may give 6,500 lbs. of flowers, which would yield at least 33 lbs. of essence.

In the past there has apparently been some confusion as to the proper botanic name of the Ylang-ylang. It has been referred to as Artabotrys odoratissimus and Unona odorata. It is evident, however, that the correct name is Cananga odorata.

LEMON GRASSES IN CEYLON.

Lemon grass is largely grown for its oil in Ceylon. It does not seem to be particular as to soil or situation, and will grow at any elevation up to 1,600 feet. The soil that gives the best returns, however, appears to be a sandy loam.

Lemon grass is usually propagated by offsets from clumps of mature grass. The best results are obtained from clumps two or three years old. The stools are divided into slips and planted into holes at distances of 2 or 3 feet apart. After planting, the soil should be trodden down firmly around the plants. Necessary weeding operations should be carried out at least twice a year.

In the cultivation of this crop little or no expenditure need be made in the purchase of manure. An occasional application of cattle dung, however, is said to have good results, and after distillation of the essential oil, the grass may be returned to the ground as a mulch. In Ceylon a first cutting of grass is made about nine months after planting. Two or three cuttings a year can be made. Replanting is necessary after the third year.

The oil is generally distilled directly the grass has been cut, but it is stated that better results are obtained by keeping the grass for a day before commencing this operation. The process of distillation, although very simple, takes four or five hours to complete. After distillation, the crude oil is filtered and then run into bottles or casks ready for the market. The yield of oil varies greatly, sometimes amounting to 0·2 per cent. of the weight of the grass. A good yield is about 100 quarts, or 4,000 fluid ounces per acre. At 6d. per ounce, this represents a return of £100 per acre.

Lemon grass oil is generally employed in the perfuming of scented soaps and pomades. It is also largely used in the adulteration of verbena oil. The product has largely increased in value of late years, and in Ceylon a price of from 6d. to 8d. an ounce can be relied on. A sample of oil sent from Montserrat was valued by London brokers at 4½d. per ounce, and it was stated that there would be no difficulty in disposing of at least 500 lbs. of the product. *Agricultural News, April 18, 1908.*

NOTICES OF BOOKS.

* "THE VEGETABLE GROWERS' GUIDE."

THE authors of this work, of which the first volume is now before us, have embarked on a large task, and they are fully aware of its magnitude, as the preface and introduction to the work abundantly prove. In fact, the treatise, for it is nothing short of this, is so planned as to tell all that is worth knowing about vegetables. It will be readily admitted by all who peruse the pages that the authors have gone a long way in the direction of substantiating their claims to completeness, even though the reader may not see "eye to eye" with them on all the points they raise—and settle. But they speak with considerable authority bred of long experience of vegetable growing under diverse conditions. The volume opens with discussions on the formation, and the maintenance of the kitchen garden, and the whole is treated in a very practical spirit. We venture, however, to suggest that the diagram on p. 21, showing how a system of drainage should be laid, is not planned in accordance with the best principles. The main drain is carried obliquely across parallel straight rows of side drains, with the result that all the laterals on one side of the main must always enter it at more than a right angle. The remarks on manures are sensible and sound; whilst properly advocating the use of natural manure as a chief means of building up the necessary humus, the utility of suitably-chosen chemical fertilisers is explained.

Passing to the consideration of the growing of the vegetables themselves, each kind is fully treated, the cultural details are exhaustive, and much critical information is given as to the value of different varieties of each vegetable. The principal pests, both animal and vegetable, are also described, and in many cases figured, and this information will be greatly valued by the intelligent gardener who is everywhere taking a wider and more scientific interest in all that appertains to the welfare of his crops.

A feature of the book which will not only prove useful at the present time, but at a future period will still be valuable from the historical point of view, lies in the financial estimates, both of the cost of growing and of the profit obtainable from the different vegetable crops under garden cultivation.

Whilst the over-specialising on "exhibition" produce is deprecated, the authors adopt a reasonable and well-balanced attitude towards this question. For, whilst there can be no doubt that the growing for exhibition purposes may, and sometimes does, lead to the abandoning of the really good for the apparently magnificent, it is equally certain that the competition afforded by shows serves as an excellent stimulus, and tends to check slackness or contentment with mediocrity on the part of the gardener.

We are glad to congratulate the authors on the production of the first instalment of so fine a work, and we doubt not that all who are interested in the cultivation of garden produce will look forward with interest to the completion of the book. Its other merits are enhanced by the numerous figures and coloured plates, and if the former are sometimes a little rough, they, at any rate, serve their purpose. The publishers also deserve praise for the general excellence of the printing and other technical accessories of a book which will deservedly take its place as a standard work on the subject of vegetable culture, which is rapidly becoming of greater importance in this country.

* *The Vegetable Growers' Guide*, by John Wright, V.M.H., and Horace J. Wright, with 30 coloured plates and upwards of 200 diagrammatic drawings; Vol. I. London: Virtue & Co.

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Oncidium macranthum.—This species is of comparatively easy culture, if afforded a cool, intermediate temperature and protected from strong sunshine in the summer months. The flower scapes are now nearly developed. They are exceedingly large when compared with the size of the pseudo-bulbs which produce them, and they necessarily exhaust the plant to a considerable extent. It will, therefore, be seen that the plants should not be allowed to flower before they have become strong specimens. O. macranthum produces strong, thick roots which should be carefully protected at all times, never allowing them to suffer from drought at any season. The plants dislike to have their roots disturbed. Therefore, re-potting should only be carried out when it appears to be absolutely necessary, but in cases where the plants need it the operation may be carried out at any time when the young growths are seen to be producing fresh roots. When re-potting, let ample rooting space be provided for each plant, and the base of the plant be set rather low in the pot, filling up to and around it with crocks and charcoal, for drainage purposes. For the rooting medium employ Osmunda fibre, Polypodium fibre, and Sphagnum-moss in equal parts, using these ingredients in a rough state and mixing with them some crushed crocks and charcoal. Make the material moderately firm about the roots. After this has been done place some clean, hand-picked Sphagnum-moss over the surface. Owing to the climbing habit of this species, the young roots of established plants are often produced some little distance above the surface of the compost. In such cases a little material should be placed in such a position that these roots may reach it, and thus be conducted to the compost beneath. Should they remain exposed they would be the more liable to injury from insects.

Cœlogyne cristata and its varieties.—Since these plants flowered a very moderate supply of water at the roots has sufficed for their requirements. During that period of partial rest they have recovered from the strain imposed by the flowering, and the shrivelled pseudo-bulbs have regained their plumpness. But growth having commenced, the amount of water applied to the roots should be gradually increased, until it is seen that the new pseudo-bulbs have commenced to form, when the supply should be again increased until the pseudo-bulbs have completed their development. Established plants in a healthy condition should be kept in a light position in a freely ventilated atmosphere of intermediate heat, and the surroundings should be maintained in a moist state by frequently damping the stages and other surfaces in the house. The plants may also be sprayed overhead whenever the weather is bright. An examination should now be made of these Cœlogynes to ascertain which plants need to be re-potted and which require only to be top-dressed. Large specimens may remain for a considerable length of time without re-potting, and are capable of maintaining themselves in good condition. But the period during which they will be able to do this will vary according to the thoroughness in which the previous potting operation was carried out. If a collection contains a number of specimens, it is advisable to re-pot one or two of them each year, so that if the newly-potted plants do not immediately produce flowers, this loss will not be felt. Plants that are to be re-potted should have all the old material shaken from their roots, and after the mass has been pulled to pieces all the dead roots and old pseudo-bulbs should be cut away, leaving only three or four pseudo-bulbs behind each leading growth. Place the plants in clean receptacles of suitable sizes, and fill these with drainage materials to about two-thirds of their depth, over which place a layer of thin turf or rough moss. The rooting medium may be composed of turfy loam, peat, Osmunda fibre and Sphagnum-moss in equal parts, adding a liberal quantity of crushed crocks and silver sand. Let these ingredients be well mixed together and use them in a rough state. The specimens should be made up in a conical fashion, a commencement being made in the centre of the receptacle (the centre pseudo-bulbs thus being placed the highest), afterwards packing each piece securely with the potting mixture, and making use of copper wire pegs to hold them firmly in position. Let all the growths be placed in such a manner that they will point towards the centre. When the operation has been completed, place the plants in a shady position and spray them overhead frequently; also damp the staging in between the pots in order to prevent the pseudo-bulbs from shrivelling more than is unavoidable.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Early vines.—As soon as the Grapes upon the early vines are ripe, the atmosphere of the house must be kept cooler than heretofore, and by free ventilation and a moderate amount of artificial heat the interior of the house should be kept drier than usual, for under these conditions the fruit will keep longer. In the earliest houses it is not usual to leave the fruit upon the vines for a sufficient length of time after it has ripened to necessitate the borders having to be watered before the fruit is gathered. But if for any reason it should be desirable to water the borders while ripe fruit is still hanging upon the vines, the watering should be carried out early in the morning of a bright day. In any case, directly the fruit has been gathered, the borders should be thoroughly moistened with weak liquid manure, and the vines should be forcibly syringed with clear water to cleanse them of red spider or any other pest. Endeavour to keep the leaves in a healthy and clean condition as long as possible, as this will enable the wood to become perfectly matured.

Mid-season vines.—Such vines as Black Hamburgh, Madresfield Court and similar varieties carrying crops of fruit for use at midsummer should be afforded weak farmyard manure water, or top-dressings of artificial manure, remembering always that the plants may be easily injured by over-doses of manure. Keep a close watch for red spider, and upon its first appearance sponge the leaves with soapy water. Attend to the stopping and tying of the shoots each week, and cut out from the bunches of fruit any seedless berries they may still contain. Maintain an atmospheric temperature at night of 60° to 65°. Ventilate the house early each morning, and close the ventilators sufficiently early in the afternoon to cause the temperature to rise to 85° or even 90°. Damp the surface of the borders early in the morning and again in the afternoon when the house has been closed to promote atmospheric moisture.

The late vines.—Our vines of such late varieties as Lady Downes Seedling, Appley Towers, Black Alicante, Alnwick Seedling, and Lady Hutt have not yet made such progress as is usual at this date. Examine the borders to see if they require water; thin out a few of the surplus inflorescences before the plants come into flower. At that period it will be necessary to promote the conditions that have already been recommended in this column for the earlier fruiting vines during their flowering stage. For the purposes of pollination, plants of Alnwick Seedling should be syringed, or the inflorescences should be touched by a camel's hair varnish brush in order to remove the glutinous exudations from the stigmas of the flowers, otherwise a bad set will result. If this be done, however, care should be taken to see that the blossoms will be dry at midday, when the pollen should be distributed. As soon as it can be ascertained which berries have set, the final thinning of the bunches may be carried out, and later, the thinning of the berries should be given attention. When thinning the berries, it should be borne in mind that the Grapes will not possess good keeping qualities if they are allowed to be overcrowded during their period of developing and ripening. It is desirable to remove any extra loose shoulders on such vines as Black Alicante, Alnwick Seedling, Lady Hutt and any others that are more or less prone to form unshapely bunches. In structures containing Gros Colmar or any other variety of Grape which is liable to have its leaves injured by the direct rays of the sun, it is necessary to afford sufficient shading to prevent this. For directions as to Muscat Grapes, the reader may turn to the Calendar printed in the issue for May 2.

THE FLOWER GARDEN.

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

Preparations for bedding-out.—It is but four weeks since we had 2 feet deep of snow and 14 degrees of frost. It is, therefore, not surprising that the spring-flowering plants have been much retarded. The summer bedding plants have necessarily been kept under glass longer than usual, and they are none the better for this, as it is often impossible to prevent them being crowded whilst still in the houses, and the temperatures are sometimes higher than is good for them. In these gardens the spring-flowering plants are just at their best, and their display is quite three weeks later than last year. The Wallflowers exhibit several new shades of colour, and their effect is very pleasing when such varieties as Eastern Queen, Old Gold, Vulcan, Spanish Queen, and others are grouped together.

Tuberous-rooted Begonias in mixed colours and planted in single beds are very effective for summer flowering, and in late years they have been substituted in many instances for Pelargoniums. If, however, they are planted in beds, forming part of a geometrical design, each bed should be planted with a variety of one colour. But if reds, pinks, whites, bronzes, and yellows are planted in sufficient quantities, the general tendency is for them to appear flat and uninteresting. Therefore, it is customary to introduce amongst them what are termed "dot" plants. For this purpose Gladioli are commendable, and may be used in named varieties of various colours. They should be planted at the same time as the Begonias. If the latter are planted in suitable soil, they make numerous roots, grow freely, and flower well. But it must be remembered that they require much moisture, and if some decayed leaves are intermixed with the soil, also a little soot and wood ashes, they will generally succeed better.

Vases.—In the numerous gardens where vases are used to ornament conspicuous positions in the flower garden, it is necessary that they should be so planted at the commencement that they will be able to afford a good effect immediately afterwards. Pelargoniums two years old are among the most suitable free-flowering plants for such cultivation, and autumn-rooted cuttings of Ivy-leaved Pelargoniums, together with Lobelia seedlings, may be used for the draping of the vases. It is desirable, when the vases are placed in different aspects, to provide for each vase presenting a separate colour. Excellent colours are afforded by such Pelargoniums as Henri Jacoby (deep crimson), Achievement (double pink), Paul Crampel (scarlet), Madame Crousse (pale pink), and Souvenir de Charles Turner (dark pink). Soil that is taken from beneath the potting bench is very suitable for filling the vases, and it should be made moderately firm about the roots of the plants, and be freely watered directly the work of planting has been completed.

Hollyhocks.—If seeds were sown early in February, as was advised in a previous Calendar, the plants should now occupy 5 or 6-inch pots. This method of raising Hollyhocks is desirable from several points of view. Such plants are less liable to the fungus disease than those raised from cuttings. They grow most freely, and there is always the possibility of obtaining varieties of extra good quality. I have found that isolated plants are less frequently the subjects of attacks from the disease, and for this reason it is better not to group Hollyhocks too closely together. If they are judiciously intermixed with Pompon and Cactus-flowering Dahlias, the effect is good. Both plants require deep, rich soil and frequent waterings during the summer months.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Fruit prospects.—In this district it is as yet impossible to determine what the effects of the recent unfavourable weather will be. However, blossom is very plentiful on most trees, and if a quarter of their number should set well there will be good crops of fruit. Plum trees appear to have fewer blossoms than most other crops, and Strawberry plants vary much in appearance, Givon's Late Prolific having apparently suffered most from the inclement weather.

Disbudding.—This work will now be in full progress upon Peach and Apricot trees, and in more southern districts than this the work will soon be completed. Do not allow trees that have failed to set fruits to be neglected in this matter, but disbud them equally with the others. The details of disbudding Apricots and Peaches were discussed in the Calendars printed in the issues for April 18 and 25. I need, therefore, only say that the operation should be carried out during mild weather as far as possible, and that the weakest-growing trees should be left until last, by which time they will have gained a little strength. The operation of disbudding the shoots and thinning-out the fruits of all trees should be entrusted only to experienced men. A well-balanced and fertile tree may often be secured by the timely removal of badly-placed shoots and the pinching-in of others. If the work is properly done, this will render it unnecessary to employ the knife severely in the winter season.

Vines out-of-doors.—Last year the out-of-door vines were generally failures; but this should not cause us to neglect the plants in the present season. By giving early attention to the matters of disbudding, and the stopping and tying-in of the shoots, much may be done to secure a better return this year. But apart from their fruit, out-of-door vines are very ornamental, and from this point of view alone they are worth cultivation. Disbudding should be commenced as soon as it can be seen which shoots will produce the best bunches of fruits. Not more than one shoot and one bunch should be allowed to each spur, unless there is much wall space it is desirable to cover. The young shoots should, in all cases, be stopped at the first "joint" beyond the bunch, and the shoots should be tied close to the face of the wall, in order that they may benefit from the warmth which is absorbed by the wall. Every lateral should be pinched at the first leaf. Watering may need to be done during dry weather, especially if the vines are growing against hot buildings, and frequent applications of liquid manure should be made.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

The Stove.—Plants that are now growing quickly and are known to be liable to the mealy bug should be frequently examined in order to destroy this pest before it becomes prevalent in the collection. The best method of cleansing infested plants is by using an insecticide called "The Empire." If this is applied by means of an "Empire" sprayer one man will be able to cleanse many plants in a very short time.

Shading and ventilation.—These matters should receive extra attention at the present time, when the weather is changeable and sunshine most fitful. Care should be taken never to allow the blinds to remain down after the sky has become clouded. Stove foliage plants will now require to be syringed twice each day. After syringing has been done in the morning a small amount of ventilation should be employed, and an equal amount should be left on after the plants have been syringed in the afternoon until the foliage has again become dry. Do not hesitate to freely ventilate the stove when the outside temperature is not lower than 60°, for if draughts be prevented the additional air will benefit the plants. Frequently damp the surfaces in the house during the middle of the day in order to promote atmospheric moisture.

Allamanda, Dipladenia, Stephanotis and Gloriosa.—These plants are now growing very quickly, therefore the shoots require to be regulated in order that each may be exposed well to the light, and for the same purpose any surplus shoots should be removed.

Bougainvillea.—These plants flower best when the shoots are trained under the roof of a house and allowed to depend from the roof. As soon as the plants have passed out of flower, the flowering shoots should all be cut off and a second display of bloom may then be expected in the autumn.

Salvia splendens.—When sufficient cuttings have been taken for purposes of propagation, the old plants may be planted out into an unheated frame, where the lights can be removed later in the season. If treated in this way the plants are not likely to suffer much from red spider, and in September, if the roots be cut round with a spade a few days before lifting the plants, they may be potted up and will form handsome specimens for flowering in the greenhouse.

Bouvardia.—If treated in the manner recommended for Salvia splendens, Bouvardias will succeed well; the climate of Scotland is too cold to allow us to plant the Bouvardias entirely in the open. A suitable compost for these plants is one consisting of good loam, leaf-soil and sand, and it should be pressed firmly about the roots at the time of planting. Keep the frame closed for a few days after the planting has been done, and syringe the plants each afternoon if the weather is favourable.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Over-crowding of crops.—One of the greatest and most frequent mistakes of kitchen gardening is that of allowing the crops to become overcrowded through insufficient thinning. This applies to nearly every crop in all kinds of soils. Ten or more plants are frequently allowed to occupy space that is merely sufficient for one plant. Peas and Beans are, perhaps, amongst the first to suffer when treated in this manner. Not only do they yield a deficient crop, but the period of cropping is also of much shorter duration. It is, nevertheless, a good plan to sow the seeds just about as thick again as it is intended to allow the plants to develop; but after this has been done the thinning must not be neglected. It should be carried out in two operations, and the earlier it is done the better are the results.

Fertilisers.—During the next month or six weeks everything should be done that is possible to encourage vegetables of all kinds to make uninterrupted growth. In most cases, but especially upon land that is not sufficiently rich, applications of some suitable fertiliser are needful. There are many artificial compounds now on the market, which, if applied according to the directions issued with the manures, are capable of benefiting the crops. For many years past I have used Clay's Fertiliser, with excellent results, and for Potato crops Messrs. Wood & Sons have a preparation which is equally valuable. Fresh soot is a good fertiliser, and it is also valuable as a deterrent of birds and other pests. Young seedling Carrots and Celery are liable to become infested with green aphis at this season of the year, and in such cases they should be syringed with the X.L.-All liquid directly the pest is observed. One application, if made with care, generally proves sufficient to destroy the pest. Slugs are very numerous this year, and only by the greatest perseverance can many of the crops be saved from their ravages. As a preventive, however, the soil should be broken as finely as possible, and made quite firm about the young plants. After this has been done, the surface should be entirely covered with finely-sifted cinder ashes. Having tried many remedies, I have found nothing so effective as these ashes, which slugs have a great objection to crossing.

Potatos.—Immediately the young growths of the earlier Potatos appear above the soil, let the soil between the rows be hoed with the flat hoe, and when the growths are 3 inches above the soil, let earthing-up be carried out. Keep a sharp look-out for frost, and when this is likely to occur afford the plants some protection.

Runner Beans.—Seedlings which have been raised in pots or boxes under glass should now be thoroughly hardened off and got into readiness for planting in the permanent rows before the end of the present month. The plants should be put into well-prepared trenches, into which plenty of good manure has been worked. Plant two rows in each trench, and allow at least a distance of 12 inches between the plants. The trenches should be separated from each other by distances of 10 or 12 feet. Take every precaution to protect the young plants against snails and slugs, and apply stakes to the rows at the time of planting. The stakes should be as long as it is possible to get them. Each should be thrust well into the ground, and at intervals they should be supported by cross stakes tied with strong tarred cord. Another sowing may now be made in the open garden

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, MAY 25—
Ann. meet and dinner of the Kew Guild at the Holborn Restaurant. Anniversary meet. of the Linnean Soc.

TUESDAY, MAY 26—
Roy. Hort. Soc. Sh. in the Temple Gardens, Thames Embankment (3 days).

WEDNESDAY, MAY 27—
Ann. meet. Brit. Gard Assoc. in Essex Hall, Strand, 7 p.m. Bath and West and Southern Counties Soc. Sh. at Dorchester (5 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—55·9°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May 20* (6 P.M.): Max. 73°; Min. 54°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday, May 21* (10 A.M.): Bar. 29·8; Temp. 64°; *Weather*—Bright sunshine.
PROVINCES.—*Wednesday, May 20* (6 P.M.): Max. 58° Colchester; Min 51° Ireland N.W.

SALES FOR THE ENSUING WEEK.

TUESDAY—
100 magnificent Orchids, by order of Messrs. Sander & Sons, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 2.30.

THURSDAY—
Selected Plants from the Chillingham collection of Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 1.

FRIDAY—
Special Sale of Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.45.

Gardeners' Orphans.

In this country the State makes no provision for maintaining its orphans other than that afforded by workhouses and similar institutions, that, however, do not in this connection commend themselves to British sentiment. So long as these conditions exist there will always present themselves in every industry and profession sufficient grounds for the exercise of private charity.

We know that in various industries, societies and communities, praiseworthy efforts are made to maintain the fatherless children of those who were formerly numbered amongst the productive workers in the industries, or who were members of the societies, but have fallen prematurely from the ranks through death. It would be an easy matter for us to urge that the conditions of employment in practical gardening are such as to make it doubly imperative upon horticulturists to do their very best in the interests of gardeners' orphans. At the recent Festival Dinner of the Royal Gardeners' Orphan Fund, which was reported in our last issue, one of the speakers referred to the emoluments and the status accorded to gardeners as being incommensurate with the responsibilities entrusted to them, and insufficient to enable them to make proper provision for support in old age. We have urged the same thing over and over again, and we hope that in the future employers generally will learn to appreciate more correctly the value of the services rendered by their gardeners, and will show their increased appreciation in a substantial and satisfactory manner.

But it is not necessary to rest the case of the orphans even upon the generally low scale of the salaries paid to gardeners, for the need of charity would often arise even if the wages were satisfactory. Visitations of illness and death are casualties that affect the comparatively young in life as well as those of riper years, and many a worker is permanently removed from the scene of his toil before he could possibly accomplish much in the nature of providing for those who are naturally dependent upon him. In such cases as these it is the bounden duty of those who survive to afford the provision their fallen comrades were unable to make.

It is, therefore, a matter for general satisfaction that the recent Festival Dinner of the Royal Gardeners' Orphan Fund was attended with the success we were able to record in our last issue. The Fund was instituted in 1887 to commemorate the Jubilee of Her Majesty Queen Victoria, and coming generations are likely to say, as we say at this time, that gardeners could not possibly have chosen a more commendable method of commemoration. Although it is but 21 years since this happened, many of those who were among the first and most ardent supporters are no longer with us. In such a short period their labours are well and appreciatively remembered, and whilst their loss is mourned, there is the satisfaction that new workers have been forthcoming, and that changes by death or otherwise have not been allowed permanently to impede the general progression of the Fund. Its original objects were to make allowances not exceeding five shillings per week to the "Orphans of Gardeners, Foremen in Public, Private and Market Gardens, and the Managers or Departmental Foremen in Nursery and Seed Establishments" until they reach the age of 14 years, and subsequently by means of special grants to assist them in providing clothing or tools or apprenticeship fees when commencing to earn their own livelihood.

In faithfully carrying out these objects the fund has expended a sum of money amounting to £18,000, and during the same period has invested funds that yield more than sufficient interest to defray the whole of the cost of management. At the present time there are 116 orphan children, for whose maintenance until they are 14 years of age the Executive Committee has assumed responsibility. To accept Mr. Poupart's simile, how the "sport" of 1887 has flourished!

The most optimistic of those who helped to found the fund could hardly have anticipated that its "Coming-of-Age" would be celebrated in such auspicious circumstances.

At the recent festival the chair was appropriately filled by the President of the fund, the Duke of Bedford, K.G., who showed his active interest by fulfilling the duties of this position and subscribing £250. A feature of the meeting was the announcement by the treasurer, Mr. Edward Sherwood, that his father, brother, and himself would subscribe a sum to provide permanently sufficient interest to maintain one orphan. Another satisfactory circumstance was the statement by the secretary, Mr. Wynne, that the shilling contribution suggested in February last by Mr. H. J. Clayton, one of the founders, had resulted in the collection of £230, a sum which has since received considerable additions.

The committee, of which Mr. Henry B. May is chairman, and stewards had worked well, and the total subscription, exclusive of the "Sherwood" or "Maybud Campbell" gift, was £1,385, being a greater amount than has ever been raised at an annual festival.

There are two matters mentioned in the speeches to the toast of "Gardeners and Gardening" that deserve emphasis. One is the point urged by the Mayor of Westminster, Mr. John W. Dennis, J.P., that it is more than ever necessary for gardeners to avail themselves of the latest knowledge gained in the science and art of gardening, and the other is the plea made by Dr. Farmer, F.R.S., that horticulture should be given political recognition by the State and official recognition at the universities.

Reverting to the fund, it only remains for us to appeal to gardeners and proprietors of gardens to do their utmost to increase the number of annual subscribers that progress may still be maintained during the new epoch upon which the charity has now embarked.

OUR SUPPLEMENTARY ILLUSTRATION depicts a portion of the Rhododendron Dell at Kew as it appears in May and June. Surrounded by tall trees, the visitor, as he listens to the singing of the birds and obtains a chance view of a squirrel on the path in the distance, might imagine himself to be in the woods of an estate far removed from the electric tramcars and motor omnibuses, rather than a spot only some six miles from the centre of London. Situated on the western side of the gardens, and extending parallel with the river Thames, the long, winding valley or depression is nearly a quarter of a mile in length. Originally known as the "Hollow Walk," it is said to have been excavated by the Staffordshire Militia when quartered at Kew, in the reign of George the Third. Sheltered on either side by tall trees and evergreen shrubs, especially Hollies, being a low-lying situation, and so close to the river (100 to 150 yards), the position is fairly moist. The supplementary illustration shows the dell looking from N.E. to S.W. Sir WILLIAM HOOKER commenced the planting of Rhododendrons on this spot, and now the whole of the banks, for some distance in places on either side of the walk, are clothed with masses of the finest of the hardy Rhododendrons, a goodly number of which have attained to considerable dimensions. The collection is added to every year. It is also necessary from time to time to move large plants, to give others more space to develop. This means that the area occupied by the Rhododendrons is increasing, and it is doing this both in length and breadth wherever possible. The shelter afforded by the banks and trees and shrubs previously mentioned make it possible to grow some of the hardiest of the Himalayan and Chinese species, together with their hybrids. Near the centre of the dell a few Camellias have also been planted. The illustration at fig. 149 shows a large specimen of R. Cunninghamii on the right, the smaller plants in the centre of the picture being R. Griffithianum (Aucklandii) hybrids, notable

for their large flowers, and considered by many growers to be the finest of all Rhododendrons. Unfortunately, it is only possible in this country to grow them outside in sheltered positions, except in the favourable climate of the south-west and one or two similar localities. A pretty Himalayan species flowering in the dell at present is R. campylocarpum, the flowers are bell-shaped, pale yellow, and about 2 inches across. A few of the best Rhododendrons also at present in flower are Ascot Brilliant (rich red), John Waterer (deep rosy-red), Macranthus (white-flushed purple), Manglesii (large white flowers, tinted pink, especially in bud), Prince Louise (white, almost prostrate in habit), Auguste van Geert (rosy-purple), Hamilcar (purple), and Broughtonii (deep rosy-red, a very large specimen).

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We wish to remind our readers that the 69th anniversary festival dinner in aid of the funds of this institution will take place on Wednesday, June 24 next, at the Hotel Metropole, under the presidency of the Rt Hon. the Lord ALDENHAM. Subscriptions or donations to be placed on the chairman's list for announcement at the dinner are earnestly solicited, and may be sent direct to Lord ALDENHAM, or to Mr. GEORGE J. INGRAM, secretary, at the offices, 175, Victoria Street, Westminster, S.W.

FIG. 149.—RHODODENDRONS AT KEW, SHOWING A FINE SPECIMEN OF R. CUNNINGHAMII IN FLOWER ON THE RIGHT.

THE TEMPLE FLOWER SHOW will be opened on Tuesday next, and will remain open until the 28th inst. Judging will commence at 10 a.m. on the opening day, and half an hour later the members of the Floral and Orchid Committees will assemble, but there will be no meeting of the Fruit and Vegetable Committee. At 12 noon the exhibition will be open to the Fellows and the public. Fellows are reminded that there will be a private view from 7 a.m. to noon on Wednesday, May 27, when admission will be by Fellows tickets only. Gardeners may obtain 2s. 6d. tickets for 1s., which will admit them to the show on Wednesday between the hours of 12 noon and 7 p.m. These special tickets must be obtained on or before May 23 from the secretary of the society. The Temple Gardens are easy of access by the District, and most of the other underground railways of London. The London County Council's tram system passes by the main entrance to the exhibition, and this year the new connection with the North London tramways will be available for visitors. In addition, there are numerous services of horse and motor 'buses which pass by the Law Courts in Fleet Street, which are close to the show ground.

A GARDENER'S GOLDEN WEDDING.—Mr and Mrs. BLACK, of Smeaton Gardens, East Lothian, recently celebrated their golden wedding, writes a correspondent, when they were the recipients of many presents, those from Sir ARCHIBALD and Lady SMEATON HEPBURN being a gold watch for Mr. BLACK and a diamond brooch for Mrs. BLACK. For a number of years Mr. BLACK has had charge of everything connected with the estate, with the exception of the farm. A large rock-garden has been constructed in recent years, but Orchids are, perhaps, still the favourite plants of this veteran gardener, who has several sons following in his steps, of whom some are settled in situations in America, but the eldest (Mr. ALEXANDER BLACK) is head-gardener to the Duke of LEINSTER, at Carlton. Mr. BLACK, it may be added, completes his fiftieth year as gardener at Smeaton next November, and is still hale and hearty and as enthusiastic a gardener as ever he was.

MR. B. H. THWAITE, whose death has been recently announced, devoted considerable attention to the subject of applying electricity to the roots of cultivated plants. His system was described in our issue for September 8, 1906, p. 180. Before the commencement of his illness Mr. THWAITE was engaged in conducting experiments at the Royal Botanic Society's Gardens, Regent's Park

RECENTLY INTRODUCED PLANTS. — M. MAURICE L. DE VILMORIN exhibited at the Ghent Show a large number of plants in pots, being recently introduced species. Many of these were trees and shrubs that have already been described in these pages and elsewhere, but owing to the early date of the season, the plants had made very little growth, and in consequence

were not attractive to the general public. M. VILMORIN has now published a list of the species and varieties, and the pamphlet is illustrated. The exhibit was awarded a Gold Medal.

THE LATE MR. BERNARD COWAN, whose death occurred on May 5 at South Shields, was on occasional contributor to these pages. He had been superintendent of the Cemeteries under the South Shields Burial Board and latterly the Corporation for a period of thirty years, and previous to his appointment was head gardener to Sir WILLIAM HUTT, of Gibside, and Sir. H. CLAVERING, of Axwell Park. He was vice-president of the English Arboricultural Society and joint secretary of the South Shields Chrysanthemum Society. Many gardeners have visited the South Shields burial grounds, especially the Horton Cemetery, which Mr. COWAN had laid out in a most admirable style and maintained in such a manner that it was one of the most beautiful places in the borough.

ABERDEEN AND NORTH OF SCOTLAND COLLEGE OF AGRICULTURE.—Much justification is being expressed in educational circles in the North, writes a correspondent, at the scheme for the extension of the work of this college at present under the consideration of the Government and the Scottish Education Department. Should it be adopted—as seems likely to be the case—a very considerable impetus will be given to the development of the work of the college. The aim of the Scottish Department is to weave agricultural education into the general educational system of the country. This will involve, in the first place, an addition to the curriculum of rural schools, and here the college will have to give all the assistance possible to effect this object. The college will be expected to advise and consult with school boards as to laying out school gardens, not for the purpose of teaching the children to be horticulturists, but rather for inspiring them with a love for nature study, especially as it is exhibited in the plant life around them. To be complete and effective nothing could be more natural than that such instruction should originate in our rural schools, where it will find its readiest and most receptive pupils in those who are born and bred among country pursuits, and who will, in the large percentage of cases, be destined to follow such pursuits. But the function of the college under the scheme will not merely be to furnish this instruction in its higher forms, but it will also provide courses of study for students and particularly to train teachers. Other developments are also in contemplation, all having a bearing on rural life, while the provision of an experimental farm is not being overlooked. Altogether the extension scheme appears to have all the elements of practicality about it, and should it come to be applied—as there is every prospect of its being—there can be no manner of doubt as to the beneficial results that are bound to follow. In agriculture and horticulture, as in everything else, improved education must lead to an improvement in methods and to the elevation and increased importance of these industries. That these are the expectations entertained may be inferred from the hearty manner in which the governors of the college approved the scheme at a meeting they held the other day.

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 25, 1908, 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.

FLOWERS IN SEASON.—From the Knapp Hill Nursery, Woking, Mr. ANTHONY WATERER sends us examples of several interesting shrubs in flower, including a very fine form of the old Cydonia japonica, named Knapphill Scarlet; a double-flowered form of the Bird Cherry, Cerasus padus, and heavily-flowered sprays of the single form of this plant, the long racemes of flowers being borne in great numbers on quite small twigs. Another interesting plant sent is Pyrus Malus, variety Niedzwetzkyana, with flowers of a vinous-red colour. The fruits of this plant are of interest in the autumn, when they are of the same colour as the bark of the shoots. Mr. WATERER informs us that the sprays of Cerasus padus "Knapp Hill variety" were taken from a large tree about 30 feet high, and having a spread of branches of the same measurement. The tree must present a grand spectacle at this season when covered with its long, drooping inflorescences of white blossoms. A flower of the beautiful Oncidium tetracopis has been sent us by Messrs. STANLEY & Co., Southgate, London, who inform us that it was taken from a plant bearing more than 120 flowers.

BATH AND WEST AND SOUTHERN COUNTIES SOCIETY'S SHOW will be held at Dorchester from May 27 to June 1. Besides agriculture the schedule makes provision for horticulture and forestry.

DECORATIONS AT CHESTER.—On the occasion of the recent visit of His Majesty the KING to this historic city, one of the principal of the street decorations was contributed by Messrs. DICKSONS, Ltd., the well-known seedsmen and nurserymen. Their offices have one of the largest frontages in Chester, and this was decorated with flowers and foliage plants. The balconies were occupied with Daffodils and scarlet Pelargoniums in broad lines. Hanging baskets were filled with the same flowers, while Palms, Ferns, trailers of Smilax, and Ivy completed a most effective display. The windows were also filled with floral subjects. The decorations were described by the local Press as the most striking feature of the street decorations.

CARNATIONS AT GHENT.—Messrs. Low & Co., Bush Hill Park Nurseries, inform us that, since the general prizes were awarded at the Ghent Show, they have received a medal for their exhibit of Carnations already referred to in these columns.

PROPOSED NEW PARK FOR ABERDEEN.—A number of the leading citizens of the West End of Aberdeen have petitioned the City Council on the advisability of acquiring the lands of Bleachfield, situated on the outskirts of the West End of Aberdeen, for the purpose of establishing a public park. This is the only part of the city which does not possess a public park. There are already in the city some seven parks or open spaces, but all these are situated a good distance from the West End. The lands in question, at Rubislaw, Bleachfield, consist of about 25 acres, and are delightfully situated. Large lakes are already there, and a goodly volume of water runs through them. The lands belong to the Aberdeen Land Association, and the terms offered the Council by this company are regarded as favourable. The stipulation is that not less than 15 acres must be acquired, the terms being £400 per acre. It is not at all likely, however, should the Town Council adopt the project, that they will restrict the purchase to 15 acres, but will no doubt acquire the whole area of 25 acres which is available. That the time is opportune for the purchase and the price favourable may be understood when it is stated that only four or five years ago the price for the same ground was £850 per acre. It is not so very long ago that the city had to pay thousands of pounds for a mere strip of the land, the whole of which could have been acquired some 20 years earlier for a nominal sum. The general feeling is that the Town Council should not allow so favourable an opportunity to pass of adding to the number of places in the city desirable for recreation and amusement.

SUN-DRIED COLONIAL FRUITS.—The recent success of the sun-dried Australian and Cape fruits in the London markets, says the *Times*, has attracted considerable attention from importers and distributors in this country. It is agreed that the sun-dried and crystallised Figs from Australia and the Cape respectively were the finest fruits of their class which have ever been put upon the British markets. The retailers were able to dispose of them at the rate of 3s. a dozen, this being a record price for such fruits. The Colonial producers have proved unmistakably their ability to control the trade in these fruits in England, provided they can ship enough to meet the wants of the trade buyers. One Eastcheap firm considers that these sun-dried fruits, packed attractively in one-layer small boxes, could be disposed of in large quantities at high prices with ease. Sun-dried Figs, Apricots, Peaches, Plums, &c., equal in grade to the specimen Figs recently shipped to England, would be sure to find a market.

WATER-COLOURS DEPICTING JAPANESE SCENERY.—An exhibition of garden and other scenery in Japan, executed on the spot by Miss ELLA DU CANE, is on view at the Fine Art Society's Galleries, 148, New Bond Street, W. There are in all some ninety paintings, the scenes for which have been well chosen. Flowering subjects predominate, and these are chiefly those of the spring season. The summer is indicated in finely-executed drawings of the Lotus family and of the Iris, whilst the later summer is represented by the season of the Blue Hydrangea. There are effective pictures representing the coast scenery of Japan, others deal with such subjects as small islets with Pine trees thereon. The stepping-stones, so characteristic of Japanese gardens, are shown in many and varied forms of arrangement. The colours of some of the flowering plants are intense, but they are not overdone, for the clearer skies of Japan conduce to deeper tints of colour in flowers than we see in England.

ANNUAL MEETING OF THE KEW GUILD.—We are requested to again remind old Kew men that the annual meeting and dinner of the Kew Guild will take place at the Holborn Restaurant on Monday evening next. Mr. W. W. PETTIGREW, superintendent of the Cardiff parks and open spaces, will preside at the dinner.

*** TREES AND SHRUBS.**—The fact that this work should have reached its third edition plainly shows it supplies a need, and the moderate price at which it is published places it within the reach of all who may desire to select trees or shrubs for planting. As a general guide, and as showing the large variety of plants available, it is most useful, even although in some cases it may be found to suggest a choice with a cheery optimism that experience will, perhaps, sometimes fail to justify. It is a book which should be in the hands of all those charged with planting public parks or large gardens. Advantage has been taken of the issue of this edition to bring the work up-to-date.

* *Hardy Ornamental Flowering Trees and Shrubs*, by A. D. Webster. Third edition. London: Smith Elder & Co. 1908. Price 3s. 6d.

EXTERMINATION OF RATS.—These rodents are as much a pest to the gamekeeper, and any means of exterminating them is welcomed. The substance Ratin, which has been referred to in these columns on former occasions, is the subject of a little pamphlet describing the extermination of rats on the island of Little Cumbrae, situated at the mouth of the Forth of Clyde. The island is about 900 acres in extent, and was formerly a famous sporting estate, rabbit and woodcock shooting being abundant. But the place has long suffered from the depredations of rats, and this evil was augmented by a number of these creatures which reached the shore from a wrecked ship. It therefore became necessary to institute a war against them, and a quantity of Ratin was laid about their haunts, in all some 2,200 packets of the specific being used. The poison was applied in January, 1908, and in March a thorough inspection of the island was made, with the result that no trace of rats could be found.

A COLOUR CHART.—The question of a cheap work for identifying the colours of flowers has been discussed by members of the National Sweet Pea Society, and an open letter on the subject has been addressed to the Hon. Secretary of that society by Mr. STANLEY BROOKE, of York. The secretary, Mr. CHAS. H. CURTIS, in his reply, states that it is unlikely the National Sweet Pea Society will be able to undertake the cost of preparing such a work, but if it is recognised that it would be equally valuable to kindred societies such as the Rose, Dahlia, Carnation and Chrysanthemum Societies, these societies might be induced to issue a chart conjointly, and, failing them, the Royal Horticultural Society might be asked to undertake the task. The cost of the work should be small enough to enable it to be purchased by the members, for it is found that the *Repertoire des Couleurs*, although an excellent colour chart, is too expensive to be of general use.

PRIZES FOR HYACINTHS.—The Dutch Bulb Grower's Society at Haarlem is offering, under the auspices of the Royal Horticultural Society, prizes for forced Hyacinths, to be competed for at the Royal Horticultural Society's exhibition to be held on March 9, 1909. There are four classes, three being for amateurs, and gentlemen's gardeners, and the other for nurserymen only, who are offered as a first prize the Gold Medal (valued at £50) of the Dutch Bulb Grower's Society at Haarlem for the finest collection of Hyacinths, either in pots, pans, or in glasses.

Publications Received.—*Pansies and Violets*, by D. B. Crane, F.R.H.S. Illustrated. (London: The "Amateur Gardening" Office, 148 & 149, Aldersgate Street, E.C.) Price 1s. net.—*Hardy Ornamental Flowering Trees and Shrubs*, by A. D. Webster. Third edition. (London: Smith Elder & Co.) Price 3s. 6d. net.—*London Parks and Gardens*, by the Hon. Mrs. Evelyn Cecil. With illustrations by Lady Victoria Manners. (London: Archibald Constable & Co., Ltd.) Price 21s.—*The Nature Book*: A Popular Description by Pen and Camera of the Delights and Beauties of the Open Air. In parts; 7d. net. (London: Cassell & Co., Ltd.)

PYRUS JOHN SEDEN (PEAR × QUINCE).

THIS interesting fruit was raised by Messrs. J. Veitch & Sons at their Langley Nursery in 1895 from Pear Bergamotte Esperen and the Portugal Quince, a variety of Pyrus Cydonia, the latter being the pollen parent. Three plants were raised from seeds taken from the same fruit, and of these two have fruited, while the third has produced a dwarf and somewhat stunted tree.

The plant of which the fruit is illustrated at fig. 150 is similar to the Quince in its general habit and foliage, and the time and method of flowering coincides with that of the Quince. At the present time the fruits are quite firm, and will probably keep in a good condition for a considerable period. When first gathered the colour of the fruit was a grass green, but it became slightly darker. The flavour is distinctly that of the Quince.

The other tree resembles the Pear in every respect, and the mode of flowering is in trusses, the same as in the mother parent. Its fruits are pear-shaped and they have a rich Bergamotte flavour. They were ripe early in November and developed a reddish-brown colour. *T. W. B.*

FLORAL BEDDING ARRANGEMENTS.

THE season is at hand when the beds in the flower gardens will need furnishing with their summer and early autumn occupants. Owing to the lateness of the season, many of the spring-flowering plants, such as Myosotis dissitiflora, Wallflowers, Aubrietias, and Violas, which now occupy the beds, can scarcely be said to be in full flower, and Silene pendula compacta, Saxifraga umbrosa, and such-like plants, will not be in flower for another week or two. The majority of the plants employed in spring bedding are not, as a rule, at their best before the third week in May, or the end of that month, when it is time to plant the summer occupants of the beds, such as the different sections of Pelargoniums, Calceolarias, Ageratums, Lobelias and Fuchsias. The gardener is loath to break up the pleasing floral picture furnished by the blue Forget-me-nots, pink Silene, Wallflowers, &c., but he is also mindful of the floral effect that has to be produced by summer-flowering plants in the same beds by the middle or end of July, hence his anxiety to plant the ordinary summer bedding as soon after the end of the third week in May as the weather and other circumstances will permit. Three weeks or a month later will be soon enough to plant out tuberous Begonias, Alternantheras, Mesembryanthemum cordifolium variegatum, Heliotropes, and similar tender plants.

In the meantime the work preparatory to bedding out must be proceeded with in a judicious and active manner. The bedding plants require properly hardening, taking them from the Vineries and Peach-houses to cold pits and frames, where, after a few days, the sashes can be drawn off during the daytime, afterwards shifting the plants—for lack of better accommodation into improvised frames in a sunny aspect, covering them at night with mats. In gardens where "carpet" bedding is practised, the beds should be manured, dug, trodden, and made level with the rake preparatory to setting out the designs, which should be simple and proportionate in their several parts, and be neatly executed. A few beds in every flower garden should be devoted to a modified form of the "carpet pattern" style of bedding. Plants of erect and graceful growth, different shades of colour, and varying in height from 9 to 21 inches, should be judiciously interspersed to counteract the flatness produced by the dwarf-growing foliage plants forming the ground plan. A few beds of this description form a pleasing contrast to the effect produced by the masses of scarlet, pink, white, yellow, blue, mauve, and other coloured flowers.

The beds in which Pelargoniums are to be planted should be prepared for their reception by digging in a light dressing of decayed manure, commencing with the beds containing the earliest spring-flowering plants, by removing those intended for use another year to the reserve garden, and planting the surplus plants here and there on either side of favourite walks and drives in the home woods, &c. Oblong and large circular beds planted with the silver-foliaged and scarlet-flowered Pelargoniums Bijou,

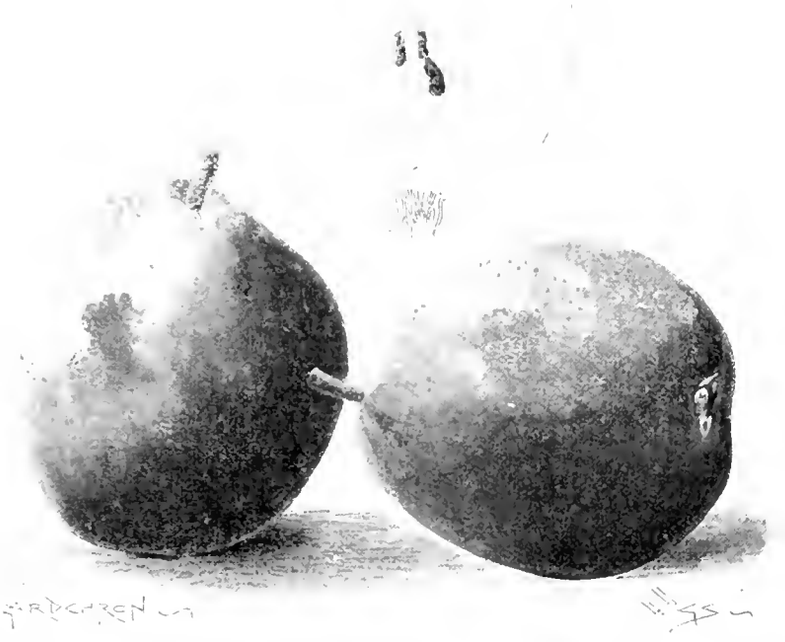


FIG. 150.—PYRUS "JOHN SEDEN," BEING A CROSS BETWEEN THE PEAR AND QUINCE.
(From specimens exhibited by Messrs. Jas. Veitch & Sons.)

with tufts of Blue Perfection Viola planted between, has a pleasing effect, as also has the Golden Queen Viola planted among the bronze and tricolor-leaved Pelargoniums. Some gardening acquaintances of mine used to advocate affording the plants plenty of room in the beds to develop, which meant that the beds are scantily furnished until within a few weeks of their being ruined by autumn frosts. The soil in which the plants are growing should be quite moist when they are being transplanted, and the soil should be made firm about the roots. During the interval from the time of setting the plants in the beds and the date at which the beds are wanted at their best, keep the flowers picked off, and any of the plants showing a disposition to outgrow their neighbours should have the points of the shoots pinched out, so as to promote a balance of growth, and thereby give the beds a unitorm appearance.

Masses of colour may be obtained by planting beds with the following varieties of the Pelargonium: Henri Jacoby (crimson), Raspail(semi-double, crimson), Denmark (producing large trusses of salmon-pink), Charles Turner, ivyleaf (cerise), Niphetos (double white), Indian Yellow (yellow), Crystal Palace Gem (golden leaved), Calceolaria amplexicaulis (lemon colour), Ageratum Tom Thumb (mauve), Lobelia pumila magnifica (deep blue). Beds planted with sub-tropical subjects, such as Ricinus, Abutilon, Variegated Maize, Nicotiana affinis, Solanum, Agave, Yucca, Acacia lophantha, Grevillea robusta, Dactylis glomerata longissima, Perilla nankinensis, with a groundwork of Coleus Verschaffeltii, would contrast effectively with the beds filled as indicated above, and to which effect a few beds planted with Heliotrope and Mignonette will add fragrance as well as variety. In conclusion, if beds in which tuberous-rooting Begonias are planted be covered with the silvery or golden Sedum, it will ultimately prevent the foliage and flowers of the Begonias from being splashed by heavy rains. At the time plants are being put out, water should be given at the roots, and repeated at frequent intervals until they are established. *H. W. W.*

FORCING RHUBARB BY ETHERISATION.

According to the *Canadian Florist*, experiments in forcing Rhubarb by ether were carried out last winter at the Cornell University Research Station, and comparisons made with the produce obtained under ordinary conditions. The experiments were started on December 26 with three clumps of etherised and the same number of unetherised clumps of Rhubarb. Care was taken to have the clumps as nearly of the same weight as possible. The effect of the ether was very pronounced, the leaves of the etherised clumps being ready to cut fully five days before those from the unetherised clumps. Not only were the shoots earlier in the case of the treated plants, but there were more of them. There were in all four cuttings; the first was made on January 29, and the last on February 10. The total gain in weight as compared with the unetherised clumps was 2 lbs. 4 ozs. in favour of the etherised batch, which was equal to 33 per cent. gain.

The cost of etherisation is small. The price for a perfectly airtight box need not be great, and any handy man can make one, and if there are cracks in it, these can be stopped with felt-paper. Commercial sulphuric acid, such as is required for etherisation, costs 75 cents per pound, which quantity is sufficient to etherise 30 good-sized roots. Thus the cost of the process is more than balanced by the five days' gain in time, and the extra quantity of Rhubarb produced by the process. *E. M.*

LAW NOTE.

CLAIM FOR BULBS.

Before Judge Allen, at the Nottingham County Court, on Thursday, May 14, Messrs. W. R. Alkemade & Co., of Holland, claimed £49 3s. 6d., the balance of an account of £69 3s. 6d. for bulbs, &c., sold and delivered to J. S. Fisher, nurseryman, of Wells Road, Nottingham. The defendant, who has a stall in the market place, made a counter-claim for £54 19s., on the ground that some of the bulbs supplied were diseased, some were not true to name, and he had suffered loss of trade in consequence.

Defendant said that in 1905 he complained about the quality of the goods he received, but when he gave the order in 1906 he was assured that the bulbs would be more satisfactory. After the bulbs had been received a week they went soft and developed a disease. He sold about 1,000 of the bulbs, and he had many returned from his customers, resulting in loss of trade. The plaintiffs alleged that no complaint was made to them until seven months after the bulbs had been delivered. If a complaint had been made immediately they would have been willing to consider it.

His Honour held that the Hyacinths were not of the best quality, and that the Narcissi were unsaleable, but that the claim for damage for loss of trade had not been substantiated. Judgment was given for the plaintiffs on the claim for the full amount, and for the defendent on the counter-claim for £18 16s.

HOME CORRESPONDENCE.

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

Apple Charles Ross.—It is evident that *A Working Grower's* reference to Charles Ross (p. 314) is in no sense praise, when he refers to it as a spoilt Peasgood's Nonsuch. Having regard to what seems a very local as well as a limited experience of the variety, is not such judgment at once hasty and harsh? How was it, if such be a correct estimate of the quality of this Apple, that for two years in succession it secured the first prize in the competition at the Royal Horticultural Society's Fruit Show as the best flavoured fruit in a class in which some 30 dishes of many assumed high-flavoured varieties were shown and tasted, and last year both first and second prizes fell to Charles Ross. Very large fruits of this Apple produced by rich culture approach to Peasgood's in character. Fruits produced under ordinary conditions are of medium size, and more closely resemble Cox's Orange Pippin in flavour, and when the trees are older the flavour will further increase. *One of the Judges.*

Fruit Prospects in Scotland. There is an abundance of blossom on the Plum and Cherry trees in south-western Scotland this season; and especially on such varieties as the Early Rivers, Czar, Victoria, and Superb Greengage Plums; and the May Duke, Early Rivers, Black Eagle, and Morello Cherries. In my own garden those trees seem to have greatly benefited by a strong application of lime given at the end of last October to their fibrous roots. This will also be of great value to them during the crucial stoning season, especially as the trees have come into blossom nearly a fortnight later than in normal seasons, and thus escaped the frost. The beautiful Prunus Pissardii is at present making an effort, so far successful, to set its fruit. Several Pears, including the Early Crawford, and Apples, such as the Irish Peach and the Beauty of Waltham, are already in exquisite and fragrant bloom. *David R. Williamson.*

——The wintry weather which culminated in a snowstorm and a frost of uncommon severity on April 24 has done much greater harm to vegetation than was at first apparent. In many places it has wrecked the fruit crop and crippled the trees; especially is this the case in the north of Scotland, where I saw Laurels and other shrubs quite blackened. In our milder climate, Apricots and Figs have suffered most severely, but it is becoming every day more obvious that Apples and other fruits also have had the fruit-buds destroyed. Hardy Fuchsias, Moutan Paeonies, Japanese Maples, Pyruses, and many other plants which have passed unscathed through many hard winters are all less or more damaged. The flowers of Norway Maples have been dropping to the ground exactly like Gooseberries at an earlier date. *R. P. B., Tyninghame Gardens, Prestonkirk.*

Rhubarb.—A variety of Rhubarb that appeared to be an exceptionally strong grower and prolific in its foliage was shown at the meeting of the Royal Horticultural Society on April 14 last under the name of Dawes' Challenge. Apart from the remarkable vigour of these some three-years-old stools, with all their bulk of blanched petioles showing what strong Rhubarb roots are capable of producing, there was nothing remarkable in the variety. The stalks that were shown in bundles at the same time, when cut through, presented a white flesh rather than a red one, and that was held by the Committee to be a decided defect. This variety must not be confounded with Daw's Champion, a variety that has received the certificate of the R.H.S., and which is one of the earliest of Rhubarbs, producing fine deeply-coloured leaf-stalks that are coloured internally as well as on the skin. Deep colouring is always associated with flavour in Rhubarb, and is held as a most valuable feature in this plant. For market purposes, deep colour in the stems is indispensable, and, because of this, the richly-coloured, early maturing Hawke's Champagne has been the most widely grown for market sale. The older early varieties, such as Linnæus and Albert, appear to have been quite displaced by Hawke's Champagne, but Daw's Champion is even better than the last-named, and will in time occupy the highest place as a market variety of this fruit, for the successful market growers must have the best and earliest variety. With the exception of the new variety exhibited on the 14th ultimo, it is believed that the gardens at Wisley contain representatives of all the known varieties of Rhubarb, and this affords an admirable opportunity for estimating the relative values of each variety, in regard to earliness, colour, and cropping. In the case of Rhubarb for forcing, the capacity of the variety to reproduce its foliage rapidly is important, and no doubt a great deal of this quality depends upon the vigour of the crowns, which should not be too thickly planted, and the leaves should be unmolested during the summer season. Fifty years ago the best known varieties of Rhubarb seem to have been Victoria, then described as the "best," Tolbolsk, Gigantic—probably the same as Stott's Monarch—Buck's and Elford. Now we have probably some 20 or 30 varieties, of which Victoria is still the most favoured with cottagers, but not with market growers. The Crimson Winter or New Zealand Rhubarb does not seem to have been widely grown. Possibly, after a few years' growth here, it may accommodate itself to our seasons. With many gardeners the most popular Rhubarbs are The Sutton, Kershaw's Paragon, and Scarlet Defiance, all of which are undoubtedly fine varieties. *A. D.*

Humea elegans.—I was somewhat surprised to observe a correspondent recommending this plant to be placed in a warm structure during winter, because it succeeds so well in a cold pit among other plants which require merely enough heat to exclude frost, that I should imagine a low temperature is just what it requires. The Humea at one time was considered a particularly "miffy" plant, and one staged in a collection of stove and greenhouse plants, if presented in perfect condition, with foliage intact, made invariably a strong point. It is still a subject demanding very careful treatment, judging from the bare-stemmed plants which are all too common at the same time. I find it one of the easiest of plants to manage, the chief points being to keep it slowly growing without suffering a check from seed time to flowering. I find June quite soon enough to sow the seeds. As these germinate in a rather irregular manner, the tiny seedlings need to be withdrawn as they become large enough to handle, to be pricked off into pots or boxes. Once fairly started, the plants make roots abundantly, and they must be potted and re-potted before they become in the least degree potbound. Good plants are produced in 8 and 9-inch pots, the shift into these being made before winter sets in, and in spring, if extra large plants are required, a further shift

into 11-inch pots is essential. The benefit of a low winter temperature is that under such conditions not much water is needed, and there is perfect immunity from insect pests. But with the warmer, longer days of spring the plants require much water, and as the roots fill the soil manure water must be given without stint. When bedded out, it is essential to continue the application of manure water until the plants have taken to the soil, otherwise they are almost certain to perish, or, at the very least, to lose their foliage. I have occasionally had plants so late in blooming that they have been in good condition all through the winter, when they have been prized for room furnishing, though it must be conceded that the scent, which most people appreciate, is abhorrent to others, to whom it is reminiscent of a dirty pigstye. It may be added that there are good and better strains of the Humea, some being considerably brighter than others. *B.*

SWEET-SCENTED GREENHOUSE RHODODENDRONS.—We are not all favoured with the delightful climate of the extreme south-west of England where so many Himalayan Rhododendrons find a congenial home out of doors. Such being the case, some of them at least must in most districts be regarded rather as greenhouse than as hardy shrubs. For the development of some of the various Himalayan species such as R. arboreum, a large structure is necessary, but this does not ho'd good with regard to them all, and some of the species, and many of the garden hybrids obtained therefrom, may be flowered in a comparatively small state. Apart from their beauty, some of these garden forms bear flowers which possess a delicious fragrance, a feature that commends them to nearly everyone. The different garden varieties owe the greater part of their perfume to Rhododendron Edgeworthii, a very distinct species, remarkable for the dense, woolly tomentum with which the undersides of the leaves are thickly clothed. The flowers are large, widely expanded, and pure white, except for a blotch of yellow towards the base of the upper segments. Their perfume is delightful. As a rule, R. Edgeworthii is of somewhat straggling habit, to be accounted for by the fact that in a state of nature it frequently occurs as an epiphyte on the trunks of trees and has to stretch out towards the light. Next to R. Edgeworthii, the species that has played an important part in the production of these garden varieties is the compact-growing R. ciliatum, with blush-coloured flowers, more thimble-shaped than those of the preceding species. Other kinds that have also been employed are R. Dalhousiæ, R. formosum (or Gibsonii as it is often called), R. Veitchianum, and R. virgatum. One of the earliest hybrids possessing the delicious fragrance of R. Edgeworthii is Princess Alice, which was obtained by Messrs. Veitch as the result of crossing this just-named species and R. ciliatum. This variety has very fragrant blossoms, intermediate in shape and size between its parents. When first expanded, they are a good deal flushed with pink, but after a time become almost white. This was first shown by Messrs. Veitch, and a First-Class Certificate awarded it by the Royal Horticultural Society in 1862, but it still holds its own as one of the very best. R. fragrantissimum and R. sesterianum, both old varieties, suggest in general appearance a similar parentage, that is, if the forms now grown are the same as the original ones. I should say that the parents of these two varieties are R. Edgeworthii and R. formosum. A very popular garden variety with large white deliciously-fragrant blossoms is Lady Alice Fitzwilliam, of whose early history I have no record. It is, however, in every way a very desirable form. The largest-flowered variety of all with the delightful perfume of those previously mentioned is R. Forsterianum, raised, I believe, by Mr. Otto Forster many years ago. The parents are R. Edgeworthii and R. Veitchianum, the large, almost pure white flowers of which are remarkable for the attractive manner in which the edges of the petals are crisped. Within the last few years Messrs. Veitch have given us several opportunities to see the beauties of R. Veitchianum, for they have freely shown well-flowered examples at the spring meetings of the Royal Horticultural Society. In returning to R. Forsterianum, it may be noted that while the habit of the plant, at least, in a young state, is somewhat straggling, the flowers are magnificent. They are large, crisped, widely expanded, and pure white, with the exception of a slight yellowish blotch. From 20 to 30 years ago a group of sweetly-scented Rhododendrons raised and distributed by the late Mr. Isaac Davis, of Ormskirk, was much sought after, but of late they are not so generally met with. Probably this is owing to the fact that they are less vigorous growers than those previously mentioned. The Ormskirk seedlings bearing the names of Countess of Derby, Countess of Sefton, Duchess of Sutherland, Lady Skelmersdale, and Mrs. James Shawe, were obtained by the inter-crossing of R. Edgeworthii and R. multiflorum, this last a seedling raised by Mr. Davis from R. virgatum × R. ciliatum. Some at least of these hybrids are characterised by comparatively dwarf growth, and a free yield of blossoms when quite small. The flowers of these are all white, slightly tinged with pink on the exterior, but they differ in well-marked features from each other. All agree in having a delicious perfume. Since the death of Mr. Davis I have never met with the members of this section grown in quantity, and they are now difficult to obtain. Though not remarkable for its fragrance, mention of the Ormskirk-raised Rhododendrons suggests R. præcox (ciliatum × dauricum), for which we are indebted to Mr. Davis. That gentleman used to point out that, when first shown by him on March 12, 1861, it was only considered worthy of a commendation by the Floral Committee of the R.H.S., whereas time has proved that it well deserved the highest honours. An instance of the irony of fate is furnished by the fact that on the same day the variegated-leaved variety of Agathæa cœlestis was given a First-Class Certificate. *W.*

THE PERPETUAL-FLOWERING CARNATION AS A BEDDING PLANT.—The merits of the perpetual-flowering Carnation as a summer bedding plant are not generally recognised, notwithstanding that this type of the flower is superior for the purpose to the ordinary border Carnation. In many gardens Carnations are not utilised for summer bedding because they require to be planted in the autumn or very early spring, and thus preventing the planting of spring-flowering subjects. The perpetual-flowering Carnation may be planted in the open in May, and after the spring-bedding plants have finished flowering. At Messrs. Hugh Low & Co.'s Bush Hill Park nursery experiments have been conducted with the perpetual-flowering Carnation to test its suitability as a summer-flowering plant, and the results have proved that the best results are obtained from late-rooted cuttings, wintered in a cold frame, and planted out in May. Bushy plants, in 5-inch pots, with from eight to ten shoots, give satisfactory results. Plants which produced a crop of bloom during the early winter also did well, and excellent results were obtained from early-rooted cuttings, with from five to seven shoots, planted out from 3-inch pots. An important point is to have the growths from 3 to 4 inches long, so that when they are put out in May there will not be a long period before the flowers appear. Varieties specially suitable for flowering out-of-doors are: White Perfection, Lady Bountiful, Harlowarden, Harry Fenn, Robt. Craig, Victory, Mauvina, Floriana, and Enchantress; while Mrs. T. W. Lawson and its numerous sports are all suitable, but the flowering shoots are short. The cultural requirements are simple. Hoeing should be freely practised, and the plants should receive an occasional top-dressing, or application of liquid manure. A sharp spray with salt water will keep insects at bay. Experiments have also been carried out by Messrs. Low in the wintering of the perpetual-flowering Carnation in the open ground, under the same conditions as that given to the ordinary border Carnation. Excellent results were obtained in this direction, notwithstanding that the soil was of a rather heavy texture and somewhat damp. A few only of the plants died. Plants which had flowered during the summer months in the open, and were cut back in the autumn, withstood the severe weather of the past winter, and are now developing flowering growths. The varieties which did best were: Enchantress, Lady Bountiful, White Perfection, Robt. Craig, Harry Fenn, and Nelson Fisher. *Montagu C. Allwood.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

MAY 12.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Dr. A. Voelcker, Messrs. G. S. Saunders, H. T. Gussow, de B. Crawshay, J. T. Bennett-Poe, H. J. Elwes, W. C. Worsdell, E. M. Holmes, J. Douglas, and F. J. Chittenden (secretary). Visitor, Rev. A. R. Upcher, M.A.

Malformed Narcissus.—Mr. W. C. WORSDELL reported that he had examined the malformed Narcissus J. T. Bennett-Poe sent to the last meeting by Messrs. HOGG & ROBERTSON, and found that the flower exhibited signs of fasciation, but this was only partial, since the perianth segments were only nine in number, as were the stamens; there were, however, two normal ovaries, each with its full complement of three carpels. The style was somewhat flattened, and springing from its base was a branch which was probably a second style. This had become petaloid and tubular, and in the tube thus formed a third style had developed.

Fasciation in Narcissus.—Mr. J. W. ODELL sent flowers of Narcissus Emperor which had been produced after all the normal flowers in the bed had died off, and which were fasciated, some having flattened stems bearing at the apex three flowers, each on a separate pedicel, others having the fasciation carried farther, so that the flowers themselves were coherent.

Peloric Calceolaria.—Mr. H. TYSOE, of the Lodge Gardens, Bedford, sent flowers of Calceolaria showing regular peloria. All the flowers on the main branches of the inflorescences of two plants exhibited this phenomenon.

Primula.—Mr. DOUGLAS showed on behalf of the Right Hon. the Earl of WALDEGRAVE some flowers of the green Primrose, in which the corolla is virescent and the stamens are but imperfectly formed. Rev. A. R. UPCHER, M.A., of Halesworth, Suffolk, showed a large number of flowers of Polyanthus of large size and much substance, and many with a very distinct eye. The calyx was large and very broadly campanulate in most of the flowers. Mr UPCHER had started some 30 years since with the old "butter" Polyanthus, and had pollinated this with pollen from Primula sinensis and P. Auricula; but although considerable variation in many directions was observable in the flowers shown, the committee did not consider that there was any evidence that the pollen of these species had had any effect in producing the results obtained. Some of the forms had fringed petals, and others smooth-edged petals, the petals in some were remarkably broad, the "eye" was well marked, and contrasted with the remainder of the corolla in some, while in others the deep colour was suffused over the whole of the petals. The collection showed in a marked manner the variation obtainable in Polyanthus through cultivation without the introduction of new blood. Mr. BOWLES showed a number of flowers of P. officinalis from a wild source lacking the deep yellow spot which is usually to be found in the flowers of this species. He asked that others would make observations in order to note whether this was a common phenomenon or not.

Seakale disease.—Mr. H. T. GUSSOW showed a specimen of Seakale which had become rotten, one of a considerable number in a plantation in Norfolk, which he said had been attacked by a bacillus, at present undescribed, differing in certain characters from Pseudomonas campestris. He considered that the attack of the organism upon the Seakale had been made possible by the methods adopted in forcing the Seakale, and that the attack might have been prevented if air had been admitted by raising the Seakale pots somewhat above the soil level.

Intumescence in Brugmansia.—Mr. G. S. SAUNDERS showed a leaf of Brugmansia exhibiting small warty growths, known as intumescences, a condition brought about usually by lack of a proper balance between the amount of water supplied at the roots and the humidity of the air, and a proper regulation of temperature.

Amaryllis sp.—Mr. H. J. ELWES, F.R.S., showed a plant apparently allied to Amaryllis solandræflorum, but having a rose suffusion upon the perianth. The flowers are of very elegant form, and the plant appears to be rarely seen in this country.

Moræa iridioides var. Johnsonii. Mrs. J. L. RICHMOND, of Woodlands, Lustleigh, South Devon, sent a flower and leaf of the very beautiful variety Johnsonii of Moræa iridioides (*see Gardeners' Chronicle*, May 11, 1907, fig. 121). The flowers are considerably larger than those of the type or the variety Macleayi, and the foliage is upright instead of being fan-shaped; the bud was picked on May 7, and the flower was still almost perfect on the 12th inst. The seed from which the plant originated was brought by a lady (Mrs. JOHNSON) from the mountains of Ceylon, where it had probably been originally taken from South Africa.

BRITISH GARDENERS' ASSOCIATION.

MAY 12.—We are informed that at the last meeting of the executive council, held on the above date, Mr. Chas. Foster in the chair, 78 new members were elected and two candidatures were rejected. Questions affecting the payment of wages due to a Northampton member, and the alleged grievances of men at Kew were considered, and will come up for further report. Arrangements were made for the annual general meeting, which will take place at the Essex Hall on Wednesday, May 27, at 7 p.m. A very large meeting is anticipated.

ROYAL BOTANIC.

MAY 20.—An exhibition was held under the auspices of the above Society on this date. Tulips formed the chief feature of the display, and amongst other exhibits of note was a collection of Roses staged by Messrs. WM. PAUL & SON, Waltham Cross, who showed tall plants of rambling varieties about 9 to 10 feet high, including the pretty single blush-red Kathleen; Stella, with twisted petals; Claire Jacquier, of amber colour, changing to white; Grace Thompson, Lady Gay, Paradise, and other well-known sorts. There were also fine blooms of La France, Grace Darling, Étoile de France, Madame Durand, Dora, Marquise Litta, Souvenir de Madame Eugene Verdier, and Madame Jules Gravereaux. (Gold Medal.)

Messrs. J. PEED & SON, West Norwood, exhibited a group of Japanese Maples, with Richardia (Calla) africana and Clematis interspersed amongst them.

The Misses HOPKINS, Mere Gardens, Shepperton-on-Thames, had a pretty arrangement of rock-garden and other hardy flowers.

The Misses E. & M. KIPPING, Hutton, Essex, also made a pleasing exhibit of rock-garden plants.

Messrs. R. WALLACE & Co., Colchester, staged about 150 large vases of Tulips, including Gesneriana lutea, lutea pallida, Gesneriana Major, Orange Beauty, &c. (Large Gold Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, were awarded a large Gold Medal for a grand exhibit of Tulips, which included the varieties James XIV., Tak van Poortvliet, Auber, Inglescombe Pink, Calliope, &c.

Messrs. R. H. BATH, LTD., Wisbech, put up a choice collection of Tulips, which included some fine new varieties. Giant, a large purple-mauve flower, with dark base, was very fine; Feu Brilliant, of a deep crimson colour, with a blue base; and Haarlem, a large flower of rosy-pink shade, were all of merit. (Silver-Gilt Medal.)

Messrs. HOGG & ROBERTSON, Dublin, staged an exhibit of Tulips, chiefly of the Darwin varieties, but cottage garden Tulips were also well shown. St. Brigid Anemones were included in the display. The flowers were all of the best quality. (Gold Medal.)

CERTIFICATES OF MERIT.

Rose "Paradise."—A pretty rambling variety with starry single flowers, the petals being white at the base, and shading to pink. Shown by Messrs. W. PAUL & SONS.

Tulip Psyche (Darwin).—A pink variety, with pale blue base, the large flowers being of good substance.

T. "Millet" (Darwin).—The colour is deep maroon-crimson; the blooms are large and of good substance.

T. Afterglow.—A cottage garden variety, the colour being yellow, shading to deep red. These Tulips were shown by Messrs. R. WALLACE & Co.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MAY 11.—The usual monthly meeting was held at the Horticultural Hall, Vincent Square, Westminster, on the above date, Mr. Charles H. Curtis in the chair. Five new members were elected and one nominated. The amount paid for sickness during the past month was £25 12s. The amount of sick pay up to May in 1907 was £199 11s., and to the same time this year it was £154 8s., being less by £45 3s. Five chronic sick members and five other members are on the funds at the present time. The annual report and balance-sheet has been posted to all honorary and benefit members.

CATALOGUES RECEIVED.

GEO. COOLING & SONS, Bath.—Roses.

THOMAS KENNEDY & Co., Dumbries.—Bedding, hardy herbaceous, greenhouse, and other plants.

CLARK BROTHERS & Co., 65, Scotch Street, Carlisle.—Summer flowering plants and florists' flowers.

G. H. RICHARDS, 234, Borough, London.—Horticultural sundries.

W. PAUL & SONS, Waltham Cross, Herts.—Roses, Cannas, Phloxes, &c.

CLIBRANS, Altrincham and Manchester.—Bedding plants.

THE PARMITER PATENT SPRING WIRE TOOTH HARROW, for surface weeding, &c.

COLONIAL.

C. A. NORBLIUS, Gembrook Nurseries, Emerald, Victoria, Australia.—Fruit trees, ornamental trees, &c.

FOREIGN.

HARLAN P. KELSEY, Salem, Mass., U.S.A.—American hardy Rhododendrons and bulbous plants.

AMERICAN NURSERY CO., 150, Broadway, New York.—Trees, shrubs, Roses, perennial plants, &c.

JULES DE COCK, Villa des Lauriers, Meirelbeke-Gand, Belgique.—Indoor plants.

FRANZ DE LAET, Contich, Anvers, Belgique.—Cactaceous plants.

V. LEMOINE ET FILS, Rue du Montet 134, Nancy, France.—Greenhouse and hardy plants.

OTTO MANN, Leipzig.—New plants.

FRANÇOIS GUILLEAUX, 21, Rue de Cronstadt, Nancy, France.—Plants.

J. FEED. WESTENHOEFF, Sassenheim, Holland.—Bulbs and flower roots.

HOLLAND PLANT COMPANY, Boskoop, Holland.—Rhododendrons, Roses, Clematis, Pæonies, &c.

WILLY MUELLER, Naples, Italy.—New and rare plants.

YOKOHAMA NURSERY CO., LTD., London address, Craven House, Kingsway, London, W.C.—Hardy Japanese trees and shrubs.

J. C. TISSOT, 7, Rue du Louvre, Paris.—Horticultural sundries.

GEORG HARTMANN, "Lindenhaus," Niederhochstadt, a Taunus, Prussia.—Orchids.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* ***write the names of persons and places as legibly as possible.*** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. I. RODGERS, for the past 4 years and 8 months Foreman to Lady HOLMPATRICK, Abbotstown, Castleknock, Dublin, as Gardener to the Marquise CONYNGHAM, Slane Castle, County Meath.

Mr. C. GREEN, late Gardener to E. A. HANKEY, Esq., Norton House Gardens, Lacock, Wilts., as Gardener to H. FAVAGER, Esq., Baldon House, Marsh Baldon, Oxon. (Thanks for contribution to R.G.O.F. box.)

Mr. H. HUMPHRY, for the past 2 years Gardener to Lady MARY HOLLAND, Knebworth Hall, Royston, and previously Gardener at Triggens Park, Ware, as Gardener to the Right Hon. Lord LUDLOW, Lamport, Northampton. (Thanks for contribution to R.G.O.F.)

Mr. J. CHILCOTT, for 3 years Orchid Grower at Knowsley Hall, Prescot, as Gardener to Mrs. TAYLOR, Chipchase Castle, Warkworth-Tyne.

Mr. S. BURGESS, for the past 9½ years Gardener to J. T. FRIEND, Esq., Northdown House, near Margate, Kent, as Gardener to Mrs. LAUBER, Preston Hall, Aylesford, near Maidstone, Kent.

Mr. FRED. STANBRIDGE, for the past 3 years Gardener to Lord ERNEST HAMILTON, Shantock Hall, Hemel Hempstead, as Gardener to H. W. CARR, Esq., Bury, Pulborough, Sussex.

Mr. A. DAVIES, for 5½ years in the gardens, Oakmere Hall, Hartford, Cheshire (the last 4 years as Inside Foreman), as Gardener to H. C. BURDER, Esq., The Elms, Warrington.

MARKETS.

COVENT GARDEN, May 20.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Anemones per doz. bunches	2 0	3 0
— double pink	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	2 6	4 0
Carnations, per dozen blooms, best American varieties	2 0	3 0
— second size	1 6	2 0
— smaller, per doz. bunches	9 0	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0	10 0
Cyclamen, per doz. bunches	6 0	8 0
Cypripediums, per dozen blooms	2 0	2 6
Daffodils, various, p. doz. bunches	1 0	2 0
Eucharis grandiflora, per doz. blooms	4 0	5 0
Freesias, per dozen bunches	2 0	3 0
Gardenias, per doz. blooms	1 6	3 0
Gladiolus Colvilei vars., per doz. bunches	7 0	10 0
Gypsophila per dz. bunches	3 0	5 0
Iris (Spanish), per dozen bunches	3 0	6 0
Lapagerias, p. doz.	1 6	2 6
Lilium auratum	2 0	3 0
— candidum	2 0	3 6
— longiflorum	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality	12 0	15 0
Marguerites, white, p. dz bunches	3 0	4 0
Marguerites, yellow, p. dz. bchs.	2 0	3 0
Mignonette, per dozen bunches	3 0	6 0
Myosotis, per doz. bunches	2 0	3 0
Narcissus, per doz. bunches	1 0	1 6
— poeticus ornatus	1 0	1 6
— Double varieties	3 0	4 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches	5 0	6 0
— Zonal, double scarlet	5 0	8 0
Ranunculus, p. dz. bunches	5 0	8 0
Roses, 12 blooms, Niphetos	1 0	2 6
— Bridesmaid	2 0	5 0
— C. Testout	2 0	4 0
— General Jacqueminot	1 6	2 6
— Kaiserin A. Victoria	2 0	4 0
— C. Mermet	2 0	4 0
— Liberty	2 6	4 0
— Mad. Chatenay	3 0	6 0
— Mrs. J. Laing	2 0	4 0
Statice, per dozen bunches	5 0	6 0
Spiræa, per dozen bunches	5 0	8 0
Stocks, double white, per doz. bunches	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz blooms	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches	6 0	12 0
— Darwins	9 0	12 0
Violets, per dozen bunches	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch	1 0	2 0
— Sprengeri	0 9	1 6
Berberis, per doz. bunches	2 6	3 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches	1 0	3 0
Galax leaves, per doz. bunches	2 0	2 6
Grasses, per dozen bunches	1 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross	4 0	5 0
Myrtle, per dozen bunches, (English) small-leaved	4 0	6 0
— French	1 0	1 6
Smilax, p. dz. trails	3 0	5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri	6 0	12 0
Araucaria excelsa, per dozen	12 0	30 0
Aspidistras, p. dz., green	15 0	24 0
— variegated	30 0	42 0
Asparagus, p. doz., plumosus nanus	9 0	12 0
— Sprengeri	6 0	9 0
— tenuissimus	9 0	12 0
Azalea indica	24 0	36 0
Boronia Elatior, per dozen	15 0	24 0
— heterophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
— yellow, per dz.	6 0	8 0
Callas, per dozen	8 0	10 0
Cinerarias, per dz.	4 0	6 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	20 0
Crotons, per dozen	18 0	20 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen	4 0	5 0
— laxus, per doz.	4 0	5 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen	9 0	15 0
— candidissima	15 0	18 0
— Cavendishi	18 0	24 0
— persoluta alba	24 0	30 0
— Wilmoreana	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100	8 0	12 0
— in small and large 60's	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Fuchsias, per doz.	6 0	9 0
Genistas, per doz.	5 0	8 0

Plants in Pots, &c.: Average Wholesale Prices (*Contd.*).

	s.d. s.d.		s.d. s.d.
Hardy flower roots, per dozen ...	0 9- 2 0	Pelargoniums, per doz., Zonal	5 0- 8 0
Heliotropiums, p. dozen	4 0- 6 0	— show varieties	12 0-18 0
Hydrangeas, per dozen	10 0-18 0	— Ivy-leaved ...	6 0- 8 0
Kentia Belmoreana, per dozen	18 0-30 0	— Oak-leaved ...	3 0- 5 0
— Fosteriana, dz.	18 0-30 0	Petunias, per doz., (double) .	6 0- 8 0
Latania borbonica, per dozen ...	12 0-18 0	Rhodanthe, per dozen	4 0- 6 0
Lilium longiflorum, per dz.	18 0-24 0	Roses, Ramblers, each	5 0-30 0
— lancifolium, p. dozen	18 0-24 0	— Hybrid perpetuals, per doz	9 0-18 0
Lily of the Valley, per dozen ...	18 0-30 0	Saxifraga pyramidalis, per doz.	15 0-18 0
Lobelia, per dozen	4 0- 6 0	Selaginella, p. doz.	4 0- 6 0
Marguerites, white, per dozen ...	6 0- 9 0	Spiræa japonica, p. dozen	5 0- 9 0
Mignonette, per dozen	6 0-10 0	Stocks (intermediate), per dozen	5 0- 8 0
		Verbena, Miss Willmott, per dozen	6 0-10 0

Fruit: Average Wholesale Prices.

	s.d s d		s.d s.d.
Apples (**Tasmanian**), per box:		Grape Fruit, case	8 0-10 0
— Ribston Pippin	8 0-10 0	Grapes (English new), per lb....	1 6- 3 0
— Cox's Orange Pippin... ...	12 0-18 0	— Muscats (English, new), p. lb.	2 0- 5 0
— Alexander ...	8 0- 9 0	— (Cape), per box (small) ...	2 0- 6 0
— Wellington ..	12 0-13 0	— (large)	5 0-12 0
— Scarlet Nonpareil	9 6 11 0	— (Almeria), per barrel	14 0-18 0
— **Australian**, per case:		Gooseberries (English), ½ sieve ...	8 0-10 0
— Esopus ...	9 0-11 0	Lemons:	
— New York Pippins	8 0-12 0	— Messina, case	7 6-10 0
— Monro Favorite	10 0-12 0	Lychees, per box .	1 0- 1 5
— Jonathan ...	8 0 12 0	Mandarins	
— Ribston ...	9 0 11 0	— (Palermo), per box (100)	3 0- 4 0
— Cox's Orange Pippin... ..	16 0-20 0	Mangos (Jamaica), per dozen	12 0 18 0
— Wellington .	11 0-12 0	Melons (Guernsey)	2 0- 3 6
— Rymer Pippin	9 0-11 0	Nuts, Almonds, per bag	45 0 —
— Alfriston ...	9 0-10 0	— Brazils, new, per cwt. .	50 0 57 0
— Adams Pearmain	9 0-10 0	— Barcelona, per bag .. .	30 0-32 0
— French Crab ..	8 0-10 0	— Cocoa nuts, 100	11 0-14 0
— **Nova Scotian**, per barrel:		Oranges (Valencia), per case ..	12 0-25 0
— Fallawater .	17 0 19 0	— Denia, p. case	12 0-22 0
— Nonpareil .	12 0-14 0	— Jaffas, per box	9 0-11 0
— **Canadian**, per barrel:		— Californian Navel, p. case	13 0-14 0
— Baldwin	20 0 21 0	— Palermos, Blood:	
Apricots (French), per box ..	0 11- 1 2	— per box (100)	6 0- 7 0
Bananas, bunch:		— per box (200)	9 0-12 0
— No. 2 Canary .	6 0 —	Peaches (English) per dozen	10 0 20 0
— No. 1 ,, ...	7 6- 8 0	Pears (Cape), per box	5 6- 7 0
— Extra ,, ...	8 0- 9 0	— cases	5 0 8 0
— Giants ,, ...	10 0-12 0	— (Australian), per box .	4 0 7 0
— (Claret) ...	7 0- 7 6	Pineapples, each	2 0- 6 0
— Jamaica ...	5 0- 5 6	Strawberries (English), per lb ..	2 0 3 0
— Loose, per dz.	0 9- 1 3	— seconds ...	1 0- 1 9
Cranberries, case	8 9- 9 0		
Cherries (French), ½ sieve... ...	7 0- 8 6		
— (French), p.box	1 0- 2 0		
Dates (Tunis), doz. boxes	4 0- 4 3		
Figs (Guernsey), per dozen ...	2 0- 8 0		

Vegetables: Average Wholesale Prices.

	s.d. s.d		s.d s.d.
Artichokes (French), per dozen ...	2 0- 2 6	Marrow (Engl. lb	2 0 8 0
Asparagus, Sprue, per bundle ...	0 6 0 7	Mint, per dozen bunches --	1 0- 2 0
— Montauban ...	1 3- 1 6	Mushrooms, per lb.	0 9-0 10
— Toulouse, per bundle... ...	1 0- 1 6	— broilers ..	0 8 —
— English ...	1 0- 1 6	Mustard and Cress, per dozen pun.	1 3 —
— Spanish, per bundle... ...	0 8-0 10	Onions (Egyptian), per bag	6 6- 7 0
— Giant, per bundle .. .	3 0- 5 0	— pickling, per bushel... ...	1 6- 2 6
Beans, Broad (French), p.pad	1 6- 2 6	— Spring, dz. bun.	1 6- 2 0
— Guernsey, p.lb.	0 6- 0 9	Parsley, 12 bunches	1 6- 2 0
— English ..	0 8- 0 9	Peas (French), per packet ..	0 4 —
Beetroot, per bushel	1 3- 1 6	— (French), p pad	2 6- 3 0
Cabbages, per tally	3 0- 4 6	— (Guernsey), per lb.... .	0 6- 0 8
— Greens, p. bag	1 0- 1 6	Potatos (Guernsey), per lb.	0 3 —
Cauliflowers, per dozen	1 0 2 0	— (Jersey), barrels, cwt. .	18 0 —
— per tally ...	4 0- 8 0	— Teneriffe, cwt.	11 0-13 0
Celery, per roll ...	0 8- 1 0	Radishes (Guernsey), dozen ...	0 10- 1 0
Celeriac (French), per dozen ..	2 0 —	— round, p. doz.	0 8-0 10
Chicory, per lb. ...	0 3- 0 5	Rhubarb (Natural)	1 6- 2 0
Chow Chow (Sechium edule), p. dozen	3 0 —	Salsafy, per dozen bundles ...	3 6 —
Cucumbers, per dz.	1 6- 3 0	Seakale, per dozen punnets ...	9 0 12 0
— per flat ...	4 6- 8 0	Tomatos (English), per lb.... ..	0 8-0 10
Endive, per dozen	-0 9 1 3	— second quality	0 4 0 6
Horseradish, foreign, per doz. bundles ..	9 0-12 0	— (Teneriffe), per bundle of four boxes	16 0-22 0
Leeks, 12 bundles	1 0- 1 6	Turnips (French), per bunch ...	0 6- 0 8
Lettuce (English),	3 0- 3 6	Watercress, p. doz.	0 4- 0 6
— (French), p. dz.	0 8- 1 0		
— (French), Cos, per dozen ...	3 0- 4 0		

Remarks.—French Cherries are arriving in half-sieves, and there are reports that the prospects of a heavy crop this season are good. There are English Gooseberries from Kent and the West of England. Strawberries are still cheap and the supply seems greater than the demand. Mushrooms are much cheaper owing to the warmer weather. Peaches are selling fairly well, but the supply of these fruits is ample. Trade generally is quiet.—*E. H. R., Covent Garden, Wednesday, May 20, 1908.*

Potatos.

	s. s. per ton		s. s. per ton
Kents—		**Scotch**—	
Up-to-Date	110-115	Up-to-Date (grey soil)	105-110
British Queen ..	105-110	Maincrop (grey soil)	105-110
Scottish Triumph ..	105-110		s. d. s. d. per bag.
Lincolns—		**French**—	
Up-to-Date	105-115	Reds	3 9 4 0
Maincrops	105-115	**German**	
Royal Kidney ..	95-100	Up-to-Date ...	4 9-5 0
— (Blackland) .	90 95	Magnum Bonum	4 6-4 9
Evergood	95-105	Imperator. . ..	4 0-4 3
— (Blackland) . .	90- 95	**Belgium**—	
		Kidneys	4 3 4 6
Dunbars—		**Dutch**—	
Up-to-Date (red soil)	120-130	Up to-Date .	4 6-4 9
Maincrop (red soil)	125 130	Magnum Bonum	— 4 3
		Imperator	3 6 4 0

Remarks.—Trade is slow and consignments are very small. New Potatos are arriving from Jersey, and next week there will be considerable consignments from this island; they are realising to-day (Wednesday) 17s. 6d. per cwt. *E. J. Newborn, Covent Garden and St. Pancras, May 20, 1908.*

COVENT GARDEN FLOWER MARKET.

During the past week trade has improved considerably. There is now a large demand for bedding plants. The hot weather has rapidly developed Roses, Carnations, and other flowers, which are all abundant.

Pot Plants.

Pelargoniums are the most prominent flowering plants. The show and decorative varieties have not much favour among London buyers, but they have a demand in the provinces. Among Zonals, F. V. Raspail is still one of the most prominent, Snowdrop and Albion are the best whites, and Hermione is now the best double white; Mrs. Lawerence and King of Denmark are the most popular salmon-coloured varieties. Semi double pink varieties do not seem to open their flowers well in the season, but there are several good single pink varieties, Mrs. French and Mrs. Brown Potter being favourites. King Edward, Paul Crampel, and Gloriation are "scarlets" of merit. Ivy-leaved varieties include Madame Crousse Galilee, Souvenir de Chas. Turner, and Mrs. Hawley. Galilee is largely used for decorations. Ordinary plants for window-boxes, etc., are worth from 6s. to 8s. per dozen, but extra well finished plants in 48's realise 15s. to 18s. per dozen. Autumn sown Mignonette is very good, and well-flowered samples of the spring sown plants are obtainable. Intermediate Stocks are still procurable in well grown plants. The common Musk is good; Harrison's variety is not so much appreciated as it was a few years ago. Saxifraga pyramidalis is very fine. Roses include fine specimens of Hiawatha, Sweetheart, Dorothy Perkins, and other Ramblers. The hybrid perpetuals are also very good. Yellow Calceolarias are now procurable. There is an improved dwarf type of the yellow Chrysanthemum segetum. Plants of Marguerites can be had in various sizes. I have not yet seen any of the yellow variety. It is remarkable that we do not see any new varieties of Fuchsias in the market; such sorts as Rose of Castile, Mrs. Hextesbury, Arabella, Gertrude Pearson, Scarcity, and other old sorts remain favourites.

Bedding Plants.

Most growers of hardy flower roots still have large stocks on hand. Pansies and Violas sell fairly well, but the trade is beginning to fall off. All summer bedding plants are well supplied. Boxes of plants are considerably cheaper than they were a few years ago.

Cut Flowers.

Spanish Irises are abundant and cheap. English growers should cut them before they are very far advanced, as they would be more satisfactory to buyers; those from abroad are cut before the first flowers are open, and they quickly develop their buds after they are put into water. Poppies should also be cut before the flowers are expanded. Sweet Peas are now abundant in various colours. Narcissus poeticus and the double white variety are abundant. Many Roses are sold at very low prices, and the Carnation trade is nearly as bad. Liliums have developed rapidly since the hot weather set in. L. longiflorum is very fine. Callas are abundant and cheap. Lily of the Valley from the open ground is now plentiful. *R. H., Covent Garden, Wednesday, May 20, 1908.*

DEBATING SOCIETIES.

GUILDFORD AND DISTRICT GARDENERS'.—At the fortnightly meeting of this association, held on Tuesday, May 5, under the presidency of Mr. W. Hogsden, a lecture on "Water Gardening" was given by Mr. D. Watson, of Sutton Place Gardens. The lecturer gave details upon the formation and arrangement of water-gardens. He also stated the names of many of the more suitable aquatic and bog plants and gave hints on their cultural requirements. The planting and arrangement of shrubs and plants for effect in large masses near to the water-garden were also dealt with by the lecturer.

WARGRAVE AND DISTRICT GARDENERS'.—At a recent meeting Mr. E. Young, of Welford Park Gardens, Newbury, gave a short address on "The Cultivation of the Gloxinia." The lecturer referred to the methods of propagation by seed, cuttings and by leaves, describing minutely every detail for successful culture. The various ingredients used in the potting soil, the operation of watering, syringing, shading, and the use of artificial manures were described by Mr. Young, and he showed photographs of plants he had cultivated, some having as many as 60 flowers.

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending May 16, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The *weather* was generally unsettled, with much cloud, and more or less rain on several days. Thunderstorms or thunder only occurred in some parts of the kingdom on every day except Sunday most commonly about the middle of the week.

The *temperature* was rather above the average in the east and west of Scotland, and in the north-east and east of England, but rather below it elsewhere. The highest of the maxima were registered early on the 11th or 12th at several stations, but on the 16th generally. They varied from 67° in Ireland S., and 66° or 65° in most other districts to 60° in Scotland N. The lowest of the minima, which were recorded on rather variable dates, ranged from 31° in England S.E. (at Marlborough on the 11th) and 32° in the Midland Counties (at Cirencester on the 11th) to 37° in Ireland, Scotland W., and England N.E., and to 46° in the English Channel. The lowest of the grass minima reported were 27° at Cambridge, 29° at Crathes and Markree, and 30° at Balmoral, Oxford, Greenwich, Tunbridge Wells and Wisley.

The *mean temperature of the sea.*—Compared with the corresponding week of last year the water was warm on the north-east coast of Great Britain and cold in almost all other localities. The actual figures for the period ranged from 52·4° at Margate, 52·3° at Plymouth, and nearly 52° at Ballyglass and Seafield, to 45·8° at Bournemouth, and to 44·7° at Lerwick.

The *rainfall* was less than the normal in Scotland, the north of Ireland, and the north-west of Great Britain, but more elsewhere.

The *bright sunshine* was less than the average in all districts, as well as at almost every individual station. The percentage of the possible duration ranged from 39 in the English Channel and 37 in England S.W. to 32 over a large part of England and in Scotland N., and to 31 and 29 respectively in Ireland S. and N.

THE WEATHER IN WEST HERTS.

Week ending May 20.

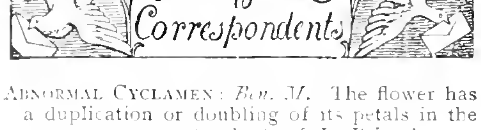
Three very warm days.—The first two days of the week were cold, but since then the weather has been unusually warm for the time of year. On the coldest day the temperature in the thermometer screen did not rise above 52°, whereas on the two warmest days the highest reading was 72°. The nights were all more or less warm. The ground is now 3° warmer at 2 feet deep, and 5° warmer at 1 foot deep than is seasonable. The first three days were wet, but since then the weather has remained fine. The sun shone on an average for 5¼ hours a day, or for half an hour a day less than a seasonable duration. The winds were as a rule light during the week. The atmosphere was very humid in the early part of the week, but the last few days the air has been very dry. A Blenheim Pippin Apple growing in my garden came first into flower on the 15th which is 10 days later than its average date for the previous 22 years, and later than in any year since 1888, or for 20 years. *E. M., Berkhamsted, May 20, 1908.*

SCHEDULES RECEIVED.

Women's Agricultural and Horticultural International Union's exhibition and sale of farm and garden produce at the Royal Botanic Gardens on Wednesday, July 15, 1908.

Winchester Horticultural Society's autumn show, to be held on Tuesday and Wednesday, November 17 and 18, 1908, at the Guildhall, Winchester.

Hanley Floral Fete will be held on July 1 and 2 in Hanley Park. The show will be the 12th in succession, and efforts are being made by the management to make the show a record one. A silver challenge cup is offered this year for the first time for the best trade exhibit. The secretary is Mr. William Poulson, Town Hall, Hanley.



Abnormal Cyclamen: *Ben. M.* The flower has a duplication or doubling of its petals in the manner common to plants of the Primulaceae.

Albino Form of the Scarborough Lily: *F. D.* An illustration of a white variety of Vallota purpurea was given in the *Gardeners' Chronicle*, August 27, 1904, p. 150, from a photograph sent us by Mr. James Whitton, Superintendent of Parks, and Curator of the Botanic Gardens, Glasgow. If you will refer to the text that accompanied the picture you will find much interesting information on White Vallotas.

Begonia Gloire de Lorraine: *J. C.* This plant may be easily trained into pyramidal shape. Place a central stake in the pot and train to this the main shoot, looping up the side branches and pinching any that require it in order to ensure a proper balance of growth.

BOOKS: *R. G.* The *Illustrations of New South Wales Plants*, by J. H. Maiden, is published under the authority of the Government of the State of New South Wales. It may be obtained from William Appleyard Gullick, Government Printer, Sydney, price 3s. each part.

BULBS FROM HOLLAND: *A. J. B.* The specimen which you sent us, and which you received from Holland for Snowdrops, is Ornithogalum nutans. This plant is often found as a "rogue" in bulb gardens.

CORRECTION. At the meeting of the Royal Horticultural Society, held on May 12, Messrs. R. H. Bath, Ltd., Wisbech, were awarded a Silver Flora Medal for an exhibit of Tulips and Narcissi and not a Bronze Banksian as stated in our report.

GARDENING EMPLOYMENT IN THE UNITED STATES: *G. W.* In our issue for February 2, 1907, p. 80, particulars are given by a gardener who had recently returned from America on the conditions of gardening employment in that country. He stated that the wages for head gardeners are from $50 to $100 per month, with house and coal. Situations in private gardens are hard to obtain, and an establishment employing five or six men is considered a large one. If you decide to go, do not buy any special clothes, but take what you happen to possess. Leave your hob-nailed boots behind; you will find they are of no use there, being too cumbrous. If you have no friends, you must have £6 in your pocket on landing. On arriving the first thing to do is to place your name on every employment register you can, whether of florist, seedsman, or nurseryman.

HOLLIES: *S. T.* It is not unusual for a few leaves of newly-planted Hollies to turn brown and fall off. In such cases all shrivelled shoots and branches should be removed, and if you can place tiffany or any similar light material over the specimens as a protection against the sun's rays and winds, so much the better. The covering material should be kept moist until the Hollies make new growth.

HORTICULTURAL TRAINING FOR A YOUTH: *W. F. L.* The best training for a youth who wishes to learn gardening is to commence in a good garden, under the care of an efficient gardener. He will thus begin at the very bottom of the profession and be taught all the duties, however small, and a knowledge of these minor duties will be of great assistance to him, should he afterwards reach a responsible position in the profession. There are, of course, several schools where gardening is taught, including that at Wisley, which is under the auspices of the Royal Horticultural Society. Full particulars for admission as students to the Wisley gardens can be obtained from the Secretary of the Royal Horticultural Society, Vincent Square, Westminster.

INSECTS: *J. G. B.* The small white insect found in the soil is one of the "springtails" (Lipura fimetaria, Linn.). It is very common, and often swarms in soil heavily charged with manure or leaf-mould. The insect on the Picea shoot is apparently Chermes corticalis, one of the Aphidæ. The micro-photograph you sent is very good.—*G. W. T. (subscriber).* The grub is known as the "Leather Jacket" or larvæ of the Crane Fly (Tipula sp.). You may trap them by placing pieces of turf between the infested plants. Gas lime is injurious to these pests, but it cannot be applied to land under cultivation.—*H. R.* The grubs you send are a species of Tipula. See reply to *G. W. T.*

MUSHROOMS DISEASED: *G. A.* Your Mushrooms are affected with a disease caused by Hypomyces perniciosus. According to the Leaflet No. 139, issued by the Board of Agriculture, numerous toadstools and other fungi suffering from the parasitism of different kinds of Hypomyces are common in woods and pastures every season, and spores are probably introduced into the Mushroom bed along with the manure or road sweepings commonly used. In some instances it is certain that the spawn is infected before it is placed in the Mushroom bed. In such cases, when the spawn commences to "run," the threads, instead of having a clear and sharp outline like white cord, present a fluffy appearance, due to the presence of the parasite on the surface of the strands; the branches are also much fewer in number than when the spawn is healthy and growing vigorously. Under such circumstances the entire bed should be removed before the parasite produces spores; otherwise, if the house becomes thoroughly infected, common experience has shown that the disease is exceedingly difficult to eradicate. When infection occurs through the introduction of spores into the house by wind or other causes, the disease may be confined to certain portions of the bed, and the prompt removal of infected Mushrooms as soon as the slightest symptoms are observed may check the disease from assuming the proportions of an epidemic. After removing the soil and manure of an infected bed, great care should be taken in cleansing the tools, boots, and even clothing; otherwise there is great risk of infecting other beds. Rejected soil and manure should be at once removed from the neighbourhood of the Mushroom beds. They may be applied to the land, as the contained spores, so far as is known, can only develop on some kind of fungus, and do not attack any other cultivated crop. When a house or other structure in which Mushrooms are grown has become infected, it should be completely emptied and thoroughly sprayed, both roof, walls, and floor, three times at intervals of ten days with a solution of sulphate of copper—one pound of sulphate to 15 gallons of water. During this period of spraying the house should be kept warm and moist, for the purpose of favouring germination of the spores of the parasite, which are destroyed with greater certainty when growing than when in a resting condition.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

FLOWERS: *P.* Ribes speciosum, the Fuchsia-flowered Gooseberry.

PLANTS: *W. F. B.* Erysimum cheiranthoides.—*J. B.* Senecio auriculatissimus, a species from British Central Africa. The fact that several nurserymen have this plant amongst Senecio (Cineraria) stellata with the idea of crossing the two will explain the appearance of your plant.—*R. S. P.* Moræa bicolor.—*W. K.* Lamium maculatum.—*A. J. W.* Schizostylis coccinea.—*E. F.* 1, Onychium japonicum; 2, Cyrtomium falcatum; 3, Cyrtomium fortunei.—*W. E. S.* 1, A small Odontoglossum loochristiense; 2, O. Andersonianum Rucklanum; 3, O. Andersonianum hebraicum; 4, O. Andersonianum lobatum; 5, O. Coradinei, very good variety; 6 and 7, O. Andersonianum, good varieties; 8, O. Adrianæ.—*Crispum.* A very pretty Odontoglossum, probably not a true O. crispum, for, like many which have been imported from the district from which O. Adrianæ comes with O. crispum, there is a slight trace of O. Adrianæ in it, and it would probably be more correct to name it O. Fascinator (crispum × Adrianæ).—*H. W.* Lælia purpurata, a very good, white-petalled variety; and Odontoglossum citrosmum, which you have grown remarkably well, and therefore it has produced a fine, branched inflorescence.—*Alpha.* 1, Cochlioda vulcanica; 2, Odontoglossum gloriosum; 3, Odontoglossum blandum; 4, Oncidium abortivum; 5, Aerides falcatum.—*P. P. S.* 1, Adiantum Capillus-veneris cornubiense, A. Capillus-veneris Mariesi; 3, A. Pacotii; 4, Lantana, garden variety; 5, Billbergia nutans. You should fix the numbers to the specimens.—*M. W.* 2, Begonia Ingramii; 4, B. parvifolia; 5, Pteris serrulata cristata. Specimens of the other plants should be sent again when in flower.—*G. D.* 1, Next week; 2, Conopodium denudatum.—*W. P.* Erica vagans white variety, Pyrus betulæfolia.—*Weekly Reader.* The form of Odontoglossum crispum sent is very distinct. The marking on the labellum is seldom seen so effectively displayed as in your specimen.—*R. R.* 2, Sedum Telephium; 3, Agathæa cælestis; 4, Juniperus chinensis; 5, Lonicera Xylosteum; 6, Mercurialis perennis; 7, probably a Spiræa (send when in flower).—*A. D.* 1, Lepidium Smithii; 2, Pedicularis sylvatica; 3, Polygala vulgaris; 4, Genista species; 5, not recognised.—*G. M.* 1, Escallonia macrantha; 2, Manettia bicolor; 3, send better specimen and state whether a greenhouse species.

PRIMROSE: *W. M., Naples.* The most similar plants in commerce to the flowers you have sent us are the bunch Primroses. Thanks for the specimens of Calanthe discolor.

SEED-PRODUCING POTATOS: *T. T.* We do not know any modern variety of Potato that produces seed freely. Many years ago some varieties did seed abundantly, but they were not good croppers. If the varieties were to seed freely they would simply reproduce themselves from seed. To obtain new varieties cross-fertilisation is necessary, and this can only be brought about by artificial pollination. You will find Puritan, Beauty of Hebron, Sir John Llewellyn, and Royal Kidney to flower freely, but none produces seed unless flowers on them be specially pollinated by hand, and to obtain new varieties the pollen must be taken from the flowers of another variety. Pollen is so difficult to obtain that it is not an easy matter to get sufficient to effect fertilisation.

SOIL FOR ANALYSIS: *J. H. B.* If you will send a sample to Dr. Voelcker, of 22, Tudor Street, London, E.C., he will undertake an analysis for you. His fee is reduced in the case of any persons who are members of the Royal Horticultural Society.—*G. L.* Our fungus expert reports that there is no disease present in the plants, and suggests that the trouble is in the soil. For particulars of soil analysis see reply to *J. H. B.*

STRAWBERRIES DISEASED: *Agricola and J. R. F.* Your plants are affected with the Strawberry mould disease that was described and figured in the *Gardeners' Chronicle*, July 16, 1904, p. 35. The fungus causing the complaint is Botrytris cinerea, a pest that is responsible for many diseases in cultivated plants.

SULPHURIC ACID REFUSE: *Interested.* Do not mix this corrosive substance with your manure, as this strong acid is fatal to plant life, and it may also have formed compounds that are highly injurious to vegetation. Try its effect as a weed killer on the garden paths.

TULIPS DISEASED: *J. S.* Your bulbs are suffering from a disease caused by Botrytis cinerea, a fungus often referred to in our columns. No remedy is known for the disease, and it is essential to destroy all affected bulbs to prevent the disease from spreading.

VINE LEAVES: *J. E.* There is no disease present in the leaves. Their discoloration and subsequent falling must be due to some error in culture. Have you applied too strong doses of manurial stimulants at the roots?

WEEVILS EATING ROSE BUDS: *T. C.* The insects you send are the common clay-coloured weevils. You should continue to hunt them at night time with a lantern. Spread a white cloth beneath the trees and shake the bushes, as these insects fall immediately a bright light is flashed near them. As regards poisoning them, we do not think quassia extract would be sufficiently strong, but you might try one of the arsenical compounds, such as Paris Green or London Purple. These mixtures can be sprayed on to the foliage by means of an ordinary syringe.

COMMUNICATIONS RECEIVED.—A. D.—Constant Reader—J. D. G.—J. G. W.—E. S.—Cannon E.—T. W.—T. C. B.—W. H. St. Q.—J. B.—F. H. W. E. S.—Col. Prain—W. S. S.—T. Lunt—W. W. P.—W. H. J.—F. M.—W. M.—Franco-British Exh.—Jas. W.—A. Berger—W. B. L.—T. C.—F. J.—F. M. W.—T. H.—A. O.—F. R.—G. P.—A. J. H.—G. S.—R. Sydenham—A. H.

View in the Rhododendron Dell, Royal Gardens, Kew.

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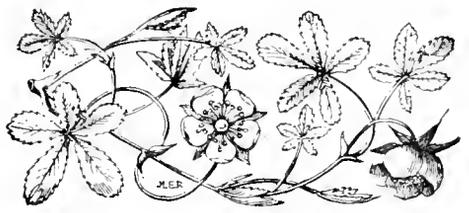

THE
Gardeners' Chronicle
No. 1,118.—SATURDAY, May 30, 1908.

CONTENTS.

ILLUSTRATIONS.

THE CRIMSON VARIETY OF CYTINUS HYPOCISTIS L.

I WAS delighted when staying at Hyères (Var) during last April to come across the beautiful little parasite of the Rock-roses. For some reason the Cytinus appealed to my zoological prepossessions. It is more like some tropical Anthozoon (coral) than a genuine leaf-bearing, root-and-branch-producing plant.

I found the commoner variety of the Cytinus, with orange-coloured bracts and yellow flowers, growing on the white-flowered Cistus, with sticky, narrow leaves. A second white-flowered Cistus, with broader, sage-coloured leaves, is nearly as common on the hills about Hyères as *C. monspeliensis*. I take it to be *C. salviifolius*, and I found the orange and yellow Cytinus on the roots of that species also.

But here and there were tracts of the *Maquis*, where the beautiful Cistus, with large, pink flowers, was predominant. It is apparently called *C. albidus*, a name which refers not to the colour of the petals, but to some other part of the plant. On the roots of this pink-flowered Cistus I found, in some 15 instances, the carnation or crimson variety of Cytinus, which is an even handsomer thing than the commoner orange variety. My specimens had carnation-coloured bracts and pure white flowers, and were stronger and more fleshy than the orange and yellow variety which I found on *C. monspeliensis* and *C. salviifolius*.

It certainly was the case within my limited experience that the carnation-coloured variety grew on the roots of the *pink*-flowered Cistus only, and that the orange and yellow variety grew on the *white*-flowered Cistus (of two species) only. If this observation were established as a definite law, it would indicate a bio-chemical connection of the rich carnation colour of the parasite with the pink pigment of the flowers of the host, and would have an interesting bearing upon the question of the pre-formation of a colourless chromogen substance and its storing in the root of the pink-flowered species of Cistus, whence it would be extracted and chemically developed into full carnation-glory by the root-parasite Cytinus.

With the kind assistance of Dr. Rendle, of the Natural History Museum, I have looked up what has been written on the Mediterranean Cytinus. It appears that, whilst the normal Cytinus Hypocistis L. has orange-coloured bracts and yellow flowers, a red variety has been recognised as var. rubra by Clus and var. kermesinus by Gussoni, whilst one author has proposed to consider the red variety as a distinct species *C. Clusii*. Arcangeli (*Atti. Congress Internaz. Botan.*, Florence (1874), published 1870, p. 155) has published a valuable anatomical account of Cytinus, as well as a discussion of its varieties and the hosts they frequent. He states that the red variety, which he calls var. kermesinus, grows on Cistus villosus in Tuscany. This is a red or pink-flowered Cistus, and is a synonym of *C. incanus*, whilst the pink-flowered *C. creticus* is a sub-species of the same. So far, Arcangeli's statement is in favour of the notion that the red carnation colour of the parasite may be due to the "chromogen" of the host plant. He, however, goes on to say that, where *C. monspeliensis* and *C. salviifolius* occur (that is to say, on the Ligurian Riviera), he always found the orange and yellow Cytinus on *C. monspeliensis*, and "only once" on *C. salviæfolius*. He further states that when he found Cytinus on *C. salviifolius* it was always, with this one exception, the red variety Cytinus Hypocistis var. kermesinus. If that is a correct observation, it makes an end of my suggestion. It is, however, possible that the question was not one which pressed itself on Arcangeli's attention, and he might have, by an oversight, assigned specimens of Cistus albidus without the inflorescence to the white-flowered *C. salviifolius*.

Perhaps some of the readers of this journal may be able definitely to settle the matter, now or at a future date.

I may add that, whilst my specimens of the red variety of Cytinus Hypocistis all showed carnation-coloured bracts and white flowers, it is stated that the flowers are sometimes also tinged with red. I have also seen a figure of the orange and yellow commoner variety, in which the corolla is represented not as pure yellow, which it certainly was in all my specimens, but as being partly flaked with orange. *E. Ray Lankester, May 20.*

THE BERLIN BOTANICAL GARDEN.

(Continued from page 327.)

THE collections under glass are exceptionally rich in species. Some of the groups, for example the Australian, South African, and tropical African, being far richer in number of species than are to be found elsewhere. The houses stand on high ground on the north side of the garden. They are divided into two departments, namely the nursery department where the plants are cultivated, and the show department. The public are not admitted into the former except by special permission. There are 12 spacious span-roofed houses devoted to this nursery work, and they are connected by corridors, so that in the coldest weather there is no difficulty in working them. In addition to these houses, there are three long, spacious pits, two of which are devoted to the cultivation of decorative greenhouse plants, the other serving as a store-house for plants requiring shelter in winter.

The show houses are grouped on an eminence not far from the nursery houses. There are 15 of them of various sizes arranged roughly in the form of a rectangle, and connected with each other so that visitors may go the whole round without having to go into the open air, an arrangement which is very advantageous in winter. These houses are constructed so as to admit the maximum amount of light, the sash bars being thin iron, but it must be difficult to maintain them at the required temperature during very frosty weather. There are double sets of doors at all the entrances from the outside.

The heating mechanism for the whole of these houses may be described as a new invention. Four large boilers erected in a roomy "machine house" supply the steam, which is led by steel pipes to the different groups of houses, where it passes into small tanks of water; and this, after it has been thus heated, circulates through hot-water pipes in the ordinary way. The arrangement of pipes, valves, tanks, &c., is such as no doubt may appeal to the engineer, but it looks far too costly and complicated to please the gardener. However, it works satisfactorily so far as the supply of heat is concerned. The great Palm house is heated by a complete circle of radiators situated in an open chamber extending all round the house below the ground level. All the houses are connected by an underground tunnel which is kept carefully locked against interfering persons, and it is used by the stokers at night so that they need not go through the open garden, which is guarded by two very large and savage dogs let loose every evening. These dogs have such a reputation that no one would dare to venture into the garden after closing time.

The Palm house is a large, elliptical-domed structure, 150 feet long by 80 feet wide, its height being 78 feet. All the plants in it are planted out in beds and borders, there being no stage of any kind. Tropical climbers are trained on the largest trees rather than against the glass, the aim being to produce as natural an effect as possible. The heating chamber and ventilating machinery are screened from view by means of a rockery, from the top of which is a waterfall, the water running down

through irrigating channels and serving the purpose of keeping up a moist atmosphere. A span-roofed house for Aroids, not yet finished, adjoins the Palm house, and from this the visitor passes into a large pavilion, 40 feet square, in which tropical dicotyledonous plants are planted out in the central portion or grown in pots on stages round the sides. Next to this is the Orchid house, 60 feet long and 20 feet wide, filled with tropical Orchids, many of them exceptionally fine specimens. From this house we enter another pavilion, in which Musas and other striking monocotyledonous plants are grouped. Following this is the house of Bromeliads, a very large collection being maintained. Then come the Ferns, beautifully grown and effectively grouped. The Victoria House is still in course of construction. The visitor passes on into two large houses filled with Cacti and other succulents, by far the best collection I have seen in any garden, its extent and condition being truly astonishing. Owing to the brightness and warmth of the Berlin summer, many of the succulent plants are placed outside from June till September. Tropical economic plants are a special feature at Dahlem, and they are cultivated with conspicuous success. Passing on to the houses containing what are known as greenhouse plants, there is first an Australian house, already so full as to be overcrowded; in fact, this is the condition of all the cooler houses during the winter, the plants they then contain being accommodated outside in summer. The temperate house stands by itself. Compared with the gigantic structure at Kew, it is small, its dimensions being 130 feet long, 60 feet wide, and 50 feet high. The general opinion is that it is too high for its width. It is filled with grand specimens of tree Ferns, Araucarias, Damaras, Acacias, and other plants such as are to be seen in houses of this character. To an Englishman, it is surprising to find that the common Holly, Cedar of Lebanon, and Araucaria imbricata must here be housed under glass in winter. *J. G. W.*

(To be continued.)

LEWISIA (CALANDRINIA) COTYLEDON.

FLOWERING for the first time in cultivation in this country, this new addition to a most interesting genus has proved an attractive plant. Altogether distinct in habit from all the other species of Lewisia or Calandrinia, this plant forms a rosette of leaves not unlike those of Saxifraga Cotyledon, without the white margin, and with crisped edges. The rosettes are about 4 inches in diameter, while the spathulate leaves are fleshy, and about 1 inch across at the widest part. The stem, like the leaves, is fleshy, 4 to 6 inches high, freely branched, and bears numerous flowers, several of which are open together. The 9 to 10 petalled flowers are about 1¼ inch in diameter, the petals being rose coloured with a broad white margin. The seven orange-coloured stamens have their white filaments more or less coherent at the base, while the sepals are also coherent and beautifully fringed like the bracts with reddish, glandular-tipped hairs. Plants of this beautiful species were received rather more than a year ago, having been collected in the Siskyon Mountains of Northern California, where it is said to be found growing on well-drained, rocky slopes, with a southern exposure. So far, Lewisia Cotyledon has been grown in a pot in a cold frame, but it is probably as hardy as any of the other kinds, provided that it is planted in a suitable position. Taken as a whole, the members of this genus are somewhat capricious in cultivation, but they are well worth a little care and attention on account of the beauty of their flowers. The best position for them is one exposed to full sunshine, planted in a mixture of loam, leaf-soil, and sand, with plenty of good-sized stones mixed with the soil. Another important point is to keep them as dry as possible in winter. *W. I.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM "LYNWOOD."

MR. H. HADDON, gardener to J. J. Neale, Esq., Lynwood, Penarth, sends a flower of a pretty, heavily-blotched O. crispum, taken from an inflorescence bearing 10 flowers. As the plant is a small imported specimen, it may be expected to develop flowers of still greater beauty. The flower is of good shape, the sepals and petals equally broad, and the lip proportionately showy. The flower is white, slightly tinged with purple on the sepals, which also have several large purplish-red blotches. The petals have eight to ten purplish-red blotches, and the lip bears a large one of the same tint in front of the light yellow crest, the whole being evenly distributed over the surface of the flower.

ODONTOGLOSSUM EXIMIUM "CENTENARY."

(ARDENTISSIMUM × CRISPUM, BLOTCHED VARIETY.)

THE upper three flowers of a strong inflorescence of this gorgeously-coloured Odontoglossum is sent by Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, Staffordshire, who considers it one of the best and showiest Odontoglossums in the collection under his care. It is a finely-formed flower, with almost equally broad sepals and petals, the latter having an extended crimped and fringed margin. The ground colour of Odontoglossums of this section is white, but this might be more correctly described as having the sepals and petals of a deep mauve-purple, as bright on the backs of the segments as on the front, the broad margins being white. The large labellum bears distinct evidence of O. Pescatorei, obtained through O. ardentissimum, the front being pure white, and the crest bright yellow with claret-coloured blotches around it. The upper side of the column is red, and the whole flower one of the most attractive of the many showy hybrid Odontoglossums.

ODONTOGLOSSUM FASCINATOR.

FROM the gardens of T. H. Lowinsky, Esq., Tittenhurst, Ascot, Mr. Joseph Timson sends a very pretty spotted Odontoglossum, which appeared among a small lot of imported Odontoglossum crispum purchased at Messrs. Protheroe and Morris' Rooms. The flower is white, densely spotted with claret-red, a lilac shade showing through from the colour at the backs of the sepals. It is just intermediate between O. Adrianæ (crispum × Hunnewellianum) and O. crispum and identical with some of the forms of O. Fascinator (Adrianæ × crispum), raised by Messrs. Charlesworth & Co., Heaton, Bradford, who first showed a selection of them at the Temple Flower Show, 1905. Without considering this cross, the flower of the imported plant would be very puzzling as it approaches closely to a spotted O. crispum, and bears little trace of the crimped and folded lip of O. Hunnewellianum seen in O. Adrianæ. There are doubtless many specimens of this pretty secondary hybrid in gardens, and probably a few among the varieties which have passed as O. crispum. A well-formed variety of O. Fascinator, distinctly blotched with cinnamon-brown, has recently flowered in the gardens of Sir Trevor Lawrence, Bart., K.C.V.O., Burford.

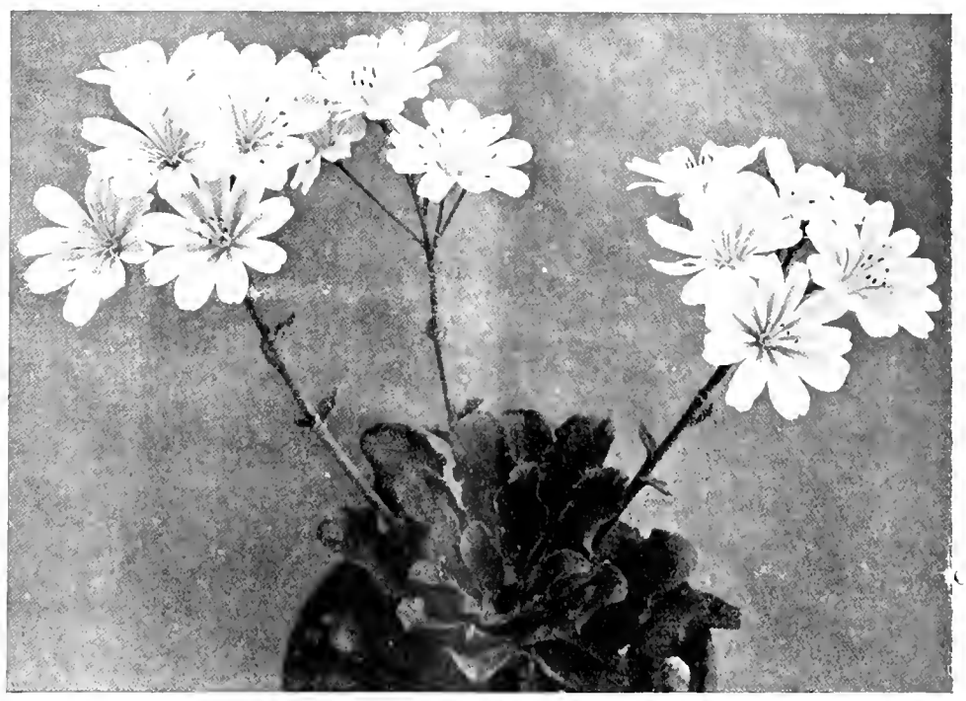

FIG. 151.—LEWISIA (CALANDRINIA) COTYLEDON, WHICH HAS RECENTLY FLOWERED, FOR THE FIRST TIME IN THIS COUNTRY, IN THE ALPINE HOUSE, KEW.

PLANT NOTES.

DENDROMECON RIGIDUM.

THIS rare Californian tree Poppy requires a sunny position, a well-drained soil, and shelter from the wind. Probably the plant would prove hardy in this country, or, at the most, lose the less well-ripened ends of the shoots from frost, unless slightly protected by Fir branches, &c. The natural season for flowering is June, but it may be obtained in bloom quite early in the year if grown under glass protection. The flowers are clear yellow, single, salver-shaped, and from 2 to 3 inches in diameter. The plant is raised from seeds, and it is necessary to sow these as soon as they ripen. It can also be propagated by means of cuttings, but this is a troublesome business. *M.*

TREES AND SHRUBS AT BATTERSEA PARK.

In no other public park in the metropolis is so large a collection of exotic trees and shrubs to be found as in Battersea Park, and at no other season than the present is the observer so well able to note the various shades of green in the foliage. I may mention a few of the more striking in leaf colour. Pale yellow is seen in Virgilea lutea, of which species of low-growing tree there are several in conspicuous positions, one being adjacent to the sunken panel garden at the north-west corner of the park. In the American Plane tree (Acer platanoides occidentalis) the young foliage is of a distinctly yellowish-green; and A. p. orientalis has leaves of a light green tint; those of Ailanthus glandulosus are of a golden brown, very distinct in tint, and appearing in large bundles; the foliage of the common Poplar trees, too abundantly in evidence on the islands in the lake, is striking in its brown colouring. The Kilmarnock Willow is a late-leafing tree, now beginning to unfold its buds, whilst the common Weeping Willow is already covered with its pendant shoots of the freshest green. A tree of Broussonetia papyrifera, growing on the lake side on the south side of the park, shows as yet (May 19) no sign of expanding leaf buds. The common Lime is in full leaf, but the leaves have not arrived at their full size, and the trees have, therefore, a less dense appearance than will be the case in summer. Of Pavias there are a few showing their brilliant spikes of scarlet and pink-coloured flowers; the red-flowered Horse Chestnuts in warm positions are loaded with flower-spikes.

Against the lighter tints of the deciduous trees the Hollies show nearly black by contrast, more especially the Hedgehog variety of Ilex Aquifolium. Ilex latifolia is pushing its new growths and the bushes of it are covered with the small white conical flower-heads. Young specimens of Salisburia adiantifolia have taken firm root, and are likely to grow into symmetrical forms, being seedlings, and not from cuttings or layers. Sombre-looking common Yew bushes have tender, green, new shoots, a tint they will keep till the end of July. White-flowered Lilac is blossoming freely where the sun has free access to the plants. In shady spots this variety is not so satisfactory. Persian Lilac is delightfully free in most parts of the park wherever it is given space for development and freedom from overhanging trees of large growth. Hawthorn bloom, in pink, scarlet, and white, is going to be a feature, and the flowers are expanding, hastened by the hot suns of the last few days. The Box bushes, now making new growth, exhale a most agreeable aroma. A tree of Magnolia conspicua in the "Sub-tropical Garden," is covered with its white, cup-like blossoms. It is a pity there are not more Magnolias planted in this park. Mention may be made of M. Soulangeana, a cross between M. Yulan and M. obovata discolor, M. purpurea, M. Lennei, M. nigra, &c. While we are in the "sub-tropical," we note a big round bed filled with Rhododendron sinense cut back two years ago and grown on in the reserve garden, with Cineraria stellata (tall), and other plants of C. aurita and C. lanata (dwarf). The taller varieties are intermixed with the Rhododendrons round about the middle of the bed, and the dwarf towards the circumference. Another bed in this part consisted of brown-coloured Wallflowers, and Tulips White Swan; and still another of Rhododendron sinense and purple Iris germanica. A mixed bed of yellow Wallflowers and scarlet Tulips was very effective. *F.*

[Photograph by W. Irving.

Fig. 152.—Epigæa repens: flowers white, tinged with red.

VEGETABLES.

SEAKALE.

Seakale prefers a strong, rich ground that has been well enriched with manure and trenched to a depth of three spits. Almost any kind of manure is suitable. I find the best results are obtained from young plants, and for this purpose I annually raise a number of new "sets." These are obtained from portions of the roots of old plants, selecting the straightest portions about 6 to 8 inches in length. The shoots of the thickness of a lead pencil are to be preferred, and they may be taken from the old plants that were lifted and forced in the previous autumn. When trimming these pieces of the roots, it is well to make a straight cut across the top and an oblique one at the bottom, as by this means the proper end for inserting downwards can be readily determined. When prepared, the "thongs" or "sets," as they are termed, are tied in bundles of 100 or 50 and placed under the stage of a cool greenhouse or pit, and plunged in coal ashes. There they remain in a good condition until the following spring, when they are found to have developed a number of adventitious buds at the top. All these save the strongest should be removed, and this is best done with a sharp knife. Planting can be undertaken any time during April, provided the weather is favourable. The Seakale is a strong-growing plant, therefore it should be allowed plenty of room to develop, and not less than 2 feet between the rows, and the same distance between the individual plants is necessary. Planting should be performed with the aid of a long dibber, and as each portion of root is inserted it should be made firm. When planting is finished, it is a good practice to place a layer of ashes on each "set," as by this means slugs and other harmful insects will be kept in check. The subsequent culture consists principally of keeping weeds in check, and to see that not more than one growth develops from each crown. In the autumn, when growth is complete and the leaves have fallen, those intended for early forcing should be selected and lifted, and the smaller roots will provide the material for the next season's "sets." Those that remain in the ground may be forced where they are in the open, and a second layer of ashes should be placed over them. These crowns in the open may be forced by the aid of fermenting manure, or they may be forced and blanched under pots. In this garden we use a special Seakale-pot, that is very similar in appearance to a 4½-inch drain pipe, but with a fixed top, and by their aid we produce our finest heads of Seakale, and without the aid of any further materials.

In order to obtain the very earliest crop of this vegetable, seven crowns should be inserted in a 9-inch pot, and the soil be filled level with the top of the crowns. On this pot should be inserted another pot, bottom upwards. The "sets" should be transferred to a Mushroom or forcing house, and they will furnish a supply of the vegetable by the end of November. A succession can be maintained by potting a quantity of the crowns weekly, and introducing them into heat as described. The raising of Seakale from seed is a tedious process, but a simple one. The ground should be prepared as advised for the planting of the crowns, and the seed should be sown during April, placing two or three seeds at intervals of about 1½ feet. The strongest seedlings should be selected and the others destroyed. The ground should be kept clean of weeds, and beyond this little is required during their first season. In gardens where no convenience exists for forcing Seakale under glass, an early supply may be obtained by sowing seeds or planting the "sets" at the foot of a south wall, or some other warm aspect. When the Seakale-pot is placed over the crowns, the pot should be embedded in leaves mixed with long manure; but this latter must not be allowed to ferment too rapidly, otherwise the growths will become blackened from the excessive heat generated. Some growers produce satisfactory results by merely covering the plants with a layer of either ashes, sand, or leaf-soil, but the practice is not one to be recommended. *W. A. Cook.*

EPIGÆA REPENS.

The genus Epigæa includes a small group of plants consisting of but three or four species. The plants are found in widely different parts of the globe, E. repens being a native of the Northern United States of America, whilst another species is found in Japan. In America E. repens is known as the Mayflower, which appellation is in allusion to its season of flowering. The plant belongs to the Erica family, and, in common with members of the Ericaceæ, it should be given a rooting medium consisting chiefly of peat, and in which no lime or other calcareous material is present. The plant forms a creeping evergreen shrub, and, although it may be cultivated as a pot plant, it will thrive in a shady nook on the rock garden.

Propagation may be effected by division, but the work needs to be carefully done. Our illustration is from a plant growing in a pot in the Alpine house at Kew.

ALPINE PLANTS IN POTS.

After struggling for many years to grow some of the attractive plants from the highest Alps out of doors, I have reluctantly come to the same conclusion as Mr. Arnott (see *Gardeners' Chronicle*, May 2, p. —) as to the hopelessness of cultivating some of them in the open garden, however much care and attention we may bestow upon them. But a great deal of pleasure may be derived from growing the same plants in pots plunged in a cold frame in ashes during the sunny months, and removed to a shelf or stage of a dry, unheated, well-ventilated house when fog and damp days may be expected. But even then no mistake must be made, and there is ample scope for skill and attention.

Under certain conditions, I have found it possible to grow and to flower not only Eritrichium nanum, but also Androsace glacialis, A. helvetica, and A. imbricata. Of Eritrichium nanum I brought back five plants from the Alps last July. Of these four are flowering nicely. I may add that, in a 7-inch pot, I have four seedling plants of Eritrichium, the seed having been sown in April, 1906. These are all flowering, and I have seed pods on some of them fertilised with pollen from the partly-established plants. The seed was sown in chopped sphagnum-moss, granite chippings, silver sand, and a little peat dust. These four little plants are growing, and retain their natural habit. They are each now about as big as a half-crown piece. I have not ventured to handle them, and there seems no need to do so, as the pot is half full of drainage, and they are growing in a crust of about 4 inches in depth.

Androsace imbricata, shown in the photograph (reproduced at fig. 153), was chipped with a cold chisel out of a big boulder lying in the floor of a valley in the Valais in July, 1906, when it was about three-quarters of an inch across. I brought it home with almost no fibre to the 2 inches of tap-root, but it has never looked back and is now the picture of health.

I have also plants of Androsace glacialis, collected in 1906 and 1907. I grow them in the same way as Eritrichium nanum, planted in silver sand, granite dust, and a little peat, and surfaced round the collar with coarser granite chips. Several of my plants of both these species were potted on the mountain in their own soil, of which the above seems to be a satisfactory imitation. All the plants have done well under this treatment, and I think all have flowered—some of them profusely. A fine plant of Androsace helvetica, which I bought already established, has grown considerably since it came to me about a year ago. This species, of course, requires to be well fed in limestone, but the pot can be surfaced like the others with granite chippings.

Each pot is immersed again into a larger one, the object being to prevent damping off. The Eritrichium nanum plants are never watered directly, and the Androsaces only in spring and summer, when the air is bright and clear and there is a breeze. The outer pot is filled with silver sand for one-third of its height, and with granite chippings above that. The water given into the outer pot percolates quickly through the granite chippings, and much more slowly through the silver sand, and the silky roots of the plants have time to draw what they require, while the moisture does not hang about the collar, or near the foliage. Except when in full flower my plants are kept on the dry side, and in winter they are very seldom watered, and then only through the outer pot. But I have, in other years, lost plants of both Eritrichium and A. glacialis by keeping them over dry in the resting time. During the growing period my plants are plunged in ashes in a cold frame with ample provision for ventilation when the light is on. The bed of the frame is tilted to face the north, and the whole is placed in the sunniest and airiest possible position. In September the pots are transferred to the stage of a dry, cool house. Plenty of air and all possible sun is allowed. In very foggy weather and during a thaw I sometimes carry the Eritrichium plants across to a Carnation house, and stand them as far away from the pipes as possible and near a ventilator. I am indebted for the photograph to my friend, Mr. Digby Legard. *W. H. St. Quintin, Scampston Hall, York.*

FLORISTS' FLOWERS.

THE PICTORIAL HISTORY OF THE CHRYSANTHEMUM.

At the Chrysanthemum show held by the National Horticultural Society of France in Paris in November last, M. Georges Gibault, the librarian of the Society, formed the happy idea of exhibiting from the library of the Society a large number of books in which articles on the Chrysanthemum had appeared, together with many coloured engravings of old flowers that had been published in the various botanical and horticultural works in the possession of the Society.

My time was too much taken up with the show itself to do more than cast a very swift, albeit a very appreciative glance at the interesting collection, literary and artistic, which was staged in several glass cases. This is a precaution that is certainly necessary if any society expects the owners of rare books or prints to lend them for the purpose of public display. Fortunately M.

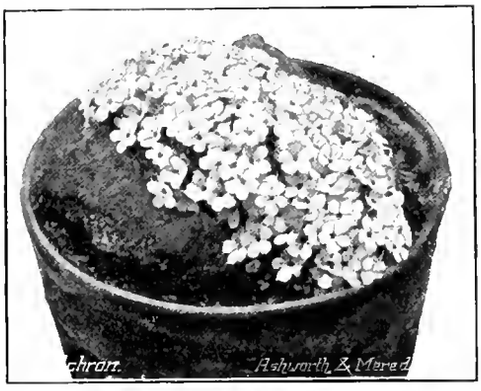

Fig. 153.—Androsace imbricata.
(The outer pot, containing sand and granite chippings, has been removed.)

Gibault gave in *Le Jardin* of December 20 a list of the principal items he staged, and, under the heading, "L'Exposition Iconographique Retrospective des Chrysanthèmes" will be found his notes, which are practically a catalogue of the principal illustrations and engravings that were shown.

It is interesting to note that the French growers and admirers of the popular autumn flower have in general a wider interest and sympathy in the literary and artistic features of their favourite than is the case with most English growers. This was made abundantly manifest to me when, after the judges' luncheon, the President of the Chrysanthemum section of the Society enquired whether I would be willing to help them by sending a few notes on the bibliography of the flower for insertion in their *Journal*. I was glad to be able to do so, with the result that the Society now possesses in its *Journal* (vide the December, 1907, number) the most complete and exhaustive bibliographical list that has ever been published on the Chrysanthemum. A small edition in independent form has been issued, and has been warmly appreciated by my French colleagues.

But to go back to M. Gibault's article in *Le Jardin*, those who see this excellent French journal will find that the list of coloured plates exhibited comprises most of the modern varieties. No history, pictorial or literary, of the Chrysanthemum can possibly be considered authentic or exhaustive unless reference be made to English authorities. The reason is that in the early days nearly the whole of the Chrysanthemums were introduced into Europe through the agency of the Horticultural Society of London, together with a few English amateurs who had become interested in the cultivation of the plant.

The first one, known as the old purple, was introduced by Blancard, of Marseilles. All the others between 1798 and 1832 were either sports or importations from China through English agencies. Some of these were introduced into France by M. Noisette, of Paris, but there is no evidence or record of further additions after the first, through French sources.

Interest having been aroused in the newcomer, our botanical magazines were not long in giving illustrations and descriptive articles concerning them, and it is just in these cases that the exhibit in Paris was the most deficient. They are of intense interest to the student of horticultural progress, for they show the immense advance that has been made in the cultivation of the flower; for it must not be considered, as many good people seem to think, that the first of the Chrysanthemums introduced was a wildling. It was certainly not that, but a cultivated flower, long grown by the Chinese florists, like most of its successors.

Sabine, whose name occupies a foremost place in the literature of our flower, did much to disseminate knowledge about the Chinese Chrysanthemum, and the plates, beautifully coloured as they are, which appeared in the *Transactions* of the Horticultural Society of London give to-day an exact idea of what the Chrysanthemums of nearly a century ago were like. But there were other books and other illustrations published in England, without which no pictorial history of the Chrysanthemum can be regarded as complete.

At this moment a more complete reference is not possible, but I think it will be serviceable to draw attention to most of those old plates that were not included in M. Gibault's article, and they are, briefly, as follow:—The purple, the changeable white, and the expanded light purple Chrysanthemums are figured in the *Botanical Magazine*. The quilled white, the superb white, the golden yellow, and the quilled pink Chrysanthemums are given in the *Botanical Register*. In Sweet's *British Flower Garden* we find excellent plates of the curled Lilac and the superb clustered yellow Chrysanthemums. The *Transactions* of the Horticultural Society of London are conspicuous for some of the best, and we there find pictures of the quilled flamed yellow, early crimson, large quilled orange, semi-double quilled pink, the quilled salmon-coloured, the semi-double quilled orange, the small yellow, the changeable pale buff, and the two-coloured Incurved Chrysanthemums.

The starry purple Chrysanthemum is figured in a very pretty plate in Morris' *Flora Conspicua*, and in the *Florists' Magazine* for 1835 we find Early Blush and Tasselled Yellow. After this period these descriptive names cease, and the present style of nomenclature came gradually into vogue. Duc de Cogliano and Minerva are figured in the *Florists' Journal* for 1843, and in many of the monthly publications, such as the *Floricultural Cabinet*, the *Floral Magazine*, *Florist and Pomologist*, &c., the Chrysanthemum in later years was freely and liberally dealt with. Unfortunately, in some instances, the figures are very indifferently executed, most of them being lithographs poorly coloured by hand. With the advent of colour printing an improvement has been made in the illustrations, but these are chiefly to be found in foreign horticultural publications.

It is very interesting to pass in review these old-time illustrations of a popular flower, and to note the gradual development and improvement of the flower all along the line. The idea has

taken root, and it is now announced that the National Horticultural Society of France will, at the next Paris Chrysanthemum Show, hold a special exhibition of literary and artistic objects. More complete particulars of the exhibition will be given later, but it is proposed that there shall be two main divisions, one to include old books, publications, prints, engravings, pictures, and old catalogues of Chrysanthemums; the other for blooms of old Chrysanthemums in cultivation prior to the year 1896. The idea is an original one, and, if properly supported, will materially help to keep up the enthusiasm of the Chrysanthemum lovers on the other side of the Channel. *C. Harman Payne.*

NOTICES OF BOOKS.

* "ORIGIN OF A LAND FLORA."

THIS is a book that will appeal rather to the botanical specialist than the public who might perhaps be attracted by its title. The author is well known for the extensive researches he has made on the structure of the vascular cryptogams, and on the problems connected with that important class of plants. The question as to how the land plants which we see around us have arisen, is closely bound up with the details of the life history of these lower forms; and our views are largely influenced by the interpretation we place on the relation existing between, for example, the prothallial generation of the Fern, and the Fern plant itself. It is generally recognised that the Ferns and their allies, as well as the Mosses, exhibit two sharply-marked phases in their life histories. The spores germinate and produce an organism on which sexual organs are produced, and from the fertilised egg springs, as a new generation, the Fern plant, or the so-called "fruit" of a Moss respectively. This germination does not give rise to sexual organs, but to spores, and from these the sexual generation once more springs. There is thus a clearly-marked alternation of the sexual and asexual phases in the life history of these plants, and many people believe that the latter has arisen as a specialised development from the fertilised egg, that the organism thus formed has reached independence (as in the Fern), and has become adapted to a terrestrial existence, whilst the sexual phase (the prothallium) remains specially fitted for aquatic conditions. According to this view, the terrestrial stage has gradually increased in importance from very small beginnings, forming, as it were, a local extension of the life history, until it has completely overshadowed the earlier aquatic parent. Professor Bower is an able exponent of this theory, which however, is far too complex to consider in detail here. It is hardly necessary to say that the book is essentially one for the advanced botanical student, and it is one that he cannot possibly neglect to study. Many of the arguments are, of course, open to criticism, and no doubt such will be forthcoming, inasmuch as there are many distinguished botanists who hold views that are quite at variance with those which are entertained by the author of this book. But the treatise itself is a masterly one of its kind, and, whatever be the ultimate fate of his theories, Professor Bower is to be congratulated on having produced a work, the permanent value of which is assured by the wealth of facts which it contains.

* *The Origin of a Land Flora*: a Theory based upon the facts of alternation, by F. O. Bower, F.R.S., Regius Professor of Botany in the University of Glasgow. London: Macmillan & Co. 1908.

[*Photograph by Chas. Jones.*

FIG. 154.—SILENE PENDULA COMPACTA, A GOOD BEDDING PLANT: FLOWERS PINK.

SILENE PENDULA.

THIS pretty pink-flowered species is a valuable subject for the flower border, where its spreading trailing branches form thick tufts which are in flower from May to August. As a border subject the plant is useful, and, in common with all the Catchflies, it will furnish a supply of flowers for the decoration of rooms, and it will associate well with the more pretentious Roses, Pæonies, Dahlias, and Carnations.

The plant, if allowed to ripen its seeds, will reproduce itself naturally by this means. A tuft of Silene pendula in flower is a pretty object on a rockery or wall garden. We remember to have seen in Paris a variety named ruberrima, with flowers more richly coloured than in the type, and it formed a very effective variety as bedded out in the Park Monceau.

Our illustration shows S. pendula compacta grown as an isolated specimen out-of-doors.

VIBURNUM CARLESII.

THIS Chinese species was shown by Sir Trevor Lawrence, Bart., at the meeting of the Royal Horticultural Society on April 14, on which occasion the Floral Committee granted the plant an Award of Merit. Although still uncommon it is in cultivation in a few gardens in this country. For the opportunity of figuring the species (fig. 155) we are indebted to our valued correspondent, Mr. W. E. Gumbleton, who sent us a flowering shoot from his gardens at Belgrove, Queenstown, Ireland, which contain so many new and rare plants. The flowers of Viburnum Carlesii when fully opened are of the purest white, and the expanded inflorescence may be likened to a glorified white Bouvardia. In addition to their beauty, the flowers are fragrant, and bunches of cut flower-sprays would form a choice subject for a vase. As a plant for embellishing a wall, this Viburnum should be especially useful. A full description of Viburnum Carlesii is given by Mr. W. Botting Hemsley in the *Journal of the Linnean Society* XXIII., p. 350.

The Week's Work.

FRUITS UNDER GLASS.

By T. COUMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Queen Pineapples.—Plants on which the fruits are now swelling should have their roots watered once each week with tepid water containing a small quantity of Peruvian Guano. They need an atmospheric temperature at night of 70°, but a few degrees higher in mild weather will be better. Carefully ventilate the house early on bright days, gradually increasing the ventilation as the day advances, and close the house again in the afternoon at such a time that the temperature will rise to 90° for a short time. Maintain a moist atmosphere by lightly spraying the plants overhead, damping between the pots early in the morning and again at closing time during fine weather, and the paths also as often as may be required. Only one or two suckers, which may be required for propagation, should be allowed to remain on the plant; the remaining ones should be removed as soon as they are seen. Afford a little shade during the hottest hours of the day (by the use of thin tiffany blinds) to prevent the fruits or leaves from becoming scalded owing to the direct rays of the sun shining upon them whilst their surfaces are wet. When the fruits commence to ripen, watering must be discontinued; the atmosphere should be drier, and the ventilators may be left partially open at night. If too many fruits appear to be ripening at one and the same time, some of them may be retarded by placing the plants, as soon as the fruits commence to colour, in a moderately cool house or pit. Those plants that were potted into their final pots in February will require more liberal supplies of water now that their roots are becoming numerous, and a little guano may be mixed in the water. On no account, however, must the watering be excessive, it being better to err in the opposite direction. If the roots suffer from drought, the effect of this will be seen by the edges of the leaves becoming unduly contracted (cupped). Keep these plants entirely free from suckers. Ventilate the house, afford shade to the plants and promote atmospheric moisture, as directed, for the plants now swelling their fruits.

Smooth Cayennes and other varieties.—Plants of varieties of Pineapple which are expected to provide ripe fruits during next winter should be almost fully developed specimens by this date, and their pots should be well filled with active roots. Attend carefully to the routine management and maintain a bottom heat of about 85°. By midsummer the plants should

complete their growth and commence to develop their fruits. If necessary, this stage should be encouraged by keeping a drier atmosphere and somewhat restricting the supply of water to the roots, avoiding carrying this treatment to excess. The plants of winter-fruiting varieties that have been raised from suckers potted into 7-inch pots early in spring are now sufficiently well rooted to be shifted into well-drained pots 12 inches in diameter. Use a compost of light, fibrous loam (rejecting the fine particles), and mix with it a little bone meal and soot. Pull away a few of the bottom leaves from each plant, remove the crocks from the soil, and in repotting ram the compost firmly down around the old soil. Plunge the pots up to their rims in a bed having a heat of 85°, and let the atmospheric temperature be maintained at 70° at night, allowing it to rise 5° or 10° by day. Keep the atmosphere rather close and in a moist condition for a week or ten days following the operation, and spray the plants overhead each morning and afternoon. Provide shade from bright sunshine, bearing in mind that the Smooth Cayenne suffers injury more readily than any other variety if exposed to direct sunshine. The greatest care should be taken to avoid over watering freshly-potted plants, and equal diligence is necessary to see that the soil is not allowed to become too dry. Every care should be taken of the leaves during the operations of potting and plunging the plants, but it is not wise to tie the leaves of each plant into a bundle.

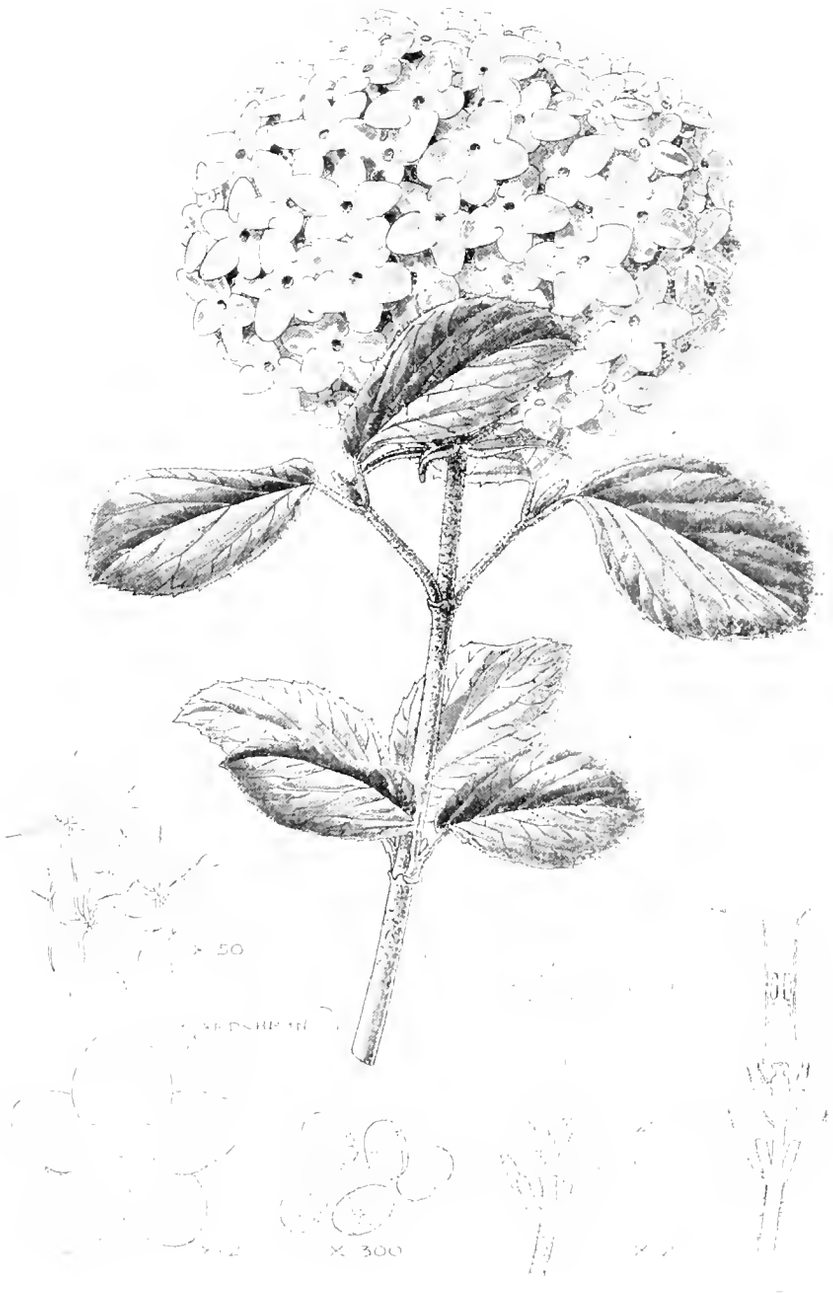

Fig. 155.—Viburnum carlesii: flowers white.
(For text see p. 345.)

THE ORCHID HOUSES.

By H. G. Alexander, Orchid Grower to Major G. L. Holford, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Dendrobiums.—The evergreen species and varieties which flower at about this season are beautiful and attractive plants. D. densiflorum, D. Farmeri, D. thyrsiflorum, D. moschatum, D. Dalhousianum, D. fimbriatum, D. chrysotoxum, and D. suavissimum are free-growing plants that can be accommodated in an ordinary plant stove while making their growths during the summer months, and in the winter rested in a warm greenhouse. These plants usually commence developing their new growths and flower-spikes simultaneously, and by the time the flowers are past these young growths are somewhat advanced in making roots from the base. At this stage any necessary repotting or surfacing should be attended to. The dwarf-habited kinds should be placed in baskets and these suspended from the rafters; whilst the taller-growing ones are best cultivated in pots and placed on the stage. Avoid using receptacles of larger sizes than necessary, and in selecting them be careful that they are clean and sufficiently provided with drainage material. The plants, when well established, should be kept close up to the light, using a moderate degree of shade only to protect them from bright sunshine, syringing the foliage frequently during bright weather.

D. Phalænopsis Schröderiana.—With the warmer weather and greater amount of sunlight, this splendid species is pushing forth new growths rapidly. The plants are best cultivated in receptacles that can be suspended from the rafters in the warmest division. Very little shade being necessary, the thinnest of materials only should be employed, and this only during the hottest part of the day in summer. Any of these plants that need fresh rooting material should be given attention when the new growths have attained a height of 3 inches, for new roots will then emerge from the base of the pseudo-bulbs and quickly establish themselves in the compost. Well-drained pans should be selected for the plants, and when repotting these latter, remember that the best results are obtained from plants that have their rooting-space confined. When in full growth and the pseudo-bulbs are in course of formation, the plants should be examined each day for watering, a plentiful supply of moisture at the roots being necessary. The atmosphere should also be maintained very moist, and the syringe may be used freely amongst the plants on bright days.

D. formosum, D. infundibulum, and its variety Jamesianum.—D. formosum is a very useful Orchid where there is a great demand for the choicest white flowers in autumn. The plants, which are now commencing to grow, should be treated as I have advised for D. Phalænopsis. D. infundibulum is also growing and making new roots, and may be repotted or top-dressed according to the requirements of each plant. Their treatment is much the same as D. formosum, except that this species should be cultivated in a cool intermediate temperature instead of in the warmest division.

Potting compost.—For all the species I have mentioned a similar compost should be employed to that recommended in a previous Calendar for Dendrobiums. Exercise the usual care in watering all freshly-potted plants, and afford them extra shade on bright days, especially to those specimens which have had all the old materials shaken from their roots.

THE KITCHEN GARDEN.

By E. Beckett, Gardener to the Hon. Vicary Gibbs, Aldenham House, Elstree, Hertfordshire.

The season.—The welcome change in the weather a fortnight ago has done much to promote the growth of vegetation, and if we get no further spring frosts early vegetables, though somewhat late, are likely to be abundant and of good quality. Clear the ground of the remains of any vegetable crop as fast as these cease to be of further use. Nothing tends to impoverish the ground more than Cabbages or other species of Brassica, when they commence to flower.

Cucumbers.—Plants in full bearing, whether cultivated in houses, pits, or frames, will need to have the oldest of the growths thinned out and the new growths regulated and tied in. Rigidly avoid overcropping the plants, but apply abundance of water to the roots as well as liquid manure. If liquid manure is difficult to obtain, there are many forms of patent manure which are of very great value to this crop. In order to prevent attacks of black aphis, one or two fumigations with the XL-All vaporiser should be carried out. Apply a surface dressing of good loam and half-decayed horse manure, in equal parts, at intervals of about ten days. Employ a little ventilation early in the morning, but close the lights again early in the afternoon. Should any of the plants show serious signs of exhaustion, it will be wise at this season of the year to throw them out and start again with young plants and fresh material.

Tomatos.—Plants which have been well hardened and properly prepared for planting out of doors, may now be safely put out into sheltered positions. I have previously stated that it is almost useless to cultivate Tomatos in the open garden unless seed is sown early in the season,

so that at the end of May strong plants may be ready which will commence to fruit almost immediately after they are planted out. Wherever it is possible to do so, let the plants be put against a wall or building facing to the south. The soil should not be manured at the time of planting, and no stimulant will be required until a considerable number of fruits have set. Cut away all side growths, keeping each plant to one main stem. Make another sowing for raising plants to fruit under glass during autumn.

Asparagus.—Plants in the seed bed should be thinned out to distances of 4 to 6 inches apart, and the surface of the ground should be kept frequently stirred. Seeds may still be sown, if by any chance the operation has been neglected, or seeds have failed to germinate. The permanent beds should be examined each day, and the thickest shoots cut for use carefully with an Asparagus knife when they are about 3 inches in height. Hand-weed the beds to keep them perfectly clean.

Maize or Indian Corn.—In warm districts, and during favourable summers, Indian Corn may be induced to sufficiently develop their Cobs for consumption if the plants are raised under glass in boxes and planted out in a southern aspect in well-prepared ground. There are several improved varieties procurable.

PLANTS UNDER GLASS.

By Thomas Lunt, Gardener to A. Stirling, Esq., Keir, Perthshire, N.B.

Chrysanthemums.—Plants which are being cultivated for producing large blooms should now be repotted for the last time. Before commencing this operation, select a sufficient number of each variety, being careful not to retain more than can be properly accommodated in the houses in September, it being much better to cultivate a moderate number well than that a larger number should be more or less spoiled by overcrowding. Examine carefully for green fly, and if any of this pest be detected, let each plant be dipped in quassia water. The most suitable-sized pots for most varieties are those having a diameter of 10 inches. Use clean pots and provide each with ample means of drainage, as Chrysanthemums need an abundance of water during the summer months, but are not capable of thriving in a water-logged soil. Let the compost consist of rather heavy loam, leaf-mould and rough sand, as the roots will now require a soil rather richer and heavier than that which was used in the 6-inch pots. Immediately after potting provide each plant with a small stake in order that it may be kept firm at the neck. Cultivators in Scotland should place their plants in a position where it will be possible to afford them protection from frost; it is scarcely safe to expose them fully until the end of the first week in June. For their accommodation during summer, it is desirable to arrange the plants upon a square piece of ground which is covered with ashes. Place 7-feet high posts at distances of 15 feet apart, and in lines separated from each other by 6 feet. A strong fencing wire may then be stretched along the lines from post to post, and the stakes of each plant being tied to this wire, they will then be safe from injuries which would otherwise be caused by winds. Each one will eventually need two stakes, one placed on either side of the pot. The stakes should be tied across the top with a piece of string the same distance apart as at the base. When placing the plants in their summer position, it is essential that each should be given sufficient space that the shoots and leaves will be fully exposed to sunlight. When tying the shoots to the stakes, always make the ties upon firm wood, allowing the soft, unripened tops to sway under the influence of the wind. Suitable stakes are the red-wood stakes 5 feet long, and they are the cheapest in the end. These may be fixed firmly in the soil, whereas the smoother surfaced Bamboo stakes are apt to become loosened. A piece of crock about 3 or 4 inches square should be placed on the surface of the soil in each pot, and when applying water it should be poured on to this material. By its use watering can be carried out more quickly, and the surface soil will not be washed out of place. Planks 9 inches wide are useful for standing the pots upon whilst the plants are out of doors.

THE FLOWER GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Berkshire.

Summer bedding.—Lobelia cardinalis and its varieties are amongst the most ornamental of bedding plants, and their value should not be overlooked. Under good cultivation the plants attain a height of about 3 feet, and if grouped together in beds formed on the grass, or by the margin of streams, they have a very fine effect. Useful plants for forming a groundwork for these Lobelias include Alyssum maritimum, Gazania splendens, and G. s. variegata, Dactylis glomerata, any of the dwarf Ageratums (such as Countess of Stair, and Veronica Andersoni. If these plants be used the Lobelias need not be planted so closely together.

Lantanas.—These plants are very free-flowering, and exhibit various colours, including shades of pink, white, lilac, crimson, yellow and rich orange. They are very handsome if trained as standards, and the practice of planting dwarf Lantanas to form a groundwork, and interspersing standards of a distinct colour is commendable.

Coleus Verschaffeltii is still the best Coleus for bedding out-of-doors. It is very effective if grouped alone, or if interspersed with standard plants of the white Marguerite.

Heliotropium and Calceolaria amplexicaulis.—Standard plants of these species have a very good effect over beds of herbaceous Pæonies, and they cause the beds to remain attractive for a longer period.

Miscellaneous groupings.—It is scarcely necessary to mention that beds planted with Madame Crousse Pelargonium, with a few standard plants of the same variety amongst them, are exceedingly attractive. The standard plants should be about 5 feet in height. Dwarf varieties of Ageratum, with plants of Abutilon striatum interspersed; Raby Castle Carnation, mixed with named varieties of Gladiolus and Montbretias; Celosias associated with Fuchsias; bronze and yellow-flowered Begonias mixed with standard plants of Streptosolen Jamesonii, are all pleasant associations.

THE HARDY FRUIT GARDEN.

By E. Jordan, Gardener to The Dowager Lady Newburgh-holme, Warter Priory, Yorkshire.

Cherries.—Kentish, May Duke, and other early varieties will now have set their fruit in most districts, therefore examine the trees carefully for black aphis and maggots. The aphis may be destroyed by syringing the trees with Quassia Extract or some other insecticide, but the maggots are hidden away in the curled leaves, and these leaves should be taken from the trees by hand, and burned. Trees of the variety Morella must be kept clean from aphides at all costs, or they will badly cripple the points of the shoots. If the attack of aphis is slight it is usually sufficient to dip the points of the shoots in weak tobacco water, and apply a syringing with clear water on the morning following that operation. Disbud any trees that are well furnished with shoots, removing back and foreright shoots, or any others that will not be required permanently for the trees (see also the "Calendar" published in the issue for April 25). Do not stop the leading shoots, or thin the fruits at the present, as it is probable that many of them will fall from the trees during the process of stoning.

Mulching.—This important operation in hardy fruit culture is practised for the purposes of conserving the moisture in the soil, applying plant food to the soil, and economising labour. Mulching upon heavy soil should be deferred until the ground has become warmed by the summer sun, except in cases of freshly-planted trees, which should be mulched with light litter only. Trees which are not bearing crops do not require dressings of rich manure, and its application might do harm by encouraging the trees to make gross and unfruitful growth. It is better to apply a good dressing of wood ashes or burnt refuse, covering this material with a little stable litter. Established trees, however, which are growing on light soils, and any which have been worked upon surface-rooting stocks and that have carried crops of fruit, require rich stimulants. These should be afforded a liberal dressing of stable manure, followed by a copious watering, repeating the mulch later in the season; this is better than making an excessively heavy application at one time. On all occasions, before applying the mulch, or before watering the ground, let the surface soil be slightly pricked up by means of a fork. Wall-trees growing in moderately deep and well-drained borders, and having their roots near to the surface, will not succeed perfectly unless they are given rich mulchings and liberal waterings.

General work.—Continue to use the hoe over the surface of the ground amongst hardy fruit trees, and do not neglect any of the little details that are necessary during this busy season to enable the trees the better to develop their crops.

PUBLIC PARKS AND GARDENS.

By James Whitton, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Culture of hardy plants.—Amongst the many phases of present-day gardening, one of the most pleasing is the cultivation of hardy plants. I use this term "hardy plants" in its fullest sense, including in it all species that are capable of withstanding ordinary winters in this country. Formerly a large number of plants which had long been in cultivation in this country were either totally neglected or relegated to that plant purgatory, the back border. I will not discuss the causes which led to the former neglect or present appreciation of these plants; but, in welcoming the change which has saved many valuable subjects from oblivion, offer some observations on their value for the decoration of public parks. Before doing so, let me remark that it is necessary to keep always in mind the fact that the use of scarce plants in public gardening is not to be recommended unless under special circumstances. There is such a wealth of material nowadays at our disposal that there is no justification for extravagant expenditure of public money on plants which are costly because they are scarce.

Question of arrangement.—In some cases it appears to be the aim of the cultivator to dispose his plants in solitary isolation that each may exhibit its individual characteristics, but without regard to the creation of pleasing effects, whether by harmony of colour or contrast of form. While this method may be permissible in certain situations where arrangements that tend to the easy and convenient comparison of species is almost a necessity, it cannot by any stretch of the imagination be looked upon as artistic gardening. Though my own personal taste is in favour of the free and natural style, I am bound to admit that, in particular situations, the formal garden possesses features of beauty and grandeur peculiarly appropriate to its surroundings. In so far as this formalism applies to public gardens, it may be observed that the style is not only more costly to adopt, but also to maintain. Returning to a consideration of the value of hardy plants for park purposes, I will first speak of their use for naturalising in suitable situations. In how many instances are spring-flowering bulbs planted as freely as they might be? We see the annual displays made in beds of formal outline; but this is not what is meant. I want to emphasise the better plan of using them more freely in a natural manner in the wooded and more grassy parts, where they will afford a special interest to visitors, who watch with the keenest interest for the first appearance in spring of the Snowdrop and the Winter Aconite. Unfortunately, these two plants are not always a success in town gardens. They appear to be somewhat fastidious as to soil, and they dislike town smoke just as do the Hybrid Perpetual Roses. Where they are capable of thriving, and are planted in wide, irregular masses, they are appreciated as much as their more showy successor, the Crocus, which plant, being less fastidious, will often succeed where Snowdrops fail. The brilliant effects obtained by planting Crocuses in masses has been frequently described and illustrated in the *Gardeners' Chronicle*; but, despite these excellent object-lessons, they are often still planted in stiff lines and formal designs. In considering the Crocus, one has to remember the injury caused to the flowers by the house sparrow so common in urban districts. The birds appear now to be worse even than formerly, for, whereas they used to confine their attention to the yellow varieties, they now destroy the flowers irrespective of colour. Fortunately, however, the town Crocus is not so liable to injury from the short-tailed mouse as are the same plants when grown in the country.

(To be continued.)

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

Appointments for June.

TUESDAY, JUNE 2—Nat. Amateur Gard. Assoc. meet.

THURSDAY, JUNE 4—Linnean Soc. meet.

SATURDAY, JUNE 6—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

MONDAY, JUNE 8—
Bank Holiday. Harpenden Fanciers and Agric. Soc. Sh. United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, JUNE 9—
Roy. Hort. Soc. Coms. meet. British Gard. Assoc. Ex. Council meet. Nat. Rose Soc. Com. meet.

THURSDAY, JUNE 11—
Exhibition of Colonial Fruits in the Roy. Hort. Hall, Westminster (2 days).

WEDNESDAY, JUNE 17—
Roy. Bot. Soc. Summer Exh. (3 days). Yorkshire Gala, York, Jubilee Exh. (3 days).

THURSDAY, JUNE 18—Linnean Soc. meet.

SATURDAY, JUNE 20—German Gard. Soc. meet.

TUESDAY, JUNE 23—
Roy. Hort. Soc. Coms. meet. Oxford Fl. Sh.

WEDNESDAY, JUNE 24—
Richmond Fl. Sh. Hort. Sh. at the Franco-British Exhibition, Shepherd's Bush (3 days).

THURSDAY, JUNE 25—
Isle of Wight Rose Sh. at Ryde (provisional).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—55·9°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May 27* (6 P.M.): Max. 75° Min. 55°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May 28* (10 A.M.): Bar. 30·4; Temp. 70°; *Weather*—Bright sunshine.
PROVINCES.—*Wednesday, May 27* (6 P.M.): Max. 70° Guildford; Min. 57° Ireland N.W.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Bedding Plants, Bulbs, Palms, &c., at 12; Lycoris, Nerines, &c., from Japan, also Palm seeds, at 3, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Imported and Established Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.45.

The Temple.

The institution of the Temple Show may be said to have come of age in the present week, for the exhibition that is still open as these pages go to press is the twenty-first that has been held by the Royal Horticultural Society in the historic grounds of the Inner Temple. The history of these shows has been characterised by an extraordinary degree of success, insomuch that their popularity has continued to grow until, at the present time, the very difficulties and inconveniences that attend them are attributable to the unparalleled attraction they present to the Fellows and general public. At the termination of such a considerable period the Society may well receive congratulations upon this satisfactory feature in its yearly calendar, and we may express the hope that no circumstances may arise to interrupt the favourable arrangement that exists between the Society and the Benchers.

Although it would be unwise to argue that the holding of exhibitions is the highest or most important work to which an influential society can direct its energies, it is none the less true that properly organised shows have a real value that is very generally appreciated, and the Temple exhibitions would still be necessary if they became a small tax on the Society's finance, a circumstance which makes it the more apparent that it is a matter for congratulation that they are not only self-supporting, but are a means of augmenting the funds.

It is entirely due to the restricted space available in these gardens that the inconvenience of overcrowding is felt so keenly as is the case at the present time, and on this occasion the Council has certainly shown a desire to serve the convenience of the Fellows as far as possible. With this object the price of admission was raised on the opening day from seven and sixpence to ten shillings, but so far as we could judge the number of persons present on Tuesday afternoon was as great as in former years! A greater boon to the Fellows was the regulation which excluded the general public from the exhibition altogether on the Wednesday morning until 12 o'clock noon, for this concession afforded the Fellows an opportunity to see the exhibits in some degree of comfort, which was quite impossible on

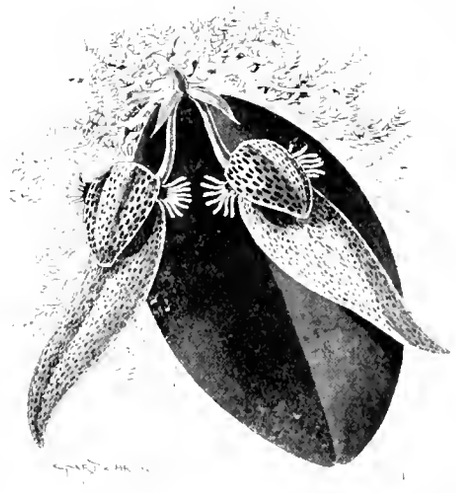

FIG 156.—BULBOPHYLLUM MIRUM, AN INTERESTING SPECIES EXHIBITED AT THE TEMPLE SHOW. (See p. 253.)

the Tuesday after the tents had been thrown open. The manner in which the Fellows have shown their appreciation of the facilities provided on Wednesday will no doubt induce the Council to make this arrangement a permanent one.

In several directions further efforts were made to relieve the congestion, and the alterations were certainly improvements. There have been frequent complaints in former years that the long narrow tent extending from the entrance gates became so thronged with people that a very considerable time was necessary to get from one end to the other, and in hot weather the atmosphere was so oppressive that ladies especially suffered considerable inconvenience and fatigue. By making an opening in this tent at the point opposite to the secretary's tent an opportunity was afforded to get out into the open air at half the distance, and this opening was also of great value for the admittance of air. The alteration in one of the other tents was of lesser importance, but its effect was in the same direction, whilst the battened way over the grass from the main entrance on the Benchers, or Fleet Street, side of the gardens allowed visitors to pass to the tents and return therefrom in a shorter space of time.

Of the event itself, it must be said that the display is very like former Temple shows. These exhibitions show but little variation from year to year, and, as we have remarked on several former occasions, it would be satisfactory if means could be devised that would introduce some new features. Having so recently witnessed the great exhibition at Ghent, in Belgium, some of those present at the Temple could not refrain from contrasting the methods adopted at Ghent for displaying the exhibits and the lack of method observable at our own shows. It is admitted that the enforced limitations of space at the Temple offer a serious hindrance to the adoption of any intelligent scheme for producing the best scenic effects, but that this is not the only reason for the neglect is proved by the Holland Park exhibitions, for at Holland Park there is an abundant space available, yet the methods of staging are usually little better than at the Temple. It may be stated here that the exhibits of Messrs. Cutbush, both in the tents and out-of-doors, have been arranged with more regard to effect than most others. The groups of Carnations in the Orchid marquee over a bright pink groundwork of Polyantha Roses may serve as an example, though perhaps the general tone of pink and rose colours was a little marred by the inclusion, in one corner, of a plant of Carnation with flowers of an orange shade not perfectly harmonious with the rest.

Apart from this question of arrangement there is little room for criticising the Temple shows. They are the means of bringing together a large number of exhibits which represent the very best cultivation practised in this country, and the general display just as perfectly illustrates general gardening in Britain as the Ghent show depicted the commercial horticulture of Belgium. It would not be easy to conceive a greater contrast than is presented by the two shows. In the one case the display consisted of an enormous number of splendid specimens of stove and greenhouse plants, with whole plantations of Rhododendrons, but with scarcely any hardy flowering plants represented, whilst one of the most striking features of the Temple Show lies in the enormous number of hardy flowers, thus testifying to the increased appreciation they now receive in this country. There were very choice Orchids at Ghent, but they were fewer in number than those staged at the Temple. But why attempt to compare the exhibitions? They are so essentially different that a visit to one but helps us to appreciate more highly the other!

We have said that the Temple shows illustrate in a satisfactory manner the gardening practised in this country, but this statement requires qualification on the present occasion for the reason that fruits and vegetables were less numerously shown than usual, and there was not a single exhibit of this nature from an amateur's garden. It is, of course, true that the date of these shows is very early for such produce, but on previous occasions

some satisfactory collections have been staged, and it would be a pity if these are to be discontinued, if only for the reason that foreign visitors will be led to think that the culture of fruits and vegetables is not given proper attention here, which would be quite contrary to the facts.

The present exhibition is not likely to be remembered for any outstanding novelty it revealed. Amongst Orchids the Odontiodas are now becoming familiar plants, and although the new ones shown by Messrs. Charlesworth and Mons. Henri Graire are interesting, they can hardly be expected to cause the same amount of excitement that was produced in 1904, when the first product of this bigeneric cross was exhibited by Mons. Vuylsteke. The Lælio-Cattleya Elva, Westonbirt variety, from Major Holford is a very showy flower, and the Cattleya Mendelii "His Majesty," shown by Mr. Francis Wellesley, also the blotched Odontoglossums from M. Vuylsteke, not to mention other new Orchids, which are described in our report, all afford matters of interest to Orchid cultivators, whilst the curiously-formed Bulbophyllum from Sir Jeremiah Colman, Bart., shown at fig. 150, has a botanical interest that is unapproached by many of the more showy species. Whilst referring to the Orchids it may be mentioned that the Veitchian Cup has been awarded to Mr. F. Menteith Ogilvie, and that Major Holford, so far from having exhausted his resources by his recent exhibit in Belgium, has a magnificent show of well-cultivated plants, some of which we illustrate in this issue.

Apart from the Orchids, some of the best novelties are the stove species exhibited by Messrs. Sander at Ghent and already illustrated in these pages, but a number of awards were granted to hardier plants which are described on another page.

On the opening day the exhibition was graced by the presence of H.M. The Queen and H.R.H. Princess Victoria.

It is interesting to note that the show includes contributions from one hundred and twenty-five exhibitors, including several from Belgium and France, a much larger number than was the case some years ago, when the area covered by the exhibits was equal to that available at the present time.

Our Supplementary Illustration represents a view of the roof garden at Cardiff Castle, a somewhat unique feature of the building. We understand that the creation of this garden was the idea of the late Marquis of Bute, whose tastes were pre-eminently antiquarian, and who loved to surround himself as much as possible with such things as were reminiscent of other ages. The roof garden—colloquially called the "Peristyle"—is situated at the top of an octagon tower about 100 feet from the ground level, and from windows on its four sides extensive views are to be obtained of the whole of the City of Cardiff and the surrounding country side. From the floor—which is mosaic—to the very tiles of the roof no expense has been spared in its construction, and its artistic embellishments are the wonder and admiration of all visitors. The fountain in the centre is constructed of bronze, and the animals represented are beavers—the top one full grown and the four lower ones its young. In the background is seen a large bronze statue of the Madonna and Child, the pedestal of which is a slab of white marble resting upon a base of polished Aberdeen granite. The beautiful paintings on the upper portion of the walls depict scenes from the life of the prophet Elijah, and the explanation of each picture is given in Hebrew characters below. Frescoes representing animal subjects occupy the lower portions of the walls. Needless to say, this is not an ideal roof garden from the plant grower's point of view, as it is too much shut in and shaded. Its beauty and interest depend solely on Art and not on Nature; and it is, after all, only a garden in name.

Kew Guild Dinner.—This annual festivity was celebrated at the Holborn Restaurant on the 25th inst., when 86 members of the Guild assembled. Prior to the dinner, the annual meeting was held, and the report of the year presented. Mr. Bean retires from the editorship of the *Journal*, and in future the Committee will edit the work. The demand for the *Journal* was larger in 1907 than in any previous year, 726 copies having been distributed. The total number of life members is now 254. The dinner was presided over by Mr. W. W. Pettigrew, superintendent of the Cardiff Public Parks, supported on the right hand by Dr. Otto Staff, and on the left by Mr. A. W. Hill, M.A., Assistant Director of the Royal Gardens, Kew. The chairman, in proposing the toast of the Kew Guild, said that such an institution was the means of binding the members together in friendship. Friends, and especially those made when young, are the most valuable possessions one can have. Kew, he said, afforded especial opportunities for forming friendships, and he urged the young men at present in the gardens to select their friends carefully, but with this reservation, make as many friends as they could. An institution such as the Kew Guild possessed great possibilities. Its members include some of the foremost horticulturists of the day, and these were scattered all over the world. It had power, if used aright, to influence the public and the Government to the benefit of gardening generally. He would like to see some recognised horticultural degree, and he thought that the Government, through Kew, might lead the way in this matter. He urged the young gardeners at present at Kew to embrace all the opportunities the gardens afforded them in learning both the practical and scientific sides of their profession. Mr. Daydon Jackson, in the absence of Mr. W. Botting Hemsley, F.R.S., responding, said that the faculty of cultivating friendships was a valuable one; old friends are the best, but unfortunately one is always losing them. Mr. Watson referred to the approaching retirement of Mr. Hemsley from his duties at Kew, and spoke in sympathetic terms of the indisposition of Mr. Geo. Nicholson, a vice-president of the Guild. Mr. R. Hooper Pearson proposed the toast of "The Chairman." He said that Mr. Pettigrew's work at Cardiff was of a character deserving the highest praise, and as an employer of young gardeners his conduct towards them was exemplary. Not only did Mr. Pettigrew take an interest in teaching them the practice, but also the science of their calling. At the same time he was a good disciplinarian, and enforced such habits as punctuality, which were in themselves of value to young men. Mr. Pearson referring to the chairman's speech, declared

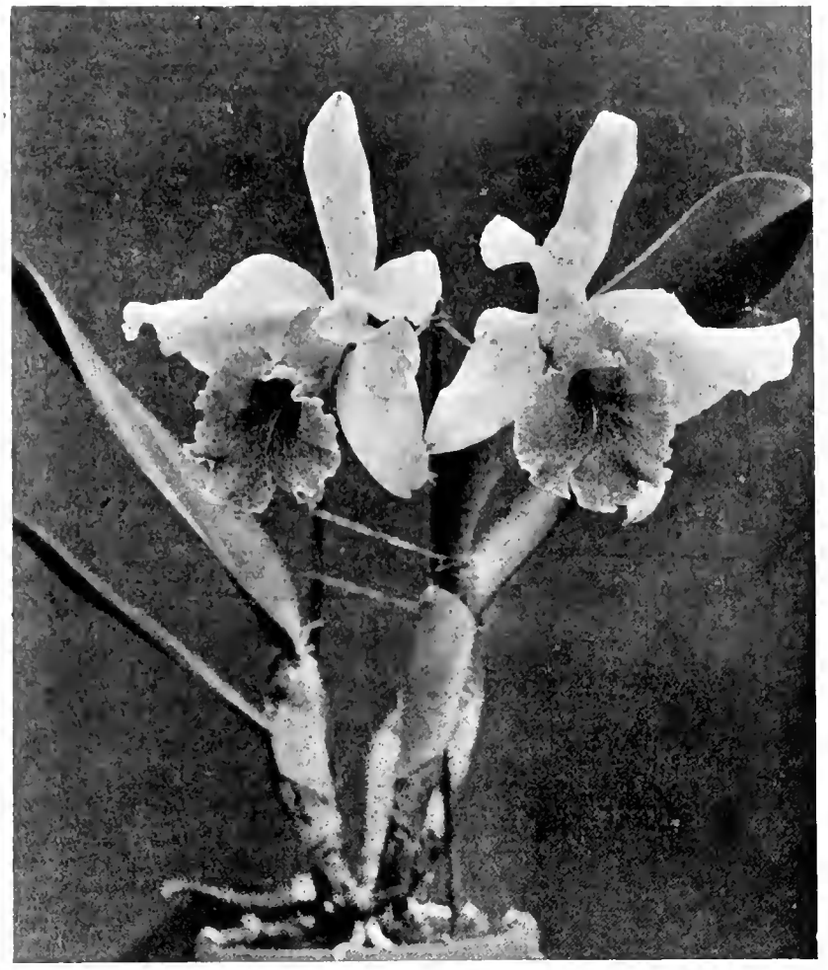

Fig. 157.—Lælio-cattleya "Elva," Westonbirt variety. Awarded a First-class Certificate at the Temple Show.

that it was an argument in favour of horticulture receiving State recognition, which was desirable from every point of view, and a matter that should engage the earnest attention of gardeners. The chairman responded, and shortly afterwards the meeting terminated.

FLOWERS IN SEASON.—We have received from Mr. W. BAYLOR HARTLAND a box of Tulips from his noted Irish nursery at Ard-Cairn, Ballintemple. Among the many beautiful varieties sent were Orange Globe, a variety having long petals of scarlet colour flushed with cerise and edged with orange; Mrs. Moon, one of the best of the yellow Tulips; Rosalind, of a pleasing shade of red, of good form, and not over large; Pompadour, a big, bold scarlet flower; Shandon Bells, with white ground splashed with pink; and Stella, of bright rose colour, with a white base.

M. ABEL CHATENAY.—English visitors to the Paris Salon, who are personally acquainted with M. ABEL CHATENAY, the genial secretary of the National Horticultural Society of France, will have no difficulty in recognising the large three-quarter length portrait as an excellent and life-like representation of this gentleman. The number is 864, the artist M. LEON ARMAND HUET, and although the title given is merely M. A. C. in the catalogue, those who know M. CHATENAY need no further information. It may be mentioned that in this year's Salon there are nearly 100 pictures of fruit and flowers in oil or water-colour, so that horticultural visitors to the Salon may be sure of an hour's interest outside that afforded by the ordinary exhibits.

FIG. 158.—SOME CHOICE VARIETIES OF HIPPEASTRUM, EXHIBITED BY MESSRS. KER AND SONS AT THE TEMPLE SHOW.

MR. THEODOR REIMERS, at Neumuhlen, near Hamburg, writes a correspondent, will celebrate his 50 years jubilee as superintendent of the well-known garden of HERR ETATSRATH DONNER on June 8 next. The garden was originally a very small one, but owing to Mr. REIMERS' work it is now one of the most celebrated and interesting in Germany. It is visited by a great many gardeners who have reason to go to Hamburg. Mr. REIMERS is well known to many of our readers.

LINNEAN SOCIETY.—The two new foreign members of the Linnean Society are Professor OTTO BUTSCHLI, well known for his remarkable investigations on the lower animals and on the structure of protoplasm, and Professor A. G. NATHORST, the distinguished Swedish palæontologist.

——— A meeting will be held on June 4, at 8 p.m., when the following papers will be read:—1, Prof. A. DENDY, F.R.S., "Note on the Spicules of Chirodota gemmifera, Dendy and Hindle"; 2, Mr. E. S. SALMON, F.L.S., "Two new Fungus Diseases"; 3, Mr. F. N. WILLIAMS, F.L.S., "The Caryophyllaceæ of Tibet"; 4, Mr. F. A. POTTS, "Polychaeta of the Indian Ocean"; 5, Dr. S. J. HICKSON, F.R.S., and Miss HELEN M. ENGLAND, M.Sc., "The Stylasteria of the Indian Ocean"; 6, Messrs. W. N. CHEESMAN, F.L.S., and T. GIBBS, "A Contribution to the Mycology of South Africa."

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Sir FRANK CRISP, LL.B., J.P., has forwarded the sum of £31 6s. 5d. in aid of the funds of the above institution, being a proportion of the proceeds of admission fees received for opening Friar Park, Henley-on-Thames, to visitors.

MR. W. HONESS who contributed the Weekly Calendar on "The Kitchen Garden" for these pages last year, has removed from Cobham Park Gardens to take up the position of gardener to WALTER RAPHAEL, Esq., Hopedene, near Dorking, Surrey. The new garden contains some excellent glass houses which afford good facilities for indoor fruit and plant cultivation.

RHODODENDRON EXHIBITION.—Messrs. JOHN WATERER & SONS, LTD., Bagshot, inform us that their annual exhibition of Rhododendrons in the Royal Botanic Society's Gardens, Regent's Park, will be opened on Wednesday, June 10, and remain on view throughout the month. Judged by former displays this exhibition is likely to be worth a visit by all those interested in garden Rhododendrons.

APPOINTMENTS ABROAD.—We learn that Mr ROBERT FYFFE and Mr. FRANK REGINALD LONG both members of the gardening staff at Kew, have been respectively appointed, on the recommendation of Kew, by the Secretary of State for the Colonies to the post of Superintendent of the Botanic, Forestry, and Scientific Department of the Uganda Protectorate, and Superintendent of the Government Plantations in the Federated Malay States.

HOME CORRESPONDENCE.

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

EDGEWORTHIA CHRYSANTHA.—A plant seldom seen in private collections is Edgworthia chrysantha. Its beautiful waxy, yellow flowers changing to white, have a pleasing fragrance during the winter and early spring months. If planted out in a cool house along with Daphne odora and Luculia gratissima, all these fragrant plants will flower well during a dull season of the year. Now is the best time to propagate the Edgworthia by inserting cuttings (which should be taken with a "heel" of the old wood) into small thumb pots filled with silver or coarse river sand, but having no hole at the base for drainage. Plunge the pots in a propagating frame having a moderate degree of bottom heat, and water them copiously twice daily. The cuttings will make roots in about three weeks' time if they are carefully shaded from bright sunshine. The Daphne and Luculia may be treated in a similar manner. *Wm. H. Jenkins, Northenden, Cheshire.*

NEW MELONS.—Although it is one of the regulations governing the action of the Fruit Committee of the Royal Horticultural Society that no awards can be made to any Melon by the committee unless previously grown for trial at Wisley, raisers still send fruits to Vincent Square. At a recent meeting two fruits named as new varieties were received and tasted, but had either been a second Diamond Jubilee it could have secured no award, according to the Council's regulations. But as those regulations are probably rarely seen by those who raise and send Melons, and some other subjects, I append the clause in Regulation 38 for their edification:—"No award will be made to Potatos, Peas, Beans, Tomatos, Cucumbers, Melons, and *similar* subjects, unless previously tested in the Society's gardens at Wisley as to their cropping qualities and distinctive merits." I put the word similar in italics because it is not made clear whether it applies to Melons only, or to all the kinds named. If it applies in that wide sense, then it seems doubtful as to what in vegetables the committee can deal with at the table. Naturally, with such conditions imposed, it should be arranged that a full trial of all the things named should take place every year. If such be not possible, then raisers will be handicapped in being deprived of their opportunity to secure the Society's awards. The two Melons sent recently had the too common fault of having two characters of flesh, the inner a soft watery pulp, the outer rather hard and unripe. The intercrossing of two diverse colours in Melons seldom produces other than these defects. *D.*

DEFINITION OF "AMATEUR."—A schedule of classes for the horticultural show to be held at the Franco-British Exhibition on June 24 and following days, such as should produce a very fine display, has just been issued. How far the liberal offer of medals made, or the less liberal sums as prizes may attract exhibitors remains to be seen. But the schedule includes "open" classes and classes for "amateurs." Seeing that anybody may compete in an open class no definition of status is needed. But when the term "amateur" is included, some definition of what the executive means by such a term should be given. The Royal Horticultural Society practically terms everyone as an amateur who is not a trader, including professional gardeners, who are, after all, but the agents of their employers. Other societies distinctly separate the professional gardener from the amateur. Possibly, for the show referred to, some definition of what is an amateur will be supplied. *A.*

Royal Horticultural Society.

THE TEMPLE SHOW.

MAY 26, 27 and 28.

THIIS important floral festival was held on the above dates. In the matter of weather the Society is to be congratulated, for although the opening day was somewhat dull it was not wet, and the second day saw perfect summer weather conditions. A slight difference of arrangement was seen in the tents this year, and they were conducive to the comfort of visitors, who appeared to be as numerous as ever, notwithstanding that the price for admission was raised on the opening day to ten shillings. As a flower show the exhibition was equal to any that have preceded it, but on this occasion no outstanding novelty was presented; this notwithstanding, awards to new plants were freely given. The exhibits of Orchids were quite equal to the best of former displays of these flowers at the Temple, and the same may be said of the Roses, hardy flowers, Begonias, and greenhouse subjects generally, whilst the Carnations were much in advance of those at any former Temple Show, partly because they have become more popular for decorative purposes as cut blooms. Messrs. Sander's new plants attracted considerable attention, and most of these have been already described in our columns. The management of this great exhibition was conducted without a hitch, and the thanks of the exhibitors and visitors are due to the officials, including the secretaries, the superintendent, Mr. Wright, Mr. Frank Reader, and the others. It was a matter of regret that the secretary, the Rev. W. W. Wilks, M.A., was absent from the exhibition through indisposition.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, R. Brooman-White, Sir Jeremiah Colman, H. Little, H. J. Chapman, C. J. Lucas, R. G. Thwaites, J. Wilson Potter, H. G. Alexander, W. Boxall, H. Ballantine, W. Thompson, A. Dye, W. Bolton, H. A. Tracy, N. C. Cookson, W. P. Bound, Gurney Wilson, F. J. Thorne, G. Shorland Ball, A. A. McBean, W. H. White, F. M. Ogilvie, J. Charlesworth, F. Sander, W. Cobb, and E. Ashworth.

There was a magnificent show of Orchids, the coveted Veitchian Cup being awarded to F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford, for a very fine group, admirably staged. Major G. L. Holford, C.I.E., C.V.O., who secured the cup last year, not being in competition.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), occupied the first place on the right-hand side of the central stage in the large tent with a magnificent group of superbly-grown specimens staged in Mr. Alexander's usual excellent manner. The group was carried well up at the back, the sprays of Dendrobium Dalhousianum, large white Phalænopsis Rimestadtiana, Vanda teres, and other species mingling with the foliage of the Palms. Beneath these, in sections, were arranged a very fine selection of Lælio-Cattleyas, even the small plants being very heavily bloomed. Among the finest noted were Lælio-Cattleya Fascinator nobilior, with four spikes of 13 flowers; L.-C. Lustre magnifica, a brightly-coloured new hybrid; L.-C. Canhamiana Rex, a charming little specimen, bearing 12 white flowers with glowing crimson lip; L.-C. C. Wallaertiana, L.-C. G. S. Ball, L.-C. Elva, Westonbirt variety, a pretty new hybrid between Cattleya Warscewiczii and L.-C. Ingramii (see fig. 157); L.-C. Bedouin (L. purpurata × L.-C. Hycana), and varieties of L.-C. Aphrodite. Brasso-Cattleyas were represented by six distinct crosses bearing on the B. Digbyana hybrids 45 flowers, the handsome Westonbirt variety of B.-C. Digbyano-Mossiæ having eight large rose-tinted blooms. Miltonia vexillaria varieties staged in this group have never been equalled either for size or quality, the very healthy plants being densely set with flowers. Miltonia vexillaria virginale (see fig. 159) bore 10 spikes and 41 flowers; M. v. marmorata, three spikes of 17 flowers; two fine plants of the deep magenta-rose M. v. Empress Augusta Victoria 41 and 67 flowers respectively; M. v. Cobbiana, six spikes of 29 large, white-lipped blooms; M. v. Alfred, five spikes bearing together 27 flowers; a noble specimen of M. v. superbum bore 28 spikes with 134 flowers; and the handsome M. v. Westonbirt variety (see fig. 160), a companion of the famous M. v. Memoria G. D. Owen, two spikes with 10 flowers. Odontoglossums were very finely shown, the various specimens bearing over 100 spikes, with a total of upwards of 1,300 flowers, a plant of O. crispum having nine spikes with 124 flowers; another four spikes with 73 blooms. The fine varieties Madonna, Panther, Zoë Westonbirt variety, and other handsome forms bearing from 12 to 50 blooms each. The type of O. crispum grown at Westonbirt is good, and the manner in which the plants are developed to the highest degree presents them at their best. Cattleyas were very effectively displayed in the group, the pure white C. Dusseldorfei var. Undine raised at Westonbirt, of which 12 plants bearing together over 50 flowers were shown, being a telling feature. C. Mossiæ Westonbirt variety bore 22 fine flowers; the handsome C. M. Baroness, varieties of C. M. Reineckiana, the pure white C. M. Wageneri and its variety Mrs. E. Ashworth, and other fine forms were also shown, together with C. Skinneri alba, C. Warneri, varieties of C. Mendelii, C. Schilleriana Westonbirt variety, Lælia purpurata in fine varieties, including L. p. alba and L. p. Daintiness; L. majalis alba, a selection of Cypripediums, a grand lot of the orange-scarlet Masdevallia Veitchiana and the purple M. coccinea Harryana, Cochlioda Noezliana, and other showy specimens were also included.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. W. P. Bound), staged a splendid group on the other side of the stage at the entrance, a very large number of rare and interesting species being represented in the group, and a very fine selection of hybrids raised at Gatton Park. In the arrangement Mr. Bound displayed great skill, the rather narrow stretch of staging being made to present greater depth by the manner in which the elevated plants at the back of the group were arranged. High up among the tall Palms were the scarlet and orange-coloured heads of the useful hybrid Epidendrum Boundii, and the hybrids of it, E. Gatton orange and E. Gatton red, whose fine heads of bloom on tall reed-like stems well adapt them for decorative arrangement. Spathoglottis Colmanii and its varieties aurea and fulvissima gave bright yellow and red tints. Lælio-Cattleya Ruby Gem, L.-C. Highburyensis, L.-C. G. S. Ball, L.-C. Canhamiana alba var. Lady Edridge, and other varieties of L.-C. Canhamiana and L.-C. Nysa, all raised at Gatton Park, were very bright and variously coloured. In the centre of the group were fine specimens of Cymbidium Lowianum, together with the pretty pale greenish-yellow C. L. concolor Gatton Park variety; C. Colmaniæ and C. Lady Colman, two very pretty Gatton hybrids; and C. eburneo-Lowianum, in three very fine forms. Among these the deep reddish-scarlet Masdevallia Harryana Gatton Park variety and other richly-coloured forms and Renanthera Imschootiana gave bright colour. Odontoglossums were finely represented, the O. crispum having for the best O. c. Marjory Tyrrell Giles, a very pretty blotched variety; O. c. Mary Colman, also good and distinct; O. c. Colmaniæ, of fine shape and well marked; O. c. Lady Roxburgh, O. c. roseum-punctatum, O. c. purpureum, O. c. Rosy Queen, O. c. Richard Knight Causton, O. c. Colmanianum, and other rare forms. Other fine Odontoglossums noted were O. Wilckeanum The Don, O. W. Gatton Park variety, O. polyxanthum Gatton Park variety, O. triumphans aureum, the clear yellow O. Lindenii, now rare; O. cirrhosum Gatton Park variety, varieties of O. citrosmum, including the variety punctatissimum. Cattleyas were good and in great variety, those noted being C. Mossiæ Arnoldiana, C. M. Reineckiana "Major Lendy," C. M. Jeremiah Colman, a very handsome and distinct form; C. M. Horsmanni, and several other very distinct forms of C. Mossiæ; also good forms of C. Mendelii, C.

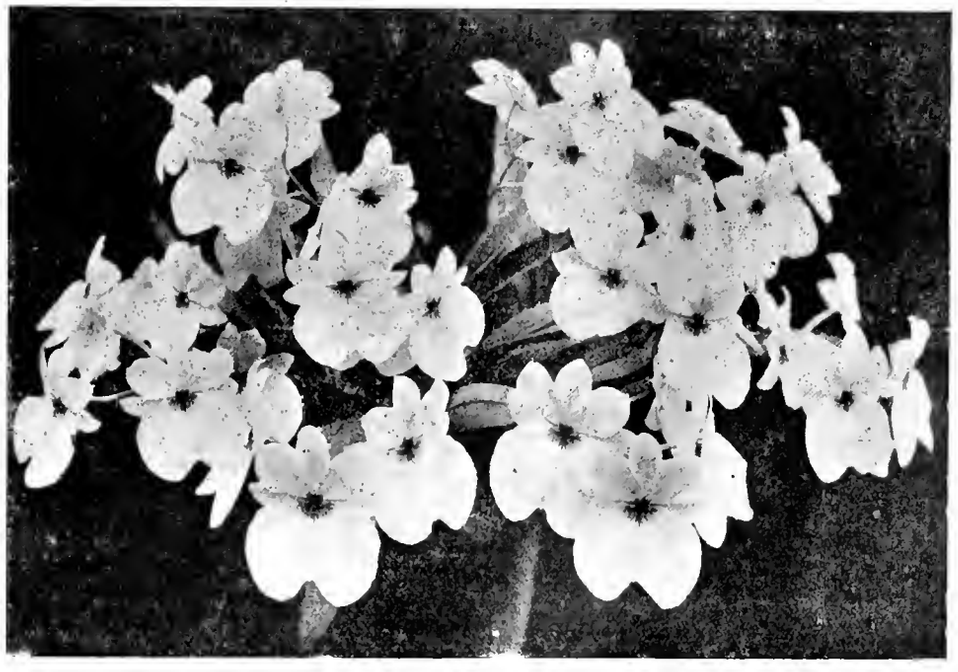

FIG. 159.—MILTONIA VEXILLARIA "VIRGINALE," AS EXHIBITED BY MAJOR HOLFORD AT THE TEMPLE SHOW.

Wm. Murray, and others. Miltonia vexillaria was represented by the varieties Colossus, Dainty, magnifica gigantea, and Cobbiana, all well bloomed; M. Bleauana Gatton Park variety was fine; so also were the varieties of Lælia purpurata. Other handsome plants remarked were Vanda teres Aurora and V. t. gigantea, the singular white Dia-Cattleya Colmanii, and several very interesting new hybrids of Diacrium bicornutum, Cypripedium Lawrenceanum Hyeanum, and other good Cypripediums; Cœlogyne Colmanii, some graceful Thunias, &c. Among specially interesting species of the order botanical, but many of them very curious and beautiful, were Cirrhopetalum gamosepalum, C. Cumingii, the fine C. pulchrum, Bulbophyllum Lobbii Colossus, B. Godseffianum, and the curious B. barbigerum.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), was awarded the Veitchian Cup for a magnificent group, admirable at all points, as well for the fine character of the exhibits as for the effective arrangement. The varieties of Miltonia vexillaria were splendidly shown, and among them M. v. Chelsiensis with six spikes, the white lipped M. v. virginale, and M. v. Cobbiana, and the finely-coloured M. v. Empress Augusta Victoria. On each side two arrangements of the emerald-green and white Cypripedium Lawrenceanum Hyeanum, C. callosum Sanderæ, and C. Maudiæ were very effective, no fewer than 50 flowers of C. callosum Sanderæ appearing. Besides them were a fine lot of the best coloured varieties of Cypripedium Lawrenceanum, including the variety Hackbridgense and a quantity of well-flowered plants of the pure white C. niveum and other Cypripediums. Among blotched forms of Odontoglossum crispum, O. c. Menteith was a grand flower, finely blotched, and of typical white and rose-tinted varieties; a very effective display of finely-grown, profusely-flowered plants was made. Hybrid Odontoglossums were good and numerous, one of the best being O. ardentissimum. The Shrubbery variety, a charming variety heavily blotched with deep reddish-purple, the tips and margins being white; and O. (cirrhosum × ardentissimum), a most floriferous and pretty hybrid. Other fine specimens noted were Cymbidium Devonianum with eight spikes, a good C. Lowianum concolor, Cattleya Skinneri alba, and a good selection of other showy Cattleyas, Cypripedium Honoriæ, &c.

Messrs. Sander & Sons, St. Albans, had a group of excellent quality. In the back was an arrangement of about 20 specimens of the large white Moth Orchid, Phalænopsis amabilis Rimestadtiana, beneath which were the scarlet Renanthera Imschootiana and Cochlioda Noezliana, and a profusion of pink and white Miltonia vexillaria. Cattleya Mendelii and various fine Odontoglossums entered largely into the composition of the group, which was most artistically arranged. Among the Odontoglossums, O. crispum festivum and O. c. transcendens, two blotched forms, with a new yellowish tint in the blotching, were noted; also O. c. Lusitania and O. c. Mauritania, two finely spotted forms, and among the numerous hybrids O. Lambeauianum, O. eximium, varieties of O. ardentissimum, and others of remarkable beauty. One of the finest plants in the show was Cymbidium Sanderæ, with a strong spike of several large white flowers, with crimson marking on the lip; in Aërides virens Sanderæ can be seen a rare albino, and A. Houlletianum, is uniformly pale yellow. Cattleya citrina maxima bore several large, wax-like yellow flowers; Dendrobium Bronckartii is a pretty new species, and the old Cattleya Skinneri and its white form, white C. Mossiæ, and other Cattleyas appeared to advantage. At one end a selection of plants of botanical interest included Masdevallia Obrieniana, M. xipheres, Vanda cœrulescens, Odontoglossum stellatum, Polystachya bracteosa, and other pretty species, and near them were a selection of the rare Odontoglossum platycheilum. Others of superior merit remarked were Cattleya Mendelii formosa, with a very fully coloured lip, and bearing four flowers; two good forms of the Odontonia Lairesseæ, illustrated in our last issue; Cattleya Niobe, of a very handsome type, &c.

Messrs. J. Cypher & Sons, Cheltenham, followed with a very fine group, in which Miltonia vexillaria, Lælia purpurata, and the large flowered Cattleyas predominated. Specially good were Miltonia vexillaria leucoglossa, and M. v. Empress Augusta Victoria; among Lælia purpurata the old L. p. Williamsii was the best. Cattleya Skinneri, varieties of Lælio-Cattleya Canhamiana, L.-C. Gannymede, the white Cattleya Dusseldorfei var. Undine, a fine selection of brightly-coloured Masdevallias, Cypripedium Maudiæ, C. Rothschildianum, good C. bellatulum, and other good things were also included.

Messrs. William Bull & Sons, King's Road, Chelsea, finished the staging on the same side with a group of Lælia purpurata, Cattleyas, Dendrobium thyrsiflorum, and other showy Orchids.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very remarkable group, rich in fine novelties in Odontoglossums, &c., the centre of attraction being their superb new Odontioda Charlesworthii, a marvellous flower of rich colouring (see Awards). At the back of the group, in the middle, was an arrangement of fine specimens of Vanda tricolor and V. suavis, such as are now seldom seen. Drooping around them were sprays of Oncidium macranthum and other graceful Oncidiums, and on each side fine forms of Lælia purpurata, Miltonia vexillaria, and banks of handsome Odontoglossums, of which O. Gladys, May Blossom (cirrhosum × Rolfeæ), and O. Eleanor (cirrhosum × Uro-Lambeauianum, O. Ossulstonii, and many others. Plants of special interest and well shown were Vanda cœrulescens, with many light blue flowers with violet lip; Bulbophyllum Godseffianum, Renanthera Imschootiana, with bright red flowers, a good specimen of Trichopilia tortilis, Epidendrum variegatum, the pretty little Physosiphon Loddigesii, with many sprays of dark orange flowers, the rare cream-white Dendrobium chlorops, and the blue D. Victoria Regina; Cœlogyne pandurata, Angræcum falcatum, A. Sanderianum, the rose-coloured Saccolabium ampullaceum, Vanda Bensoniæ, and of specially fine things the pale rose-spotted Cypripedium bellatulum Queen of Spain, the deep red-spotted Odontoglossum Phœbe magnificum.

Messrs. J. & A. McBean, Cooksbridge, the famous Odontoglossum crispum specialists, staged a group well worthy of them, the typical white forms of O. crispum being superb, and the blotched varieties very remarkable. Of these the central plant O. crispum Pride of Sussex was one of the finest known, its very large white flowers being almost covered with deep reddish-purple blotches, and in the front of the group the latest novelty, an unnamed form with the general features of O. c. Leonard Perfect, recently illustrated in the *Gardeners' Chronicle*, a very fine introduction. At the back were well-flowered Cymbidium Lowianum, in

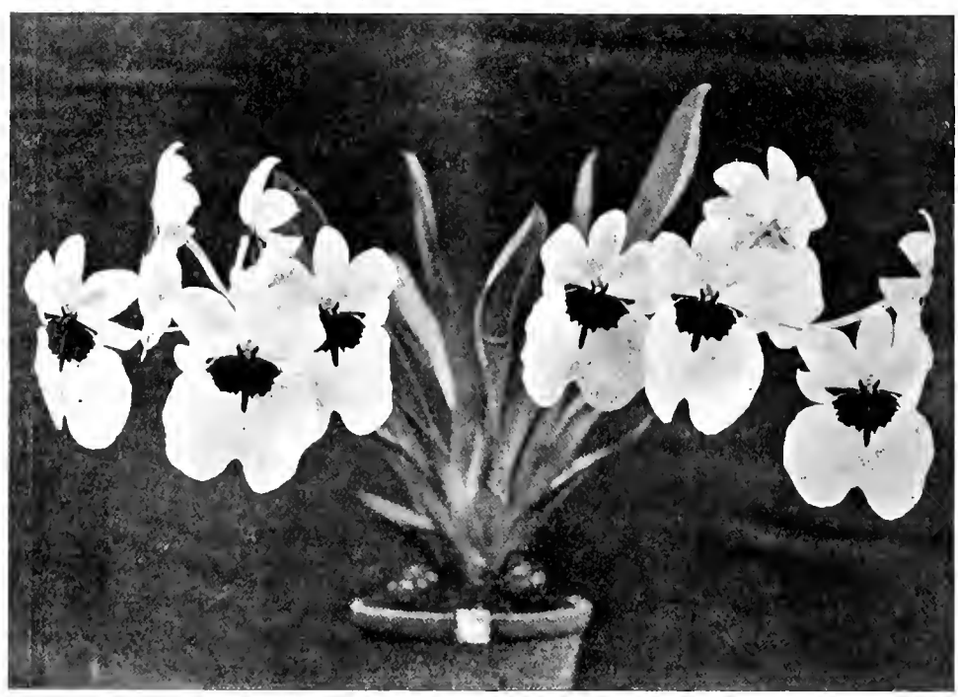

Fig. 160.—Miltonia vexillaria "Westonbirt variety," as exhibited by Major Holford at the Temple Show.

Skinneri) were two pretty novelties. Very pretty forms of O. Phœbe, and the fine Heaton strain of O. Rolfeæ, the pretty light-coloured O. amabile pallida, O. Othello Golden Gem, of a pale orange tint, and a large number of other handsome hybrid Odontoglossums were also represented. O. crispum were plentiful and good, some fine blotched forms being noted, the variety Président Fallières being very richly marked. Miltonia vexillaria alba, one of the finest pure white varieties; a grandly-flowered Cattleya Skinneri; fine forms of Lælio-Cattleya Fascinator; L.-C. Henry Greenwood, L.-C. Dominiana, and other Lælio-Cattleyas, three good specimens of the best white Cattleya Mossiæ Wageneri, and innumerable other fine Orchids were also included in this group.

Messrs. Moore, Ltd., Rawdon, Leeds, followed with a bright and interesting group, in which were excellent Odontoglossums and other favourite Orchids, and a selection of rare species of botanical interest. At the back were the long sprays of Cymbidium Lowianum, with the branched spikes of the yellow Oncidium Marshallianum, and other graceful species. Odontoglossum crispum were good and finely flowered, and some good spotted forms were included. Of the hybrids noted were good O. Phœbe, O. front of which was a very fine variety of the rare Oncidium superbiens, and others of its class. Beside them were good forms of Cattleya Mendelii and C. Mossiæ, some brilliant scarlet Cochlioda Noezliana, the heavily blotched Odontoglossum crispum F. K. Sander, the singularly marked O. crispum Rosslyn Sunset, and O. c. Sunrise, and a remarkably good Miltonia vexillaria Chelsiensis.

Messrs. Armstrong & Brown, Tunbridge Wells, had one of the most artistically arranged groups in the show, the alternate concave and convex outline being very effective. High up at the back was a grand specimen of Cœlogyne Dayana, with a large number of long drooping racemes of flowers. With it were sprays of the large yellow Oncidium macranthum, and around an effective arrangement of Odontoglossums and scarlet and red Masdevallias and Odontoglossums, the central ones being the handsomely-blotched O. ardentissimum var. Mrs. Temple; the cream-white O. Wilckeanum Urania, which has light cinnamon-brown blotches, good O. percultum, and other hybrid Odontoglossums, the clear white O. crispum virginale, and some nicely spotted forms. In the concave sides were selections of very fine Cypripediums, the best being C. Chamberlainianum magnificum, a

large and very dark coloured flower; C. callosum Sanderæ, some specially handsome C. bellatulum, &c.

Messrs. Hugh Low & Co., Enfield, completed the arrangement of that side of the central stage with a fine group, in which their superb strain of Cattleya Mendelii, which has produced so many fine forms, made the principal feature. Among their Cattleya Mossiæ the finest was C. M. Le Président, one of the best ever imported. Odontoglossums were also well shown by Messrs. Low, and of other good and rare things noted were Cirrhopetalum Wendlandianum, with long yellow and red flowers with fringed upper sepal and petals; the curious Oncidium unicorne and O. cornigerum, Dendrobium cymbidioides, D. Bensoniæ album, Diacrum bicornutum, Epidendrum prismatocarpum, with many spikes; the pure white Odontoglossum Pescatorei virginale, and Dendrobium albosanguineum.

Mons. Chas. Vuylsteke, Loochristi, Ghent, showed a selection of fine Odontoglossums, including the pretty blotched O. crispum Blushing Bride and O. c. Rainbow. For others see Awards.

Mons. Jules Hye de Crom, Coupure, Ghent (gr. M. J. Coene), showed his new Miltonia Hyeana, white with lilac mask at the base of the lip.

Baron Sir H. Schroder, The Dell, Egham (gr. Mr. Ballantine), sent the finely blotched

Fig. 161.—odontioda charlesworthii, awarded a first-class certificate at the temple show.

Odontoglossum crispum F. K. Sander, O. c. Doris, O. c. Veitchianum, O. c. Haroldianum, and the pretty hybrid O. Emma; also a fine plant of the handsome Miltonia vexillaria Memoria G. D. Owen.

Mr. J. Robson, Altrincham, showed fine Phalænopsis Rimestadtiana, Odontoglossums, a good white Cattleya, &c.

R. Ashworth, Esq., Newchurch, Manchester (gr. Mr. Pidsley), staged a small group of good Odontoglossums, &c., including O. crispum Black Prince (a very dark blotched form), O. c. Starlight, O. c. Marjorie, O. Pescatorei Charlesworthii, O. P. Ashworthii, &c.

Mrs. Collingwood, Lilburn Tower, Alnwick (gr. Mr. Lovett), showed a group of very finely-flowered Vanda teres.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed Odontoglossum crispum Goodsoniæ and O. c. Président Fallieres, both handsomely blotched varieties.

Mr. J. Birchenall, Alderley Edge, Cheshire, sent a green and white form of Bollea Lalindei, a pretty blush-white Cattleya Mendelii, and Schlimmia trifida.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), showed Odontoglossum crispum xanthotes "Snow Queen."

Messrs. Jas. Veitch & Sons, Chelsea, arranged a nice selection of Odontoglossums, Cattleyas, &c., with their fine group of foliage plants.

AWARDS.

First-Class Certificates.

Lælio-Cattleya Elva Westonbirt variety (C. Warscewiczii × L.-C. Ingrami), from Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). A showy flower, with light rose-coloured sepals and petals, and deep ruby-crimson lip with a small pale yellow spot on each side of the disc. (See fig. 157.)

Cattleya Mendelii His Majesty, from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). A superb Cattleya of great size, thick wax-like texture to the flower, perfect shape, and very delicate colouring. Sepals and petals blush-white; lip pure white with a yellow disc, in front of which is a small blotch of purplish-rose, the broad, crimped margin being white.

Odontioda Charlesworthii (Odontoglossum Harryanum × Cochlioda Noezliana) (see fig. 161), from Messrs. Charlesworth & Co., Heaton, Bradford. A great triumph for these patient Orchid hybridists, the plant in question being very beautiful, the flowers of good size and unique, almost indescribable in colour. The flowers in size and shape equal an ordinary Odontoglossum Pescatorei. In colour of a uniform deep ruby-crimson with a reddish glow when the light is raised, the spiny crest being yellow.

Odontoglossum illustre luxurians, from Mons. Chas. Vuylsteke, Ghent. Flowers large and of fine form, reddish-purple with white margin and tips.

Odontoglossum eximium Queen Alexandra, from Mons. Chas. Vuylsteke. Flowers deep reddish-purple, with slight lines and margin of white.

Cypripedium ventricosum, from Messrs. W. Cutbush & Son, Highgate. A very handsome, hardy species, native of Siberia, and allied to C. macranthum. The large ventricose labellum is deep rose colour.

Awards of Merit.

Odontioda St. Fuscien (Cochlioda Noezliana × Odontoglossum Adrianæ) (see fig. 162), from Mons. Henri Graire, St. Fuscien, Amiens, France. A very pretty hybrid, with a light yellow ground to the flower, closely blotched and margined with scarlet, the front of the lip tinged with rose.

Odontoglossum hibernicum (Hallii × hastilabium), from Messrs. Charlesworth & Co. An attractive novelty, with brown-barred sepals and petals and with sulphur-coloured tips. Lip brown at the base, white in front.

Cirrhopetalum pulchrum, from Sir Jeremiah Colman, Bart. A strong-growing species, with umbels of reddish flowers.

Odontoglossum laudatum, from Mons. Chas. Vuylsteke. A very handsome hybrid of rich colour and good form.

Odontoglossum crispum Kenneth, from Norman C. Cookson, Esq. (gr. Mr. H. J. Chapman). A very large white flower, heavily blotched with reddish-purple.

Odontoglossum Lindenii, from Sir Jeremiah Colman, Bart. (gr. Mr. W. P. Bound). The now rare clear yellow species formerly more frequently seen in gardens.

Cattleya Mossiæ "Le Président," from Messrs. Hugh Low & Co. A grand and finely-coloured variety, the very broad crimped lip being of a deep crimson-purple with light margin.

Botanical Certificate.

Bulbophyllum mirum, from Sir Jeremiah Colman, Bart. A very singular species (see fig. 156), with whitish flowers closely spotted with deep chocolate-purple, a whitish fringe decorating the sides of the central part of the flower. It is described by Mr. J. J. Smith and figured in *Icones Bogorienses*, tab. ccxxi., and recorded from Padang Pandjang, Sumatra. It is a remarkable and pretty species, the fringing with which the small nearly ordicular petals is furnished being very singular. (See fig. 156, p. 348.)

Cultural Commendation.

To Mr. H. G. Alexander, Orchid grower to Major G. L. Holford, C.I.E., C.V.O., for the splendid specimen of Miltonia vexillaria mentioned previously.

GROUPS OF STOVE AND GREENHOUSE PLANTS.

Messrs. Sander & Sons, St. Albans and Bruges, shared the honour with Messrs. James Veitch & Sons, Ltd., of presenting the most extensive collection of recently-introduced plants. They had their noted specimens of new and rare plants that won for them the premier position in the class for new plants at the recent Ghent Exhibition, most of which have formed the subjects of recent illustrations in the *Gardeners' Chronicle*. Others of much merit are Sansevieria Laurentii, a species with zebra-like marking and golden margins to the erect leaves; a variegated variety of Bougainvillea glabra; a magnificent specimen of Anthurium Scherzerianum, Bilbergia Forgetiana with green stripings and broad yellow bands on the handsome foliage; Furcræa Watsoniana, an Agave-like plant, the leaves of which have broad golden bands and a green margin; Polypodium Knightiæ, a Fern with long fronds, the pinnæ being laciniated, not unduly, but just sufficient for giving extra gracefulness to the plant; Linospadix Petrickiana; Anthurium Sanderi, with fine metallic green colour and lighter veining; Pandanus Sanderi var. superba, having handsome yellow and green striped leaves of great length; and Salmia Laucheana, a plant resembling a Ravenala with a leaf divided two-thirds from the apex and all the foliage arising in the same plane.

Messrs. James Veitch & Sons, Ltd., King's Road, Chelsea, made a bold exhibit with stove

Fig. 162.—odontioda st. fuscien, awarded an award of merit at the temple show.

and greenhouse plants, having chiefly handsome specimens of ornamental-leaved species, and with a number of flowering plants for relief. Fine examples of Caladiums, Anthuriums, Alocasias, Marantas, Codiæums (Crotons), and Dracænas formed the principal objects, and above these and interspersed with them were plants of Croton caudatus, C. tortilis, a handsome specimen of Nepenthes Mastersiana, Aralia triloba, and on either corner in the foreground magnificent examples of Dracæna Doucettii var. de Grootei. In addition was a fine plant of Medinilla magnifica, finely in flower, also brightly-coloured spathes of Anthuriums, a group of Odontoglossums, and other Orchids, Carnations, with Ferns, Palms, Asparagus, and numerous other pretty subjects. In the same tent, Messrs. Veitch exhibited hardy plants, the collection embracing many things of interest, some being quite new. There was a Rhubarb not yet in commerce named Rheum Alexandræ. This Chinese plant has small yellow leaves coloured like some of the Euphorbias.

Messrs. Wm. Bull & Sons, King's Road, Chelsea, showed a collection of ornamental-leaved plants of exotic species, the most prominent in which was a magnificent plant of Heliconia illustris. The large Canna-like foliage was beautifully coloured with its red striations and petiole. Two large well-grown plants of Dracæna Victoria were also noticeable, and, in addition, were Bertolonias, Caladiums, Aralias, Filicium decipiens, Asparagus, Palms, Ferns, &c.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, had a large assortment of useful flowering plants suitable for indoor decoration. Many were of uncommon species, and all were worthy of notice. There were Streptocarpus in great numbers, mostly of the Achimenes-flowered type, and very large in their flowers; the range of colouring was wide. The uncommon Malvastrum grossulariæfolium were represented by many well-flowered plants. Kalanchoe was represented by K. flammea and K. kewensis ×, the latter exhibiting exceptionally fine heads of blooms. There were, as is usual in Messrs. VEITCH'S exhibit at these shows, a fine batch of handsome Phyllocactus. Mention must also be made of Amphicome Emodi, Coreopsis Grantii, Boronia heterophylla, Lantanas, Lobelia tenuior, and many plants of greenhouse Schizanthus.

Messrs. JAMES CARTER & CO., High Holborn, London, W.C., made an attractive display of florist's flowers at the entrance of the long tent near to the main gateway. Immediately on entering the tent was a group on either side, the one of brilliantly-flowered Cinerarias arranged as a bank with skill, and on the opposite side a rock garden furnished with suitable species. The central table facing the entrance was gay with Carnations, Begonias, Gloxinias, Cinerarias of the small-flowering strain, and Schizanthus. These latter plants were shown with flowers of many shades of colours, all so densely flowered that they appeared as masses of flowers. Schizanthus were also planted in hanging baskets that were suspended from a central festoon, along which was trained long growths of Smilax. The various subjects on the table were well blended for colour effect.

Messrs. HUGH LOW & CO., Bush Hill Park Nursery, Enfield, London, N., showed an assortment of showy flowering plants of greenhouse species, such as Ericas in variety, Chorizema, blue-flowered and other kinds of Hydrangeas, Boronias, Gazania splendens, Lotus pelorhyncus, the long trails of which bore numerous red flowers, and Gerbera Jamesonii. Interspersed in the exhibit were several large plants of the Bottle-Brush Tree, Meterosideros floribunda, and the showy-leaved Dracæna Victoria.

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, showed a few flowering plants next to their fine group of Ferns.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a mixed group of flowering plants and a display of Cacti, including forms of Echinocactus, Cereus, Pilocereus, and Euphorbias. A brightly-flowered Bougainvillea named Maude Chettleurgh (see Supplementary Illustration to our issue for November 12, 1904), attracted attention. There was also a fine batch of herbaceous Calceolarias, Hydrangeas in small pots with huge inflorescences, Fuchsias in variety, and a group of Cannas. These last-named were not so fine as on some former occasions, but this, we were informed, was due to the backward season. We recorded as varieties of outstanding merit, Dr. Nansen, a dwarf-habited variety, having very pale yellow flowers; Julius Metz, suitable for bedding purposes on account of its dwarf growth; J. B. van der Schoot, yellow with red spots; Venus, rose-pink, a new shade in this flower; Prof. Dr. Balz, crimson with a yellow centre; Hesperide, orange; &c.

Messrs. SUTTON & SONS, Reading, occupied a prominent position in the largest tent with an exhibit of showy greenhouse flowering plants, including Gloxinias, Schizanthus, Calceolarias, Nemesias, Nicotianas, Begonias, &c. The display furnished the entire end of the marquee, and although the design was somewhat formal, the general effect was good. There were semi-circular bays of Schizanthus at either end, then others of herbaceous Calceolarias, with a central one of Cinerarias, principally of the "star" type. The intervening spaces were occupied with handsome Begonias of the tuberous-rooting kinds, Gloxinias of the erect-flowering type—all large, handsome plants, representing a choice strain of this flower, &c. There were several clumps of Nicotianas with coloured flowers, with Palms and Ferns for relief, and a finish to the group was formed by an edging of Grass in its seedling stage.

The beautiful Pelargonium Clorinda was never shown more effectively than in the magnificent group of these plants displayed by Mr. Edwin Beckett, gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree. There were about 15 plants, each of standard shape and trained to a stout bamboo stake.

A remarkably good and extensive group of Streptocarpus was staged from the same garden. The Aldenham strain of these plants is a choice one, and much improvement is manifest in the splendid range of colouring, size, and form seen in the flowers shown by Mr. GIBBS.

Hippeastrums.—A group consisting of about one hundred of these plants was staged by Messrs. KER & SONS, Aigburth Nursery, Liverpool. Dark-coloured varieties were arranged at the back of the exhibit with the lighter-flowered kinds in the foreground. Messrs. KER'S strain of these plants is of repute, and although not so fine perhaps as we have seen earlier in the season, they made a grand show, and found many admirers. Notable varieties were Empress Crimson, the name being significant of the colour; Virginia, a bold flower of rose colour; Virgin Queen, having four large expanded blooms each pale in colour and striped with rose; Cerise Queen and Margot, both of cerise colour; Zephyr, a pale-coloured variety, &c.

Gloxinias.—A group of these greenhouse plants was shown by Messrs. JOHN PEED & SONS, West Norwood, London, S.E. The flowers, although somewhat stiff, are excellent in their colouring and markings, some of the choicer kinds being especially attractive. Such are King Edward VII. (crimson), F. H. Goodwin (pale crimson), Lord Roberts (deep purple, a very fine variety), E. L. Peed (plum colour), Princess Ena (heliotrope veining), Howard Peed, and Countess of Carnarvon.

Messrs. SUTTON & SONS, and Messrs. CARTER & Co. both made extensive exhibits of these plants in their groups referred to above.

Begonias.—One of the choicest of these exhibits was put up by Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath. The group was not over large, but of sufficient size to embrace most of the best kinds in commerce, and every plant was worthy of inclusion. A pretty feature was provided in three baskets suspended from tall iron supports, and furnished with the varieties Fleur de Chrysantheme (pink), Alice Manning (yellow), and Carmina (carmine). These have trailing growths that hang down, bearing their pretty flowers freely. Among the tuberous-rooting section mention may be made of Lady Tweedmouth, the rose-salmon petals being crenated at their margins; Percy Foster (scarlet), Col. Turnor (crimson), Princess Mary (orange, edged with pink), Duchess of Portland, Pink Pearl, and Brilliant.

Mr. JOHN R. BOX, West Wickham and Croydon, displayed a group of tuberous-rooting Begonias, making a special feature of varieties having crimped margins. Of this section may be mentioned Mrs. Cole Child (coppery red), Mrs. Pankhurst (yellow), Glory (orange), and Mme. Tettazzini, a new variety of pink colouring. Of the commoner type mention may be made of Mrs. Barclay Walker, Miss Alice Attrill, Queen Alexandra and Rev. Canon Horsley, the flowers of which were shades of salmon colour; Scarlet Queen, and Miss P. Moule.

Another choice group of these plants was exhibited by Messrs. T. S. WARE, LTD., Feltham, Middlesex. The group was one of the most extensive devoted to these flowers, and they were shown in excellent condition. We may select as choicer kinds Maud Wolland (apricot), Wm. Marshall (scarlet), Marchioness of Bute (white), Lady Ebury (salmon-red), Sonning Joy (cerise), Mrs. Geo. Pike (crimson), King Edward VII. (crimson), Mrs. Moger (a delicate salmon colour), and Dr. Clement Godson (rosy salmon).

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, contributed an exhibit of tuberous-rooting Begonias, all finely flowered and exhibiting excellence of culture. The group was prettily arranged, and embraced, amongst other varieties, Mrs. J. C. Gwillim (salmon-red), Oriflamme, with crinkled petals, the colour being red; Mrs. H. Harris, the wavy petals being very large and coloured orange-pink; Mrs. Moger, of Camellia shape and a handsome shade of salmon or pink; Marguerite Gwillim, yellow, &c. There was also a selection of single-flowered kinds, and several having pupillæ-like outgrowths on the segments. The whole was relieved with Ferns and Asparagus species.

A group of Begonias was also displayed by Messrs. JOHN LAING & SONS, Forest Hill, London, the plants being well displayed and not crowded.

CALADIUM.

Messrs. JOHN LAING & SONS, Forest Hill, made an interesting show of Caladium, the plants ranging from 2 feet to 4 feet in height. Very striking in colouring were Mrs. Laing, having a white ground and crimson netting, edged green; The Mikado, having leaves with a crimson centre, and green-bordered; bicolor sericeum, rather lighter in tint than the last-named; Orphie, candidum, Gerald Dow (a big crimson leaf), Reine de Danemarck, and King Haakon (with foliage almost white).

Messrs. J. VEITCH & SONS, LTD., Royal Exotic Nursery, Chelsea, showed, in association with other fine foliage plants, splendid specimens of Caladium, and of these we append the names of the more striking varieties: Henry Lovatt, Reine de Danemarck, Thomas Tomlinson (a very beautiful leaf), Gustave Cruyer (one of the finest of the crimson-leaved kinds), Rose Laing, Souvenir de M. J. Burn, Baron de Rothschild, Princess of Teck, and Sir Henry Irving.

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed a number of large-leaved Caladium, all of exquisite colouring and very delicate in appearance. Massed against a groundwork of greenery composed of Adiantum Ferns, the beautiful leaves appeared to advantage, the tints ranging from red through many shades to almost white, and not the least beautiful were those having green tints. Mme. Marie de Flacourt is of delicate colouring, being a suffusion of rose on the creamy lamina with an indication of green in some of the veining. Henry Lovatt commanded attention in its lovely red and green tinting. John Peed is also worthy of inclusion amongst the best kinds.

CLEMATIS.

Messrs. G. JACKMAN & SON, Woking Nursery, Surrey, showed a grand group of Clematis in variety. The brightest colours were observed in Ville de Lyon, King Edward VII., Molly Moser, the flower in this case having a rose-pink band on a white ground. Henry is quite white, all but the anthers; Lord Neville is still unbeaten as a large-flowered purple Clematis. Jackmanii rubra has a strikingly fine crimson-purple tint. Among double-flowered varieties mention should be made of Belle of Woking, a white flower with a shade of purple pervading it.

Messrs. R. SMITH & CO., St. John's Nurseries, Worcester, had a fine exhibit of Clematis. Of double-flowered varieties we remarked Enchantress (white), Venus, and Victrix (pale lilac). Among single-flowered Clematis, King Edward VII., Fairy Queen, Lawsoniana, Mrs. G. Jackman (white), Sensation (a rich satiny-mauve), and Beauty of Worcester are deserving of general cultivation.

A small collection of Clematis was shown by Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey.

CARNATIONS.

A fine group of Souvenir de la Malmaison Carnations, each plant carrying four to six blooms each, was shown by CECIL F. RAPHAEL, Esq., Porter's Park, Shenley, Herts. (gr. Mr. Grubb). This group consisted of the varieties Princess of Wales (old rose), Maggie Hudson (deep crimson), King Arthur (scarlet), and the type having flowers of a pale flesh tint.

Messrs. CUTBUSH & SONS, Highgate, London, N., and Barnet, exhibited small groups consisting of Carnations in each, and these were shown of one variety over a groundwork of varieties of Rosa polyantha, the effect being remarkably good. We may mention such fine varieties as the Pasha (an orange and scarlet flower), Mrs. Martin R. Smith (a rich pink "Malmaison"), Francis Samuelson (a scarlet flower with an orange tint—a taking colour), Elf King (one of those indescribable purplish tints that would go well with mourning attire), Baldwin (large bloom of a deep pink colour), Cecilia (pale lemon-yellow, double, and good of shape), Maggie Hudson, Marmion (a light-tinted

"fancy" of the "Malmaison" form, the florets edged with white, and having white at the base), Mercia (crimson flower of large size), King Arthur, &c.

In their group of ornamental foliaged plants Messrs. J. VEITCH & SONS, LTD., Royal Exotic Nursery, Chelsea, set up neat, round groups of tree Carnations of such varieties as Winsor, Enchantress (both pink and white-flowered), the curiously-coloured Mikado, Deacon (a scarlet flower of middle size and fairly full), the lovely Lady Bountiful, &c. These Carnation groups harmonised exceedingly with the bright tints of foliage and flower surrounding them. "Malmaison" Carnations were set up to the number of 18 large plants, carrying 20 and more large blooms.

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Middlesex, excelled any of their previous displays of Carnations, these, as cut blooms, being shown in extraordinary profusion. We noticed the various forms and tints of Enchantress, White Perfection, Lady Rose (a "Malmaison," with spoon-shaped florets), Mrs. Burnett (one of the prettiest flowers), Victory (a vivid scarlet flower), Winsor, Princess of Wales, &c.

Mr. W. H. PAGE, Langley Nurseries, Hampton, exhibited a group in which we noted the scarlet-flowered Beacon, very fine Princess of Wales, Lady Bountiful, Britannia, Mrs. H. J. Brooks (a small, neat white bloom), Aristocrat, President Roosevelt, and the old esteemed variety, Uriah Pike.

Mr. C. F. WATERS, Balcombe, Sussex, made another exhibit of the same extent as the last-named. The finest display was made with Princess of Wales, and many of the finer varieties of the Souvenir de la Malmaison type now grown were noted. Of less well-known varieties mention may be made of Helen Goddard (a flower of a cerise colour), Lady Rose, Aurora, Lady Grimston, Glendale, &c.

Mr. H. BURNETT, Carnation specialist, Guernsey, showed Carnations in profusion, and of the highest quality. Most of them were so fine that it was very difficult to make a selection. Mrs. H. Burnett is the finest variety of its colour rose-pink. R. Craig, Mrs. Lawson, and the variegated form of this variety, and Mikado were excellent; Winsor and many unnamed seedlings.

Mr. C. ENGELMANN, Hornybrook Nursery, Saffron Walden, made a moderate display with most of the favourite varieties of the day: Jessica (a fancy with scarlet stripes), Harlowarden, Enchantress in variety, Pink Patten (a flower with flat petals and sufficiently double to be a good flower).

Messrs. BELL & SHELDON, Castle Nursery, Guernsey, had a fine exhibit of choice varieties, including Beacon, Enchantress, Evangeline (a very fine double, pale pink flower), Sensation, Harlowarden, Winsor, &c. These Guernsey flowers seem to excel in brightness of colour.

Mr. S. MORTIMER, nurseryman, Rowledge, Farnham, Surrey, showed a large number of Carnations of native and American origin. We noted Flamingo, Victory, The Belle (a neat white bloom), Fair Maid (one of the flat floretted section, of a very pale pink tint), Adonis (a bright scarlet), and several of the older varieties.

Mr. THOS. WARE, LTD., Feltham, Middlesex, made a small display, and among the more popular sorts we observed the novelty Conway (a flower of fair size and of a soft rose-pink tint). Winsor, Enchantress, and other favourites were the preponderating varieties.

Mr. A. F. DUTTON, The Nurseries, Iver, Bucks., made one of the more important exhibits of Carnations. Besides the usual varieties seen in collections, which were admirable specimens of cut blooms, we noted Mabelle (a flower having flat petals of an old rose tint), Pink Imperial (cerise), Red Riding Hood (a fine scarlet flower), Imperial (having rosy-red flakes on a suffused pink ground), and Aristocrat.

Messrs. G. & A. CLARK, LTD., The Nurseries, Dover, had an exhibit of American and English varieties of Carnations. They showed the new variety Burswood (a scarlet-coloured Carnation).

W. JAMES, Esq., Chichester (gr. Mr. W. H. Smith), showed a fine group of Carnations, and adjoining these was a number of tree Pæonies shown by the same exhibitor.

ROSES.

Mr. CHARLES TURNER, Royal Nurseries, Slough, displayed Roses in great numbers, and of many sections. There were dwarf bushes of Teas, Hybrid Teas, and Hybrid Perpetuals, of Rambler Roses, Polyantha Roses, both single flowered and double flowered. The biggest blooms of any of the Roses were those of Princess C. de Ligne, which measured 7 inches in diameter, a loosely-built bloom. The blooms of Frau Karl Druschki were also of great size, and those of Pierre Notting, a flower resembling a Maréchal Niel in tint. The blooms of Madame Victor Verdier were good. Mrs. E. Mawley, a Tea Rose, has a dull pink tint; the variety Bessie Brown was well shown on a standard plant; Merveille de Lyon, Niphetos, Mrs. R. G. Sharman-Crawford, and Souvenir de Madame Eugene Verdier were excellent. The show of plants was magnificent.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, made a charming display with a corner group in the largest tent. It was arranged with a low foreground of dwarf bush Roses, Teas, Hybrid Teas, and H.P.s. Of these we may call attention to Wm. Shean, a H.T.; Mrs. Miles Kennedy, a grand Tea of a creamy white, tinged with orange in the centre; Yvonne Vacherot, a creamy white flower of Niphetos shape; and very fine blooms of Cherry Ripe, Ulrich Brunner, Elizabeth Barnes, Mildred Grant, Nellie Johnstone, and Richmond, which were especially worthy of notice. Among these dwarf Roses, and in a triple line at the rear, standard, pillar, umbrella, and other forms in which Roses look well were disposed, and these consisted of Polyantha and Rambler varieties, blooming in great profusion. Rose Wichuraiana var. Lady Godiva opens with a pink coloured centre and changes to white; Rosa Polyantha Martha is of a bright pink shade and semi-double. The H.T. Dorothy Page Roberts is a flower of a sprawling form when it expands, and as such it may find admirers; the colour is uncommon—a salmon-pink. H.T. Dean Hole is pretty as a bud, but it must be caught young.

Messrs. W. CUTBUSH & SON, Highgate, N., had dispersed among their pink and white-flowered dwarf Rosa Polyantha tall, slender plants of such Ramblers as Dorothy Perkins, Hiawatha, Rose Paradise, Mrs. F. W. Flight, &c. The effect was excellent, and there were many encomiums from the visitors.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a bank of dwarf plants of Rambler Roses, including Mme. N. Levavasseur (Baby Rambler), Lady Gay, Debutante, Hiawatha, Crimson Rambler, and American Pillar, a large-sized single-flowered Rose.

Mr. G. PRINCE, of Oxford showed tall and dwarf Rambler Roses, among them a new variety named Lady Violet Henderson, a white semi-double Rose, that is said to be a continuous bloomer; Mrs. Longworth, a sport from Caroline Testout, a flower of pink and white tints, full before it is fully open (new); The Lion, H.T., a pretty filbert-shaped bloom of a salmon-pink colour, with a tint of copper in it; Delight is a new variety of Rosa Wichuraiana, pink, with a white centre, the flowers of the build of Hiawatha.

Messrs. W. PAUL & SON, Nurseries, Waltham Cross, made a somewhat similar display, but larger. There were the same Rambler Roses in tall examples, splendidly flowered. Beneath these there were arranged pot Roses of Teas, Hybrid Teas, Hybrid Perpetuals, &c., with flowers as fine as possible. Dora, a H.T., had blooms nearly 6 inches in diameter, and which were very full and compact. A plant of Frau Karl Druschki carried a dozen fine blooms. Marquise de Sinety (H.T.), a beautiful globular flower, full and above the usual size; the colour a shade of pink, should become a favourite. Aennchen Muller is a new form of R. polyantha, with voluted petals. The display of dwarf potted plants of the finest varieties was of the best. Elaine, a H.T., pure white, a fine bedder, obtained an Award of Merit.

Mr. G. MOUNT, Nurseryman, Canterbury, made a small exhibit of Roses of the choicest kinds, and in the finest possible condition. Unusually fine were Mrs. John Laing, Ulrich Brunner, Joseph Lowe (H.T.), a sport from Mrs. W. J. Grant; Richmond, and Frau Karl Druschki. Rambler Roses in variety as standards, arches, and pillars, formed the back of the stand.

Messrs. B. R. CANT & SONS, Colchester, made a show of cut blooms of Roses, backing them with tall Rambler Roses. The cut blooms consisted chiefly of admired varieties of Teas, Hybrid Teas, and Hybrid Perpetuals, and shown in the best condition. A boxful of Maréchal Niel were very meritorious.

Messrs. HUGH LOW & Co., Bush Hill Park, Middlesex, had an exhibition of Roses on the grass in the open air, Ramblers forming the bulk of the plants, and these were present in quite dwarf as well as tall plants.

RHODODENDRONS AND AZALEAS.

Messrs. JOHN WATERER & SONS, LTD., Bagshot, Surrey, showed hardy Rhododendrons in many beautiful varieties. They displayed the beautiful Pink Pearl in excellent condition, the sprays being crowned with the huge pink-coloured blooms. Francis B. Hayes, white, with chocolate-red markings; Francis Waterer, red (as a standard plant); Marquis of Waterford, a beautiful specimen, with long pyramidal inflorescences of a pleasing red colour, with deeper-coloured margins; Mrs. Holford, Kate Waterer, Cynthia, Prometheus, Gomer Waterer, and a host of others of equal beauty.

Mr. CHAS. TURNER, Royal Nurseries, Slough, had a number of pyramidal-trained plants of Azalea indica. The white Madeleine, Apollo (red), Comte de Chambord (soft pink, with splashings of deep pink in the upper petals), Roi d'Holland (red), Vervæneana (a semi-double variety, having pink colouring on a white ground), Mme. Van Houtte (of perfect form), and Roi d'Holland (red) are a selection of the best varieties shown.

Messrs. R. & G. CUTHBERT, Southgate, Middlesex, displayed a very large group of Azaleas of the Mollis, sinensis, and Ghent or pontica types, with hybrids of these species. They also showed some handsome varieties of the occidentalis breed, notably a new variety labelled Magnifica. The clusters of bloom in this variety are fragrant, the upper petal having yellow markings, the other segments being white. Another variety named Graciosa will be found described under Awards. We also noticed Fanny, pale lemon spotted with orange; Nancy Waterer, a fine yellow-flowered kind; hybrids of the Altaclerense type, with flowers of exceptional beauty; Peter Koster, Consul Ceresole, &c.

Mr. R. GILL, Tremough, Cornwall, brought trusses of Rhododendrons and other plants from his noted gardens, which enjoy a favoured climate. There were magnificent "heads" of R. Falconeri, R. Aucklandii, Beauty of Tremough, Gill's Goliath, Gill's Triumph, the unique R. Roylei, and a new variety in R. Gillii, with deep rose-coloured flowers.

Messrs. H. LANE & SON, Berkhamsted, contributed Rhododendrons as pot plants, amongst which we noticed good examples of Cynthia, Purity, and the double-flowered form of R. fastuosum.

HERBACEOUS AND ALPINE PLANTS AND CUT FLOWERS.

In the exhibits of hardy plants there is little fresh to record, and it would almost appear that any great advance, so far as the extent and quality of the subjects are concerned, must be a matter of great difficulty. In certain directions, while the exhibits as a whole display great care in their preparation, the same care has not in every case been extended to the method of arranging the subjects. Rock gardens and improvised rockery arrangements have become a feature at the Temple Show, and while these arrangements are certainly good in some instances, and very suggestive in others, it is curious to note how a moisture-loving subject can be placed high and dry on an exposed rockery, whilst an encrusted Saxifraga—fit subject for a rocky ledge—should find itself with Trilliums or allied things in quite wet situations, or among bog plants. A rock-garden exhibit should be the subject of much thought and careful treatment, and nature should be copied as faithfully as may be possible. But taken collectively, the displaying of the exhibits was good, while their numbers and their quality generally, in a season by no means too favourable, affords the best proof of the increasing popularity of these hardy

plants. Inside the entrance to No. 1 tent Messrs. Carter & Co., High Holborn, arranged, as in former years a rock-garden exhibit planted freely with choice and suitable Alpines, such as Phloxes, Saxifragas, Primulas, Aubrietias, &c. Examples of Saxifraga pyramidalis were especially pleasing. Near by Messrs. Wm. Artindale & Son, Sheffield, had a showy group of herbaceous subjects, amongst which Primula japonica, Ranunculus aconitifolius, Gerberas, Cypripedium calceolus, and other plants were prominent.

Mr. R. Farrer, Craven Nursery, Clapham, Yorks., exhibited a delightful assortment of the choicest Alpines, arranged with judgment and skill. In this exhibit it was apparent that the person who was responsible for it possessed an intimate knowledge of the plants and their natural environment, and cranny and crevice alike had its quota of the choice things displayed. Thus were seen Ramondias, Androsace villosa, A. sarmentosa, A. Chumbyi, Edraianthus serpyllifolius, with its rich violet "cups" or "bells"; the lovely Daphne rupestris, exceptionally rich in colour; Primula farinosa, Gentiana verna, many delightful Saxifragas, and, not least, one of the boldest displays of Trillium grandiflorum ever brought to the Temple Show. A few suitable shrubs completed a very charming and decidedly instructive bit of grouping.

Messrs. J. Cheal & Sons, Crawley, had a bolder arrangement, suggestive somewhat of the natural rock unearthed. Bold prominences and recesses were alike skilfully treated and suitably planted with such plants as Erinus, Tiarella, Pinguiculas, Sarracenias, Dianthus neglectus, Edraianthus serpyllifolius, &c.

Messrs. George Bunyard & Co., Maidstone, contributed a fine display of herbaceous cut flowers and Tulips; such things as Eremuri, Irises in great variety, Pæonies, Genms, Meconopsis cambrica, Saxifraga Cotyledon pyramidalis, single and double Pyrethrums and Gerbera Jamesonii may be instanced as affording abundant proof of the representative character of the group. The Tulips alone were a great feature, and were much admired.

Mr. John R. Box, West Wickham, contributed a small rockery, pleasingly arranged with Alpines and allied plants.

Mr. Amos Perry, Enfield, showed a collection that was largely composed of the more showy perennials disposed in handsome colonies with occasional breaks and recesses of choice things arranged in a natural manner. The finer of the Liliums, as L. Hansonii, L. auratum, L. speciosum in variety, L. testaceum, and L. longiflorum, were seen to advantage, while the more hardy Sarracenias, as S. flava, S. f. rubra, S. variabilis, and S. purpurea, were associated with a small arrangement of Water Lilies, Aponogeton, &c., with Gunnera and other water-loving plants in the background. Hardy Cypripediums, choice Primulas, including P. pulverulenta and P. Cockburniana, the pretty Calochorti, and stately Eremuri were also noted, while the newer forms of Phlox canadensis occupied a prominent place. Tulips, too, presented a blaze of colour at the one end of the group.

Mr. B. Ladhams, Shirley, Southampton, included in his group such excellent things as Incarvillea grandiflora, Aquilegia Stuartii, together with Rehmannia angulata, tree Pæonies, &c.

The Misses E. & M. Kipping, Hutton, Essex, had a small but prettily-arranged rockery, on which were arranged Alpine, herbaceous and flowering shrubs.

The collection of hardy plants from Mr. G. Reuthe, Keston, Kent, was of a more comprehensive character, and in addition to a large assortment of small Alpines in pots, was seen a very handsome collection of the finer species of Rhododendrons. Embothrium coccineum in full beauty. Droseras, hardy Cypripediums, a rare Himalayan Saxifraga, S. Brunoniana, pretty groups of Ramondia, the rare Dryas Drummondii with pleasing yellow flowers, Mertensia lanceolata, pretty colonies of Primulas, Androsaces, the curious Clintonia borealis and many more beautiful, rare, and interesting plants.

Showy Oriental Poppies in many varieties were well displayed by Mr. W. J. Godfrey, Exmouth, Devon; while Mr. N. Lowis, Bridgewater, had near by a fine group of the beautiful St. Brigid Anemones.

Messrs. Gunn & Sons, Olton, near Birmingham, had an excellent collection of Phloxes, including P. suffruticosa and P. decussata in variety, the former including such beautiful varieties as White Swan and Mrs. Hunter, the latter perhaps one of the most beautiful of its class. The white flowers are of good form, and have a pink centre. In the centre of the group was a fine batch of the purple-flowered Viola cornuta.

Mr. M. Prichard, Christchurch, Hants, arranged a capital collection of the more showy herbaceous species chiefly as cut flowers. He made prominent displays of the beautiful Scilla nutans in many good varieties, single and double Pyrethrums, Spanish and other Irises, Oriental Poppies, the earlier-flowering Pæonies, Eremurus, Anemone sylvestris, &c. Among dwarfer plants we noticed Saxifraga Aizoon lutea, S. A. rosea, Dianthus glacialis, Veronica rupestris alba (a delightful plant), and many more.

A very showy and interesting array of herbaceous plants, choice shrubs, &c., were well staged by Mr. R. C. Notcutt, Woodbridge, Suffolk. The group included fine examples of the yellow-flowered Piptanthus nepalensis, Viburnum macrocephalum, Berberis Knightii (a strongly-spined species with clusters of clear yellow flowers), the white-flowered Azalea latifolia, said to be quite hardy, together with Pyrethrums, Thalictrum aquilegifolium, Cheiranthus Allioni, Irises, &c.

Mr. J. Forbes, Hawick, displayed freely Pansies, Polyanthuses, Pentstemons, and other hardy plants in a good group.

Messrs. Lister & Son, Rothesay, showed a collection of Violas in many shades of colour, a somewhat exceptional group of Ixias, also Sparaxis and Irises of several sections.

Early-flowering Gladioli came from the nursery of Mr. Lilley, Guernsey, who also had plants of the curious Arum crinitum.

The Misses Hopkins, Shepperton-on-Thames, displayed in a free manner on a rockwork exhibit, Phloxes, hardy Cypripediums, Primulas, Saxifragas, and other plants of a similar character.

The King's Acre Nursery Company, Ltd., Hereford, had a showy group of perennials in flower, amongst which were Incarvilleas, Phlox canadensis, Saxifraga Cotyledon pyramidalis, and other hardy plants in variety.

Tulips in many kinds and in good condition came from Messrs. Wm. Bull & Sons, Chelsea.

Messrs. R. Smith & Sons, Worcester, set up a mixed arrangement of Irises, Tulips, early Gladioli, and other plants.

A capital arrangement of Alpines with rock-shrubs and herbaceous plants was staged by Messrs. Geo. Jackman & Sons, Woking. We noticed varieties of Primulas, Columbines, Heucheras, also Gentiana verna, the pretty Daphne Cneorum, Lithospermum Gastonii, Ranunculus aconitifolius (double-flowered variety), Trilliums in variety, single and double Pyrethrums, &c. The method of grouping was well carried out in this exhibit.

Messrs. Barr & Sons, Covent Garden, London, W.C., had a very extensive and comprehensive group, which included choice Alpine and herbaceous plants and perhaps one of the most gorgeous displays of Tulips ever seen at a Temple show. The blooms of these bulbous plants were in every way excellent, and quite remarkable in a season like the present. The Darwin and May-flowering sorts naturally predominated, and among them we noted such handsome yellow-flowered sorts as Inglescombe Yellow and Walter T. Ware, a pair difficult to excel at this season; also Zulu Sophrosyne, Orange Beauty, Lord Curzon, Clara Butt, Salmon Prince, and Louis XIV. Apart from these were many of the English or old florists' Tulips in good condition. In addition, Ixias, Cypripediums, Early Gladioli, Irises of many sections, Primulas, Columbines, &c., were shown in considerable numbers. One of the showiest things in the collection was the orange-coloured Dimorphotheca aurantiaca, a pretty annual from the Cape, having Marguerite-like blossoms some 2 inches in diameter.

Lady Northcliffe, Sutton Place, Guildford (gr. Mr. J. Goatley), had a group of seedling plants in flower of the somewhat rare Meconopsis racemosa. The colours are exceedingly variable, and certainly not so showy as the originally introduced species.

A very excellent group of the perpetual-flowering Pink Progress was shown by Mr. C. H. Herbert, Acock's Green, near Birmingham. The plant is obviously a good grower, producing strong stems fully 2 feet in length, on which are borne handsome, fragrant, perfectly-formed flowers of Lilac pink colour. The plant is worthy of inclusion in gardens.

Mr. J. Walker, Thame, Oxon, had a very interesting collection of the English or florist's type of Tulips.

Messrs. Gilbert & Son, Bourne, Lincolnshire, exhibited a rich display of Anemones in many showy varieties. Hardy plants, with Tulips, were freely displayed by Messrs. G. & A. Clark, Dover, the group including not a few of the more showy herbaceous subjects. A collection of tufted Pansies and Violettas was shown by Mr. Howard Crane, Archway Road, Highgate, N. They formed a feature near one of the entrances to No. 1 tent. The blossoms were pleasingly arranged in pans in a somewhat natural manner, and in this way displayed both their beauty and value to advantage. There were some three or four dozen of these pans, containing as many different sorts, the group, and especially its arrangement, exciting a good deal of interest. The Violettas were exceedingly charming, having a miniature, almost Alpine character of growth, and they are very free in flowering.

Messrs. Baker's, Wolverhampton, had a very extensive grouping of Alpines, Liliums, and other showy subjects as Primula japonica, P. pulverulenta, Trilliums, Incarvilleas, in addition to a very handsome collection of bedding and other Pansies displayed in pyramidal sprays.

Messrs. Hogg & Robertson, Dublin, had a delightful display of Tulips of the Parrot, Darwin, May-flowering, and other sections.

A group of Alpine, rock-shrubs, and other hardy plants was shown by Mr. A. R. Upton, the Hardy Plant Nursery, Guildford. The collection was full of interest, and was arranged with taste and skill. Primulas, Gentians, Saxifragas, Androsaces, Ramondia, Haberlea, &c., were displayed with freedom, and gave an excellent estimate of their value in the rock-garden.

The large collection of Darwin and other Tulips from Mr. Alex. M. Wilson, East Keal Manor, Spilsby, was one of the finest of its kind ever staged, and of a very representative character, the giant cups impressing all by their boldness and beauty.

Messrs. R. H. Bath, Ltd., Wisbech, also showed a rich and varied collection of Tulips displayed to advantage.

Tree Pæonies and single and double Pyrethrums were shown by Messrs. Jas. Kelway & Son, Langport, Somerset. In the large Orchid tent, Messrs. R. W. Wallace & Co., Colchester, in addition to a very fine lot of Tulips, arranged a group of herbaceous and bulbous plants in flower. Liliums were well represented in such species as L. Hansonii, L. testaceum, L. Monadelphum Szovitzianum, &c., while Irises of many kinds, Incarvilleas, Heucheras, the scarlet Habranthus pratensis, with Ixias, Anchusa italica "Opal," Eremuri, and others, contributed to an excellent group of the best and most worthy hardy garden subjects.

SWEET PEAS.

Mr. C. W. Breadmore, Winchester, showed bunches of Sweet Peas in excellent condition, the sprays of blossoms being of a good colour and well flowered. Some of the finest varieties were Helen Lewis (of a rich orange tone), Miss Willmott, Etta Dyke (perhaps the finest white variety in commerce), Elsie Herbert (an edged flower of white and rose), Mrs. Collier (cream), King Alfonso (deep carmine), and Audrey Crier (pink).

Messrs. G. Stark & Co., Great Ryburgh, Norfolk, had a small exhibit of these flowers, the finer blooms being Mrs. W. King, Helen Lewis, Queen Alexandra (rich carmine), and Gladys Unwin (pink).

Messrs. Robert Sydenham, Ltd., Tenby Street, Birmingham, had a display of Sweet Peas, of which the best varieties were Navy Blue, King Edward VII. (rich carmine), Paradise (pink), Herbert Smith (carmine rose), and Scarlet Gem (a variety very rich in colour).

Messrs. E. W. King & Co., Coggeshall, Essex, exhibited Mrs. W. King (rose), Helen Lewis, Queen Alexandra (rich carmine), and others of merit.

FERNS.

Messrs. H. B. MAY & SONS, Edmonton, arranged an imposing group of choice species and varieties of Ferns. The space for staging being limited, the plants were arranged to a great height. Nephrolepis, shown on tall standards, had long drooping fronds, whilst Davallias, grown on tall stems, were also imposing. The new plumose forms of Nephrolepis were a feature. The latest addition, N. exaltata Amorpohlii, is certainly one of the most beautiful Ferns in existence. N. elegantissima, N. Whitmanii, N. superba, and N. todæoides are all grand Ferns. Pteris Summersii and P. Childsii are beautiful plumose varieties. Pteris aspericaulis, Lomaria L'Herminieri, Adiantum macrophyllum albo-striatum, Didymochlæna truncatula, Adiantum Veitchii, Gymnogrammes, and Polypodium Mayi gave pretty shades of colour to the group. Polypodium Knightiæ, Acrostichum aureum, Goniophlebium subauriculatum, Platyceriums, Drymoglossum spathulatum, Polypodium vaccinifolium, Asplenium obtusilobum, and others on tree trunks were all well cultivated and shown in the best possible condition. The climbing Lygodium was also well shown.

In the open ground Messrs. MAY also arranged a pleasing group of hardy Ferns. The North American Osmundas were well shown, and crested Scolopendriums were a great feature. Of varieties, we may instance S. ramocristatum, S. corymbiferum, S. digitatum marginatum grandiceps, S. cristulatum, and the curious little S. densum, all of which were very pretty. Athyrium Filix-fœmina plumosum multifidum, one of the finest of the Lady Ferns, A. F.-f. cristulatum, A. F.-f. formoso-cristatum, Pteris aquilina conglomerata (a pretty variety of the common Bracken Fern), Cyrtomium falcatum Mayi, Lomaria chilensis, Polystichum angulare diversilobum grande, and other choice varieties were all well shown.

Messrs. SANDER & SONS, St. Albans, exhibited Adiantum species nova, a very distinct Fern from Columbia. The frond somewhat resembled A. lunulatum, but they were larger and of more substance than that species. A grand specimen of Polypodium Knightiæ was also shown by this firm.

Messrs. J. HILL & SON, Lower Edmonton, staged a very fine group of Ferns, in the centre of which was a grand specimen of Platycerium grande. There were also fine plants of P. Willinckii, P. Hillii, and P. Veitchii, Nephrolepis Amorpohlii, N. todæoides, and N. amabile (a new variety), Adiantum Veitchii, A. cyclosorum, A. tinctum, A. macrophyllum, A. renforme, Asplenium multilobatum (a very distinct new species), Osmunda javanica, and Davallias in several choice varieties. Filmy Ferns included examples of Trichomanes crispum, Todea superba and other choice sorts.

THE OUTDOOR EXHIBITS.

These were as full of interest as those of previous shows, but, generally speaking, there was more diversity in the style of arrangement. This was partly caused by the fact that it was found necessary to diminish the extent of space allowed along the paths for individual exhibits, and the depth was increased to compensate for this. Some alteration was consequently compulsory where the groups were large.

Near the north entrance to the Orchid tent, Messrs. J. VEITCH & SONS, Chelsea, had two handsome groups of plants most effectively arranged, all presenting considerable variety in colour and habit. A few pyramidal and standard Bays in tubs helped to diversify the general form, and the bases of the taller specimens were surrounded by brilliant yellow, orange, salmon, and red hardy Azaleas; contrasting with these were groups of the pure-white Viburnum macrocephalum and a large white Clematis. Brilliant colours were furnished by plants of Rose Hiawatha and other varieties. Amongst smaller notable exhibits in this collection were admirable examples of the delicate pinkish Statice Suworowii, with long, cylindrical, interesting spikes of flowers. The Blue Hydrangea Hortensia, various ornamental species of Vitis, many Primulas, including P. japonica, P. pulverulenta, and P. Veitchii; also the yellow Meconopsis integrifolia and the rose-flowered Rehmannia angulata were all conspicuous.

Myosotidium nobile was admirably shown by J. D. ENYS, Esq., Enys, Cornwall. The plants were in three large tubs about 2½ feet in diameter, the leaves large and glossy green, and a dozen or more heads of pink and blue flowers.

The Bottle-Brush tree—Metrosideros floribunda—was in strong evidence, Messrs. HUGH LOW & CO., Bush Hill Park, contributing a group of 40 or 50 specimens in pots. Some were in dwarf bush form, with 20 or 30 brilliant red heads of flowers, and others were in standard style. The decorative value was heightened by the free use of variegated plants as a margin in the group. Carnations and Rambler Roses also formed two beautiful groups from Messrs. HUGH LOW & CO., in both cases the background was formed of standard Bays, but the flowering plants were very informally and tastefully displayed, many telling varieties being included.

Messrs. DAVID RUSSELL & SON, Brentwood, exhibited an extensive collection of hardy shrubs and ornamental trees, with Roses, Rhododendrons, Azaleas, and Viburnums. Shrubs and other plants, with variegated or golden-coloured foliage, were very conspicuous, the species Dimorphanthus mandschuricus standing out boldly, together with Maples of many kinds.

Pigmy Japanese trees from Messrs. J. CARTER & Co., High Holborn, again commanded a large share of attention, and a considerable variety of forms was represented, both in an old and a young state; the dark shades of the Conifers were relieved by the coppery or green tints of Japanese Maples.

The water garden and group of hardy plants arranged by Messrs. WM. CUTBUSH & SONS, Highgate, was one of the special feature of the display outside the tents, and an admirable effect was produced. The Japanese Irises and Osmundas had an excellent appearance on the border of a pond of water. Liliums, Eremuri, Lupins, and Pæonies, with the Dropmore variety of Anchusa italica, and white Campanulas helped the general effect. On the higher point of the background hardy Azaleas and Rhododendrons were massed, with Japanese Maples and Bamboos. In the front of the group collections of Incarvillea grandiflora, with large crimson flowers, the blue Phlox Laphamii and hardy Cypripediums were notable; especially conspicuous amongst the latter was the deep crimson-purple Cypripedium ventricosum, for which a First-Class Certificate was awarded. Groups of glowing scarlet Vallota purpurea, a new Coleus with peculiar large red verrucose leaves named Cordelia, and the soft-tinted Astilbe (Spiræa) Peach Blossom were additional attractions.

Mr. AMOS PERRY, Enfield Nurseries, exhibited groups of the blue Phlox canadensis Perry's variety, in contrast with the darker but smaller Laphamii—both useful and distinct, the former being particularly floriferous. Several other choice hardy plants were shown at the ends of these groups.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey, supplied a charming group of ornamental shrubs and trees, arranged in an uncommon manner with a curving path through the collection; they also furnished a fine margin to one of the entrances to the large tent. Golden leaved trees were prominent, especially Quercus concordia, Golden Standard Ivies, Cornus alba Spathii, and Golden Maples. The rich dark copper Beech (Fagus sylvatica purpurea), the copper Hazel, and the silvery Elæagnus macrophylla imparted diversity of colour, while many Genistas, Cytisus, and Ceanothus also furnished floral attractions.

Messrs. J. CHEAL & SONS, Crawley, arranged a choice and handsome collection of ornamental shrubs and trees, with flowering plants, in a novel and effective manner. The front part was in semi-circular form, a narrow path separating this from the taller background. Oaks, Maples, Beeches, Aralias, Clematis, Rhododendrons, Azaleas, and Lilacs were the chief features.

Messrs. RICHARD SMITH & CO., Worcester, showed a fine collection of Rhododendrons, Lilacs, Azaleas, and various ornamental shrubs and trees, which had many admirers. Rhododendron Pink Pearl, in the centre of the group, was a conspicuous favourite.

Japanese Maples were grandly represented in a group from Messrs. W. FROMOW & SONS, Chiswick. The plants were healthy, and showed the wonderful diversity in leaf-form and colouration, which distinguish these graceful plants, to perfection. The majority were in the form of standards, especially the red-leaved varieties, but some of the finely-cut bright green forms, like dissectum palmatifolium, were shown both as bushes and standards.

Messrs. JOHN WATERER & SONS, LTD., Bagshot, contributed specimen Hollies, Rhododendrons in choice varieties, Kalmias, and various Conifers. The group was boldly and effectively arranged, and the Rhododendrons comprised many choice varieties.

Messrs. T. CRIPPS & SON, LTD., Tunbridge Wells, had a group of Japanese Maples in excellent condition, the red and yellow forms being most prominent, and with them were tall specimens of ornamental vines and a few Conifers. This was a very charming group, and might have had more space with advantage.

Tasteful examples of rockeries from Messrs. PULHAM & SONS, 71, Newman Street, Oxford Street, occupied a large corner near the Embankment entrance, and indicated in an unpretentious but effective way the methods this firm adopt with such good results.

Messrs. WM. CUTBUSH & SON, Highgate, had an extensive collection of examples of topiary work, chiefly in Box and Yew. With them were tall standard conical Bays and other trees. A great variety of forms was included, and they attracted the attention of many visitors.

Choice Alpine and herbaceous plants from Mr. MAURICE PRICHARD, Christchurch, filled a table in the grounds. Amongst them were numerous varieties of hardy subjects, Aubrietias, Saxifragas, and Dodecatheons, all interesting and pretty.

Messrs. BARR & SONS, King Street, Covent Garden, filled a large amount of table space with Japanese pigmy trees in all their grotesque forms, several exceeding 100 years in age, though not more than 2 or 3 feet high. Japanese Maples, similarly diversified, were also included, together with the elegant but seldom seen Zelkova acuminata.

Messrs. H. B. MAY & SONS, Upper Edmonton, exhibited the brilliant scarlet Salvia Pride of Zurich, a number of new Coleus, and handsome Verbenas, with Lobelias, Heliotropes, &c.

Mr. G. REUTHE, Keston, Kent, showed a small collection of hardy plants, amongst which the brilliant blue Gentiana verna was notable amongst other choice Alpines.

Mr. W. PINGO HORTON, Cravenhurst, Seaford, Sussex, showed a small collection of Alpine and herbaceous plants, arranged on cork-edged shelves.

MISCELLANEOUS EXHIBITS.

Mr. A. J. A. BRUCE, Chorlton-cum-Hardy, showed a collection of insectivorous plants of hardy kinds, including Sarracenias, Darlingtonias, Droseras, and Dioneas. Many of the Sarracenias and Darlingtonias were pleasingly marked in their upper parts, and some were coloured deep red. There were many named varieties of the various species in this meritorious exhibit, and all the plants exhibited excellence of culture.

A large batch of show or Regal Pelargoniums was put up by Mr. W. J. GODFREY, Exmouth, Devon.

Messrs. BAKER'S, Wolverhampton, showed a large assortment of Violas and Pansies in numerous varieties, also Lily of the Valley, Primulas, Spiræas, &c.

The KING'S ACRE NURSERY CO., Hereford, showed Carnations, Schizanthus, and Heliotropes. These latter flowers were in variety, some having relatively huge inflorescences, notably those labelled Argus and Anthys. The same firm showed a pretty rose-coloured Petunia.

Messrs. HEATH & SON, Cheltenham, showed many well-flowered plants of show Pelargoniums.

Herbaceous Calceolarias were finely shown by Messrs. WEBB & SONS, Wordsley, Stourbridge. The plants were crowned with their large flower heads, the flowers representing all the shades seen in this useful decorative subject.

Messrs. J. GARRAWAY & CO., Clifton, Bristol, showed a group of plants of their noted strain of Schizanthus wisetonensis.

Messrs. JARMAN & CO., Chard, displayed their pretty hybrid Centaureas in white, heliotrope, and yellow-coloured flowers.

Messrs. W. & J. Brown, Stamford, displayed Verbenas, Heliotropes, Cytisus, Ageratums, Roses, Lotus peliorhyncus, and other subjects of a like nature.

Messrs. Geo. Paul & Son, Cheshunt, showed Lilacs in variety, a plant of Lonicera Hildebrandtii in flower, an ornamental-leaved Catalpa named C. syringifolia pulverulenta, a grand plant, in a pot, of Hydrangea arborescens, &c.

Mr. Jannoch, Dersingham, Norfolk, showed Lilacs in variety, an outstanding plant being one of the white Mme. Lemoine variety, the flowers of which are duplicated in their petals. Mr. Jannoch also showed Lily of the Valley.

Mr. W. J. Godfrey, Exmouth, Devon, displayed several named varieties of Verbenas, the most promising of which was the beautiful kind named after Miss Willmott.

Roberts, T. W. Turner, W. P. Thomson, H. J. Cutbush, Chas. Blick, Chas. T. Druery, W. G. Baker, W. Bain, N. F. Barnes, Chas. Dixon, J. W. Barr, Jas. Walker, Edward Mawley, and R. Hooper Pearson.

AWARDS.

First-Class Certificates.

Dracæna Doucettii var. De Grootei.—A handsome ornamental-leaved plant, with long, narrow leaves rather more than 1 inch in their widest part. The lower leaves curve gracefully downward, the others being erect, together forming a stove plant of exceptional beauty. The long, narrow leaves are margined and striped with yellow, the mid-rib being red, and this colour is suffused through the lower portion of the foliage. Shown by Messrs. James Veitch & Sons, Ltd., Chelsea.

Tulip Walter T. Ware.—This is a handsome flowers. Shown by Messrs. R. & G. Cuthbert, Southgate.

Begonia Empress Marie.—A large flowered white variety of the tuberous-rooting section. The blooms are of the Camellia form, and the petals have handsome waved outlines. Shown by Messrs. Blackmore & Langdon, Twerton Nursery, Bath.

Codiæum (Croton) Fred Sander.—This beautiful yellow and green variety was described in our issue for April 25, p. 258, and illustrated on p. 275 in the succeeding number.

Rose Elaine.—A dwarf-habited Hybrid Tea variety, white with a faint trace of rose, especially in the younger blooms. The form of the flower is good, the petals being much reflexed. Shown by Messrs. W. Paul & Sons, Waltham Cross.

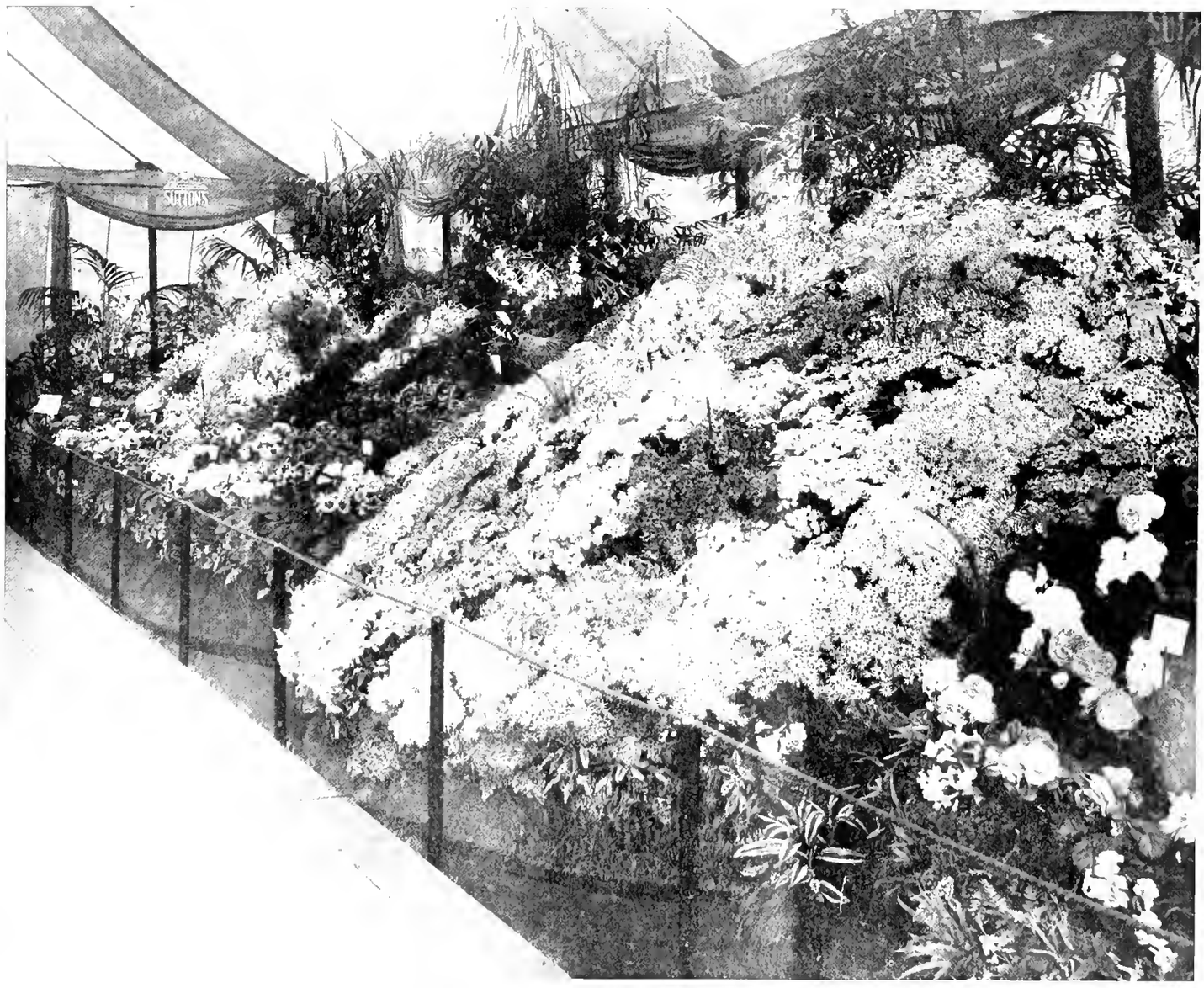

Fig. 163.—Messrs. Sutton and Sons' exhibit of cinerarias, gloxinias and other plants at the temple show.

Messrs. W. H. Rogers & Son, Ltd., Red Lodge Nursery, Bassett, Southampton, made a small exhibit of Rhododendrons, Astilbe (Spiræa), and Clematis montana rubens.

Messrs. W. Paul & Son, Waltham Cross, Herts., had trusses of Rhododendrons of hardy varieties, bunches of Lilacs, and the yellow-flowered Genista hispanica.

Mr. W. R. Chaplin, Jovinges Nursery, Waltham Cross, exhibited Petunia

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. W. J. James, W. Cuthbertson, G. Reuthe, (Jno. Green, C. J. Salter, F. Page

May-flowering variety that has previously received an Award of Merit, and on account of its general excellence it was granted a First-Class Certificate on this occasion. The colour is deep golden-orange of a shade probably unique among late-flowered kinds. Shown by Mr. Walter T. Ware, Bath, and Messrs. Barr & Sons, Covent Garden.

Awards of Merit.

Azalea amœna alpha "gracilis."—Large trusses of blooms, white with blotchings of yellow on the upper petals are the characteristics of this fine variety. The blooms are fragrant, and there is a suspicion of rose in the younger

Rose Tausendschon.—An excellent rambling Rose with rose-pink blooms hanging in large bunches from the ends of long side growths. Some of the inflorescences measured more than 9 inches in diameter, and for this class of Rose the individual blooms are also large. The plant is a free grower, and has bright foliage of very healthy appearance. Shown by Messrs. W. Paul & Sons, and Hobbies, Ltd., Dereham, Norfolk.

Rose White Dorothy.—A white climbing Wichuraiana variety, said to be a sport of the popular Dorothy Perkins variety. Shown by Messrs. Paul & Sons, Cheshunt, and Messrs. B. Cant & Sons, Colchester.

Dimorphotheca aurantiaca.—This plant is a showy and beautiful annual from the Cape, with Marguerite-like blossoms 2 inches or more in diameter, coloured a rich orange-gold, and rendered the more conspicuous by the rather dark coloured disc. The plant, as shown, is about 18 inches high, neat in habit, and profuse in its flowering. From Messrs. BARR & SONS, Covent Garden.

Pæonia decora alba.—A single-flowered variety like P. Emodii, with rounded petals that are cupped, and giving a saucer-like outline to the flower. From Messrs. R. W. WALLACE & Co., Colchester.

Tulip Duchess of Westminster.—A very handsome rose-coloured Darwin Tulip with shapely flowers that are delicately tinged with pinkish-white near the edges. It is a conspicuous variety in a selection of these bulbous flowers. From Mr. ALEX. M. DICKSON, East Keal Manor, Spilsby.

FRUIT.

For so huge an exhibition, the display of fruit was very meagre, being limited to three trade collections, not a single private garden being represented by an exhibit. Such a deficiency is apt to lead strangers to British horticulture to assume that the food products of gardening are lightly esteemed, when compared with the marvellous wealth of flowering material seen on every hand. To assume so much is to materially undervalue British fruit culture under glass. Still its comparative non-representation on this occasion calls for remark.

Messrs. THOS. RIVERS & SONS, Sawbridgeworth, as usual, had in the large Orchid tent one of their customary collections of fruit trees in pots. There were some three dozen Peach, Nectarine, and Cherry trees of large size, all in fine fruit. The Peaches were both first early varieties being Duke of York and Duchess of Cornwall; the Nectarines were all of that superb variety Cardinal, and the Cherries were Early Rivers, Frogmore Bigarreau, and Elton. There were also several small Fig trees and a collection in pots of the Citrus family.

Messrs. G. BUNYARD & Co., Maidstone, staged a remarkable collection of 100 dishes and baskets of well-preserved Apples, and, apart from the general excellence of the samples, the way they had been preserved created wide interest. These dishes were backed by several pot trees of the early Cherry Guigne d'Annonay. Specially fine Apples were Calville Rouge, High Canons, Smart's Prince Albert, Ontario, Belle de Pontoise, Calville Malingre, Wagener, Calville des Femmes (large and handsome), Newton Wonder, Norfolk Beefing, Alfriston, Prince Alfred (very fine), Farmer's Seedling, Bramley's Seedling, Tibbett's Pearmain, King of Tompkins' County, Lane's Prince Albert, Mère de Ménage, Winter Queening, Belle Dubois (very fine), Gabalva, Beauty of Herts, and Brownlees's Russet; also Pears Belle des Arbes and Easter Orange.

Messrs. LAXTON BROTHERS, Bedford, sent up a most attractive collection of Strawberries of picked samples. There were 16 baskets and dishes, and two dozen plants in fine fruit. These latter comprised Laxton's Pineapple, Epicure (rich dark fruits), and Bedford Champion. In addition to the above, Royal Sovereign was largely represented. The firm added to the exhibit in dozens, in baskets, superb fruits of Early Alexander Peach and Cardinal Nectarine, and a few dishes of brown Turkey Figs.

VEGETABLES

were moderately shown, only trade or market products being presented. The most interesting collection certainly was one of Messrs. SUTTON & SONS, Reading, of Potato tubers and plants of divers species in pots. The tuber display comprised 52 varieties, shown in dishes, the product of planting in frames on beds of leaves giving very mild warmth on February 26. None were large, but all were of most acceptable table size. Of those kidney-shaped and specially noticeable were Gladiator, Superlative, May Queen, White Beauty of Hebron, Myatt's and Sutton's Ashleafs, Seedling 159, and Supreme, whilst of coloured kidneys, King Edward VII., Purple Eyes, and Mr Bresee were the best. Of white, round forms, British Queen, Up-to-Date, Sutton's Seedling, Sir J. Llewellyn, Abundance, Nonsuch, Ideal, Harbinger, and Early Puritan were good, and of coloured rounds, Reading Russett, Lord Tennyson, The Dean, and the Sutton Flourball. The pot plants included those of Blue Giant and Commersonii Violet to show identity, and of species S. Commersonii from Uruguay, and other forms; S. etuberosum, with foliage most resembling that of the garden Potato; S. maglia, S. tuberosum, S. verrucosum, and others.

Messrs. WATKINS & SIMPSON, Henrietta Street, London, sent a collection of imported vegetables, the most meritorious of which was a number of fine white solid heads of Cauliflower Early Six Weeks. There were numerous bunches of Early Frame Carrot, Early Long White Radishes, and Romaine Early Frame Cos and Cold Frame Cabbage Lettuces, neither good-hearted samples.

An interesting collection came from the Thatcham Fruit and Flower Farm, Berks, of glass-grown samples, prominent amongst which were numerous bunches of Early Frame Carrot, similar to what had been seen in the imported collection. There were quantities of the long white Marteau Turnip, like Jersey Navel, very good Paris white Cos Lettuce, white Dutch Cabbage Lettuce, and French Breakfast Radishes. These products were stated to have been grown on the "Maraiber" systems.

Very fine oval-shaped bundles of Asparagus came from Mr. R. STEVENSON, Burwell, Cambridge; oblong bundles from Mr. GODFREY, and round bundles from Mr. HARWOOD, both of Colchester, all the samples being remarkably fine.

Awards made by the Council.

VEITCHIAN CUP.

F. Menteith Ogilvie, Esq., for Orchids.

GOLD MEDALS.

J. Veitch & Sons, Ltd., for foliage plants, flowers, &c.; W. Cutbush & Son, for Roses, Carnations, Alpines; Sander & Son, for Orchids and foliage plants; Charlesworth & Co., for Orchids; Major G. L. Holford, C.I.E., C.V.O., for Orchids; Hugh Low & Co., for Orchids, Carnations, &c.

SILVER-GILT FLORA MEDAL.

T. S. Ware, Ltd., for Begonias and Carnations; H. Cannell & Sons, for Roses, Calceolarias, Cannas, &c.; J. Carter & Co., for flowering plants; G. Mount, for Roses; Hobbies, Ltd., for Roses, G. Reuthe, for herbaceous plants, &c., Alex. Dickson and Sons, Ltd., for Tulips; J. Hill & Son, for Ferns; A. J. A. Bruce, for Sarracenias; Armstrong & Brown, for Orchids, H. Burnett, for Carnations, A. F. Dutton, for Carnations; R. Ashworth, for Orchids.

SILVER-GILT KNIGHTIAN MEDAL.

T. Rivers & Sons, for fruit trees in pots; Laxton Bros., for Strawberries.

SILVER CUPS.

Sutton & Sons, for miscellaneous plants; Barr & Sons, for herbaceous plants; G. Bunyard & Co., Ltd., for herbaceous plants and fruit; J. Waterer & Sons, for Rhododendrons, &c.; May & Sons, for Ferns, &c.; L. R. Russell, for Clematis, shrubs, &c.; R. Smith & Co., for Clematis and herbaceous plants, C. Turner, for Roses and Azaleas; G. Paul & Sons, for Roses, &c.; Jackman & Son, for herbaceous plants; Pulham & Son, for Alpines, &c.; J. Cheal & Sons, for trees, shrubs, and herbaceous plants, W. Paul & Son, for Roses, &c.; T. Cripps & Son, for Acers, &c.; R. P. Ker & Sons, for Hippeastrums, A. Perry, for herbaceous plants; R. & G. Cuthbert, for Azaleas, &c.; Hon. V. Gibbs, for Pelargoniums and Streptocarpus; C. F. Raphael, for Carnations, &c.; Blackmore & Langdon, for Begonias; R. Wallace & Co., for herbaceous plants; Sir J. Colman, Bart., for Orchids; W. James, Esq., for Carnations and Peonies, J. Cypher & Sons, for Orchids, &c.; M. Prichard, for herbaceous plants.

SILVER-GILT BANKSIAN MEDALS.

J. Peed & Son, for Caladiums and Gloxinias; Baker's, for herbaceous plants, J. R. Box, for Begonias; Craven Nursery Co., for Alpines; Fromow & Sons, for trees, shrubs, &c.; R. C. Notcutt, for herbaceous plants.

SILVER LINDLEY MEDAL.

F. Menteith Ogilvie, Esq., for Orchids.

SILVER KNIGHTIAN MEDALS.

Thatcham Fruit Farm, for vegetables, Stephenson, for Asparagus.

SILVER FLORA MEDALS.

F. Cant & Co., for Roses, D. Russell & Son, for trees, shrubs, &c.; J. Laing & Sons, for Begonias, Caladiums, &c.; C. W. Breadmore, for Sweet Peas, A. R. Upton, for herbaceous plants; Webb & Son, for Calceolarias; B. R. Cant & Sons, for Roses, Dobbie & Co., for Violas, &c.; Hogg & Robertson, for Tulips; J. & A. McBean, for Orchids; J. W. Moore, for Orchids; R. Gill, for Rhododendrons.

SILVER BANKSIAN MEDALS.

J. D. Enys, for plants of Myosotidium; W. P. Horton, for Alpines; King's Acre Nurseries Co., for herbaceous plants; A. M. Wilson, for Tulips; W. Bull & Sons, for Orchids and foliage plants; H. Crane, for Violas; Misses Hopkins, for Alpines, &c.; F. Lilley, for bulbous plants; G. Prince & Co., for Roses; Watkins & Simpson, for vegetables; R. H. Bath & Co., Ltd., for Tulips and Carnations; A. H. Gwillim, for Begonias; A. J. Harwood, for Asparagus; T. Jannock, for Lilacs, &c.; B. Ladhams, Ltd., for herbaceous plants; W. H. Page, for Carnations; Bell & Sheldon, for Carnations.

MARKETS.

COVENT GARDEN, May 27.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Anemones per doz. bunches ...	2 0	3 0
— double pink ...	1 0	1 6
— fulgens, per dozen bunches	2 0	3 0
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	2 6	4 0
Carnations, per dozen blooms, best American varions ...	2 0	3 0
— second size ...	1 6	2 0
— smaller, per doz. bunches	0 9	1 2 0
— Malmaisons, p. doz. blooms ...	8 0	12 0
Cattleyas, per doz. blooms ...	8 0	10 0
Cyclamen, per doz. bunches ...	6 0	8 0
Cypripediums, per dozen blooms..	2 0	2 6
Eucharis grandiflora, per doz. blooms ...	4 0	5 0
Freesias, per dozen bunches ...	2 0	3 0
Gardenias, per doz. blooms... ...	1 6	3 0
Gladiolus Colvilei vars., per doz. bunches ...	7 0	10 0
Gypsophila per dz. bunches ...	3 0	5 0
Iris (Spanish), per dozen bunches	3 0	6 0
Ixias	4 0	6 0
Lapagerias, p. doz.	1 6	2 6
Lilium auratum ...	2 0	3 0
— candidum ..	2 0	3 6
— longiflorum ...	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality ...	12 0	15 0
Marguerites, white, p. dz. bunches	3 0	4 0
Marguerites, yellow, p. dz. bchs.	2 0	3 0
Mignonette, per dozen bunches	3 0	6 0
Myosotis, per doz. bunches ...	2 0	3 0
Narcissus, per doz. bunches ...	1 0	1 6
— poeticus ornatus	1 0	1 6
— Double varieties	3 0	4 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pelargoniums, show, per doz. bunches ..	5 0	6 0
— Zonal, double scarlet... ...	4 0	6 0
Roses, 12 blooms, Niphetos ...	1 0	2 6
— Bridesmaid ...	2 0	5 0
— C. Testout ...	2 0	4 0
— General Jacqumniot ...	1 6	2 6
— Kaiserin A. Victoria ...	2 0	4 0
— C. Mermet ...	2 0	4 0
— Liberty ...	2 6	4 0
— Mad. Chatenay	3 0	6 0
— Mrs. J. Laing	2 0	4 0
Statice, per dozen bunches ...	5 0	6 0
Spiræa, per dozen bunches ..	5 0	8 0
Stocks, double white, per doz. bunches ...	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms ...	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches ...	6 0	12 0
— Darwins ...	9 0	12 0
Violets, per dozen bunches ...	2 0	3 0
— special quality	3 0	4 0
— Parmas, per bunch	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch ...	1 0	2 0
— Sprengeri ...	0 9	1 6
Berberis, per doz. bunches ...	2 6	3 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches..	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches ...	1 0	3 0
Galax leaves, per doz. bunches...	2 0	2 6
Grasses, per dozen bunches ...	1 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle... ...	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross ...	4 0	5 0
Myrtle, per dozen bunches, (English) small-leaved... ...	4 0	6 0
— French ...	1 0	1 6
Smilax, p. dz. trails	3 0	5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri. ...	6 0	12 0
Araucaria excelsa, per dozen ...	12 0	30 0
Aspidistras, p. dz., green	15 0	24 0
— variegated ...	30 0	42 0
Asparagus, p. doz., plumosus nanus	9 0	12 0
— Sprengeri ..	6 0	9 0
— tenuissimus	9 0	12 0
Azalea indica ..	24 0	36 0
Boronia Elatior, per dozen ...	15 0	24 0
— hetrophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
— yellow, per dz.	6 0	8 0
Callas, per dozen .	8 0	10 0
Cinerarias, per dz.	4 0	6 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen ...	4 0	5 0
— laxus, per doz.	4 0	5 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen ...	9 0	15 0
— candidissima...	15 0	18 0
— Cavendishii .	18 0	24 0
— persoluta alba	24 0	30 0
— Wilmoreana ...	12 0	18 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100... ...	8 0	12 0
— in small and large 60's ...	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Fuchsias, per doz.	6 0	9 0
Gemstas, per doz.	5 0	8 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.).*

	s.d.	s.d.
Hardy flower roots, per dozen ...	0 9	2 0
Heliotropiums, p. dozen	4 0	6 0
Hydrangeas, per dozen	10 0	18 0
— paniculata, per dozen	18 0	36 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen ...	12 0	18 0
Lilium longiflorum, per dz.	18 0	24 0
— lancifolium, p. dozen	18 0	24 0
Lily of the Valley, per dozen ...	18 0	30 0
Lobelia, per dozen	4 0	6 0
Marguerites, white, per dozen ...	6 0	9 0
Mignonette, per dz.	6 0	10 0
Pelargoniums, per doz., Zonal	5 0	8 0
— show varieties	12 0	18 0
— Ivy-leaved ...	6 0	8 0
— Oak-leaved ...	3 0	5 0
Petunias, per doz., (double) ...	6 0	8 0
Rhodanthe, per dozen	4 0	6 0
Roses, Ramblers, each	5 0	30 0
— Hybrid perpetuals, per doz.	9 0	18 0
Saxifraga pyramidalis, per doz.	15 0	18 0
Selaginella, p. doz.	4 0	6 0
Spiræa japonica, p. dozen	5 0	9 0
Stocks (Intermediate), per dozen	5 0	8 0
Verbena, Miss Willmott, per dozen	6 0	10 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples (**Tasmanian**), per box:		
— Ribston Pippin	8 0	9 0
— Cox's Orange Pippin... ...	15 0	18 0
— Alexander ...	7 0	9 0
— Wellington ...	10 0	12 0
— Scarlet Nonpareil	9 0	10 6
— **Australian**, per case:		
— Esopus ...	9 0	11 0
— New York Pippins	8 0	11 0
— Monro Favorite	8 0	10 0
— Jonathan ...	8 0	12 0
— Ribston ...	9 0	10 0
— Cox's Orange Pippin... ...	16 0	20 0
— Wellington ...	10 0	11 0
— Rymer Pippin	9 0	11 0
— Alfriston ...	7 0	9 0
— Adams Pearmain	7 0	9 0
— French Crab...	7 6	9 0
— **Nova Scotian**, per barrel:		
— Fallawater ...	17 0	19 0
— Nonpareil ...	12 0	14 0
— **Canadian**, per barrel:		
— Baldwin ...	20 0	21 0
Apricots (French), per box ...	0 9	1 2
Bananas, bunch:		
— No. 2 Canary.	6 0	—
— No. 1 ,, ...	7 6	8 0
— Extra ,, ...	8 0	9 0
— Giants ,, ...	10 0	12 0
— (Claret) ...	7 0	7 6
— Jamaica ...	5 0	5 6
— Loose, per dz.	0 9	1 3
Cranberries, case	8 9	9 0
Cherries (French), ½ sieve... ...	5 6	8 0
— (French), p.box	0 9	1 6
Dates (Tunis), doz. boxes	4 0	4 3
Figs (Guernsey), per dozen ...	2 0	8 0
Grape Fruit, case	8 0	10 0
Grapes (English), new), per lb ...	1 6	3 0
— Muscats (English, new), p.lb.	2 0	5 0
— (Capel, per box (small) ...	2 0	6 0
— (large)	5 0	12 0
— (Almeria), per barrel	14 0	18 0
Gooseberries (English), ½ sieve ...	6 0	7 0
Lemons:		
— Messina, case	7 6	10 0
Lychees, per box...	1 0	1 5
Mangos (Jamaica), per dozen ...	12 0	18 0
Melons (Guernsey)	2 0	3 6
Nuts, Almonds, per bag	45 0	—
— Brazils, new, per cwt. ...	50 0	57 0
— Barcelona, per bag	30 0	32 0
— Cocoa nuts, 100	11 0	14 0
Oranges (Valencia), per case ..	12 0	25 0
— Denia, p. case	12 0	22 0
— Jaffas, per box	9 0	11 0
— Californian Navel, p. case	12 0	13 0
— Palermos, Blood:		
— per box (100)...	6 0	7 0
— per box (200)...	9 0	12 0
Peaches (English) per dozen ...	8 0	18 0
Pears (Cape), per box	5 6	7 0
— cases	5 0	8 0
— (Australian), per box ...	3 6	5 0
Pineapples, each ...	2 0	6 0
Strawberries (English), per lb. ...	2 0	3 6
— seconds ...	1 0	1 9
— (French), per basket	2 0	2 9

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen ...	2 0	2 6
Asparagus, Sprue, per bundle ...	0 6	0 7
— Montauban ...	1 4	1 5
— Toulouse, per bundle... ...	1 0	1 4
— English ...	1 0	1 6
— Spanish, per bundle... ...	0 8	0 10
— Giant, per bundle	3 0	5 0
Beans, Broad (French), p.pad	1 6	2 6
— Guernsey, p.lb.	0 6	0 8
— English ..	0 7	0 8
Beetroot, per bushel	1 3	1 6
Cabbages, per tally	3 0	4 6
— Greens, p. bag	1 0	1 6
Cauliflowers, per dozen	1 0	2 0
— per tally ...	4 0	8 0
Celery, per roll ...	0 8	1 0
Celeriac (French), per dozen ...	2 0	—
Chicory, per lb. ...	0 3	0 5
Chow Chow (Sechium edule), p. dozen	3 0	—
Cucumbers, per dz.	1 6	2 6
— per flat ...	4 6	6 6
Endive, per dozen	−0 9	1 3
Horseradish, foreign, per doz. bundles ...	9 0	12 0
Leeks, 12 bundles	1 0	1 6
Lettuce (English),	3 0	3 6
— (French), p. dz.	0 8	1 0
Lettuce (French), Cos, per dozen	3 0	4 0
Marrow (English)	2 0	8 0
Mint, per dz. bchs.	1 0	2 0
Mushrooms, per lb.	0 9	0 10
— broilers ...	0 8	—
Mustard and Cress, per dozen pun.	1 3	—
Onions (Egyptian), per bag... ...	6 6	7 0
— pickling, per bushel... ...	1 6	2 6
— Spring, dz.bun.	1 6	2 0
Parsley, 12 bunches	1 6	2 0
Peas (Guernsey), per lb.... ...	0 6	0 8
Potatos (Guernsey), per lb.... ...	0 2	0 2½
— (Jersey), barrels, cwt. ...	18 0	—
— Teneriffe, cwt.	11 0	13 0
Radishes (Guernsey), dozen ...	0 6	0 8
— round, p. doz.	0 4	0 6
Rhubarb (Natural)	1 6	2 0
Salsafy, per dozen bundles ...	3 6	—
Scakale, per dozen punnets ...	9 0	12 0
Tomatos (English), per lb.... ...	0 7	0 8
— second quality	0 4	0 5
— (Teneriffe), per bundle of four boxes	16 0	22 0
Turnips (French), per bunch ...	0 6	0 8
Watercress, p. doz.	0 4	0 6

REMARKS.—Tasmanian and Australian Apples are arriving in large quantities, and their prices are easier except for the choicest samples. The demand for Strawberries this week has been good, notwithstanding increased supplies. There is also an improvement in the Grape trade. Asparagus, both home-grown and French, is considerably cheaper. Cherries in boxes and half-sieves from France are selling freely at reduced prices. *E. H. K., Covent Garden, Wednesday, May 27, 1908.*

COVENT GARDEN FLOWER MARKET.

The warmer weather has materially improved trade. The sale of summer bedding plants has militated against the disposal of hardy flower roots, and many growers are left with stocks unsold. The warmer weather has caused flowers to develop rapidly. Liliums have been very cheap, but they may advance in value any day. This morning (Wednesday) their prices showed a slight rise, and I found on visiting some growers a few days since that the stocks of retarded bulbs were nearly exhausted. This week will nearly see the finish of the Narcissus season. Gladioli are very good, but it is only the varieties of Colvillei that are seen. One grower informs me that he has G. Brenchleyensis almost ready to cut. Irises are now prominent. I. germanica in some colours sells well if the flowers are cut early. The Spanish Irises also make better prices when they are cut before the blooms are well advanced. Iceland Poppies are very good, but some growers will not cut them until the flowers are open, and when the salesmen unpack them many of the flowers drop. English growers are sending some good double white Stocks. Stephanotis, Gardenias, and Callas are plentiful, but very few Eucharis have been seen for some time.

POT PLANTS.

There is no great change to record in this department. The nurserymen are sending in large quantities of bedding plants, and they have been selling fairly well. Trade in hardy shrubs, climbers, &c., is not very good. Hydrangea paniculata is good, also H. Hortensia and the variety Thos. Hogg. H. Mariesii with flowers of a blue shade are in demand. Intermediate Stocks are nearly over. The spring crop of Mignonette is now good. Fewer nurserymen are growing Lobelia this season, and consequently its value is higher. Other subjects include Marguerites, Zonal and Ivy-leaved Pelargoniums, Spiræas, Roses, Ericas—including E. Cavendishii, E. perspicua erecta, E. ventricosa magnifica, &c. Foliage plants are well supplied. During the past week the trade in them has been moderately good. *A. H., Covent Garden, Wednesday, May 27, 1908.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending May 27.

Slight frosts on two nights.—This was on the whole a cool week. On only one day did the temperature exceed the average, and on two nights the exposed thermometer fell slightly below the freezing-point. The ground is now at about a seasonable temperature, both at 1 and 2 feet deep. Small quantities of rain fell on three days, and hail on one of those days. With these exceptions there has been no rain for over 10 days, and consequently there has been no measurable percolation through either of the soil gauges for several days. The sun shone on an average for 5¾ hours a day, which is 20 minutes a day short of the mean duration for the time of year. The winds have been light, and the direction of the air currents variable. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 3 per cent. The first Rose to flower in my garden in the open ground was a variety of Rosa alpina which was out on the 20th, or 10 days later than last year. *E. M., Berkhamsted, May 27, 1908.*

ANSWERS TO CORRESPONDENTS.

*** *Owing to unusual pressure on our space we have to hold over several society reports, including those of the Royal National Tulip Society and the National Horticultural Society of France.*

NAMES OF FRUITS: *W. G. D.* Apple Pinner Seedling.

NAMES OF PLANTS: *E. V. B.* Tellima Heuchera.—*G. S.* We do not undertake to name varieties of Tulips; the coloured bloom is probably Cottage Maid, the white one is probably Tulipa Didieri alba.—*Alpine.* 1, Saxifraga decipiens; 2, Aubrietia deltoidea purpurea; 3, Lithospermum purpureo-cœruleum; 4, Aubrietia tauricola; 5, Saxifraga muscoides; 6, Phlox nivalis.—*J. W.* Maranta bicolor.—*H. W.* Zephyranthes carinata.—*A. K., Dover.* Crinum flaccidum.—*G. D.* Laurelia aromatica.

THE BERLIN IRRIGATION MEADOWS: *Correspondent.* These meadows, or Rieselfelder as they are called, are situated in the neighbourhood of Blankenburg, and several other small towns a few miles north of Berlin. They cover several thousand acres of land. The scheme comprises the sewage disposal of the town. The sewage is pumped into central lakes, from whence it is run out over the whole area through a network of shallow canals, thus forming an excellent dung material for enriching the soil. Owing to the level nature of the land, this work has been somewhat easy, but in some cases the water has to be led underground by pipes before it can find its own level, for the main object is to prevent a rapid flow of water and thus allow the nutritive materials to be absorbed to the best advantage. The system has been in natural operation for a long time, but it was only about 25 years ago that any real effort was made to cultivate the land. An experimental station was established and tests of all kinds carried out under the supervision of competent officers, who spared no effort in the attempt to establish plants for all purposes. Fruits of all kinds, including Apples, Pears, Plums, Cherries, Currants, and Gooseberries, and vegetables and flowers likely to find a ready market were all tried with conspicuous success. Even medicinal plants were given a trial, and the results obtained were sufficient to guarantee a source of income when grown on a larger scale. Reports were published yearly setting out the results of the various experiments, and it was soon realised that from an agricultural and horticultural point of view the fields were of exceptional value. The area is now largely sub-let to various tenants, who make use of it to the best advantage. The largest area is devoted to vegetables, which grow to quite an unusual size, but are, according to popular opinion, somewhat lacking in flavour. This is to be explained by the nature of the soil, for the plants stand in almost pure dung, in many cases with their roots practically in water. Cut flowers form a large source of income, bulbous plants, Chrysanthemums, Dahlias, Pentstemons, Roses, and other plants, bloom well and find a ready sale. As stated in the note published in our issue for January 25, the fruit trees are mostly planted by the sides of the service roads, of which there are an enormous number. Apples particularly revel in the nourishment that they find here, and last year afforded a profit half as much again as in previous years. Corn of various kinds is also cultivated and the results are very successful, whilst Hemp has proved of exceptional value. It must not be thought that the whole of the area is in use. A large part of it is grass land which is at present lying idle, but the development is progressing by leaps and bounds, and bids fair to double its present income in a few years. All reasonable precautions are taken against the spreading of disease and unpleasant smells.

TO DESTROY ANTS: *T. W.* A simple plan is to pour boiling water on their nests, but probably the best remedy is a little bisulphide of carbon or vaporite inserted in the ground when the fumes will cause death to the ants. A preparation known as the Ballikinrain Ant Killer, is efficacious in destroying these pests in plant-houses, but we have no experience of its value on an open lawn. It is POISONOUS. Many thanks for the contribution to the Gardeners' Royal Benevolent Institution.

TULIPS: *A. E., Birmingham.* No Tulip mould has been found on your specimens. The injury is caused by a millipede (Julus pulchellus). It is not necessary to destroy the bulbs; they should be thoroughly dusted with a mixture of flowers of sulphur and quicklime, using half as much of the latter as the former material.

VINE LEAVES: *E. S.* We have been unable to find any parasitic fungus on your vine leaves. The Coleus leaves show two moulds, but neither of them is parasitic. The fact that the damage seems to be confined to the under side of the leaves suggests the attack of some animal pest, but none was seen. Perhaps close observation on the spot might reveal the cause of the mischief, but in the meantime we still have the matter under investigation to determine whether there may be a bacterial origin for the spotting.

WINDMILL PUMPS: *T. E. B.* Write to a firm of horticultural sundriesmen and they will obtain them for you.

WOODLICE: *Constant Reader.* These may be trapped by placing pieces of some vegetable such as Carrot, Turnip, Potato, &c., in their haunts. The baits may be poisoned by soaking them in Paris Green or white arsenic if desired. Steiner's "Vermin Paste" has also been found useful in destroying these pests. Mix the poison with barley meal or middlings and put the mixture on pieces of glass, wood or tin, and place in their haunts.

COMMUNICATIONS RECEIVED.—Frank Cooper. (Such announcements are not infrequent. We are unable to reproduce that you have sent us.)—W. F.—Erica—R. B.—Information—B. W. W.—W. G.—W. H. P.—Walter A.—E. W. & Sons—J. C. & Sons—C. H. P.—J. G. D.—P. A.—W. R. D.—Cannon E.—M. L. L.—H. J. C.—E. T. B.—R. L. C.—W. Botting H.—E. F. H.—E. Y.—H. E.—A. D.—R. A. R.—A. G. T.—W. W. P.—W. W.—W. E. G.—L. Gentil—S. B. & Co.—G. P.—G. D.—J. T.—W. P. R.—F. S.—D. H.—A. L.—C. F. F.—S. B.—G. B.—W. L.—R. B. W.—D. C.—W. H.—W. H. C.—J. W.—G. & S.—W. U.—H. G. L.—F. B.

Photograph by H. S. K.

ROOF GARDEN AT CARDIFF CASTLE, ONE OF THE RESIDENCES OF THE MARQUIS OF BUTE.

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THE
Gardeners' Chronicle

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CONTENTS.

ILLUSTRATIONS.

THE TRADESCANTS.

ONE of the glories of my few square yards of back garden is a fine patch of double purple Virginian Spider-wort, otherwise Tradescantia. It brings to mind two interesting personalities whose names, though perhaps not writ large on the pages of general history, are of special interest to flower lovers. These are the two John Tradescants, father and son. Their names live for us in their beautiful American plant, which we call Tradescantia.

In the famous Ashmolean Museum at Oxford there is a half-length portrait of the younger Tradescant, which represents him leaning on a spade—the implement of his craft. For, as the inscription on their tomb in Lambeth Churchyard states, they were "both gardeners to the Rose and Lily Queen." This was Queen Henrietta Maria, wife of Charles I., and the two Tradescants were both Royal gardeners in the reign of this monarch. One or other of them also laid out grounds for the Duke of Buckingham. Both the Tradescants were much more than gardeners. The inscription on the tomb speaks of three John Tradescants, "grandsire, father, son." The last-mentioned died young, but the elder two, as the inscription goes on to say, "Lived till they had travelled Art and Nature through." They were, in fact, botanists, travellers and collectors. Their house became known in consequence as "Tradescant's Ark." Herrick, in his *Hesperides*, alludes to "Tradescant's curious shells." He also writes, taking strange liberties with the spelling of the name:—

"Thus John Tradeskin starves our greedy eyes
By boxing up his new-found rarities."

One wonders if by any chance the name *Trade skin* is intended for a sort of pun on the eager collecter of skins, &c. Quoting again from the inscription on the tomb, it was a choice collection "Of what is rare in land, in sea, in air. . . A world of wonders in one closet shut." It is said, by the way, to have possessed two feathers of the "Phœnix tayle," a claw of the "bird Roc," and a "Dodad" from Mauritius. Izaak Walton quotes the Tradescant collection in justification of some of the mendacious tales with which he has been beguiling his readers. He has been discoursing, for example, of the river in Epirus which puts out a lighted torch and kindles one not lighted, of the Arabian river which dyes vermilion the wool of all the sheep that drink of it, of the merry river that dances at the sound of music and ceases when the music stops, and others. To assist his readers in swallowing these romances, he says:

"I know, we islanders are averse to the belief of these wonders; but, there be so many strange creatures to be now seen collected by *John Tradescant*, and others added by my friend Elias Ashmole, Esq., who now keeps them carefully and methodically at his house near to *Lambeth*, near London, as may get some belief of some of the other wonders I mentioned."

As here indicated, the contents of the Tradescant ark came into the possession of Elias Ashmole, who added to it, and kept it in a sort of private museum in his house. He left it to the University of Oxford, where it is now housed. It is known as the Ashmolean Museum, though possibly the greater number of specimens were collected by the Tradescants.

The elder John Tradescant established the first Physic Garden, or, as we should now call it, Botanical Garden, in this country. The younger Tradescant travelled much, collecting specimens for this garden. In America he came across a pretty little blue flower with broad, grassy leaves. It is now known as the Virginian Spider-wort. It used to be called Ephemerum Virginianum. When Ruppius published, in 1718, his *Flora Jenensis* he called it Tradescantia. Linnæus adopted the name, and so it obtained the impress of authority.

According to Loudon the younger Tradescant also introduced the Lilac, Acacia and Occidental plant.

The inscription on the tomb ends appropriately, saying that the two Tradescants,

"Transplanted now themselves sleep here; and when
Angels shall with their trumpets waken men
And fire shall purge the world, these hence shall rise
And change this garden for a paradise."

—*G. W. B.*

THE BERLIN BOTANICAL GARDEN.

(Concluded from page 342.)

Considering that the furnishing of the garden was not begun until five years ago, the extent and condition of the collections generally is highly creditable to all concerned. The work of bringing the plants from the old garden at Schonberg was only finished at the end of last year.

In addition to the garden, there is also a large, imposing building containing the herbarium specimens, library, and the museum collections. The State horticultural school adjoining, but independent of the gardens, is another important institution, which takes full advantage of the teaching facilities provided in the Botanic Garden.

The staff consists of a director (Dr. Engler), an assistant director (Dr. Urban), and various botanists. The executive staff is headed by Mr. Ledien, recently appointed curator in succession to Mr. Perring, and previously curator of the Botanic Garden, Dresden. His principal assistant is Mr. Peters, whose special charge is the outdoor departments. There are two principal foremen, Mr. Behnick, late of Cambridge and Kew, and Mr. Vorwerk. Under these there are 23 sub-foremen, each of whom has charge of a department. These are all experienced gardeners, their ages ranging from 22 to 30, and form the permanent garden staff; they are all housed in the gardens, and their wages are about £5 a month. Under the sub-foremen are the temporary garden assistants, who are engaged in spring for a period of about six months. This temporary help in summer is occasioned by the amount of outdoor work during hot weather, while in winter practically no work is possible owing to the frost. Their wages are 18s. or 19s. a week; from 25 to 30 are employed for the six months, about 10 of them being kept on in winter. Sunday duty is paid for at the ordinary rate. These men may be said to fill the place of journeyman gardeners under the English arrangement. There are no labourers. In addition to these, there are the improver gardeners, mostly youths of from 17 to 20. They are engaged for a year, but there is no hard-and-fast rule. They also perform Sunday duty at the same rate of pay.

The working hours for gardeners are from 6 to 6, with half an hour for breakfast, an hour for dinner, and half an hour for tea. In winter, the hours are from 7 to 4.30, with the same time for meals, excepting tea. The arrangements for providing food for the garden staff are quite exemplary, a spacious, well-furnished canteen, situated inside the garden, with a competent cook and a staff of servants, being provided by the authorities, and the food supplied is not only of good quality and well cooked and served, but it is also cheaper than it could be obtained elsewhere. This canteen is open all day, and food may be obtained in it until quite a late hour at night. Compared with the cost of living for gardeners employed near London, say, for instance, at Kew, the cost to the gardeners at Dahlem is about the same.

A mutual improvement society, no doubt a copy of that at Kew, holds fortnightly meetings in a room provided in the gardens. The meetings are well attended by the gardeners and the papers read are of a superior quality. There is also a reading room or library, but as the books are lent out to the gardeners the reading is generally done at home. The conditions of employment in Germany are so different from those in England that comparisons cannot easily be made. Comparing the hours, wages, and other conditions for gardeners employed in the Dahlem gardens with those of gardeners generally in this part of Germany, the Dahlem conditions are not satisfactory. Wages paid in nurseries are higher. *J. G. W.*

ORCHID NOTES AND GLEANINGS.

CATASETUM DISCOLOR WITH MALE AND FEMALE FLOWERS.

A STOUT inflorescence of Catasetum discolor, bearing three female flowers on one side and three male flowers on the other, is sent by Mr. G. Reynolds, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Acton, who states that another spike, bearing male flowers only, was also produced. On the inflorescence sent the male flowers are greenish, changing to yellow, the shallow galeate labellum being furnished with purplish filaments, arranged moustache-like on either side. The female flowers are about 2 inches in length from the tip of the upper sepal to the base of the deep pot-like fleshy labellum and about twice the size of the male blooms. Both are similar in colour, but in the female flowers the fringe on the sides is reduced to a slightly fringed serration on the margin. In both sets of flowers the labellum is uppermost. Since Catasetum discolor belongs to the section in which the rostellum of the male is not prolonged into antennæ, serving the purpose of bringing about the ejection of the pollinia when they are touched, the columns of both sexes closely resemble each other. In the female, however, it is much the stouter, the ovary also being proportionately thick.

Male and female flowers from the same spike of C. Bungerothii were illustrated in the issue of *Gardeners' Chronicle* for *April 13, 1889*, p. 461.

BELGIAN HORTICULTURE.

M. VUYLSTEKE'S ODONTOGLOSSUMS.

IN the report of the Ghent Show which was published in our issue for May 2 last, particulars were given of a remarkable exhibit of blotched Odontoglossums shown by M. Vuylsteke, of Loochristy, near Ghent. We have now the opportunity of illustrating three of the novelties then exhibited, the illustrations being reproductions from photographs. The most remarkable is Odontoglossum maculatissimum (see fig. 164), which is a cross between O. maculatum and O. ardentissimum. The sepals of this fine hybrid are wholly of a bronzy-claret colour, the petals being heavily blotched with the same colour on the inner halves, and cream-white on the outer. The broad lip is whitish with a large bronzy-red blotch and some pink veining. The plant exhibited had a spike bearing nine large flowers.

O. egregium var. Mme. Jules Hye de Crom is almost entirely of a magnificent shade of bronzy-claret, with white margins and tips to the segments. The attractiveness of the flower is due in a great measure to the brilliant sheen which pervades the surface of the colouring.

At fig. 166 is shown one of M. Vuylsteke's magnificent varieties of O. ardentissimum, named in this case after Mme. Vuylsteke. Those who availed themselves of the opportunity of driving out to Loochristy and of inspecting for themselves M. Vulysteke's collections in cultivation, saw numerous varieties of O. ardentissimum resembling in more or less degree the variety which we illustrate, varying, however, in detail, in form, size, and colour.

The whole collection of Odontoglossums in M. Vuylsteke's establishment present such an appearance of high culture as could never be surpassed. The plants are cultivated in low span-roofed houses, and at the time of our visit the glass work of the houses was wholly covered with wooden lath shading, showing that the amount of sunlight in this part of Belgium is greater than in England at the same period, for there was no direct sunshine at the time. There are water tanks under the stages, generally the whole length of the house, as in many cases in England, and the ventilators are all covered with wasp and bee-proof wire netting, to exclude anything that would interfere with the pollination of plants it is wished to cross.

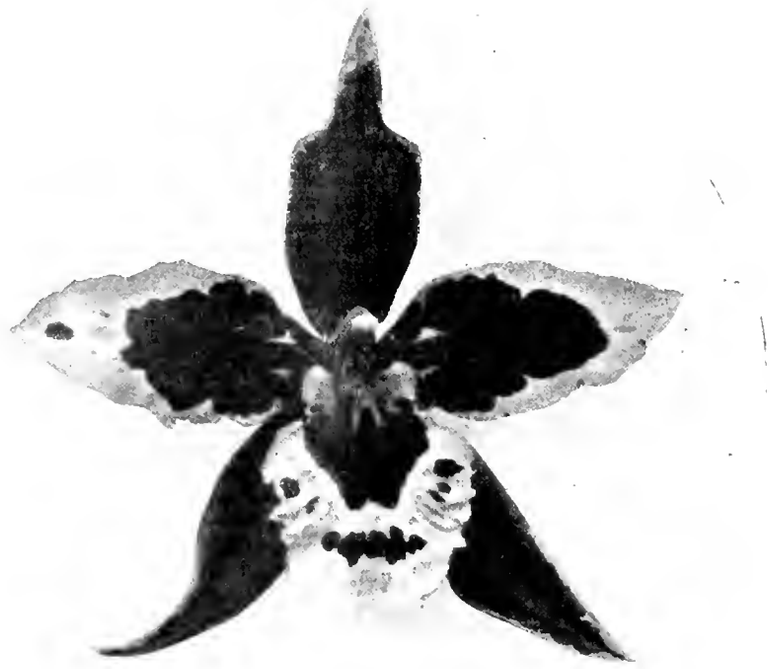


FIG. 164.—ODONTOGLOSSUM × MACULATISSIMUM.

Perfect cleanliness is apparent everywhere, and every plant appears as if it were a selected one rather than a member of a community equal in most respects to itself. In reply to a question, M. Vuylsteke, junr., assured us that no feeding is attempted, the word "feeding" in this case being applied to the giving of manures of any kind. We repeatedly saw specimens showing for bloom in their second year of growth, and were informed that the earliest time that M. Vuylsteke has yet been able to flower an Odontoglossum from seed is 18 months. It is difficult to convey a perfect idea of the strength and floriferousness of many of these Odontoglossum hybrids, but it may be stated that in one instance Odontoglossum Rolfeæ bore 70 fine flowers. In another case a variety of O. ardentissimum had an inflorescence which bore 21 flowers. Another Odontoglossum hybrid, growing in a 5-inch pot, had three spikes bearing together 48 flowers, the pseudo-bulbs being quite remarkable for their size. It was extremely interesting to inspect the various crosses between Odontoglossum cirrhosum and O. ardentissimum. They varied from flowers having white narrow petals, very similar in form to those of Odontoglossum cirrhosum, to others which exhibited the best form of O. ardentissimum, and in colour from pure white to such blotched forms as the one illustrated at fig. 166. It is evident that many surprises are yet to come from Loochristy.

FIG. 165.—ODONTOGLOSSUM EGREGIUM "MADAME JULES HYE DE CROM."

THE ROSARY.

WORK IN THE ROSE GARDEN IN JUNE.

THE inclement weather of April severely affected the Roses in the open garden, and especially those of the Tea and Noisette sections. The milder weather of May has enabled the bushes generally to recover from their injury, but should the shoots be badly damaged it will be advisable to prune them to low-seated buds and trust to a development of secondary growths, which can be aided by a surface mulching of manure and doses of liquid stimulants when growth has become active. The shoots on the standard Briars will now need attention. It will be apparent by the middle of this month which shoots are the best to retain, when three of the firmest and strongest growths near the top of the stock and at opposite angles should be selected, the remaining lower ones being cut clean away. Standard Briars that were budded but failed last year usually develop strong growths early in the second year. These will be quite a month in advance of the autumn-planted Briars and therefore valuable for early budding, using buds taken from well-ripened scions from plants grown

FIG. 166.—ODONTOGLOSSUM × ARDENTISSIMUM "MADAME VUYLSTEKE."

under glass or from grafted plants that have been recently placed outside. Amongst varieties of the Teas and hybrid Teas of special merit are Lady Roberts, Souvenir de Pierre Notting, Mrs. Sharman Crawford, Liberty, Golden Gate, Frau Karl Druschki, and Kaiserin Augusta Victoria. The general budding season will be late this year, and will not be at its height much before July, as before that time no great quantity of either scions or stocks will be available, but in all cases to secure success the bark should open freely and the scions slip out easily from the inner wood. If these conditions in stock and scion do not freely reciprocate, the operation had better be deferred until rain falls. If only a limited quantity of stocks has to be dealt with, I have found a copious soaking of water given to the roots and repeated, will, in a short time, cause the sap to rise, when the work can be proceeded with. The work of securing the buds, the staking and elimination of all wild growths from budded Roses should be completed by the end of June. If bushy heads are required, the maiden bud should not be allowed to flower, but should be pinched when 3 inches or 4 inches long. If the blooms are required for exhibition purposes, the best buds for selection are often found amongst the cluster of the first growth. In this case the first growth from the bud must be left alone and not stopped back. The Rose grower will, in seasons like this, have some difficulty in judging what to expect in the way of blooms by a certain date, and in order to be prepared for contingencies he should have reserve duplicate plants of those varieties he intends to exhibit. The largest growers usually depend on their maiden plants, but these are often only available for the later shows. For early exhibitions the best early kinds should be selected, and to obtain perfect blooms they must be disbudded quite three-fourths or even more, according to the variety. This is a matter entirely for the discretion of the grower. From the time the bud develops, the plant should be given plenty of liquid manure, diluted and alternated at intervals of about a week with the following ingredients in the proportion of 4 ozs. to 4 gallons of water, viz.: 2½ ozs. superphosphate, ½ oz. sulphate of ammonia, ½ oz. nitrate of soda, and ¾ oz. sulphate of potash. The above may be applied either in solution or as a dressing during moist weather and well raked in. If given as a solid it should be sprinkled about the surface of the ground, using equal proportions on each square yard. The above can be used until or before the flowers are expanded, after which it should be withheld. The protection of the blooms during stormy weather or from the scorching rays of the sun is necessary. Secure all plants of standard and dwarf Roses by staking and tieing the shoots; also guard against insect pests and mildew early in the season, as it is much more difficult to combat them later on. A solution of soft soap, quassia chips, or tobacco well steeped in hot water and applied during the evening and washed off next morning with clear water will usually be found effective remedies. The Dutch hoe is the best tool for destroying weeds, and this can be usefully employed between the rows of seedling Briars and amongst all planted-out Roses. The use of the hoe aerates the ground and destroys all small weeds.

All Rose beds in the open should be examined for suckers springing from the roots or stems of plants, and they must be promptly removed.

Cuttings of Roses inserted in the open during October, unless planted due north, must be shaded from strong sunshine, for although a few of them may be rooted, this precaution is necessary for the safety of the others, as until root action is established the solar heat will often cause the top growths to droop and die.

Pot Roses of all descriptions are now best placed on ashes, or plunged outside, in order to give them sufficient rest to recuperate before being brought inside again. During the autumn abundant ventilation both day and night should be given to all Roses planted under glass, and where possible it is much the best to remove the lights altogether during the summer months to thoroughly mature the wood. Well ply the garden engine amongst the plants to thoroughly cleanse them. Roses on their own roots in pots plunged under frames and that have had an abundance of ventilation can now be well vaporised before removing the ashes altogether; any that require repotting should be seen to at once. The plants should be set out far apart on the bed to allow room for the development of the summer's growth, pinching back all straggling and long shoots to promote a bushy habit. The grafted plants will now be well established outside. Carefully examine for insect pests, stake and tie the plants, and stop them a few joints back, so as to make compact specimens. Weak and unripened wood should be removed or be well cut back from all Roses, as such shoots impair the energies of the plant. The early batch of forced Teas, Noisettes, and climbing Roses now out of doors should be kept dry at their roots for a period of about two months, after which they will show signs of fresh growth, and then the exhausted wood can be cut out. After their rest, if the plants are lightly pruned and top-dressed with some rich material and kept well syringed, a further crop of flowers may be expected during the autumn. As there is now plenty of well-ripened wood, advantage should be taken to put in some cuttings on a half-spent hot-bed according to instructions already given. If due care is taken in the matters of shading, watering, and selection of the cuttings, 90 per cent. of the shoots will form roots. *J. D. G.*

MARKET GARDENING.

NOTES FROM A "FRENCH" GARDEN.

THE planting of Melons has been pushed forward as much as possible. Experienced growers have at this time plants always ready for planting out when required. When Carrots and Cauliflowers are doing well, and the grower thinks that they will be ready for market before June 20, he sows a batch of Melons at this time to replace them, instead of the customary crop of Endive or Celery.

The first batch of Melons is well forward. Some have fruits the size of two fists. The selection of the fruits is the most important detail in their culture. In the earliest batch growers are tempted to choose the first fruits which set, generally close to the main stem. This is only done in the early batches, however, for the further the fruit is from the main stem the better it will be in size and quality, though not so early as those taken closer to the stem. We generally let two or three fruits grow to the size of a tennis ball, to be more certain of their shape before leaving the best only. We give them now a fair proportion of water always in the morning before 9.30. One three-gallon can of water is generally sufficient at one time. The Melons

planted two or three weeks ago are given air freely when weather permits. We do not spread the mats at night except when it is chilly, in order to get the plants as hardy as possible without injuring them or impeding their growth.

The batch of Cauliflowers planted among the Carrots are showing bud. They will require all the water we can give them now. The watering of Cauliflowers before they show bud must be done very carefully, as they are liable to rot off if the water is excessive, and they will show bud too early if kept too dry. The batch of Cauliflowers which was planted among the Lettuces under the lights, and the batch planted directly outside, are both doing well. We have sown a batch which will be planted among the Melons, four per light at the end of June onwards till August. Though we like the Cauliflower "Driancourt" as a good all-round sort; we have sown some "Lenormand" which succeeds well through the summer and becomes an enormous size.

The Endive to follow the Cauliflowers among the Carrots have been through the ground these last four days, and receive plenty of air at the present time.

The Cos Lettuces grown under the cloches have all been sent to market, the third batch was ready as soon as the second was gone. We have another batch ready, grown entirely outside since the end of February. They were the same sorts of plants as those planted under the cloches.

The Celery sown at the beginning of April, to follow the Cauliflowers, are pricked off 3 inches apart on an old manure bed. They will require light but frequent waterings till they are well established in their present quarter. Around Paris, where Leeks have a ready sale, growers sow at the present time, in well-prepared beds, seeds of "Long of Paris." They are planted in July in the beds where Carrots and Cauliflowers were grown, 5 inches apart. This batch will be ready for the market in September if freely watered and well cultivated. *Paul Aquatias, Mayland, May 28.*

FIG. 167.—DIMORPHOTHECA AURANTIACA, WHICH GAINED AN AWARD OF MERIT AT THE TEMPLE SHOW. (See ante, page 358.)

NOTICES OF BOOKS.

* "LONDON PARKS AND GARDENS."

FEW persons who live in London realise the extent of the open spaces which help to relieve the monotony of bricks and mortar, and serve both as lungs to the city and as recreation grounds for its inhabitants. The love of gardening is comparatively a modern one, at least, amongst the majority of the population, and perhaps it is, in part at least, traceable to the ever-growing congestion of the large towns, with their teeming populations. At any rate, it is true that those whose visits to the country are few and far between are not the least appreciative of the beauties of woodland and green fields. Fortunately there are always those who enjoy a fair share of this world's goods, who also realise the attraction of rural surroundings, even in the heart of a town. The words of the old poet

"*Laudaturque domus longos quae prospicit agros*,"

are as true to-day as they were two thousand years ago; but for crowded urban populations, green spaces are not merely a luxury, they have become a necessity. The story of these open spaces within that portion of London which is administered by the London County Council is told by Mrs. Evelyn Cecil in a most delightful volume. Even were the subject itself less interesting than it actually is, the book would be well worth reading. The authoress, who is a well-known lover of gardens, has invested her theme with a charm that springs partly from her own familiarity with the places she is describing, but is also enhanced by the literary skill with which she has brought together so much that is of historical interest. Many of the green oases of London have been places of note in the past, and some of them, as, for example, Hyde Park, have played their part in the stormy scenes of the 17th century. Others, again, like the Chelsea Physic Garden, have remained as monuments to the enlightened views of prominent men; whilst still others bear witness to the intelligent foresight of private or public enterprise. It is not generally recognised that there are many trees and shrubs other than those familiar to everyone, which can be grown successfully even in London, and the list given at the end of the volume deserves to be studied by those whose business it is to lay out or to conserve the open spaces of the metropolis. On the whole, the evergreens are apt to be depressing. Their mantle of grime deprives them of attractiveness, even if it did not also injure their health, and it is seen, on glancing at the list, how Conifers have had to be abandoned in the metropolitan area. Even in the outer suburbs these trees are suffering, and every year, unluckily, their condition grows steadily worse. In former times they flourished in some districts. Thus the four original Cedars of Lebanon in the Physic Garden were objects of interest till they, one after another, succumbed to the attack of the smoke fiend.

The volume contains an excellent bibliography, whilst the illustrations, chiefly in colour, by Lady Victoria Manners, lend additional attractiveness to a well-planned and well-executed work.

* ROSE PESTS.

THERE are so many serious pests common to Roses, that a recent publication upon the subject, entitled *The Enemies of the Rose*, and issued by the National Rose Society, will be a great boon to cultivators, whether or not they are members of the Society. The notes upon the fungus diseases and preventive measures are contributed by Mr. George Massee, V.M.H., F.L.S., and those upon the insects by Mr. Fred. V. Theobald, M.A. The work is illustrated by Miss C. M. Beard. The illustrations include coloured plates of Rose-mildew, Rose-rust or Orange fungus, black spot, Rose-leaf scorch, several species of cockchafer, the slugworm, buff-tip moth, winter moth, vapourer moth, Rose Emphytus (Emphytus cinctus), also species of moth, leaf-miner, frog-hopper, leaf-rolling sawfly, and other pests. Having given the names of the contributors, it is scarcely necessary to say that the directions for combating the various pests and diseases may be thoroughly relied upon. The book is edited by Mr. Edward Mawley, the hon. secretary of the National Rose Society, and may be obtained by non-members of the Society through a member on payment of 2s. 6d.

* *London Parks and Gardens*, by the Hon. Mrs. Evelyn Cecil (Alicia Amherst), with illustrations by Lady Victoria Manners. London: Archibald Constable & Co., Ltd. 1907.

* *The Enemies of the Rose*. By George Massee, V.M.H., F.L.S., and Fred. V. Theobald, M.A. Illustrated by Miss C. M. Beard. Published by the National Rose Society.

*PANSIES AND VIOLETS.

WE have here, as stated by the author on the title page, "a handbook dealing with the cultivation and propagation of the show, fancy, and tufted Pansy or Viola for garden decoration and exhibition; the Violetta or miniature-flowered Pansy, mountain and sweet-scented Violets, including selections of varieties for all sorts of purposes." Pansies and Violets have been favourite garden plants in British gardens for several hundred years, and are more highly valued in the present day than ever, as being the most fragrant and beautiful of plants for the decoration of our gardens. Although the Pansy will succeed in smoky, crowded towns, it is only to be seen at its best in the pure air of the country. The Violet, on the contrary, can only be grown with success in the country, for it dwindles and dies when its cultivation is essayed in the town garden. There are numbers of books dealing with the history and plant lore of the subject, and with the cultivation of Pansies and Violets, but those are chiefly of interest to the specialist than to the owner of small gardens. The author of this work is a practised cultivator and exhibitor of these flowers, well acquainted with the requirements of the small grower, as he proves by the varied information afforded in his book. The editor has personally contributed the chapters on the history and botany of the Pansy and Violet, likewise the list of species of Mountain Violets, together with remarks on the foes of Pansies and Violets. These chapters will be found very interesting and enlightening to the reader. The art of propagation by cuttings in spring and summer is fully described, and pictorial examples of cuttings are given. Autumnal propagation for planting out in the following spring is touched upon, and special advice is given in regard to early propagation in the northern parts of the country where Pansies and Violas succeed best. The remarks on grouping Violas in beds and borders, using them as carpeting for beds of Roses and Carnations, and in window boxes, make informing reading; as do those on soil preparation, manuring, together with those on the summer and winter treatment of the plants. The raising of plants from seed by those who may not be able to purchase named varieties is succinctly described. Violettas, a race that originated by a cross effected by the late Dr. Ch. Stuart, M.D., of Chirnside, Berwickshire, between Viola cornuta and Pansy Blue King, have a chapter to themselves. They are fascinating plants. The culture of Violets in the open air and in cold frames and pots is fully described, and the remarks on varieties are valuable.

* By D. B. Crane. Edited by T. W. Sanders, F.L.S. Illustrated. London: The Office of "Amateur Gardening," 148 and 149, Aldersgate Street, E.C. 1s. net.

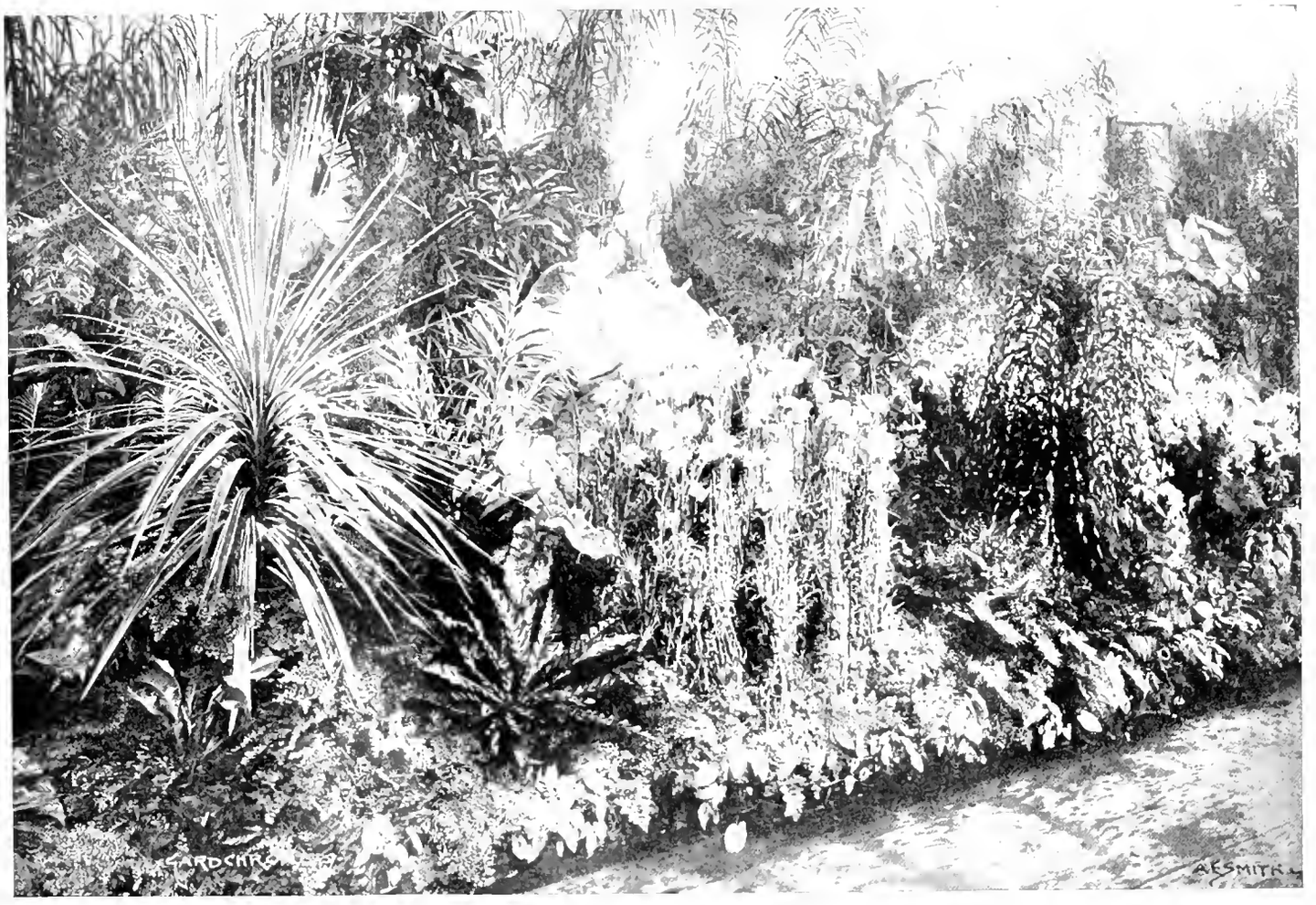


FIG. 168.—VIEW OF MESSRS. JAS. VEITCH AND SON'S GROUP OF STOVE AND GREENHOUSE PLANTS EXHIBITED AT THE TEMPLE SHOW.

The Dracæna Doucettii var. De Grootei, which gained a First Class Certificate, may be seen on the left-hand side of the picture. (See ante, pp. 353 and 358.)

NOTES FROM LA MORTOLA.

HIBISCUS VENUSTUS.

THROUGH the kindness of Mr. F. C. Baker, now at the Museo Goldi in Parana, I received some years ago seeds of a Hibiscus from Santiago de las Vegas, in the Island of Cuba. From these seeds we have now two shrubs growing in this garden, which in size and foliage somewhat resemble the old-fashioned Sparmannia africana. They began to flower for the first time at the end of last January. The petals were of a very delicate rose colour, which darkened down towards the centre to the deepest tinge of rose-red. As it was impossible for me to make out to what species our plants belonged, I sent some flowers to the Royal Botanic Garden and Museum in Dahlem. According to them the plant seems to be a rose-coloured variety of H. venustus, Blume.

This species was figured in 1891 in *Bot. Mag.*, t. 7183, with cream-coloured flowers. I have no specimens to compare, but the description seems to agree well with our plant. Certainly if it is not the Hibiscus venustus it is a very close ally. The stems of our plant are now about 2 inches high. The young shoots are green and densely covered with stellate and single glandular hairs. Some of these, especially along the petioles, are stiff and brittle and easily hurt one's hand. The petioles are robust and the lower leaves large and quite similar to those described in the *Botanical Magazine*. The upper ones get gradually smaller. The flowers come singly out of the axils of the highest leaves, about three to six on each shoot. The form of the calyx and epicalyx and, of course, of the whole flower is like the figure and description except for the colour. Besides, the flowers of our plant did not open as much as those shown on the plate, but this may be due to the cold period in which the flowers were produced, although they were very beautiful. It is to be seen whether this new shrub will become a favourite in our gardens, as its flowers are likely to be injured by the frost. But where it can be protected during the cold weather it is certain to do justice to its name "venustus." So far no seeds were produced, but cuttings will certainly strike as easy as of other Hibiscus. *Alwin Berger.*

The Week's Work.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Lilium speciosum (lancifolium).—This species and its varieties, if grown in pots, are very useful for decorating the conservatory and dwelling-house in the autumn. Bulbs that were started early will now be ready for receiving a top-dressing, partly filling up the space left in the pot when the bulbs were potted up. The top-dressing may be applied at two or three times, as it is seen that the new stems are producing roots from their base. The compost for such a purpose should consist of leaf-mould two parts, loam one part, and sand one part, with a little manure from a spent mushroom bed, mixing these materials well together before using them. When five or six bulbs are cultivated in a 10-inch pot they form good, bushy plants, capable of producing a very fine effect. The shoots should be disposed evenly, and for the purpose of training neat stakes should be placed against each growth. In order to obtain well-balanced growths the pots should be turned round occasionally, in order that each part may receive equal benefit from the sun's rays. When the roots are ramifying in their new soil the plants should be afforded frequent applications of weak liquid manure.

Plumbago rosea.—This plant is a useful subject for supplying a display of flowers during winter and spring. Cuttings should now be inserted in a mixture of loam, leaf-soil and sand, and the pots in which the cuttings are inserted should be placed in a house provided with bottom heat, where they will soon form roots. Place four cuttings in a 4-inch pot, and when they are well rooted, repot them, using receptacles having a diameter of 7 or 8 inches for their flowering stage. The shoots should be pinched in order to induce the formation of side shoots. Old plants should have the soil shaken from their roots and be repotted into some fresh loam. Established plants are suitable for planting in a small border; the shoots may be trained up the rafters of the house, from which the flowering shoots may be allowed to hang down.

Rehmannia angulata.—Seeds of this plant should now be sown in order to produce a batch of plants for next season's flowering. The same methods of seed-sowing may be adopted as was recommended for Cinerarias. Plants that are now at their flowering stage, having had the central flower spike removed when young, have developed a number of side growths and formed bushy plants. A small stake should be placed in the centre of the plant and the growths looped to this rather loosely. When in flower afford the plants an abundance of weak liquid manure.

Richardias.—R. africana and the variety Little Gem, when flowering is over, should be planted in an unheated frame, by which system they will succeed much better than if allowed to remain in the pots all through the summer. Place in the frame some good rich loam, with which has been mixed leaf-soil and sand, also a quantity of well-rooted manure. When planting, allow sufficient space for each plant to receive a full share of air and sunlight. Shake away the old soil from the roots and shorten some of the latter that are extra long. In planting, press the soil firmly about the roots, for this will permit a good ball of soil to be lifted when the plants are removed in the autumn. Afford a copious watering with tepid water and shade the frames, which must be kept closed for a few days after planting. When the plants are actively growing they are much benefited by doses of weak liquid manure, for Richardia is a very gross feeding plant

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, York-shire.

Freshly-grafted trees.—Successful grafts have made very rapid growth during the past fortnight, and they should be given attention by carefully removing the clay and examining the ties to see that these latter are not injuring the stock or scion. Rebind any that may require it, but make the tie more loose than before. At the same time support the grafts by the use of neat stakes, to prevent them being damaged by wind or other causes. As the graft continues to make more growth, all the young shoots which appear below the point of grafting should be removed. In cases where no union has taken place, it will be advisable to encourage a strong shoot to grow from the base, which may be budded presently, and so prevent failure this season. Examine any old trees that were headed down before grafting, and gradually remove any shoots which appear on the old stocks as soon as the scions have commenced to grow. Spray any grafts that are still alive but dormant, in order to encourage the buds to start into growth before the weather becomes exceedingly hot.

Summer pruning.—The pleasant change to milder weather will cause the shoots of Peach and Nectarine trees to grow very quickly, and disbudding should, therefore, be brought to a close by the removal of all those shoots that will not be required next season. The matter of summer-pruning will soon claim the attention of the cultivator. This operation requires great care and forethought, in order that the effect of the pruning may be to direct the energies of the trees to the formation of fruit buds, and to the development of this season's crop. In order to be successful, the operator should possess a good knowledge of the different kinds of fruit trees. He should know which have the habit of producing their fruit on spurs and which produce them on growths made in the season immediately preceding that of bearing.

Thinning of fruits.—Peaches will now have arrived at a sufficient size that partial thinning may be carried out. In the first place, remove all those fruits that would be likely to suffer damage from the wall or the wires, also any other badly-placed fruits may be removed before they commence to develop their stones or kernels. Very few surplus fruits need be left upon healthy trees until after the stoning process is finished—for they will not be likely to fall during that process. A fair average crop for a healthy tree to develop is one having one fruit to each square foot of space. But in determining the amount of crop, the habit of the particular variety should be taken into consideration, whether the individual fruits are large or small, and, in addition, the condition of the individual tree should be considered. Young and vigorous trees may be allowed to carry more than others, but even in these cases over-cropping is not to be recommended, as it invariably results in bringing about a period of unfruitfulness. Nectarines may be left a little closer than Peaches, say, one fruit to every 10 inches square. Reserve as many of the young shoots on these trees as there is proper room for, remembering, however, that each shoot requires to be fully exposed to light and air, or it will fail to mature. Carefully train in all the shoots it is decided to retain, and be very careful not to injure the young wood by pressing them closely to the nails or by tying them too tightly. Syringe the trees with clear water on all suitable occasions, commencing at the bottom of the tree first. Syringe them also occasionally with the XL-All insecticide, as this is a useful remedy for red spider and other insects. It is essential that the trees should be perfectly clean at the time when the fruits commence to colour, as when this stage is reached syringing will have to be discontinued.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Early Peach trees.—When the trees in the earliest house have been cleared of their fruits, the borders should be tested, and if the soil is found to be dry it should be thoroughly watered, applying diluted liquid manure instead of clear water if the trees appear to be weakly. Replenish the mulching material if this is necessary. Syringe the trees vigorously every day; carefully examine them and cleanly cut away any useless shoots which will be chiefly found amongst those which have carried fruit this year. By giving proper attention to this matter the leaves will afterwards be the better exposed to the sunshine and air, the result being that the shoots and buds will become better matured. Ventilate the house freely by day, and less so during the night. As soon as the shoots have become well hardened, both the back and front ventilators may be left fully open.

Mid-season Peaches.—Houses containing fruits which are now swelling for a second time, or commencing to ripen, should be ventilated freely, and no heat will be required during warm, sunny days, but a little artificial heat may be maintained throughout the night and also during days when the weather is dull or wet. When artificial heat is employed, just a little ventilation should be admitted in order to cause the atmosphere to circulate. Do not allow the roots to suffer from want of moisture, nor neglect to syringe the leaves with soft water. In our own case the spring water is so greatly impregnated with lime that its use, even for a short period, would destroy the good appearance of both the fruit and leaves. Expose each fruit as much as possible to the influence of the sun by tying on one side any leaves that overhang them, and also in cases where it is necessary, by raising the fruits upon smooth pieces of glass. If, however, a few fruits be left on the under sides of the branches, the supply will be lengthened, as these will not ripen quite so quickly. Attend daily to the gatherings of the fruits, doing this in the evening if possible, and being careful not to let the fruits become quite ripe before they are gathered, otherwise they will not only lose something of their flavour, but also be liable to receive injury during the process of gathering, or whilst being packed for transit.

Late Peaches.—Let the shoots upon trees in the latest houses be carefully trained, cutting out any superfluous ones. Delay the final thinning of the fruits until the formation of the stones is well advanced. Syringe the trees each morning and afternoon, and keep the roots liberally supplied with water and manure. If mildew should attack either the leaves or fruits, spray them in the evening with a solution of sulphide of potassium at the strength of one half-ounce dissolved in one gallon of water, or, as an alternative, the trees may be dusted over with flowers of sulphur. The sulphide of potassium is the better remedy, but it will discolour the paint upon the woodwork unless means are taken to protect the paint from the spray. Mildew is sometimes thoughtlessly encouraged by permitting cold draughts, especially when the leaves are young, therefore, do not leave the back and front ventilators widely open at night, especially when there are cold winds. It will, however, be necessary to ventilate the house liberally during the daytime. Aphides may be easily destroyed by the use of the XL-All vaporiser, or by dusting the affected leaves with tobacco powder. Now that the outside borders have become warmed by sunshine, they should be given a dressing with some approved artificial fertiliser, and afterwards be mulched with half-decayed stable manure.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Mulching.—The importance of mulching can hardly be overstated. It is necessary on all kinds of soil and in all localities, but is particularly useful during periods of drought, and, when practicable, should be applied immediately after a heavy rainfall. Many cultivators think that the more retentive the soil the less need there is for a mulch, but this is a mistaken idea, as such soil requires a mulch even more than soil that is of a lighter nature, on account of the expansion and contraction which is certain to occur in heavy soils, for the consequent cracking of the ground is extremely detrimental to the young rootlets. By applying a timely surface dressing of suitable material the cracking may be prevented, and there afterwards will be less need for applying water, as the mulch will greatly assist in retaining the moisture the ground already contains. June is generally the best month for applying mulches. For such small-growing crops as Beetroot, Carrots, Onions and similar vegetables, I know of no better material than that obtainable from spent mushroom beds, and if possible it should be finely broken up by passing it through a coarse meshed sieve. Long stable manure is excellent material for placing between the rows of Peas, Beans of all kinds, and Brassica crops, especially Cauliflowers, and for globe Artichokes. When nothing better can be obtained to form a mulch, short grass from the lawn, or even leaf-mould may be applied.

Broad Beans.—Make the final sowing of Broad Windsor in a cool portion of the garden. Plants raised earlier in the season and now flowering should have the points of the growths pinched out immediately a good crop of pods is assured. Should black aphis put in an appearance, syringe the growths with a solution of soft soap or some equally reliable remedy.

Endive.—Make a small sowing of both Batavian and the curled-leaved variety, selecting a somewhat shady position for this crop. Afford the plants plenty of water at the roots, or in the absence of this they will quickly run to flower.

Peas.—The ordinary sowings of Peas are very late this season. The crops may be forwarded by pinching out the points of the leading growths and by applying liberal quantities of liquid manure and clear water at the roots. Continue to make further sowings of such excellent varieties as Autocrat and Masterpiece, both varieties being valuable for yielding supplies late in the autumn. Sow the seeds thinly in trenches, in soil that has been properly prepared by careful cultivation.

Savoys.—It frequently happens that plants raised from seeds sown at the end of May prove very valuable in the following spring, as they are better fitted to survive a severe winter than plants raised earlier in the season. Select seeds of small-growing varieties for the present sowing.

Radishes.—Sow seeds in small quantities at intervals of ten days. A good selection of the variety French Breakfast is still one of the most popular, but there are other kinds distinctly attractive and possessing excellent qualities.

Onions.—Spring-sown plants that were raised under glass and have since been planted out are now established. They require to have the soil made very firm about the roots by means of the fingers. Apply the Dutch hoe frequently, and dress the surface of the soil with soot each week.

Cabbages.—Both white and red varieties which were raised during the spring may be planted out as fast as they become ready for transplantation.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major C. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Lælia harpophylla.—This is not a strong-growing species, but nevertheless healthy plants will grow freely. These require a long rest after flowering, in order to better prepare them for growth, otherwise the "leads" become irregular and the flowering is likely to be disappointing. The plants grow best in pots filled two-thirds full with a mixture of potsherds and charcoal for drainage, and above this a compost of Sphagnum-moss and Osmunda and Polypodium fibre in equal parts. Care should be taken to fix the plants firmly and elevate them slightly above the rim of the pot, surfacing the compost with Sphagnum-moss. Potting should be done as soon as the buds begin to swell at the base of the crown, and in most cases, if the plants have been cultivated well, the pots will have to be broken, taking care not to injure the roots that cling to them. These plants, owing to their slender habit, thrive best in a moist atmosphere while growing, and they require plenty of water at the roots, but there must be ample drainage to allow the water to pass quickly away, and a shady position should be selected in the cool intermediate house for them.

Mexican Lælias.—L. albida, L. Gouldiana, L. autumnalis, and its variety alba, are all sun-loving plants, which grow best in baskets suspended close to the roof glass of a house where a cool intermediate temperature is maintained. The Mexican Lælias have a great dislike to root disturbance, and, therefore, should not be turned out of their receptacles, unless they have become overgrown. Now that the roots are becoming active, any of the old, decayed material should be picked out, and its place filled with new compost similar to that which I recommended for L. anceps in a former Calendar. During the early stages of growth apply water sparingly to these plants, but when they are fully active increase the supply, and syringe them overhead whenever the weather is favourable. Only a thin shade is necessary, and this should be removed early in the afternoon to allow the temperature to rise under the influence of sun heat. If the house in which these plants are grown is kept light and well ventilated, good, firm pseudo-bulbs will be formed capable of producing strong flower-spikes.

Lælia majalis.—This is a lovely, though somewhat shy-flowering, species. Just now the plants are making growths, but there is little root action, hence, although atmospheric moisture is essential, only a little water should be afforded the roots. The flower-buds appear in the partially-developed growths, and are rapid in development. As soon as these are visible, a slight increase of moisture should be applied to the roots, and after the flowers have faded an abundant supply will be necessary until the pseudo-bulbs are fully developed. If any plants need new rooting material, this should be afforded when new roots are being made from the base of the youngest pseudo-bulbs. They should be given the same position, temperature, and potting as recommended above for the other species.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

Culture of hardy plants (continued).—Daffodils.—Of the many excellent bulbous plants in cultivation, none are more accommodating than the Narcissus. In comparison with some other species it may not present so much variety and brilliance of colouring, but for grace and general usefulness it is unsurpassed. The popularising of the Narcissus is one of the most notable circumstances in modern gardening. Here is a genus containing many species and varieties, which for many generations were looked upon and treated simply as common things by the great majority of gardeners. This is all the more striking from the fact that their elegance and beauty were alluded to in song and story, and gardeners are commonly credited as having a poetic bite. Where is there a finer appreciation of the effects of any flower when seen in mass under picturesque conditions than Wordsworth's classical lines on the Daffodil? They contain food for reflection to those studying our subject. Amongst the enthusiasts who laboured to popularise Narcissi with much success was Peter Barr, V.M.H., a veteran well known to many readers of this journal, who well deserves the title of "Daffodil King" which his friends bestow on him. In the various groups in which Narcissi are arranged there are now too many varieties. The niceties of distinction which a certain class of botanists are credited with in regard to the classification of plants is not a whit more pronounced than those set forth by florists of the exact school when riding their hobby. However useful much of such work may be for exhibition purposes, fine details in form are of no account if the variety does not possess the essential qualities of vigour, good habit and floriferousness along with a shade of colour which will make it effective at a distance. Therefore, the time has come when a more rigid elimination of what are now second-rate sorts should be made. There also might be in the classification of sorts a fuller description as to their suitability for specific purposes, such as for early forcing, the supply of flowers for cutting, garden culture, and what here concerns us chiefly, their value for naturalising in Grass. The fact that all sorts are not equally suitable for each or all of the above purposes is well known to many, but it is not sufficiently known to all cultivators. There are other points which necessitate personal experiment. While in some districts the soil appears to suit almost all sorts, there are others in which they grow strongly, but flower sparingly. There are also sorts which rapidly deteriorate or die out under ordinary garden culture, but which, when planted out in Grass and never disturbed will thrive and increase. Obviously, these are the sorts most valuable for the purpose under consideration. We have had a considerable number of different kinds under observation in Glasgow for some years, and it is somewhat surprising to discover how few have come up to a reasonable standard of excellence for our purpose. Many which proved valuable for cultivation in pots, have dwindled away when planted in rough, grassy sward, or on a stiff, clay soil. Of the many fine new forms, several promise well, but they are far too expensive as yet for naturalising. Without classifying them, the following are suitable and satisfactory sorts—N. Pseudo-Narcissus, scoticus, minor, Telamonius plenus, Golden Spur, Henry Prinz, Countess of Annesley, Horsfieldii, Emperor, Empress, Grandee, incomparabilis, Cynosure, Queen Bess, Stella superba, Sir Watkin (which is the most effective of the group), Barri conspicuus, General Murray, Golden Gem, Duchess of Brabant, Duchess of Westminster, Minnie Hume, Mrs. Langtry, Nelsoni, major, Falstaff, John Bain, poeticus, poeticus ornatus (very effective and free-flowering), and poeticus poetarum. The double forms of N. incomparabilis, Orange and Sulphur Phœnix, and the pale trumpets, also the Jonquils have not been at all satisfactory here. There is no lack of variety of form and colour in the selection I have given, and by their use the flowering season can be prolonged for over two months.

THE FLOWER GARDEN.

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

Staking.—Such plants as Canna, Grevillea robusta, Plumbago capensis, Bougainvillea, and Roudeletia will require to be supported by stakes. These should be of neat appearance and of sufficient strength to prevent the plants from being blown by outside winds. Make the soil firm about the roots of these plants at the time of planting, and afterwards take every care to prevent the roots suffering from drought.

Seedlings.—Many plants that have been raised from seeds sown under glass and were pricked out into unheated frames are now ready for planting. China Asters and Stocks require moderately rich soil. Aster sinensis, affording, as it does, such an infinite diversity of colour and possessing long stems which make the flowers valuable for use in a cut state, should, therefore, be planted freely, and during the process of transplanting care should be taken to preserve as much soil as possible about the roots.

Carpet bedding.—A bed or two of this type serves to add variety, and constitutes a conspicuous feature in the scheme of summer bedding. For such beds the soil should be raised somewhat above the level of the turf, and the surface should be made smooth and quite level before the design is marked out. Suitable plants for the planting of edgings are Herniaria glabra and Sedum. Echeveria and Sempervivum are also useful, and, for providing immediate effect, best of all. If the beds are large, when the ground has been prepared for planting, a stout plank should be raised on blocks placed at either end for the planter to stand upon, so that he will not need to tread upon the soil. The young plants being very tender, care is necessary not to press them too severely; at the same time, the roots should be made sufficiently firm that they will soon be able to establish themselves in the soil. Spray the beds occasionally in the evening when the sun has ceased to shine upon the plants.

Sub-tropical bedding.—There appear to be many more plants suitable for this style of bedding than was the case formerly. They have a stately, almost tropical, appearance, but require to be placed in well-chosen positions, where there is shelter from wind, and, where practicable, a backing of choice trees and shrubs. Such plants include Datura, Ricinus, Nicotiana, Lavatera arborea variegata, Abutilon, and Acacia lophantha.

Dahlia.—Plants raised from seeds, cuttings, or tubers should now be planted in mixed borders or beds which have been prepared for them. Salvia patens makes a good companion for the Dahlia. These plants require rich soil, and, if growing in poor soil, are likely to drop their flowers prematurely.

Border Carnations.—Spread a light mulch over the beds, and place stakes to the plants as growth proceeds. The coil stake is much the best for the purpose. The ordinary stake and matting require so much attention to prevent the inflorescence from receiving damage as growth proceeds.

The Rose maggot.—Keep a sharp look-out for the Rose maggot, and wherever a curled leaf can be seen, pinch it between the finger and thumb, it being impossible to reach the maggots by means of an insecticide.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JUNE 6—
Soc. Franç. d'Hort. de Londres meet. German Gard. Soc. meet.

MONDAY, JUNE 8—
Bank Holiday. Harpenden Fanciers and Agric. Soc. Sh. United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, JUNE 9—
Roy. Hort. Soc. Coms. meet. British Gard. Assoc. Ex. Council meet. Nat. Rose Soc. Com. meet.

THURSDAY, JUNE 11—
Exhibition of Colonial Fruits in the Roy. Hort. Hall, Westminster (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 58·2°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, June 3* (6 P.M.): Max. 80°, Min. 60°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London *Thursday, June 4* (10 A.M.): Bar. 30·1; Temp. 73°; *Weather*—Bright sunshine.
PROVINCES.—*Wednesday, June 3* (6 P.M.): Max. 72° Cambridge; Min 54° Ireland N.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Bedding Plants, Palms, Conifers, Bays, retard Lilies, &c., at 12, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

FRIDAY—
Choice imported and established Orchids in variety, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.45.

School Gardening.

The inclusion of garden teaching in the curriculum of rural schools is not, as many appear to suppose, a pure innovation, but it was not until four years ago, when the subject received official recognition, that it acquired any real importance. The work had previously proceeded merely on tentative lines; the head teachers of the schools conducted the teaching entirely in their own way and subject to no expert inspection as is the case at the present time. The natural result of this was that while the elementary instruction in certain points may have been sound, its excellence was conspicuous on the theoretical rather than on the practical side, though this was undoubtedly equally important.

The development, however, has been enormous, as appears from an answer given a short time back in the House of Commons, which is recorded on p. 185 of our issue for March 21, 1908, to the effect that there are now no fewer than 1,138 schools in the country which are receiving grants for garden teaching from the Board of Education. Assuming an average of 12 scholars at each of these schools and as the normal class is 14, this estimate cannot be regarded as excessive—it would appear that there are nearly 14,000 pupils receiving instruction in gardening during the present year. It is probable, however, that the number is still greater owing to the increasing popularity of the subject with managers, teachers, and pupils alike. Thus it may fairly be asserted that this phase of present-day education is of great importance, and should be made to become of value to the scholars and to the country at large.

It is often asked what special advantages will accrue from it in the future life of the boy? Will all these boys become practical gardeners engaged in private service or the market gardens of Great Britain? The answer is that there is not sufficient room in private gardening for such large numbers, and if there were, it can scarcely be affirmed that the teaching which they are now receiving, excellent as it is in many ways, is precisely such as would immediately make them expert cultivators. They would still have to undergo the drudgery of the customary apprenticeship, and it is certain that, keen as is their appreciation for gardening now that it takes them out of school during portions of the week, the enthusiasm of the majority would soon wear out.

In market gardens there will be room for some, but the work is not sufficiently remunerative to encourage even a moiety of the number to follow it as a life occupation. What then is the special advantage of this form of teaching? It is a simple question, but, like many others which relate to educational matters, it is not very easily answered. For the purely utilitarian aspect of educational matters is seldom the one that appeals to those who really understand these questions. The main object of *educational* training is essentially *not* to turn out specialists. Specialism comes later, and in so far as elementary education trenches on the more technical aspect of training, it falls short of its proper function, and, confusing two distinct matters, is likely to end in failure. The principle of "Quick Returns" is a very bad one from the educational standpoint.

Of course children must be induced to take as keen an interest as possible in their work, and this is usually most easily achieved by means of exercises that lead to tangible results. It is this which gives elementary science, as well as such work as gardening, its value as part of the school curriculum, and causes it to appeal so strongly to the minds of so many (though not all) intelligent boys and girls.

However, the severely practical person will never be satisfied with these things, but will insist that some direct good should result from the efforts which are being made. Well, he may rest satisfied so far as gardening is concerned. Small holdings are being extended on every hand, and the boys who have been taught the fundamental principles of practical and theoretical land cultivation will be the ones most likely to make a success of such holdings—at least, they will have a material advantage over the man who has drifted on to the land from the city office without the slightest knowledge of the soil, the principles that underlie the working of it, and how and when it must be cultivated to produce the most profitable returns. The mind of youth is most receptive, and it is unlikely that the principles which have been thoroughly inculcated will ever fade entirely away; the fact that the scholars are dwellers in rural districts where a garden is a necessary adjunct to the dwelling-house and work is constantly proceeding, will serve admirably to keep the earlier teaching always fresh in the mind.

But if the instruction is to be of ultimate good in any direction, it must necessarily be sound to start with, and it may, therefore, be well to consider the manner in which it is now given, and see whether it is possible to improve upon it in any way that will make it more substantially valuable in the future. Broadly speaking, there are only two systems in general use, and they sprang from the opinions of two clever and thoroughly practical gardeners, Mr. John Wright, V.M.H., who has had charge of the work in Surrey from its inception, and the late Mr. Robert Cock, in Staffordshire, these two counties having been pioneers of gardening as applied to teaching in elementary day schools. Much work is now being done in all the different counties, but it is largely based upon the experience that was gained at the outset in Surrey and Staffordshire.

In Surrey, reliance is placed upon the individual plot system in which each scholar is assigned a piece of ground varying in extent from half a rod to a rod, and very occasionally slightly more; in Staffordshire the communal plot is adopted on which all the pupils work together. The former system may fairly be expected to bring forth better individual results, for each boy proves his own merit by the results which he achieves. In the common plot the individuality of the pupil is merged into the whole, and it is difficult, if not impossible, to separate the keen and clever workers from the idlers, of whom there are specimens in every school; the large plot, however, has the advantage of allowing of superior instruction being given as to how an allotment or a cottage garden would be actually cropped and managed, with a view to the production of the utmost amount of vegetables from the area at command. Rotations are not now regarded as of the same importance as they were some years ago, but it is desirable that they should be taught, as in certain circumstances they are imperative, and it is quite evident that these can never be as well and clearly shown on an area of half a rod or a rod as they can on 20 or 30 rods. The balance, might appear to be in favour of the larger plot, but something must be debited against it on the score of loss of individuality, coupled with the fact that the spirit of emulation or competition hardly enters into the matter at all. This is a matter deserving of consideration, as a boy will usually strive much more strenuously and persistently when he sees that his neighbour is getting ahead of him in the appearance of his ground and his plants.

The question arises as to whether it would not be possible to adopt a middle course between these two extremes and so to combine the best points of both. This might mean that each pupil should be provided with a small plot—half a rod would amply suffice in this case, though as a general rule it is rather too small—and that in addition there would have to be one large plot, say of 12 rods, on which the class would work in common. If it were practicable, this system might perhaps be expected to produce the most satisfactory results, for the individuality of the scholars would be retained in its entirety, while the communal

working would be advantageous in conveying instruction as to the actual cultivation of a garden. The larger plot would be cropped just as if it were in the hands of an average allotment holder, and close account would be kept of the approximate value of the vegetables grown to set against the cost of production in manure, seeds, tools, and other appurtenances. The chief objection to the universal adoption of the combined system lies in the fact that it would involve the utilisation of more land. This is indeed a serious point, and one which, in many cases, might prove insurmountable, for it is often difficult to find sufficient space to put down 10 plots of half a rod apiece. Overcome this disability, and the best teaching that it is possible to give in gardening in schools would be easy of accomplishment—at least, as far as vegetable culture is concerned.

There is still another direction in which there is plenty of room for improvement, and although it has been for the most part neglected throughout the entire country, it is of great importance. We refer to fruit culture. The production of fruit in this country is an industry of national importance, and we pride ourselves on being able to grow as fine hardy fruit as any country in the world. And yet, if we look at the fruit trees in the average cottage garden, where vegetables are excellently grown, the probability is that we shall see trees that are sometimes cut—to say pruned would be incorrect in 99 cases out of every 100—they are rarely or never fed, and no thought of cleansing ever enters into the owners' calculations. Here, then, is a direction in which the proper appreciation of principles should produce great results.

The principles of fruit culture are as deserving of attention as are those of vegetable growing in the elementary day school gardens of Great Britain, and no efforts should be spared to make provision for it at every rural school. Here again we encounter the question as to the availability of sufficient land, but it is not to be supposed that this would prove an insurmountable difficulty when once the importance of the matter had been fully grasped. There is, however, another serious obstacle in the way of teaching fruit culture, namely, that the principles on which much of the practice depends are somewhat difficult for young students to appreciate, and also it is not easy to find persons who are properly qualified to explain them. In most rural schools the garden-teaching is done by the head teacher himself, and with the occasional help and assistance of the county superintendent of gardening the results are generally so satisfactory that little or no fault can be found, even by the most captious of critics. But the correct management of fruit trees cannot be taught from books, or by advice given at odd moments when the superintendent is making his periodical rounds. Although a general similarity exists between half-a-dozen Apple or Pear trees, the experienced grower knows that each differs from the other in some respect, and that, to achieve the best results, each must be treated as an individual as well in pruning as in feeding, and all other details of culture, and if the teaching given in fruit culture to the boys is to be of permanent good, then every possible point that can be brought into prominence must have consideration and must be clearly explained. Apart from the questions of space and sound instruction, there will necessarily arise that of expense also, but money is found for subjects that are of far less value in schools than is horticulture, and the necessary purchase money ought to be readily forthcoming.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will take place on Tuesday, June 9. At the afternoon meeting of Fellows a lecture on "Wild Flowers and Wild Shrubs" will be delivered by Sir GEORGE BIRDWOOD, K.C.I.E., C.S.I. A Colonial Fruit Show will be held on June 11 and 12.

THE RECENT TEMPLE SHOW.—As supplementary to the report published in the last issue of the Royal Horticultural Society's exhibition in the Temple Gardens, we now publish illustrations of several of the more important exhibits, including the stove and greenhouse plants of Messrs. JAS. VEITCH & SONS (see fig. 168), the stove foliage plants of Messrs. W. BULL & SONS (see fig. 169), and the outdoor exhibit of Alpine and other plants from Messrs. W. CUTBUSH & SONS (see fig. 171). Dimorphotheca aurantiaca, which gained an Award of Merit, was illustrated and described in these pages, and we now reproduce the illustration at fig. 167, it being desirable that the beauty of this plant should be made known to all. The conditions prevalent at the Temple Show are altogether unfavourable for notetaking, and we therefore feel much indebted to our reporters for the inconveniences they suffer in the discharge of their onerous duties. It is not surprising that a few errors creep in. Messrs. WATKINS & SIMPSON have informed us that the vegetables and salads shown by their firm were not imported, as was stated in our report, but they were grown for the firm by Mr. HARVEY at Evesham on the French system, a system which is described in the articles now appearing in these pages on the subject. Mr. MCKAY, of Messrs. WATKINS & SIMPSON, has done much to introduce the French methods into this country. By an oversight mention was omitted of the excellent exhibit of Tulips contributed by Messrs. ALEX. DICKSON & SONS, LTD., Belfast, for which the firm was awarded a Silver-Gilt Flora Medal. It was this firm who showed the fine new Tulip Duchess of Westminster, that gained an Award of Merit.

INTERNATIONAL BOTANICAL CONGRESS.—It is officially announced that the President of the Organising Committee of the Congress to be held in Brussels in 1910 will be BARON DE MOREAU, the former Minister of Agriculture, and that Dr. E. WILDEMAN will act as the general secretary. Committees are to deal also with the nomenclature of cryptogamic and palæontological botany, subjects that are sorely in need of authoritative treatment.

NOTES FROM THE ROYAL BOTANIC GARDEN, EDINBURGH.—The last published number of this periodical gives a number of interesting historical details concerning the rise and growth of this justly celebrated garden, but the special feature in its pages is the interesting account of the work of WILLIAM MCNAB, who was Principal Gardener from 1849 to 1878. MCNAB obtained his early experience at Kew, and on his removal to Edinburgh soon proved that he had made good use of his earlier training. He was an enthusiastic and a capable man, and he thoroughly justified the recommendation made on his behalf by Sir JOSEPH BANKS to Professor RUTHERFORD in 1810, as the result of which MCNAB removed from Kew to take up his duties in the Edinburgh Garden. A portrait shows him as a man of considerable force of character, albeit the picture, it is suggested, does not sufficiently emphasise the natural austerity of his countenance. Reprints are given, in two appendices, of MCNAB'S works on the *Planting of Evergreen Trees* and the *Management of Cape Heaths*.

TREES AND SHRUBS.—We are glad to see the second part of Vol. II. of *Trees and Shrubs*, edited by Professor C. S. SARGENT. It chiefly contains description and figures of a number of species of Cratægus and Viburnum. The Hawthorns are for the most part new species, and many of them are from Missouri, whilst the Viburnums are principally Chinese species which have previously been described by HEMSLEY and others. A conspectus of the Viburnums of China and Japan forms a feature that can hardly fail to be of value, inasmuch as it not only forms a key to the known species, which have increased considerably in number during the last few years, but it also includes an account of their synonymy. The price is $5 nett, and it is published by Messrs. HOUGHTON, MIFFLIN & Co., Boston and New York.

RAILWAYS IN GERMANY AND THE CULTIVATION OF FRUIT TREES.—We note in the German gardening journals that the railway authorities at Frankfort-on-the-Main intend to afford their employees a course of instruction in the cultivation and care of fruit trees, the same to be given at Giessen. Another course will be given on tree diseases, treatment of wounds, and such like treatment of fruit trees. The purposes of the instruction afforded are the cultivation of the fruit trees planted on the railway embankments, and the formation of new fruit plantations by the railway labourers.

PLANTING OF EMBANKMENTS AND OVERFLOW DRAINS ON RAILWAYS.—The Bavarian Minister of Communications has intimated to the railway and building authorities the desirability of planting railway banks and overflow canal slopes with bushes and trees that afford food for the honey bee, in order to encourage bee-keeping and furnish protection for birds.

THE BOTANICAL MAGAZINE.—The issue for June contains descriptions and illustrations of the following plants:—

PANDANUS HOULLETII, tab. 8197.—This species of the screw Pine, now described by Dr. STAPF, was introduced from Singapore in 1865, and flowered in the Jardin des Plantes in Paris for the first time in 1868. It was a male plant like the Kew specimen, from which the figure now published was drawn. Mr. RIDLEY has described it to be endemic in the southern part of the Malay Peninsula, where it grows in dense forests. The fruit is eatable and possesses a Pineapple-like flavour.

RHODODENDRON MICRANTHUM, tab. 8198.—The habitat of this specis is stated to be from Manchuria in the north to Kansuh in the west and Hupeh in the south, but it is noted by all the collectors as being found only on the very tops of the mountains. Franchet states that in its native habitat the species flowers in June and July. The present description is by Mr. T. F. CHIPP, who describes the plant as a shrub of small dimensions. The leaves are oblanceolate, cuneate at the base, glabrous and pitted above, densely scaly below, 1 to 2 inches long, and three-tenths to half an inch broad. The flowers are produced in terminal many-flowered racemes. The corolla is milky-white. Mr. W. WATSON states that the plant now figured was grown in the garden of J. C. WILLIAMS, Esq., Caerhays Castle, Gorran, Cornwall, and was presented to Kew through Messrs. JAMES VEITCH & SONS, by whom it was introduced into cultivation through their collector, Mr. WILSON. He described it

as a bush from 4 to 8 feet high with white flowers, growing at from 5,500 to 8,000 feet. At the Coombe Wood Nurseries the plant has proved to be very free-flowering, the small plants of it being now covered with flower buds. The plant first flowered at Coombe Wood in May, 1904.

BULBOPHYLLUM FASCINATOR, tab. 8199.—This new Orchid is described by Mr. ROLFE. It is a native of Annan, where it was discovered by Mr. W. MICHOLITZ when collecting for Messrs. SANDER & SONS. Living plants were sent home, one of which flowered at Kew in September, 1907. The species is nearly allied to the species Himalayan B. appendiculatum (Rolfe), but has much larger flowers, with various structural differences. It belongs to a small group characterised by their solitary flower scapes. The flowers are crimson and green.

CHIRITA BARBATA, tab. 8200.—This Gesneraceous species was introduced into commerce as C. hamosa in 1895 by Mr. J. SALLIER, of Neuilly, Seine, France. He obtained the species from the late Professor H. BAILLON, who informed him that it had been introduced by seed from the mountains of India. There are no wild specimens of C. barbata in the Kew Herbarium, and it seems probable that it is a native of one of the French possessions in the East Indies. Mr. WATSON states that Chirita barbata has been cultivated at Kew for the last twelve years, being treated as a biennial and grown along with such plants as Sinningia, Achimenes, &c. Seedlings flower well in the following spring. C. barbata is, however, described as being less beautiful than C. Moonii, from Ceylon, which grows 3 feet high and has purplish flowers 4 inches across, and C. depressa, which has the habit of a Sinningia and long-tubed blue flowers nestling among the fleshy leaves. All the species require stove treatment.

GENISTA GLABRESCENS, tab. 8201.—This species is confined to the Lepontine Alps, in the vicinity of Lake Como, on the borders of Italy and Switzerland, where it grows on mountain sides at high altitudes. Mr. J. HUTCHINSON describes it as forming by itself the sub-section Emeroides (Briquet), characterised by the solitary or geminate axillary flowers. It is a shrub about 3 feet in height, has trifoliate leaves and yellow axillary flowers, produced either solitary or as two together. In a note on its cultivation, Mr. W. J. BEAN states that C. glabrescens is not a newly-discovered plant, but it has only appeared in cultivation during comparatively recent years. It is quite hardy at Kew, and one of the most attractive of the dwarfer Brooms flowering in May and thriving well in a light loamy soil in a position exposed to full sunshine. It is of a close dense habit suitable for the rock garden, the original plant at Kew being after twelve years still not more than 18 inches in height. It can be increased by cuttings dibbled in sandy soil under a cloche during August.

A BOTANIC GARDEN IN EAST JAVA.—We learn from Mr. M. BUYSMAN that he has succeeded in establishing a botanic garden in the hill country of Java, at a height of about 4,000 feet above sea level. The climate is good, except that the daily rainfall during the wet season (November-April) is rather trying. Most tropical plants, and those from warm temperate zones, flourish if they can stand the damp, for the dry season is tempered by the abundance of spring. Mr. BUYSMAN has already a large collection of plants from all parts of the world, and it is of interest to note that he finds the Cornspurry and Chickweed (Spergula arvensis and Stellaria media) troublesome weeds, even under conditions so foreign to their usual conditions of climate. Many plants known as annuals of comparatively lowly stature with us, reach, in this garden, a considerable height, and become perennial. Thus Vicia Faba grows to about 7 feet, and is perennial, as also is the Flax. A large number of medicinal plants are grown, and much may be expected from a systematic study of their "virtues," as many of them are held in high esteem by natives, although their use is not as yet recognised by Europeans.

MR. S. ARNOTT.—Many of our readers will learn with regret that Mr. S. ARNOTT, of Sunnymead, Maxwelltown, Dumfries, sustained a bereavement in the death of his wife on the 30th ult.

THE DROITWICH EXPERIMENTAL GARDEN.—The twelfth annual report on the Worcestershire County Experimental Garden at Droitwich and eighth report on the County Instruction Gardens, by Mr. JAMES UDALE, has recently been issued. It is a record of useful experimental work that has been carried out at Droitwich, principally in connection with the culture of fruits and vegetables. Mr. UDALE has already stated in these columns his experience in regard to the pruning of Apple trees, and we are not surprised therefore to find that the results of the pruned and non-pruned trees, whether Apples or Pears, recorded in the report are in favour of the moderately-pruned trees. The illustrations of fruit trees in blossom and fruit, are of specimens that appear perfect in every respect; particularly may this be said of a bush tree of the Pear Olivier de Serres, which was photographed during the blossoming period in 1907. The experiments of the cropping qualities of varieties of Potatos have, perhaps, a less wide application, and the best manures for Asparagus in soil at Droitwich may not necessarily be the best in another district where the soil is of an opposite character. At the same time, it may be said that at Droitwich the best Asparagus has been obtained after manuring with 1½ tons of soot and 2 tons of lime to the acre, especially as we had occasion last season to remark upon the extraordinary weight and quality of a sample of Asparagus received from this garden. Further experiments deal with the "Finger and Toe" disease in Brussels Sprouts and to other plant diseases and insect pests.

THE MANCHESTER ORCHID SOCIETY.—The annual general meeting of the Manchester and North of England Orchid Society was held on May 14, a large number of the members being present. The report and balance-sheet were both satisfactory. In connection with the various competitions which have been held during the session 1907-1908, the following results were declared by the chairman, viz.:—The "Sander" Challenge Cup offered for Cypripediums was won by H. J. BROMILOW, Esq., Rainhill, Liverpool (gr. Mr. Morgan); the "Thompson" Challenge Cup for general exhibits was won by A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), who was much in advance of other exhibitors in the matter of points. J. MCCARTNEY, Esq., Bolton, was second, and he was also awarded a cup. The "Gows" Cup for Cattleyas and Lælias (species and varieties only) was also won by Mr. A. WARBURTON. The next session, which commences on June 4, should prove of great interest to amateurs throughout the country, as there are no fewer than five distinct competitions, and these are as follow:—Messrs. CHARLESWORTH & Co., Heaton, Bradford, offer a 50-guinea cup to an amateur exhibitor who gains the largest number of points for plants which have not hitherto been dealt with by the Society. The competition is to be repeated in three successive years, a new cup of the same value being given annually. Messrs. SANDER & SONS, St. Albans and Bruges, offer a 50-guinea cup for Cypripediums, which may be won outright by an amateur exhibitor who is successful three times, not necessarily in succession. H. J. BROMILOW, Esq., Rainhill, Liverpool, has offered a valuable cup to the most successful exhibitor of general displays of Orchids at the meetings. Messrs. H. LOW & Co., Enfield, have continued their competition for Cattleyas and Lælias. Z. A. WARD, Esq., Northenden, has offered a cup to the exhibitor gaining the greatest number of points for Odontoglossums. All these competitions are open to amateur members of the Society, and the hon. secretary (Mr. WEATHERS) will be pleased to give any information to intending exhibitors. Several Awards of Merit were made to plants at the meeting, including Cypripedium concolor "Ball's variety," shown by G. S. BALL, Esq.; C. bellatulum "Queen of Spain," C. Edithæ var. splendens, C. Queen of Portugal, these three exhibited by H. J. BROMILOW, Esq.; C. bellatulum var. Hodgkinsonii, shown by Dr. HODGKINSON; Cattleya Schröderæ var. heliotropium and C. Mendelii Vine House var., both shown by A. WARBURTON, Esq.

FLORAL PHOTOGRAPHY.—Now that the summer is approaching, many persons who possess cameras may wish to try their hand at photographing floral subjects, and a few hints may not be unseasonable. In the first place it is better to use slow plates rather than fast ones, and the long-focus lenses are more suitable than the short-focus ones which are commonly used with the popular cameras of the present time. The plate should be rendered sensitive to the yellow and green colours, and such isochromatic plates are found by most people to give better results than any films. A coloured screen should also be used in photographing the flowers. The objects to be photographed should be well lit, and it is hardly necessary to say that they must be in a still atmosphere if long exposures are to be given. One important detail is often forgotten by those who photograph flowers, namely, the desirability of using a small stop, whereby the "depth" of focus is increased, and the blurring of the pictures one so often sees can be obviated. Backgrounds are often not so carefully studied as they should be. If the subjects are light-coloured, perhaps black velvet is as good as anything, but whatever material is chosen, it should be of such a texture as to obtrude itself as little as possible, and a yellow-tinted blanket, if placed somewhat out of focus, will be found a suitable foil for many plants.

STOCKS FOR JAPANESE WEEPING CHERRY.—One of the chief attractions of the lawn in early spring is the Japanese Weeping Cherry, Cerasus japonica rosea plena. Grafted on tall stocks, as it should be, its branches, while vigorous, droop gracefully, and in the earliest of spring days are clothed with a mantle of lovely flowers. As sometimes seen this beautiful Weeper is grafted too low. The stocks should never be lower than 6 feet, and 8 to 10 feet would often suit positions better, as the tree is such a strong grower. The best stock for this Cherry is the common Mazzard, one of those greatly used for stocks for fruiting Cherries. If these stocks are set out and grown on for a year or two and then cut down to the ground in spring, they push up a shoot which will make a height of 6 to 8 feet by autumn, ready for grafting or budding the season following. When budded, care is required to regulate the growth as it is made. The bud is inserted on the side, and unless watched and the shoots pinched off or trained as they grow there will be a one-sided specimen. Better to place two buds, one on the side opposite to the other. *The Florist's Exchange (America).*

THE FRANCO-BRITISH EXHIBITION.—The first Horticultural Show in connection with this exhibition will be held on June 24, 25 and 26, in the exhibition grounds at Shepherd's Bush. A copy of the schedule of prizes has recently reached us. The first three classes are confined to French and British exhibitors without further limitation. In the first class the exhibits are to be of groups of plants in or out of bloom, arranged for effect in spaces measuring 20 feet by 8 feet. In the second class, a group of ornamental foliage plants is asked for under similar conditions, and in the third class a group of Orchids arranged with Ferns or small Palms, and to occupy spaces measuring 20 feet by 5 feet. The prizes offered in all the classes are similar, namely, first prize, Gold Medal and £5; second prize, Silver-Gilt Medal and £3, and third prize, Silver Medal and £2. Class 25 is for French and British exhibitors of fruit. The schedule calls for a collection of eight dishes of fruits which may include two dishes of Grapes, one black and one white, two of Melons, two of Strawberries, two of Peaches or Nectarines, and two of Figs, Plums, or Cherries. The prizes offered in this class are equal to those already mentioned. In the section for vegetables the principal class is one open to French and British exhibitors of collections of vegetables to occupy spaces measuring 20 feet by 5 feet. The first prize in this class will consist of a Gold Medal and £3; second prize, Silver-Gilt Medal and £2, and third prize, Silver Medal and £1. In all, there are 35 classes, including open classes for Roses in pots and as cut flowers, Clematis in pots, and other plants. A considerable portion of the classes being confined to amateur exhibitors. Further particulars can be obtained on application to the Superintendent of Horticultural Shows, Executive Offices, Wood Lane, Shepherd's Bush, London, W.

CARNATIONS ON THE RIVIERA.—The *Revue Horticole* publishes a communication on the pollination and raising of seeds from American and French varieties of Carnations, in which M. VILLIBINOIST states that there exists an establishment in the neighbourhood of Nizza, in which 738 varieties are grown, raised on the place from seeds, besides 400-500 of foreign origin. Many good varieties thus raised are scarcely obtainable by purchase, and the local raisers regard the varieties and the methods of crossing pursued as trade secrets, and yet M. VILLIBINOIST would infer that no artificial pollination is adopted, or but seldom. Mostly such seed is sown which ripens under the primitive protecting arrangements. M. VILLIBINOIST makes use in his crosses of the best American Carnations. Of 288 artificially-pollinated flowers, only 39 set their seeds, and the sowing produced 188 plants. A record is kept of the parentage of each cross, and the colours of the blooms of everything sown. In so far as conclusions can be drawn, it is stated that the influence of the mother plant is the stronger in these pollinated flowers. The colours of the flowers dominated the seedlings of such crosses. Some of the blooms measured from 3½ to 4½ inches in diameter. The value of these seedlings cannot be decided until they have been wintered and observed in regard to their perpetual-flowering character.

COMPULSORY SPRAYING.—It is often urged that our manufacturers are slow to adopt up-to-date methods in their business, and we are afraid the fruit grower and market gardener are equally negligent in this respect, and especially in the matter of spraying. In these days of keen competition it cannot be too strongly urged that the proper grading of produce and its freedom from insect and fungus pests are factors of the highest importance in securing the best market returns. That certain growers do observe the conditions is known, and their consignments are always readily disposed of at the best prices, because the purchaser knows that the sample is good throughout and can be relied upon. In the matter of spraying the work must be done systematically, for it is very little use if a fruit grower goes to all the trouble and expense of cleaning his trees and Orchids, if his neighbour neglects to take the same precautions, for the dirty plantation will soon infest that belonging to the more progressive neighbour. This matter is better regulated in Oregon, America, where, according to the *National Nurseryman*, if a grower fails to spray for San José scale, the authorities do it for him and tax him for the work.

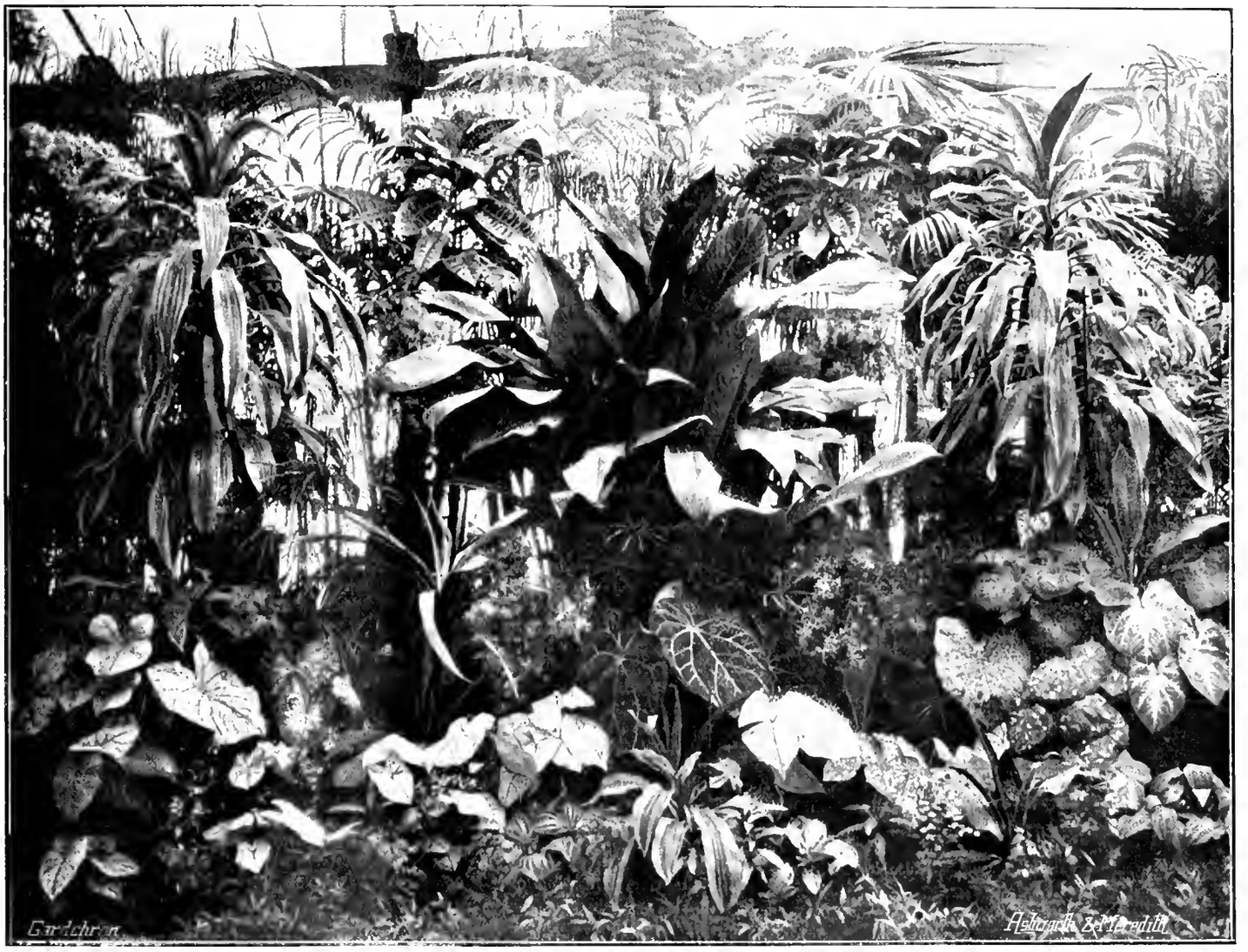


FIG. 169.—MESSRS. W. BULL AND SONS' EXHIBIT OF FINE FOLIAGE PLANTS AT THE TEMPLE SHOW. (See ante, p. 353.)

DISTRIBUTION OF ECONOMIC PLANTS.—Kew has long been engaged in the important work of distributing plants of economic value from one part of the Empire to another, and has in this manner been the pioneer of many industries in the various Colonies, and especially in the newer ones. This important work is very little known to persons other than those connected with the gardens, but in its far-reaching effects it is perhaps the most valuable of all the work that is done at our national garden, and not only does Kew provide the plants but also the young gardener to instruct the natives in their proper culture. Of recent years many of these distant parts of the Empire possess a botanical and experimental station of their own, and they are not so dependent on the Mother Country for their new plants as formerly, although Kew will always remain as an important distributing centre for new and improved varieties. According to the *West Indian Bulletin*, the various botanical and experiment stations in the West Indies are largely engaged in raising and distributing economic plants for the purpose of extending the areas under cultivation in Sugar Cane, Cacao, Limes, Coffee, Spices, grafted Mangos, budded Oranges, Cocoanuts, Rubber and timber trees. An approximate estimate of the quantity of plants distributed during the year 1906-7 is 544,900. These plants are usually distributed at cost price. The largest number of plants distributed in any one colony was 189,266 at Jamaica. This was followed by 136,652 at Trinidad, and 83,505 at Dominica. In one season, 198 mule cart-loads of seedling and other canes from the areas in Sugar-Cane experiments attached to the botanic station at British Guiana were distributed in that Colony. No greater service could be rendered to the cause of agriculture in these Colonies than by the liberal and systematic distribution of improved varieties of canes, fruit trees, and other economic plants.

Publications Received. — *Index Kewensis*, Supplement III., 1901-1905. (The Clarendon Press.) —*Les Sumacs Vénéneux*, by D. Bois, being a four-page bulletin of the Société Nationale d'Acclimatation de France. M. Bois passes under review the species of Rhus cultivated in French parks and gardens, and describes the value of each as an ornamental plant and its dangerous character regarded as a plant containing poisonous properties.—*British Year-Book of Agriculture and Agricultural Who's Who, 1908-9.* Published by Vinton & Co. Price 5s. nett.—*Reports on the Botanic Station, Agricultural School and Land Settlement Scheme*, St. Vincent, 1906-7. Issued by the Imperial Department of Agriculture for the West Indies.

TAPLOW COURT, BUCKS.

(See Supplementary Illustration and fig. 170.)

TAPLOW COURT is a handsome turreted mansion built in the Elizabethan style of architecture and is surrounded by scenery of the most picturesque description. It is the residence of Lord Desborough, and has long been the seat of noble families, for although the present mansion is comparatively new, it was built in 1855 upon the site of an older building, a white stucco or cement encased mansion. At Taplow Court lived the famous Earl of Orkney, who distinguished himself in the wars conducted by the Duke of Marlborough. Our view in the Supplementary Illustration is taken so as to include the north and west fronts; the carriage drive is situated on the east side, the main entrance to the house being approached past a sweep of lawn, in the centre of which is a statue of one of the English monarchs. There is a broad border to the right of this drive that is planted with ornamental shrubs and flowering subjects, and a wall on which are trained choice flowering plants, including many Roses. If instead of approaching to the house, the visitor were to turn through a gateway in this wall, the path would lead him to a walled-in fruit and vegetable garden, the top portion of which may be seen in the right-hand side of the bottom picture in the Supplement. The first object that attracts attention is a huge, cage-like structure made of wire netting and having top cross-bars over which may be thrown, later, fish-netting, the object being to exclude the birds from the fruit bushes below. These are Gooseberries, which we were informed are a favourite fruit of the owner, who likes to gather and enjoy them straight from the trees. The garden was stocked with its crops of summer vegetables, and the walls around were furnished with fruit trees, including Peaches, Nectarines, Cherries, &c. These were all well furnished with fruits, and the setting has been so bountiful that much thinning has been necessary. Apples were a good crop and Pears moderate, on tall columnar trees lining the walks; Gooseberries are the most disappointing crop, the young fruits having dropped in great quantities. Early crops of Peas and Potatos looked promising, especially the May Queen variety of the latter. Cherries looked remarkably promising, and they are cultivated on a large scale, but all are of the cooking varieties; hence Morello Cherries are found on both north and east walls. It is found impossible to grow the sweet Cherries owing to the presence of numerous mice. The stone fruits were remarkably clean in their growth, and we were informed that this is noticeable this season, blight of all kind being practically absent. Traversing this well-kept kitchen garden is a broad walk, the entrance to which is seen in fig. 170, at the back of the ornamental vase. There are arches at intervals spanning the roadway, and on these are trained Roses of red and yellow varieties alternately. The path is a considerable length, but in order to make it appear longer in perspective the arches nearer the flower garden are considerably larger than those at the end, for they diminish in size as they recede from view. This might be practised with good effect in other small gardens. A broad border furnished with flowering plants of numerous species is on either side of the path, and it also accommodates pyramid-trained trees of Apple and Pear. On leaving this enclosed garden by the gate seen in the bottom of our plate engraving and in fig. 170, the lawns and flower garden proper are reached, and the view at once becomes enchanting. It may be said that Taplow Court would be a beautiful spot were no attempt made at floral adornment, for it is situated on high ground amidst all the lovely scenery for which the River Thames, which flows at its foot, is famed. Around are broad belts of trees, with pretty grass drives winding through and about them, and below is the river tumbling over a weir, with tree-clad eyots and banks clothed with wild flowers. But to return to the flower garden: it will be seen that a bold design has been employed, somewhat formal, perhaps, but well carried out, the limits being confined by dwarf, closely-clipped hedges of Box. These beds are partly planted with permanent subjects, and some are furnished with flowering plants. As we saw them on Monday last they were still occupied by the spring "bedding," and this consists of Myosotis as a groundwork to Tulips. More than 5,000 bulbous plants are required to fill these large beds, and they are disposed in batches of distinct colours, the Myosotis being a pink and a blue variety alternately. Enough remained for us to see what a beautiful effect had been produced. In the summer these beds are filled with the scarlet Henri Jacoby Pelargonium and a silver band of the Flower of Spring variety. Our illustrations show them planted with these Pelargoniums.

The other beds of the design have a mixed assortment of hardy garden plants, with ornamental shrubs of small and compact habit, together with formal-trained specimens of Yew and Holly, whilst the beautiful old vase (see fig. 170) forms a fitting centrepiece to the whole. This vase is a noble specimen of the sculptor's art, and forms one of four. They were presented to one of the Earls of Orkney by Queen Anne in 1705, most probably from the rich grounds of Hampton Court. These urns were scattered about the woods of Taplow Court, but the present owner has placed them in sites more in keeping with their worth. These old statues are not the only objects of historical interest, for on the south side is an ancient, but now disused, burial ground. It contains a perfectly preserved barrow or burial mound, and this was opened, as an inscription relates, on October 15, 1883, by James Rutland, the Parish Clerk, and that the many interesting relics found therein are deposited in the British Museum. Mr. Rutland was the last person to be buried in this beautiful spot, and the curious old cromlech which does duty as his gravestone he had prepared beforehand, and it remains as a testimony to his antiquarian predilections. The view from this spot is very fine and enables one to see a great portion of the neighbouring county of Berkshire; beyond is the broad forest of Windsor, and on clear days the Castle itself is easily discernible. The gardeners' art has added a further charm in borders and beds of flowers and flowering trees and shrubs, but nothing is finer than a broad hedge of the Golden Yew, quite 9 or 10 feet through, and which is now a blaze of gold from the tips of the new growths. This has necessarily to be kept low so that the view is uninterrupted. A little lower down the hill is a pond planted with choice Nymphæas. The ground towards the west front falls towards the River Thames, but it is belted with trees, and there is a broad terrace planted with trees, including a couple of handsome specimens of Cedrus Deodora, some old Mulberries, and a large tree of Cercis siliquastrum, the Judas tree, now covered with its red blossoms. There is an old Cedar that stands as a sentinel to an avenue of these noble trees. It has a girth of about 20 feet and it branches into 10 or more leaders, each sufficient to form a tree of good size. This Cedar avenue has a grass vista, the central part of which is kept closely mown, but the other sward has a wild appearance and is beautified with flowering bulbs. These were, of course, over, but a pretty white flower, which spread in sheets, proved to be our wild Saxifraga granulata. The Cedar drive has an additional interest in that it is being extended beyond its former limits, and many notable personages have planted a tree when staying at Taplow Court. The tree-planters include both the King and Queen, the Duke and Duchess of Connaught, Prince Arthur of Connaught, the Duchess of Saxe-Coburg, and other Royal personages, and many statesmen, &c. From hereabouts a walk leads to a summer-house affording a glimpse from the cliff side of the river below, with the falling waters of the weir and the beautiful Berkshire scenery beyond. There is much else of interest at Taplow Court, but we must conclude with a reference to the plant houses. These are compactly situated in a walled enclosure, the gardener's residence, fruit-room, young gardeners' quarters, &c., forming the boundaries. There is a range of lean-to houses, the central portion being larger than the wings on either side; some well-appointed pits and frames and five modern glasshouses running parallel with each other, the central one being the largest and the two outer the smallest structures. These houses are occupied largely with Carnations of the Princess of Wales variety of the Souvenir de la Malmaison type, Lord Desborough's favourite flower. The central house is utilised as a stove, and it is furnished with the usual subjects. There were noticed several well-flowered plants of Cattleya Mossiæ and other species of this showy Orchid, whilst plants of Calanthe

Veitchii and Cypripediums in variety were in an excellent condition of growth. Melons, Cucumbers, Tomatos, and Strawberries were all fruiting freely, and Vines, Peach and Nectarine trees were also well furnished with fruits. In the lean-to structure referred to a tree of Early Rivers' Nectarine has given 200 excellent fruits this season, but the crop was largely gathered when we saw it. Not the least beautiful object at the present time is the Wistaria-clad cottage of the gardener, Mr. W. Williams, who has had the care of the gardens and grounds at Taplow Court for upwards of a quarter of a century. In addition to the fruit and vegetable garden referred to, there is another similar one not far from the old churchyard, and this is maintained in an equally efficient manner with the rest of the gardens and pleasure grounds.

after year exhibitors' demands increase, and the number of visitors grows apace. How then is that growth to be met and satisfied? Certainly not in the Temple Gardens. You have remarked that even in the much more ample space of the Holland House Park, the exhibits are not presented other than in customary form; that is inevitable there, or probably anywhere, so long as tents of the ordinary type are used, as these admit of little variation on stereotyped methods. Not merely do visitors generally see so little, but exhibitors, who have at great cost furnished splendid collections, find, because of the excessive crowding, that their efforts and exhibits are scarcely noticed. That, of course, is to them material loss, for what other reward have the trade exhibitors—by far the larger number of the whole—but to attract public attention and secure

position, which could be used as a garden-designed show, not unlike that so admirably designed by old John Gibson, then of Battersea Park, for the great Horticultural Exhibition of 1866, the space during the rest of the season being planted and kept as a beautiful pleasure garden. Such an area it should be possible to cover entirely with canvas, and thus create a truly artistic exhibition. However, this is but an ideal, whilst the practical difficulties which stare us in the face are overwhelming. *A Fellow.*

COMPOUNDS (POISONOUS) FOR HORTICULTURAL AND AGRICULTURAL PURPOSES.—The horticultural trade should now bestir themselves and approach their members of Parliament and obtain support for Clause 2 of the Poisons and

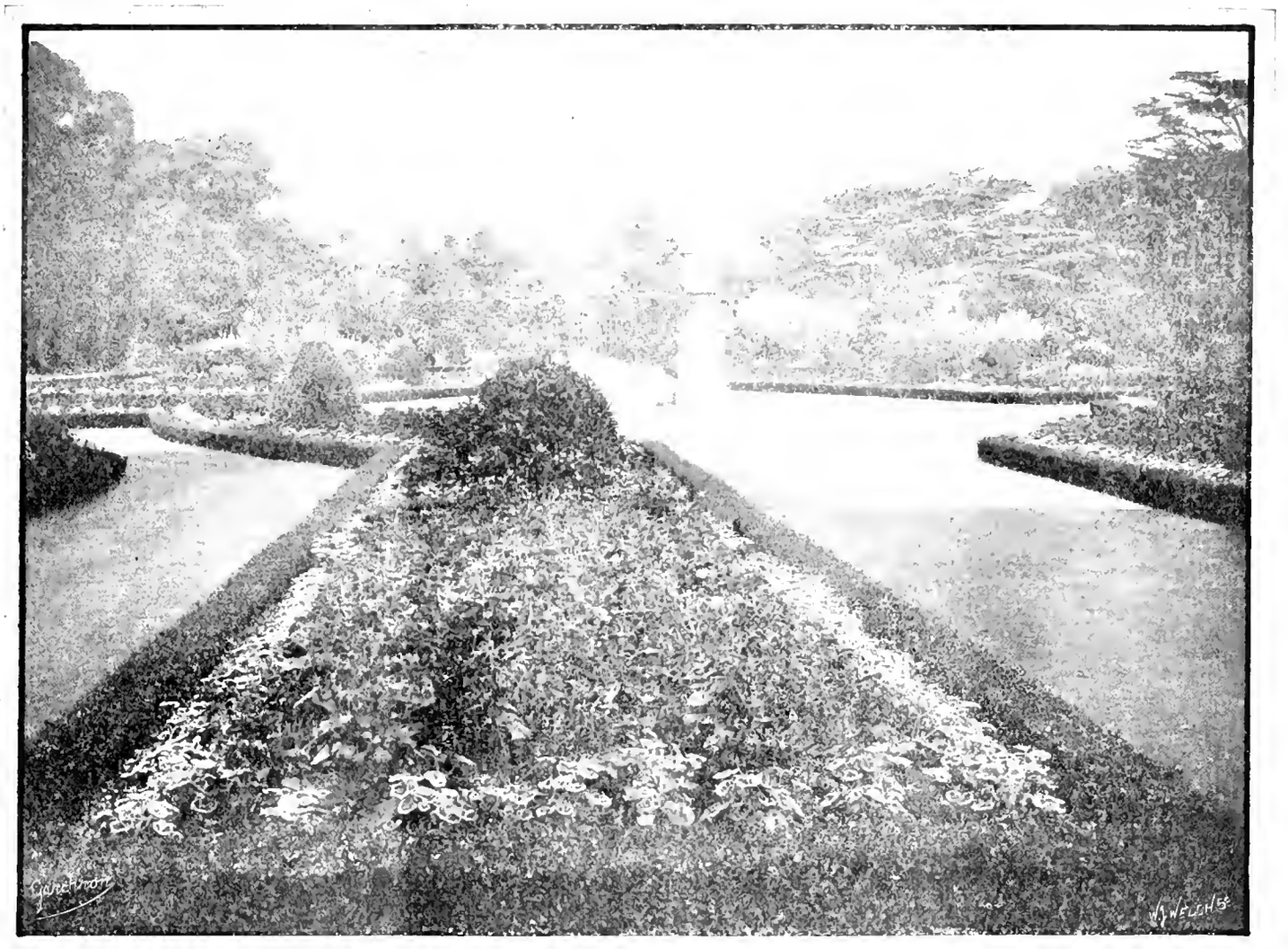


FIG. 170.—FLOWER-BEDS ON THE LAWN AT TAPLOW COURT, WITH THE KITCHEN GARDEN IN THE BACKGROUND.

(See also Supplementary Illustration.

HOME CORRESPONDENCE.

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

THE TEMPLE FLOWER SHOW.—For several years horticulturists have had to bewail the limited area of the Temple Gardens, and the severe limitations thus compulsorily enforced on the spaces allowed to exhibitors. The horticultural Press has often voiced this expression of feeling, but to hope for more room on the Embankment is to have a desire for the impossible. When, however, the daily papers voice not so much the feelings of exhibitors, as those of thousands of exhibitors who cannot see the magnificent displays in any comfort, it is evident that the question of providing more room elsewhere is becoming a forcible one, for an increase there, of either exhibits or visitors, on what was seen at the recent show, seems impossible; yet year

patronage. How many have cast their eyes longingly on the large area of Vincent Square, that delightful oasis of green verdure amidst the forest of houses in Westminster, as a place for the great May show. Whether it may be obtainable or not the public does not know. Possibly the R.H.S. Council does. If it could be secured, it would certainly be the best central site for the show in London, and although it would not be possible to create in that area a great artistic show, in any case it would so widely distribute the tents that ample room for a much larger show and for thousands more of visitors could be found. To look for Vincent Square is possibly as useless as crying for a slice from the moon. All the same, looking out upon its large area of greensward makes the horticulturist covet a brief possession of it for a great spring exhibition. The best thing which could happen for the R.H.S. would be the possession of an area of some five or six acres in extent, in a central

Pharmacy Bill when it reaches the House of Commons. The final issue between the Traders in Poisons Society and the Chemists Monopoly is fast approaching, and every effort should be made to secure a victory for fair trade. The Bill has this session passed its second reading in the House of Lords, and Clause 2 (which will make it lawful for nurserymen, florists, and agricultural agents to stock and retail insecticides, weed killers, sheep dips, &c.) has been recommended by a joint committee to go forward. It is anticipated that the Bill will reach the House of Commons, from the House of Lords, within the next few weeks, and it is most important that support for the Bill should be obtained at once by the horticultural trade by writing to their members of Parliament, claiming support of Clause 2, as the chemists are opposing it most strenuously, and canvassing members of Parliament. All information as to the way to go to work can be obtained from Mr.

J. G. Dobbs, solicitor, Worcester (secretary of the Traders in Poisons Society). In the interest of horticulture, and for the convenience of the gardening public, I trust that you will insert this letter in your next issue. *G. H. Richards.*

A GOOD "SPRING" BORDER.—A very charming border of spring flowers at Roath Park, Cardiff, this season was one composed chiefly of Aubrietia Campbellii (deep purple) and a yellow Alyssum forming an irregular edging, backed by large masses of the crimson-coloured Primula japonica, and by Darwin Tulips freely interspersed throughout the border. The bright green foliage of Phlox decussata and other perennials (which, with annual plants, will furnish the border with flowers for the summer) now adds freshness and relief to the showy masses of spring flowers. Primula japonica, carefully moved in early autumn, will succeed well for spring bedding in sites that would prove much too dry as permanent quarters for this moisture-loving plant. *Harold Evans, Llanishen, Cardiff.*

THE FLOWERING OF THE BAMBOO.—I am sending some flowering stems of Bamboo spathiflora. The clumps from which they were cut are growing in the grounds of A. F. Sharman-Crawford, Esq., Lota Lodge, Glanmire, Co. Cork, and at the present time are very striking in appearance with their tassellated stems. The plants in question mostly range between 15 and 20 years of age, but several plants much younger are also flowering; one of these was planted only five years ago, and is isolated from all the others. It is interesting to note that Mr. Fyfe experienced similar trouble with his Arundinaria Simsonsii, which all flowered at the same time (see *Gardeners' Chronicle*, p. 299). This habit of flowering and dying in the Bamboo is a great drawback, because a prominent feature of the grounds may be swept out of existence in one season, but as some varieties are evidently more liable to flower than others, we might in planting choose a greater variety and thus save the loss of tropical beauty if the flowering of one particular sort should take place. It would be interesting to learn the cause of flowering in a variety, especially seeing that this takes place simultaneously in districts so widely apart as southern Ireland and southern England. *A. Pearson, Cork.*

SOCIETIES.

BRITISH GARDENERS' ASSOCIATION.

MAY 27.—The annual meeting of this association was held in the Essex Hall, Essex Street, Strand, on the above date, the second day of the Temple Show, which has been considered to be a convenient date for many members. The attendance of about 100 out of a total membership of over 1,200 scarcely seems to justify the selected day. The main deterrents appeared to be the expense and time required for a journey to London, and a general feeling exists that some improved method of representation is urgently desirable.

Mr. Chas. Foster, of Reading, took the chair at 7 p.m., and after the usual formal business had been transacted moved the adoption of the executive council's report for the past year. He reviewed calmly and hopefully the progress and prospects of the association, commenting on the fact that having obtained a total membership of over 1,200 in about four years was a subject for congratulation. Few societies connected with horticulture had ever made so rapid an advance in such a brief period, and it proved that they had gained the approval of a large number of gardeners. At the previous council meeting no fewer than 78 new members had been elected, a convincing proof that confidence was increasing in the work of the B.G.A. They were trying to show that they were in sympathy both with the employer and the employed, as by improving the quality of the latter they were also benefitting the former. The B.G.A. *Journal* was doing excellent work as a monthly publication, and helping greatly to bring members at a distance more closely in touch with each other. It also aided in extending a knowledge of the objects and methods of the association, and certainly the membership had considerably increased, while subscriptions had been more promptly paid since its establishment. The improved education of gardeners was receiving earnest attention, and a provisional scheme for examinations had been set forth, which it was intended to carry out in such a modified form as further consideration and discussion might render necessary. The chairman referred to the question of a permanent secretary, which he said had been the subject of much thought, and the conclusion was that the present state of the finances would not permit of a departure from the system in operation. The work was being done on a most economical basis. Mr. Foster concluded by urging that a steady, sure progress was much more likely to benefit members and gardeners generally than extreme views or measures that would lead to a disorganisation of the relationship between employers and employed.

Mr. E. F. Hawes seconded the adoption of the report, and reviewed the financial position of the association in a lucid manner. The assets comprised £259 12s. 10d. at the bank, and £1 owing, or a total balance of £260 12s. 10d., against which the liabilities were nil. The total expenses for the past year had been £209 6s. 3d., but this included the cost of the certificate and some charges which were incurred in the previous year. He considered the results highly satisfactory. The report was discussed at some length, and its adoption was opposed by Mr. W. Watson, who stated that, as a member of the publication committee, he was certain the *Journal* contained editorial views with which the committee were not in sympathy. He proceeded to comment on the half-hearted policy of the present executive, but on objection to this being raised by Mr. Witty, Mr. Hawes and other members of the council, who pointed out that, as a member of the council who had attended only one of its meetings, Mr. Watson was not entitled to a hearing. Ultimately the report was carried, only four voting against the motion.

The scrutineers, Messrs. R. Lewis Castle and E. F. Hawes, presented the report of the ballot for members to fill eight vacancies on the executive council, and the following were those who obtained the highest number of votes, namely, Messrs. Chas. Hill (211), Donald Campbell (201), Edward Skelton (198), T. W. Sanders (172), Arthur Lampard (157), Inkerman A. Little (153), W. C. Modral (147), and Chas. Raffill (138). The ratification of the ballot was moved by Mr. Witty, seconded by Mr. Frogbrook, and carried.

The chairman regretted that Mr. E. F. Hawes had resigned the office of treasurer, and thanked him on behalf of the members for the services rendered. Mr. Hawes responded, and proposed as his successor Mr. Thomas Winter, which, upon being duly seconded, was put to the meeting and carried unanimously.

In proposing the re-election of Mr. Weathers as secretary, the chairman referred at some length to the excellent character of the work which had been performed, and the admirable way in which several branches had been organised as a result of the secretary's efforts. The proposition having been seconded was strongly supported by several members. Mr. W. Watson moved as an amendment that a general paid secretary-editor should be appointed on the grounds stated by him in a letter to the chairman, a portion of which had been published in the *Journal*. He claimed that the total annual expenditure under this scheme need not exceed £250, and of this sum £150 would be provided by the subscriptions of the present members, whilst he was confident that an energetic secretary would help forward the movement and increase the income of the association. To allay the feelings of those who hesitated, he proposed a guarantee fund, and offered to stand for £10 towards this. After a little discussion, the chairman asked for a show of hands in favour of "Mr. Little" being appointed general secretary. Mr. Little's name was rejected by a large majority, and Mr. Weathers' re-election was subsequently carried unanimously.

Mr. J. Harrison Dick was appointed one of the auditors in place of Mr. Tinley, who retires according to the rules.

ROYAL NATIONAL TULIP.

MAY 26.—Amongst the numerous horticultural attractions of last week, the southern show of the above Society escaped the notice of many Tulip growers, especially as the fixture was not included in the Royal Horticultural Society's list of arrangements. The exhibition was however, held in the lecture room at the Horticultural Hall, Vincent Square, on Tuesday, May 26, and proved very satisfactory to the small band of enthusiasts who foregathered to contribute their best blooms, and admire those from their rivals. A delightfully varied and brilliant display was provided on stages arranged round the room, and the accommodation sufficed both for the exhibits and the visitors.

The classes for rectified Tulips brought several notable competitors together, Mr. C. W. NEEDHAM,, Kelmscott Hall, Cheshire, the hon. treasurer of the Society, securing first honours with 12 distinct varieties, and Mr. J. W. BENTLEY, Stakehill, Middleton, gained a similar place with six varieties. In both these classes Miss WILLMOTT, Great Warley, Essex, was a conspicuous exhibitor, taking 2nd prize in each case with neat bright blooms. Mr. P. W. PETERS, Farcet House, Cambridge, the hon. secretary, also exhibited well. Classes were also provided for three blooms, and the exhibitors already named, with the addition of the Hon. A. H. T. DE MONTMORENCY, Carrickmines, were the most successful.

The classes for breeder Tulips included a number of handsome flowers of soft, varied and brilliant shades, and the competition was keen. Miss WILLMOTT had the best of six blooms, and was awarded a large Silver Medal as the 1st prize, and this lady took a similar place with the best three breeder blooms.

Single blooms occupied a large proportion of table space, as there were numerous entries in each of the classes, namely, for feathered and flamed-rose varieties, feathered and flamed bizarre, feathered and flamed byblœmen, also for bizarre, byblœmen, and rose breeders. Miss WILLMOTT, with Messrs. NEEDHAM, BENTLEY, PETERS, and HALL won the leading honours.

One section of the show, including five classes, was devoted to growers of fewer than 2,000 English Tulip bulbs, and the exhibits were meritorious throughout. The chief prizes were secured by Messrs. R. W. HALL (Cambridge), J. F. KERR (Southend), the Hon. MONTMORENCY (Carrickmines), LEONARD S. LOAT (Oxford), and H. P. BARTLEET (Shooters Hill).

Garden and Darwin Tulips were also provided for in several classes, Messrs. LOAT and BARTLEET being notable exhibitors, both staging winning collections of varieties that appealed to the non-professional visitor much more than the highly refined flowers of the special florists' classes. Some particularly charming yellow-flowered varieties, such as Parisian Yellow, Primrose Beauty, Leghorn Bonnet, Gesneriana lutea, and Bouton d'Or, were prominent in these exhibits.

It is to be hoped that another year the Society will be more fortunate in its fixture, so that a larger number of visitors may have the pleasure of inspecting these charming flowers in their best condition.

NATIONAL HORTICULTURAL OF FRANCE.

MAY 22-29.—This Society held its annual spring flower show at Paris on these dates in the large greenhouses on the Cours la Reine. A large and varied schedule was provided, there being altogether 370 classes. Among the principal prize-winners were M. ROBERT LEBAUDY, to whom was awarded the grand prize of honour offered by the President of the French Republic; the firm of LACHAUME, who received the large Gold Medal given by the Minister of Agriculture; MM. MARON ET FILS, for Orchids; the MAISON FÉRARD and MM. ROYER, CAUCHOIS, PARENT, BILLARD, BOUCHER, CHANTRIER, ROTHBERG, and others.

Along the promenade leading to the show there was an array of greenhouses, garden pottery, and other garden accessories. Several large exhibits of fruit trees trained in the various forms adopted by the French gardeners formed a notable feature, and of these there was a large display by M. NOMBLOT-BRUNEAU and MM. CROUX ET FILS. Collections of hardy

shrubs and hardy flowers were also staged in beds along the promenade.

In the first large greenhouse there was a brilliant show of Roses, Pelargoniums, and Begonias.

One of the most important of these exhibits was staged by the firm of MM. LEVÊQUE ET FILS in a display of Roses. We noted, among others, grand blooms of Frau Karl Druschki and Mildred Grant, and many of the Polyantha section, including Mme. Norbert Levavasseur (a bright rose), Mrs. Cutbush (pale pink) and Maman Levavasseur (deep pink).

M. GEO. BOUCHER also staged Roses in large numbers, including standard plants in variety, whilst amongst other exhibits we may mention those of M. AD. ROTHBERG, M. DUFRESNE, and M. AUG. NONIN.

A collection of Canna in flower was shown by MM. PIENIS ET LARIGALDIE, another of Azaleas in tubs and pots by M. ROIGER, and a large collection of Iris Kæmpferi by M. TABAR. Carnations in great variety were presented by M. BÉRANEK.

Orchids were staged in two side rooms, small collections being shown by M. C. BÉRANEK, M. A. REGNIER, MM. CH. MARON ET FILS, M. LE SUEUR, and M. ROBT. LEBAUDY, who also contributed several other important items in the show.

Hydrangeas in several cases constituted a prominent feature of the show. M. DESIRE RAMELET set up a large number of the variety Thomas Hogg in front of a background of Japanese Maples. M. ROBT. LEBAUDY also showed Hydrangeas with large massive heads of blooms of blue and pink colours.

Floral compositions were arranged at the end of the first large greenhouse.

Before passing into the corridor which connects the two large greenhouses were Zonal Pelargoniums in large numbers. At Paris the arrangement of these flowers is much different from that adopted at English exhibitions. They are always staged in beds on the ground level, and the varieties are massed according to colour.

Three of the beds were staged by M. E. POIRIER; they formed a brilliant display. The same exhibitor also staged a number of standard plants of Zonal Pelargonium, mostly varieties not known on our side of the Channel, but with flowers of good colours. M. ANDRE CHARMET exhibited a novelty in a pink semi-double variety labelled Dagata. Ville de Gardes, a dwarf, double pink Zonal variety, was staged in large numbers by M. PAUL FERON. M. BARILLET showed fancy Pelargoniums in variety.

As the visitor passed into the corridor the view was most pleasing. On the right and left sides were immense banks of Rhododendrons and Azaleas from several of the best known French growers. In the display exhibited by MM. MOSER ET FILS, of Versailles, were noticed choice plants.

A similar exhibit of equally large dimensions was also staged by the firm of MM. CROUX ET FILS. These were a fine collection, with flowers of almost every shade of colour.

The second greenhouse was as gay with brightly-coloured flowers as that previously described. A large number of beds were filled with varieties of hardy flowers shown by M. FERARD. M. BROCHET staged Clematis, Azaleas and Pæonies in large numbers. Tulips and Anemones came from MM. ANGEL ET FILS, and Pansies from M. FALAISE. A very pretty group of Primula obconica was staged by M. JOBERT MAXIME. Gloxinias were put up by M. RENE GUILLOIS. MM. CAYEUX ET LECLERC showed a handsome bed of Impatiens Oliveri, also Bougainvillea and Kalanchoe. A new double white Anthemis called Perfection was exhibited in quantity by M. AUBERT MAILLE. M. DESSERT staged Pæonies in more than 100 distinct varieties. In a tastefully-arranged bed of hardy plants displayed by MM. THIÉBAUT LEGENDRE, were Funkias, Heucheras, Pyrethrums, Geums, Columbines, Iris, Hemerocallis, Lupins, Saxifrages, Phlox divaricata, and many others. Water Lilies in a series of tanks were staged by M. CH. MOLIN, who also had another exhibit consisting of Tulips, Pæonies, Calla, Iris and Lilacs.

Ornamental foliage plants were set up in excellent style by several exhibitors [one of the best being that contributed by M. CHANTRIER, who showed Codiæums (Crotons)], M. LUCIEN LINDEN, M. LE COMTE HUGO CAHEN, and M. VICTOR LEMOINE.

Two fine groups of Dracænas and other decorative plants were staged by M. EMILE MOREL. MM. CORDONNIER ET FILS staged Crotons in variety.

MM. CAYEUX ET LECLERC had several small exhibits arranged in different places. One was of Oriental Poppies.

Begonias are always a feature at the Paris shows, and there were several important exhibits of these flowers. The best were from M. A. BILLARD, who staged a very effective collection of both single and double-flowering varieties. M. E. CAPPE had a pretty bed of ornamental foliage Begonias with Adiantum Ferns intermingled in an artistic manner. Other exhibitors of Begonias were M. FERARD and M. RENE GUILLOIS. MM. VALLERAND staged plants of Gloxinias, the group being edged with Begonias in variety. Of the Gloire de Lorraine variety, M. ROBT. LEBAUDY made the finest display.

M. GEO. TRUFFAUT had a very artistic display of Roses and Carnations arranged on a small grass lawn.

Special mention may be made of a water garden shown by MM. VILMORIN, ANDRIEUX ET CIE. It consisted of a pretty arrangement of rockwork, over which water trickled into a winding stream beneath. Hardy flowers in large numbers were also staged by the same firm. MM. VILMORIN, ANDRIEUX ET CIE also staged vegetables in great variety. There was a large display of vegetables from the SOCIETE DES JARDINIERS ET HORTICULTEURS.

M. GEO. BOUCHER, who is well known for his culture of Clematis, has some fine plants in variety.

Fruit was well represented for the time of year. The exhibits were arranged in glass cases with sloping fronts, and among the chief exhibits were those from the GRAPPERIES DE SOMAIN, M. ALB. MERCIER, the FORCERIES DE LA SEINE, and the firm of MM. A. CORTONNIER ET FILS.

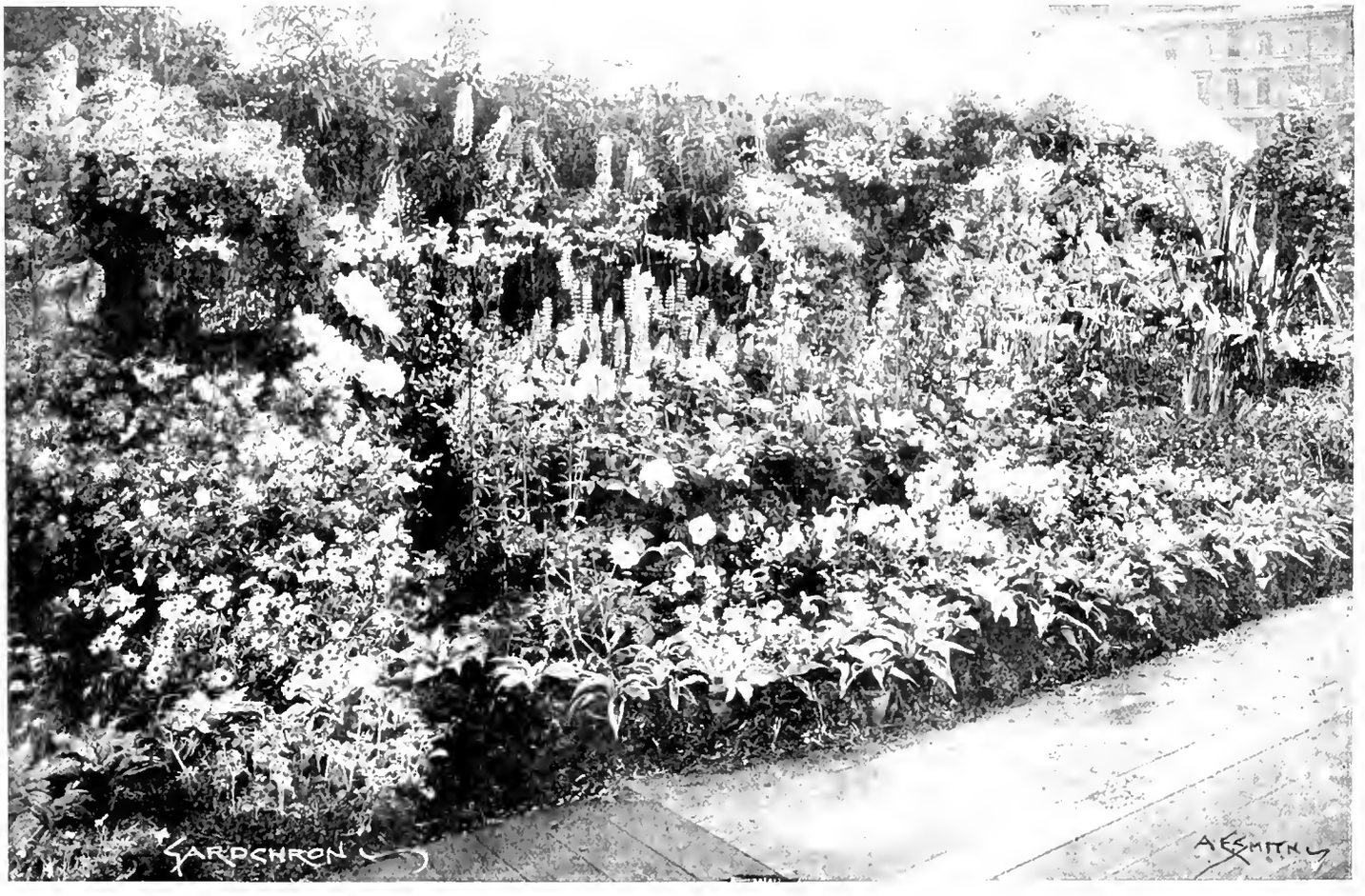


FIG. 171.—MESSRS. W. CUTBUSH AND SONS' OUT-DOOR EXHIBIT AT THE TEMPLE SHOW. (See ante, p. 357.)

DUTCH BULB GROWERS'.

MAY 4, 11.—At meetings which took place on the above dates, the following awards were made by the Narcissus Committee:—

First Class Certificates to Narcissus Alaska, a variety having a broadly-opened, deep yellow trumpet, the perianth being of the same colour; N. van Waveren's Giant, an enormous flower, with deep yellow trumpet and pale sulphur perianth; N. John Pope, with deep yellow trumpet and clear yellow perianth; N. President Weintholt, having a broadly-opened and deep yellow trumpet and yellow perianth; N. Robert Sydenham, a strong grower, with deep yellow trumpet and pale yellow perianth; N. Incomparabilis Winifred, with broad elegant cup and white perianth.

Awards of Merit were given to Narcissus Harry Veitch, a clear yellow trumpet Daffodil in the way of Emperor, but of larger size; N. Cornelia, a self-coloured yellow trumpet Daffodil; N. Theba, a deep yellow trumpet Daffodil of fine form and great substance; N. White Pioneer, having a pure white trumpet, narrow tube-shaped and starry perianth; N. Incomparabilis Louise, pure white perianth and lemon-yellow cup, a drooping flower of medium size; N. Incomparabilis cristata, with peculiar crested crown of yellow colour, perianth cream-white; N. poeticus blanca, pure white, very fine round flower; N. poeticus Glory of Lisse, a fine round flower, with rather large cup; and N. Poeticus Verdii, with large crown, broadly bordered deep orange.

LAW NOTE.

WIRE TENSION GLAZING.

MESSRS. SKINNER, BOARD & CO., horticultural builders and heating engineers, Bristol, have been granted by the Judicial Committee of the Privy Council a prolongation of their patent term in respect to their invention for glazing on the wire tension principle. It was admitted that royalties to the amount of £2,100 had been received in addition to the profits the firm of Skinner, Board & Co. had received in the manufacture of the patent wire tension greenhouses. Mr. Bramall, as a member of the public, urged that the petitioner's accounts showed that a full and reasonable remuneration had been received, and on that ground he opposed the prolongation of the term. Mr. Rowlatt, on behalf of the Crown, pointed out that the invention had not a very wide application, and considering all things, he thought the petitioner had received a very substantial sum during the patent term. He could not oppose on the question of merit, as without doubt there was considerable merit in the invention as applied to greenhouses. Lord Macnaghten, in delivering their lordships' decision, said that the petitioner had received considerable remuneration, but, having regard to the merits of the invention, its utility, and the difficulty the patentee must necessarily have found in bringing the invention to the notice of the public, except by exhibits, their lordships would humbly recommend his Majesty to grant a prolongation of the patent for three years.

ANSWERS TO CORRESPONDENTS.

CHRYSANTHEMUMS, &c.: *T. G. A. O.* Your specimens were insufficient for a proper examination being made to determine the cause of the injury. If you will send better examples, packed in damp moss, we will endeavour to assist you. In hot weather plants soon become dried in the post, unless damp moss or blotting paper is used in their packing. Cotton wool should not be employed; it is absorbent and extracts moisture from the specimens. We hope other correspondents will take note of these remarks.

COLEUS LEAVES DAMAGED: *W. L. D.* The leaves have no disease present, but exhibit injury from some cultural error, which may be due as you suggest to a hot, dry atmosphere through placing them too near the hot-water pipes. As similar plants in a cooler position have exhibited no trace of damage, the cause cannot be attributed to carelessness in watering or general attention.

CUCUMBERS FAILING: *Ashtonian.* The whole trouble has been caused by too much moisture at the roots of the plants. Stir the soil to aerate it, and apply water more cautiously.

EMPLOYMENT AT KEW GARDENS: *W. G.* You can obtain particulars from the Curator of the Gardens. No sleeping accommodation is provided by the authorities for the young gardeners at Kew, but there are numerous lodging-houses outside the gardens where accommodation can be had.

FROGS: *The Japan Seed and Plant Company.* We are unable to give you the names of persons who breed snails or frogs for table use.

FUCHSIA RICCARTONII: *R. B.* This plant is a variety of F. macrostemma, a Chilian species. It was raised by the late John Young when gardener at Riccarton, near Edinburgh, between the years 1830-35, from the variety globosa, which is also a form of F. macrostemma. See letter by the late John Downie in the *Gardeners' Chronicle*, February 20, 1875, p. 245.

GRAPES: *F. T. B.* There does not appear to be any disease in the specimens, therefore the trouble is probably one having to do with the culture afforded the vines.—*C. F. F.* The spots on the Grapes are not due to disease, but are caused by the condensation of moisture on the berries. A mixture consisting of equal quantities of soot and sulphur, sprinkled on the Turnips early in the morning, will check the Turnip fleas, of which you also complain.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers*

PLANTS: *Hortus.* 1, Lissochilus Krebsii var. purpuratus; 2, Pulmonaria saccharata; 3, Saxifraga granulata plena; 4, Veronica gentianoides pallida; 5, Tellima grandiflora.—*J. G. D.* Cyphomandra betacea, the Tree Tomato.—*T. B. B. & F. B.* Prunus Padus, the Bird Cherry.—*T. C.* Manettia bicolor.—*W. H. C.* 1, Potentilla rupestris; 2, Barbarea stricta; 3, Equisetum arvense; 4 and 5, Sisymbrium officinale; 6, Nepeta Glechoma; 7, Diplotaxis muralis; 8, probably Œnanthe crocata; 9, Senecio paludosus; 10, Lepidium Draba.—*J. W. & Sons.* Polygala vulgaris.—*Alpine.* 1, Potentilla splendens; 2, Thalictrum aquilegifolium; 3, Dryas octopetala; 4, Saxifraga taygetea; 5, Thymus serpyllum var. lanuginosus.—*Enquirer.* 1, Gaultheria Shallon; 2, Taxodium distichum; 3, Rosa Banksia; 4, Juniperus chinensis; 5, Thuya dolabrata; 6, Clematis montana.—*H. G. L.* 1, Cupressus nootkatensis; 2, Picea Morinda; 3, Sequoia sempervirens; 4, Pinus insignis; 5, Cryptomeria japonica; 6, Thuya dolabrata.—*X. Y. Z.* What miserable specimens! We will do our best. 1, Iberis sempervirens; 2, Sedum acre; 3, Saxifraga cæspitosa; 4, Sedum lydium; 5, Phlox Nelsonii; 6, Aubrietia, variegated var.; 7, Spiræa arguta.—*B. W. W.* 1, Halesia tetraptera; 2, Pinus excelsa; 3, Sequoia sempervirens. 4 Tsuga Mertensiana; 5, Acer platanoides var.—*T. T.* 1, Bulbophyllum auricomum; 2, Coelogyne ochracea; 3, Sarcanthus Williamsonii; 4, Tainia Hookeriana; 5, Oncidium pulchellum; 6, Oncidium tetrapetalum.—*H. J.* Brassia maculata and Ceanothus dentatus.—*Hortus.* Probably an undeveloped Eria acervata.—*W. S.* 1, Ulmus campestris foliis-variegatis; 2, Tilia europæa laciniata, the cut-leaved Lime; 3, Crataegus pyrifolia.—*A. M., Londonderry.* Clianthus puniceus.—*Rev. E. S. M.* Magnolia × Lennei. We cannot undertake the naming of Roses, which should be sent to a Rose nurseryman who can match them in his nursery.

NECTARINES DROPPING: *W. H.* There is no fungus present in the fruits, therefore their dropping is not attributable to disease. It may arise from constitutional weakness in the trees, or be caused through failure at the stoning period. See that the border does not lack lime in some form, the best being old mortar rubbish.

PEACHES DISEASED: *S. B.* The fruits are attacked by the Peach-mildew (Odium sp.). It is difficult to save the young fruits when they are infected with the disease, but the spread of the fungus may be largely stopped by an application of flowers of sulphur, especially if it be applied when first detected. Predisposing causes include dryness at the roots and a damp atmosphere insufficiently heated.

PEAR FAILING TO FRUIT: *Egiob.* The shoot you send is perfectly healthy, and the young fruits are falling apparently because they have not been fertilised. This may be due to a constitutional weakness in the tree, and as other Pear trees on the same wall give excellent crops of fruits, it will be advisable to replace it with another specimen. If you wish to save the tree, which is scarcely worth while as you say it has only produced half-a-dozen fruits in 20 years, try a vigorous root-pruning in the autumn, and apply some old potting soil to the rooting medium.

PEAR LEAVES BLISTERED: *A. L.* The injury is caused by the Pear-leaf blister-mite, Eriophyes piri. The best method of combating this pest is to pick off the diseased leaves before July and burn them. If the work be delayed longer the mites vacate the old leaves, enter the buds, and attack the foliage again the following season.

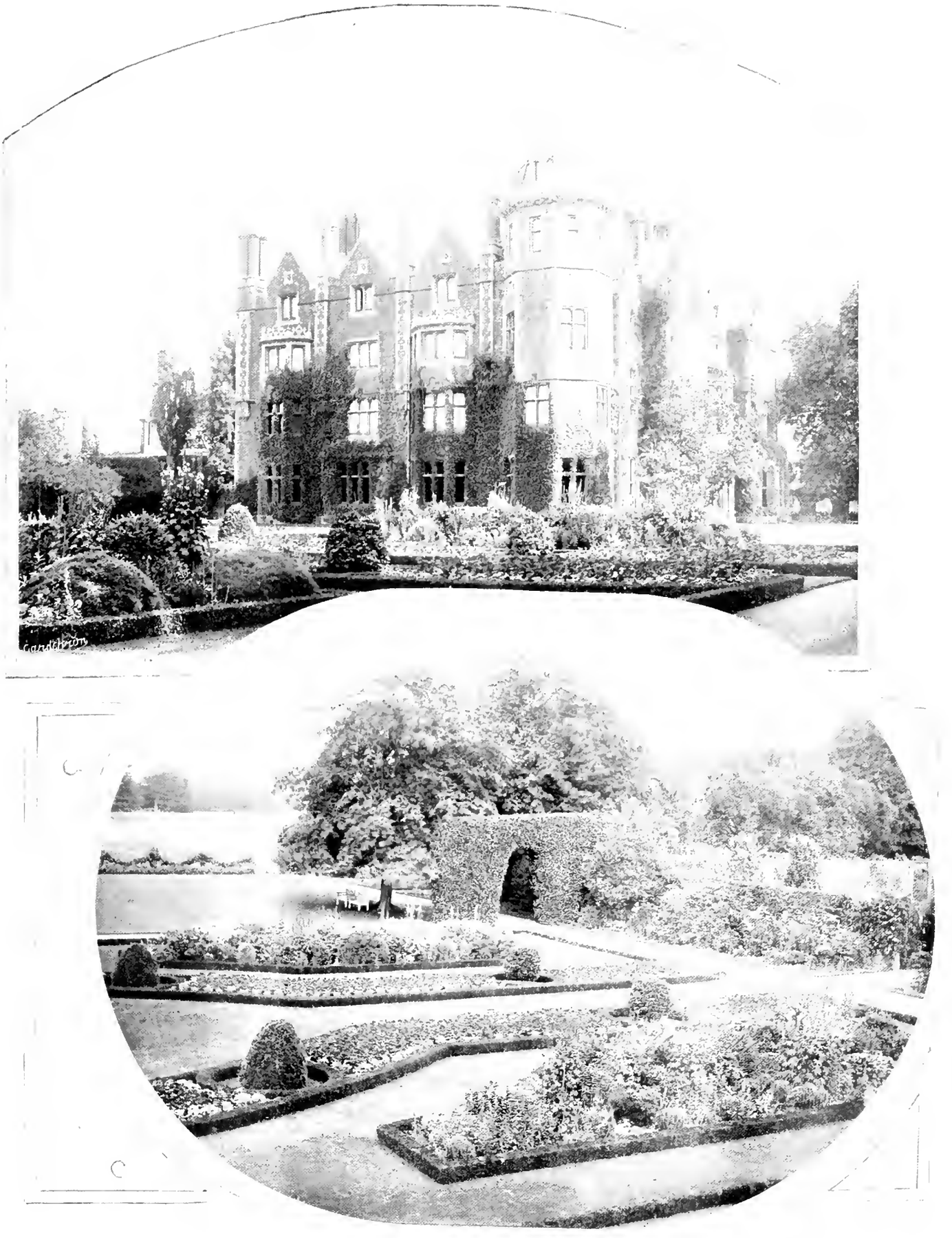
ROOTS OF CYCAS REVOLUTA: *D. C.* The nodules on the roots you send of the Cycas are not injurious. Nodules are usually present on the roots of Cycas when the plants are healthy. The roots you sent were quite dead, and are evidence of your specimen being in a bad condition. You should turn the plant out of its pot, wash the soil from the roots and stand the stem in a cool, dry place for a month or more, afterwards potting it afresh in the smallest pot that will accommodate the stem, using a mixture of three-parts good turfy loam, one of brick rubbish, and one of sand. Place the plant in a light position in a warm greenhouse and afford very little water until the new leaves are well into growth. The usual cause of failure with Cycas is over-watering, for although most of them are evergreen, they require a resting period, and this is best attained by withholding the water supply at the roots during the winter months, giving only sufficient to prevent shrivelling of the leaves.

ROSE STEMS DECAYED: *W. L.* The damage is done by a fungus, Valsa prunastri, which is probably abundant on some old Rose or Plum tree in your garden, giving the stem a cankered, scabby appearance. This should be discovered and destroyed, as until this is done the spores will continue to infect other Roses in the vicinity. We should be pleased to receive more specimens for further investigation.

SEEDLING PEAS: *A. H. and W. G.* The plants are attacked by the fungus Thielavia vasicola, which causes root rot. This fungus was illustrated in *Gardeners' Chronicle* for June 8, 1907, p. 361. Try weak applications of sulphate of potash to the soil containing the roots.

TOMATO LEAVES INJURED: *T. J. H.* There is no disease present on the foliage you send: the trouble has been caused by scalding from the sun's rays. The plants have been watered when the sun has been shining brightly, with the result that drops of water have acted as lenses and focussed the sun's rays so as to scald the tissue. If it is impossible to maintain drier conditions in the house, spray a very thin coating of whitewash on the glass on the sunny side of the house.

COMMUNICATIONS RECEIVED.—J. S.—Anxious—H. A.—G. M.—W. E.—G. T. H.—S. S.—A. McK.—T. E.—H. C.—C. W.—F. J. Cole—W. W., Ltd.—W. & S.—Erica—W. F.—R. H. B.—H. J. W.—R. N.—R. J. W.—G. & S.—H. N. H.—G. S.—Gard. Roy. Benevolent Inst.—Information—East Sussex—T. I.—G. C. P.—A. W.—W. S. H. T. H.—Vitis—W. C. W.—J. C.—H. I. C.—T. S.—Chloris—T. C.—I. I.—R. B. W.—P. P., Poona—G. T. H.—W. H. Y.—C. H. S.—C. H. P.—J. V. & Sons—H. W.—F. I.—J. B.—C. W.



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ILLUSTRATIONS.

THE DELL, EGHAM.

SEATED in the conservatory, which extends the whole length of the mansion and to which the brightest floral products of his beautiful garden are brought as they appear, Baron Sir H. Schröder delights to talk about the relative merits of the many fine plants which have been acquired by him, and concerning which he is always ready to give many interesting particulars. At the present season, when the outdoor gardens are so beautiful, the need of the extensive blocks of glass-structures at The Dell is not so apparent as in the dull season, for the view from the house of smooth green lawn studded and bounded by arrangements of bright-coloured flowers is a charming one. In the centre of the large expanse is a geometrical garden with spring flowers and Tulips and other flowering bulbs. Around are the beds of Rhododendrons, the finest obtainable, just commencing their great show of flowers; in the distance are giant Cedars, and among them specimens of the rarest Conifers of great beauty. In the side-walks are borders of herbaceous perennials, the spring-flowering species of Primula being very effective; and in every part of the garden neatness prevails, for Mr. H. Ballantine, who has been gardener at The Dell for so many years, co-operated with Baron Schröder in forming the garden, and takes the keenest interest in preserving its reputation as one of the most beautiful and complete in the country.

This collection of Orchids, being one of the oldest and most complete, some of the sections of plants in it indicate how "fashion" in Orchids, as in most other things, continually changes. Here we have a house nearly filled with Vanda suavis, Vanda tricolor, and other Vandas; another partly filled with species of Aërides and Saccolabium. These used to form the chief attraction at flower shows forty years ago, and are still as beautiful as ever, but they are seldom seen in modern collections.

Odontoglossums, and especially the many beautiful forms of O. crispum, tell a different story. From the first they were favourites with Baron Schroder, who bought liberally even before their merits and rare value were fully recognised. In 1885 First-class Certificates were given to O. crispum Schröderianum and O. c. Sanderianum from The Dell collection; the latter is now in flower there, and it is a very handsome form. In 1886 O. crispum apiatum secured a similar award, and is still one of the most beautiful varieties. It reached the highest price of its time, but values have trebled since then.

Odontoglossum Pescatorei Schröderianum and O. P. Veitchianum, two handsomely blotched forms acquired about 1883, and still flourishing at The Dell, afford remarkable instances of the distinctive character of these blotched Odontoglossums, for none has ever been imported since which equals them.

In walking through the cool Odontoglossum houses, many of them producing strong flower-spikes, we noticed the handsome O. crispum Leonard Perfect; O. c. Veitchianum, a very handsomely-marked flower; O. c. Britannia, with a spike of purple-blotched blooms; O. c. Oakfield Sunrise, O. c. Lucianii, O. c. Lindenii, O. c. Mundyanum, O. c. Rex, O. c. Robert McVittie, O. c. G. W. Law-Schofield, O. c. Pittianum, O. c. Doris, O. c. Queen's Birthday, O. c. Haroldianum, which is a very distinct fringed variety, showing some markings as on the labellum on the lower segments; O. c. Magnum Bonum, and many others.

Of other varieties of Odontoglossum in bloom were the superb O. Wilckeanum Schröderianum, which secured a First-class Certificate on May 12; several very handsome forms of O. Andersonianum; O. polyxanthum, O. Hallii xanthodon, a very fine form; the pretty pure white O. Oerstedii with 25 flowers; a very large and distinct form of O. Humeanum with large cream-white lip spotted with brown; O. Horsmanii and O. Chestertonii, two old-time blotched varieties; varieties of O. elegans and O. triumphans.

Also in the cool-houses is a very fine show of scarlet and purple Masdevallias; Cochlioda Noezliana, and Sophronitis grandiflora; and several interesting terrestrial Orchids, a speciman of Orchis hircina bearing a very strong, many-flowered spike of singular flowers; the pretty Cynorchis compacta, which regularly bears many sprays of white flowers, and Stenoglottis longifolia. It is also interesting to note that Disa grandiflora thrives well here, suspended in a cold house near the glass of the roof, although it formerly proved unsatisfactory when grown on the stage. The Cymbidiums are also grown in cool conditions. C. Sanderi (insigne) thrives more vigorously than when grown under warmer conditions. Here, too, is the original specimen of Cymbidium Tracyanum, a nice plant of C. Schröderianum in bloom, and representatives of most of the best varieties.

In the large span-roofed intermediate house some fine varieties of Cattleya Mossiæ, C. Mendelii, and Lælia purpurata are in flower. Of the last-named L. purpurata Schroderiana is the best of the white forms and L. purpurata Lowii the darkest in colour. Cattleya intermedia alba, C. Skinneri, Lælio-Cattleya Schilleriana and some of the hybrid Brasso-Cattleyas and Brasso-Lælias are also in bloom, and suspended from the roof is a complete collection of Lælio-Cattleyas. Mr. Clarke, the foreman in The Dell gardens, called attention to the original plants of most of the earliest Veitchian hybrids, L.-C. Dominiana, L.-C. Canhamiana, L.-C. bella, L.-C. callistoglossa, and others which have been in the collection for a quarter of a century, and which yet hold their own in point of beauty. In these houses were noted a fine specimen of Epidendrum prismatocarpum with many spikes, Epiphronitis Veitchii, Epilælia radico-purpurata, Lissochilus Krebsii, Bulbophyllum Dearei, with six flowers, and B. barbigerum with five sprays of its singular, feather-lipped flowers.

In an intermediate range in several divisions the first division is filled with a quantity of hybrid Cattleyas and Lælias raised at The Dell; the second with a good selection of Cypripediums; the third with large specimens of Cœlogyne cristata varieties; and the fourth with Miltonia vexillaria, flowering very profusely, and including a strong specimen of the rare M. v. Memoria G. D. Owen, with large rose-pink flowers, having a triangular deep crimson mask at the base of the lip and an elongated blotch of the same colour on the bases of the petals. Also in this range were noted a number of healthy little plants of Dendrobium speciosum Hillii, raised from seeds collected in Australia; Cymbidium Devonianum, Dendrobium chrysotoxum, and others in flower.

Facing the entrance to the largest warm house is a fine display of Thunias, the white and rose T. Veitchiana predominating, the tall reed-like stems bearing ten or twelve drooping racemes on each specimen. The white and yellow T. Marshalliana, and the purplish rose T. Bensoniæ are equally effective. A specimen of the yellow Dendrobium clavatum bears 18 fine spikes, and others are also in bloom. In the next division the centre is furnished with scarlet-spathed Anthuriums, and the side stages have a fine lot of Cypripediums in flower. The pretty Dendrobium illustre bears several spikes, some specimens of Cœlogyne Dayana, and the fine Dell variety of it a plentiful supply of long drooping racemes of flowers. The salmon-tinted Cœlogyne tomentosa has many spikes, and of the green and white Cypripedium Lawrenceanum Hyeanum, C. callosum Sanderæ, and their product C. Maudiæ a good show of

flowers is made on many specimens. A house of hybrid Calanthes has a good batch of the best of its class, C. Baron Schröder, raised at The Dell, and the large seed ovaries on one of the specimens tell that it is being used for raising new varieties.

The other plant-houses are most of them full of plants in flower or coloured foliage plants, all well grown; and the extensive ranges of vineries and other fruit houses are in their usual neat condition and promising for good crops.

One house contains a very fine lot of Gloxinias in bloom, the crimson and spotted varieties being especially good; another house is a mass of flowers borne by the many-coloured Schizanthus, white Lilies, scarlet and white Hippeastrums, Rehmannia angulata, &c., and in other houses were a fine lot of Carnations, Giant Mignonette grown to perfection; Lobelia tenuior of a very deep indigo blue; a splendid lot of herbaceous Calceolarias with fine heads of bloom, an excellent display of Caladiums, and on the roof in one house a well-bloomed example of Gardenia Stanleyana with many large, trumpet-shaped whitish flowers blotched with claret colour. *J.*

Photograph by C. Jones.

FIG. 172.—CAMPANULA FRAGILIS: FLOWERS BLUE.

CAMPANULA FRAGILIS.

CAMPANULA FRAGILIS derives its specific name from the ease with which the shoots are broken, and because of this character it is known as the Brittle Harebell. The plant attains to a height of a few inches only, for the shoots are trailing, and, when growing freely, reach a foot or more in length. The growths bear comparatively large flowers of a delicate blue colour. Because of its drooping habit the plant is especially valuable as a basket subject, and, grown in this manner, it is often seen in cottage windows. Propagation may be readily effected by means of cuttings inserted in the spring; the plant may also be divided if great care is exercised in the operation; if not, the reason for the specific name will be at once brought to the mind. The plant is a native of Southern Italy, therefore it is not perfectly hardy unless in very favoured parts of this country. Although the type plant is almost glabrous, there exists a very hairy form known under the name of C. f. hirsuta. Unfortunately for the cultivator, snails have an especial liking for this species of Campanula. A coloured illustration of C. fragilis appears in the *Botanical Magazine*, t. 6504.

FORESTRY.

PLANTING FAILURES.

IT is safe to say that the worst failures in forestry work occur at planting time. By failures I mean the trees that die in the first or second year after planting, and through preventable causes.

By far the greatest portion of forest trees planted on private estates are still got from public nurseries, and it may be useful, in the first place, to give an approximate estimate of the cost of plants and planting per acre of different species, mixed or pure, exclusive of fencing and other incidental expenses, so that the planter may have some idea what failure means.

At the present time the cost of planting an acre of mixed species, about 3 feet apart each way, of Larch, Scotch Fir, Spruce, Oak, Ash, Sycamore, and such species as will succeed together is about £6 5s., at 25s. per thousand, according to catalogue prices, and to that figure must be added 20s. to 30s. per acre for pitting and planting. If the work is done by contract and the selection left to the nurseryman, it may be done for less, but no such contracts should be entered into unless they are based on correct sylvicultural principles. Of course, planting wider than 3 feet each way will reduce the cost, but on poor waste ground and high-lying exposed situations 3 feet is wide enough, if anything is, to ensure an overhead canopy in good time, and 3½ feet or 4 feet should not be exceeded in the most favourable situations, except with the Douglas Fir, which requires from 4½ to 5 feet. If any considerable proportion of Japanese Larch be added to a mixed plantation it may raise the price per acre to £7 or £8 at present British prices, but at Continental prices the addition does not make so much difference.

A pure crop of Japanese Larch, 12 to 18 inches high, once transplanted and put in 3 feet apart, costs about £9 per acre for the plants alone, and a crop of pure Douglas Fir of the same size, 1,800 to the acre, 5 feet apart, will cost about £7 or £8 per acre for plants alone. Trees from Continental nurseries, at Continental prices, bring the cost per acre down about a half or more, but although the latter have usually good enough leads, they are not, as a rule, so sturdy nor so carefully transplanted, unless the conditions on that head by buyers are strict. I know the home and foreign trees well, and can vouch for the description which applies generally to the nursery stock in both cases. I am speaking of "planting-out" trees, not of one and two years' untransplanted seedlings, which are about equal, the Continental, if anything, being the taller. On the whole, one prefers British trees, but wishes the prices were lower. In one German nursery, where many millions of Japanese Larch and Douglas Fir are raised annually, not to mention other species, many English orders have not been executed this season because the species of the size wanted have been sold out. More and more trees are coming from Germany every season, and deliveries are just as quick as from home nurseries. There must be extensive planting going on somewhere, judging by the stocks raised and sold in this country from home and Continental sources, and extensive planters may understand what failure (exclusive of rabbits) of, perhaps, from 20 to 50 or even 80 per cent. year after year must mean, and such is not uncommon in both nursery and wood.

As to causes of failure, these begin with the species, for under equal conditions, as regards soil and climate, hardly any of our better-known forest trees have the same vitality and transplanting power. The Corsican Fir stands at the very bottom of the list as a bad transplanter between November and April; Pinus Pinaster, of similar habit, comes next, and the Scotch Fir third. The Austrian Fir will often stand more abuse than any other of its class and live. The broad-leaved deciduous species are different altogether. If they fail when transplanted from the nursery to the wood there is gross carelessness somewhere, either in the nursery or in the moving from the nursery to the woods. When an Ash, a Sycamore, an Oak, or an Elm has plumped its buds by October or November, no matter whether the leaves are still green or not, it is fit to transplant, and should be transplanted, and if it cannot be moved then it should be left till early spring.

From November till March has hitherto been the season recommended by foresters, indiscriminately, for planting all kinds of forest trees, but I will undertake to say that the dead and coldest season of the year is the very worst for planting, because the plants lose their vitality more or less when they most need it to resist extreme vicissitudes of weather.

But a large proportion of the failures in planting young forest trees are due to circumstances that occur between the time the trees are lifted in the nursery and planted out at their final destination. Such are careless lifting and exposure of the roots to the air and sun, causing them to shrivel up; careless packing; delay in transit; and careless final planting by the forester or ignorance on his part. I am writing now from well-known estates, where, in mixed plantations of Larch, Scotch Fir, Sycamore, Ash, etc., planted last year, at least 50 per cent. are now dead. That was the agent's estimate before I saw the plantations, and it was more than confirmed by counting the blanks in the rows. On another estate where the

Corsican Fir is popular, 10,000 seedlings had been got from two well-known nurseries, one in England and one in Scotland, 5,000 from each of the same age, delivered in the same week, and planted in nursery rows by the same man. A few months later the owner of the estate wrote: "There are 5 per cent. of A.'s lot now alive, while in B.'s lot there are failures, but not many. A. says he will send me a few more to make up for losses to some extent, but they will probably go the same way." I saw these lots a day or two later, and could not find quite 5 per cent. of living trees in the bad lot. I have seen worse failures even than this, in which all the trees were dead. The Corsican is a fine timber tree, and as easily managed as the Scotch Fir by those who know it and plant it at the right season, but otherwise, as the manager of a large and well-known nursery said to me, "it's a brute to move." He had just lost nearly a whole quarter. I have, I may say, miles of the true Corsican under my eye, all of which were planted between April and the end of May, with hardly a failure. They have outgrown the Scotch, and stand clear above them at all ages up to 20 feet or more. *J. Simpson.*

FOREIGN CORRESPONDENCE.

THE FLOWER INDUSTRY AT NICE.

IT is perhaps not known to many people that Nice owes its trade in cut flowers to the celebrated French author, Alphonse Karr. In 1852 Nice still belonged to Italy, and it was in this town that M. Karr took up his abode, after he had compromised himself in political intrigues. There he became a practical gardener, and the cut flowers which he exported to Paris were the more keenly sought after, coming as they did from one who was a prominent and caustic critic of the party in power at that time.

The cultivation of flowers for the market, which had hitherto only been carried on in the environs of Grasse, thus made great strides, and it has since become the principal industry of the Riviera town.

A special train leaves Nice every day during the blooming season, conveying northwards such flowers as Acacia dealbata, Roses, Carnations, Violets, Narcissi, Iris, Mignonette, &c. The horticultural establishments which exist for the providing of these flowers form the chief source of the prosperity of this part of France, and their produce, which is despatched in enormous quantities, commands prices varying from about threepence to two shillings per pound, according to the season.

Violets are mostly grown at Hyeres, Acacia dealbata at Cannes, Carnations at Antibes, and Roses at Nice. It is especially about the "Parc aux Roses" that I propose to write a short account, which I hope may interest the readers of the *Gardeners' Chronicle*. The Parc aux Roses is situated to the west of Nice, on sloping ground facing the sea, and is completely sheltered from the Mistral. It belongs to a well-known French botanist, M. Arbost, whose partner, M. Piedoic, is an experienced horticulturist. Their two specialities are Roses and Carnations. The latter have been grown with much care, and have produced flowers of great beauty and enormous size. At Turin, during the exhibition of 1904, they have met with great success, and I have heard that Queen Margaret of Italy said much in their praise, and added that she had never before seen Carnations of such beauty both as regards shape and colour. Continued success has attended this enterprise, and for that reason I decided to go and see it for myself.

All the Carnations are grown from the firm's own seed, and they owe the beauty of their colours to the scientific method and care with which they are selected. I was shown thousands of flowers of the superb Carnation Miss Willmott of a pale sulphur-yellow, with a greenish shade, merging into white at the edge of the petals. The flowers are borne on strong, firm stems, and the foliage resembles that of the "Malmaison" type. Several flowers measured from 10 to 12 centimetres in diameter. The variety is the result of a cross between "Malmaison" and one of the Nice Carnations

"Papa Guillot," another excellent Carnation, the colour of which is greyish-purple, marked with violet and flamed with rose, orange, and sometimes with pure yellow; it is a special race, and is not related to the Malmaisons. I also saw a new variety of perfect form and pure white, which had not yet been named, as well as many others with a wide range of colour. These specialists every year raise from 12,000 to 15,000 Carnations from seed, which are treated as annuals. Besides this, they take about 250,000 cuttings, which are grown under glass in a medium temperature.

There is also a plot set apart in which are grown all the species of Dianthus that are in cultivation, and there is a complete library dealing with the history of the Carnation and its cultivation.

The proprietors sell none of the cuttings or plants, and thus reserve for themselves the monopoly of the stock.

Alongside the Carnations, of which there are over 80,000 feet under cultivation, are grown the Roses, occupying an area of 100,000 feet. These flowers provide a succession of blooms from the end of October to June, and are despatched all over Europe, the principal towns of Russia, Germany, France, Italy, &c, being largely supplied by the flowers grown in the Parc aux Roses.

My visit, made in September of 1907, was of great interest, and I renewed it in March, 1908. I advise all amateurs and lovers of flowers who go to the South of France to do likewise,

FIG. 173.—AGAVE FEROX IN FLOWER IN THE "PARC AUX ROSES."
(See "The Flower Industry at Nice.")

as it offers many attractive features new to those who live in more northerly climates.

Shaded by old Olive trees, many of them a hundred years old or more, paths lead to the Mandarin groves, which produce yearly 80,000 Mandarins, and where Messieurs Arbost and Piedoic maintain a collection of 60 species and varieties of the genus Citrus. This collection is as interesting as it is unique.

There also exists here one of the most complete collections of Hydrangeas which it has been my good fortune to see, comprising as it does all the kinds that are met with in cultivation.

There are also some beautiful Palms, amongst which may be mentioned Cocos capitata, which bears a delicious fruit with the flavour of a Pineapple. Various kinds of Eucalyptus grow near and shade the house, and a huge plant of Poinsettia pulcherrima produces 2,000 heads of bloom at Christmas time. Many hundreds of Kentias are grown, besides large numbers of Chamærops of various kinds, which are chiefly exported to Belgium. *Henri Correvon, Geneva.*

VEGETABLES.

THE CABBAGE TRIBE.

Of the various culinary vegetables which find a place in gardens there is scarcely one that is of greater importance than the forms of Brassica oleracea, which includes the common varieties of the hearting Cabbage, Brussels Sprouts, Kales, Broccoli, and Cauliflower. In the *Transactions of the Horticultural Society*, 1821-24, M. A. P. de Candolle describes six races, varieties, and sub-varieties of the wild Cabbage (Brassica oleracea): 1st race, B. o. sylvestris or wild Cabbage; 2nd race, B. o. acephala, tall or open-headed Cabbage; 3rd race, B. o. bullata, the Savoy or blistered Cabbage; 4th race, B. o. capitata, round-headed Cabbage: 5th race, B. o. caulo-rapa, Kohl-rabi or Turnip-rooted Cabbage; 6th race, B. o. botrytis, Broccoli, Cauliflower or flowering Cabbage. The second type is Brassica campestris, or field Cabbage, the 1st race of which is B. campestris, Colza; 2nd race, B. c. palmaria, intermediate between the field Cabbage and B. c. napa. As my observations will be strictly confined to these races, I will not touch on Brassicas of the Turnip family—B. Rapa oleifera, the long-rooted or globular varieties, or of the various types of Radishes, Raphanus sativus. Many of these, according to M. de Candolle, are cross-breds, accidentally produced and preserved by the care of the cultivator.

The first sowing of the year as regards the true garden Cabbages may be made in the early days of the month of January in broad seed pans, wooden trays, or on mild hot-beds in a moderately rich loamy soil, the seeds being thinly sown and very slightly covered with some of the same kind of soil. If sown in pans or trays, these may be placed on shelves close to the glass in a house having a warmth of 58° to 60° at night. Water should be afforded with great care, and the soil shaded with paper till germination has taken place, but afterwards only a very slight kind of shading is needed for a few days during the hours of strong sunshine. The chief object is to secure a robust growth in the seedlings, and to prevent an attack of the "damping off" fungus by admitting as much air to the house as is practicable, having due regard to the well-being of the other plants growing in the house. When the true leaves begin to show on the seedlings, the outside conditions will have begun to improve, thus enabling the gardener to remove the seed pans, to rather cooler quarters, but still close to the roof glass, though with no more shading of paper, &c., thenceforward. With four leaves showing on the little plants, pricking out will be called for, the plants being set out at 1½ inches apart on soil made moderately firm by using a small board or flat trowel for the purpose; and towards the end of the month of February the pricked-off plants may be placed in a cold pit capable of being heated in the event of the weather being frosty; otherwise a sprinkling of straw or Fern fronds (bracken) and a mat over all will prevent the temperature of the frame becoming too low. For this early crop the following varieties are suitable: Ellam's Early, Beaconsfield, a dwarf, conically-shaped Cabbage, a little later than the first-named and an introduction of Messrs. J. Veitch & Sons, Chelsea, who are likewise offering this year a fine early Cabbage named Incomparable. Should there be a demand for Cabbages at an earlier date, they can be obtained from the late summer sowings of the previous year, the varieties named may be planted in frames and afforded a bottom heat from a bed of tree leaves, which may not exceed 65° to 70° Fahr. On the Continent, in parts where the winters are too severe to allow of Cabbages being grown at all out of doors in the winter months, it is a common practice in gardens to grow varieties of white Cabbage and of Savoys in frames heated by dung beds or dung and tree leaves, and by careful management very nice produce is obtained if planted at 1¼ to 1½ feet apart. Some of the favourite varieties of the French gardeners for planting as early crops in frames and the open ground are the following: Précoce de Tourlaville, one of the best for planting at the seaside in the open; and the heart-pointed: Joanet (Nantais), very early. Of Savoys mention may be made of Early Saint Jean, a small sort distinct from all others, very early, and the heart of the shape of the variety Oxheart. The stem is extremely short. Early Ulm is a delicious variety, coming into use in a brief space of time.

Cabbage seeds may be sown from February till May in the open air on warm borders, preferably those having south and west aspects, the soil being well firmed by treading regularly all over, and otherwise prepared for sowing by raking it smoothly and removing all large stones and rubbish. The soil should not have received any manure recently, it being better for the seedlings if they are not too succulent on being planted. Some gardeners sow the seeds in very shallow drills drawn at not less than 1 foot apart on beds laid out at 5 feet apart, covering the seeds, which should be thinly sown, with the back of an iron rake and passing a wooden roller over the seed-beds afterwards. Others sow the seeds broadcast and thinly, either method having some advantages pertaining to it—the drilling allowing of an easy way of keeping down weeds, and broadcasting affording more space per plant. A loose-hearted Cabbage, with thick white ribs to the spreading leaves, is Couve Trouchuda. This, as it is not hardy, must be consumed before the end of November, and, in order to reach its full size, it should be sown towards the end of the month of February. According to the local climatic conditions, the important early autumn sowings of Cabbages for affording a supply the following summer may be made from the second week of August in cool climates such as those of northern England, and in Scotland and the northern counties of Ireland. In other parts, having regard to altitude and exposure, the end of the month and early in September is a sufficiently early date. The following varieties may be recommended among the older ones: Hardy Green Colewort, Heartwell Early Marrow, Little Pixie Colewort, Mein's No 1, Nonpareil, a capital variety that sometimes turns in all once, or nearly so, and Carter's Reliance. Of newer varieties Incomparable, a selection of Mr. Allan, gardener at Gunton Park, may be named, and Main Crop, one of the Veitchian introductons.

Brussels Sprouts, Borecole, Kale, and Broccoli may be sown in March. Of the last-named vegetables, two sowings, one at the beginning and the second at the end of the month, should be made of the early Penzance, a very early Broccoli, with compact white heads, of moderate size; Early White Cape, succeeding the Penzance; and the famous Walcheren. In warm districts it is advisable to make still another sowing of these three varieties on the chance of obtaining a crop, should the weather in November and December not be too severe. In May the Purple Cape may be sown for cropping in the autumn, and there are other desirable varieties, of which Self-Protecting Autumn is one of the most useful, as it forms a good succession to Autumn Giant Cauliflower. In dry soils the land on which Brassica seeds are to be sown should not be dug till immediately before the sowings take place, as owing to the rapidity with which such soils lose their moisture near the surface, early digging is a fertile cause of irregular germination of the seeds. The seed-beds should be securely netted, or the birds will greatly lessen the number of the seeds before they sprout, and mutilate and devour the plants in the young stage. *F. M.*

BELGIAN HORTICULTURE.

UTRICULARIA HUMBOLDTII.

An interesting feature of the establishment of M. Th. Pauwels, of Meirelbeke, Ghent, at the present time is a good plant of the rare and very beautiful Utricularia Humboldtii in flower.

The species was discovered in 1840, in a swamp on Mount Roraima, in British Guiana, by Schomburgk, who described it as one of the most beautiful creations of the vegetable kingdom. A coloured plate and description were given, the species being dedicated to the renowned traveller and naturalist, Baron Humboldt. Schomburgk remarks that the plant bears the Indian name of "Roraima iperua," or "Flower of Roraima," and in his delightful book, *Botanical Reminiscences in British Guiana* (p. 69), he alludes to it as follows:—"Here spread before us lay a small marshy plain, on which Flora had assembled her most beautiful children, where the charm of flowers had culminated. The whole plain was covered with the dark-blue Utricularia Humboldtii, the most beautiful species of the genus, with red-tinted flower-stalks from 3 to 4 feet high, from which three or four of the curious flowers were suspended." This sight so impressed Schomburgk that he named the place the "El Dorado Swamp," after the treasure city Raleigh and others sought in Guiana. The figure was repeated in the *Annals de Gand* (1845, p. 357), and in *Flore des Serres* (t. 1390), in the hope of leading to its introduction, but this event did not take place until 1884, when Messrs. Sander and Sons' collector, Siedel, obtained plants of the Utricularia while on his adventurous journey after Cattleya Lawrenceana. It did not flower immediately, however, but on April 12, 1892, a plant was exhibited in fine condition at a meeting of the Royal Horticultural Society by Baron Schroder, which was unanimously awarded a First-class Certificate by the Floral Committee.

Utricularia Humboldtii is a semi-aquatic plant, producing tufts of broadly-reniform leaves from 2 to 5 inches across, on petioles from 6 to 12 inches long and scapes from 2 to 4 feet high, bearing from 6 to 18 large, violet-coloured flowers, about 2 inches across, three or four of them being expanded at the same time.

This beautiful species grows also on the Kaieteur Savannah, in British Guiana, as we learn from Sir Everard F. im Thurn, in the very interesting account which he gave of his ascent of Mount Roraima in 1884 (*Trans. Linn. Soc.*, ser.

2, ii., p. 256). The Kaieteur Savannah is much like Roraima in many features of its flora, and here the Utricularia grows in abundance in the pools of water which collect in the bases of the leaves of a giant Bromeliad, Brocchinia cordylinoides, which Mr. im Thurn describes as by far the most striking, as it is also the most abundant plant on the Savannah. "This gigantic plant, so striking as to compel notice even from the most unobservant traveller, is ranged in enormous numbers on the Kaieteur Savannah, and, indeed, makes, to a large extent, the strangeness of that strange scene. There the height of a full-grown specimen, under favourable circumstances, is about 14 feet, and, in the older specimens, at least, the crown of leaves is supported on a tall bare stem. It seems also there to flower abundantly. In the axils of the leaves of this Brocchinia, and only in that position, grows a very remarkable and beautiful Utricularia (U. Humboldtii, Schombk.), with flower stems 3 to 4 feet long, supporting its many splendidly large, violet flowers."

At Roraima "the Brocchinia, too, grew in parts so densely that we had to walk, not on the ground, but on the crowns of the plants, which, as we crushed them with our feet, poured from the axils of their leaves the remarkably abundant water which they retain. Nor must I omit to mention that in the bush-belt a very few plants (I saw not more than three or four) of Utricularia Humboldtii of the dark Roraima form were growing in the axils of the Brocchinia leaves, as at Kaieteur."

The Utricularia occurs both at the Kaieteur Savannah and on Mount Roraima, "but at the former station it apparently always grows floating in the water retained in the leaf-axils of the Brocchinia; while on Roraima it grows abundantly with its roots in the ground, and only very rarely in close association with the Brocchinia. The Roraima plant is, moreover, far more beautiful, and its flowers are of a more intense colour than is the Kaieteur plant. The latter circumstance is probably due to the greater vigour which the plant displays when its roots are in the ground

These facts may afford a hint to cultivators as to the method of treatment, and it should be added that M. Pauwels grows his plant in a large tub of leaf-soil, with some sphagnum-moss, the compost being put in quite loosely, and just allowed to settle with its own weight and the water applied. A warm climate is, of course, necessary. It is a most beautiful species, and the problem now is how to grow it with something like its native vigour. *R. A. R.*

NURSERY NOTES.

H. B. MAY & SONS, EDMONTON.

THE display of Ferns, mainly varieties of hardy British species, which was made by this firm on May 12, at the Royal Horticultural Hall, and for which a Gold Medal was deservedly awarded, evoked the more admiration since no such exhibition has been made since the Fern Conference of 1891, now 17 years ago, and, as a consequence, the capacity of our native Ferns as high-class decorative foliage plants has been known to but few connoisseurs The exhibits at the Conference were almost exclusively from private collections, and it is, therefore, a matter of congratulation that a trade exhibit of such merit should be put before the public as indicating a step towards that popularity which the plants undoubtedly deserve. Messrs. May & Sons have long stood in the forefront of exotic Fern growers, and they are to be heartily congratulated on their adoption and successful culture of this long-neglected branch of horticulture, the specimens shown of Hartstongues, Polystichums (fig. 174), Lady Ferns, Lastreas and other species clearly demonstrating the immense advance which has been made by selective culture of the material afforded by wild "sports" found in our native fernery districts. A recent visit to their three extensive nurseries at Edmonton and Chingford afforded us a still more vivid idea of what can be done with these plants in skilful and painstaking hands. Hundreds of thousands of them, in all stages of growth, from the tiny primary frondlets to huge fully-developed specimens occupy a large range of houses and frames, shelves and open spaces, while in one special house we saw hundreds of pots, pans, and shallow wooden boxes, in which the still earlier stages of sown spore and green prothallus indicated the source of the immense harvest around us, including that of the innumerable exotics of which the firm have so long made a speciality. A merely flying visit naturally precluded anything like a thorough inspection of the numerous houses, many of them hundreds of feet in length and crammed with verdure, which represent what may be termed the "coddling" department for many of the rarer

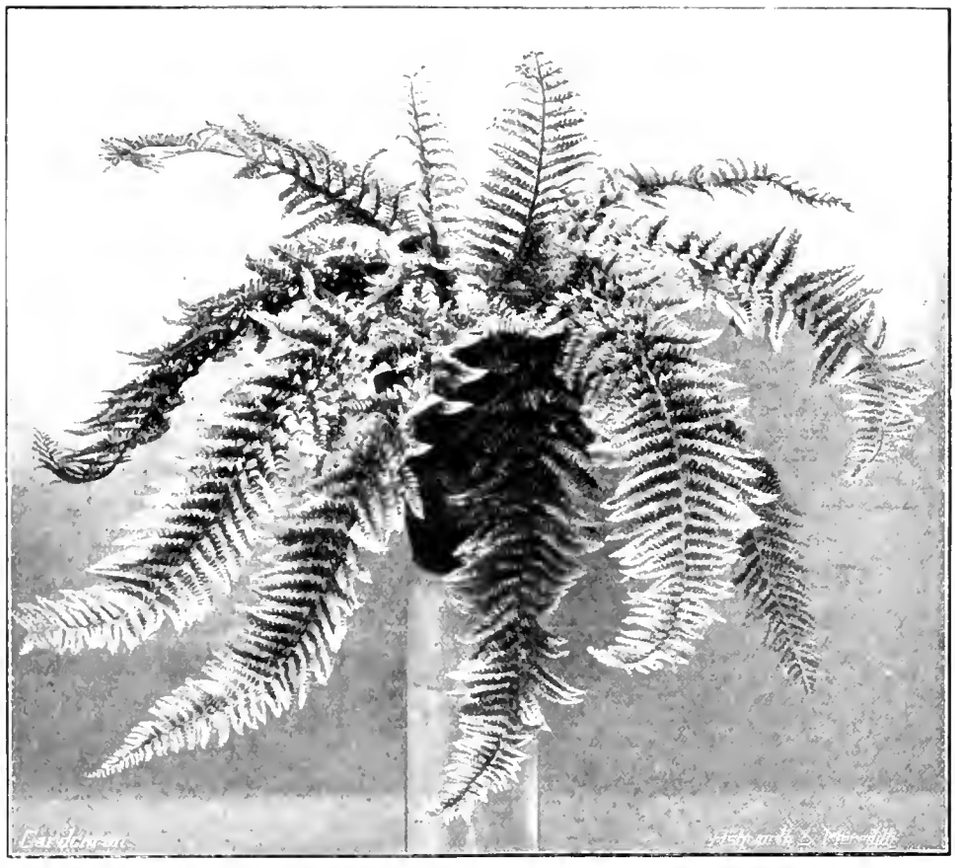

FIG. 174.—POLYSTICHUM ANGUSTIFOLIUM DIVISILOBUM DENSUM IN THE COLLECTION OF MESSRS. H. B. MAY AND SONS.

species of exotic plants, since Ferns are by no means exclusively grown. House after house, for instance, was seen to be filled with Palms, Kentias, Arecas, Latanias and Cocos by the thousand, Lapagerias, alba and rosea, drape the doors and sidelights of others, a glimpse through which shows a tropical jungle hung with festoons of white and ruddy waxen bells. While still inspecting the comparatively cool range of houses, we see magnificent specimens of temperate or sub-tropical Ferns, among which we note particularly the huge, graceful, pendulous frond masses of Davallia fijiensis and f. gracillima, D. robusta, D. plumosa, D. tenuifolia, D. Veitchii, D dissecta, and other delicately-cut forms, while, as a contrast, the broad, dark green, crisp, leathery fronds of D solida superba are massed together 4 or 5 feet through with fine effect. Contrasting too with these, and on quite different lines, we have the curious Platyceriums, with their two kinds of fronds, broad, barren ones, apparently adherent to the cork masses or tree Fern trunks to which they are attached, while more or less projecting and pendulous are the stag, or elk-horn-like, fertile fronds showing various kinds of forking. P. grande, Veitchii, alcicorne, a. divergens Mayi, biforme, æthiopicum angolense and Willinckii are all here in fine form, each presenting its distinguishing peculiarity. As a sort of link between these and their more delicate neighbours we saw Drynaria quercifolia with huge oakleaf-shaped barren fronds on Platycerium lines, but with long, pinnate, fertile ones, 5 or 6 feet in length, glossy green and very handsome. Some of the Acrostichum gems have equally diverse fronds. Drynaria musæfolia next attracted our attention, since, though the fronds are simple, the veins are dark in colour, and form a peculiarly beautiful pattern all over them. The Davallia family itself provided its own foil, so to speak, in the shape of D. heterophylla, a charming little creeping Fern, with simple lance-shaped, barren fronds and prettily crenate and narrowed fertile ones; D. minima is a still tinier plant, while D. retusa forms another curious variant, with graceful, open fronds, the sub-divisions of which are squarely terminated, resembling Asplenium præmorsum. We next observed in close proximity, Hymenodium crinitum, with broad, bat-shaped, hairy, leathery fronds, and that curiously pretty dwarf Fern Rhipidopteris peltata, with fronds like little radiating stars on stalks an inch or so high; two forms about as diverse as can be conceived. Polypodium Knightii, a gem of the first water, occupied a prominent place with its long, slender, pinnate fronds, the edges of which are cut and fringed precisely like a beautiful Welsh Polypody at its best; indeed, it represents an analogous sport in an Australian species. The Fern specimens are so numerous and so varied in form that we can merely mention a few of them, and, therefore, approach the conclusion of the exotic

Fern list by a special reference to the Nephrolepis group, which have given such wonderful varieties in late years. As a special article has already been devoted to these in the issue for December 29, 1906, p. 444, we will merely state that all the best varieties are seen here in abundance and as magnificently-developed specimens. In some houses, indeed, one can only creep through a narrow track between, as it were, a dense jungle, N. E. todeoides, Wittmanii, elegantissimum and, last but not least, Amerpohlii, which, though dwarf, holds its own with the best of the plumose section. The only houses which could present an equally fine effect, though on other lines, were those containing masses of that peerless Maidenhair Fern, Adiantum Farleyense, another of the firm's specialities. The many market forms of Pteris cretica, serrulata and tremula were there in myriads, and it was one of the most interesting features of our visit to note how, stage by stage, the plants are brought on from the invisible spore to the saleable plant in such large numbers, the whole constituting a veritable Fern factory. We must advert specially to the comparatively new speciality of Messrs. May's firm, viz., the British Fern varieties. In the course of some 30 years' cultivation of these long-neglected plants, we have seen many collections, but never finer, healthier, or better-developed specimens than are most of those at Edmonton. Naturally, some slow-growing species demand more time for full-size development than has so far been available for culture. Nearly 1,000 distinct varieties are embraced in this collection, while of exotics there are as many more. In other directions than Ferns, we may mention houses glowing with ruddy-leaved Dracænas of some 80 odd kinds, gold and green and red Crotons in about 130 varieties, Bouvardias in 30 or more varieties. Tree Carnations and Clematis, Roses, Gardenias, Ixoras, Ficus, Begonias, Ivies, and scores of other kinds of plants figure in one or other of the three nurseries at Edmonton, Millfield, and Chingford. *C. T. Druery.*

The Week's Work.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire N.B.

Gesnera.—Plants that are to flower in winter should now have their roots shaken from the old soil and the tubers potted up into 5-inch pots, putting four tubers in each pot, and using a compost consisting of peat, leaf-mould, loam, and sand. The tubers should be covered with about 1 inch deep of soil placed loosely on the top. Keep the soil rather on the dry side until the tubers have started into growth. Place the pots in a heat of about 65° to 70° on a base of sand or gravel, or any other material that will hold moisture. Syringing is not advisable, therefore damp frequently all the ground surfaces in the house, and shade the plants from bright sunshine. Allow ample room for each plant to develop perfectly, as the foliage of some varieties is very handsome. When the pots have become well filled with roots, the plants should be shifted into pots 7 or 8 inches in diameter, and in these they may flower. Care should be taken that there is no mealy bug in the house in which they are cultivated, as Gesneras are very liable to attack by this pest. Keep a sharp look-out also for thrip, and on the first appearance of the pest let the house be fumigated with the X.L.-All vaporiser.

Streptocarpus.—Hybrids raised from seeds this spring should now be pricked out into small pots containing a compost of loam, leaf-mould, and sand, with a little manure from a spent Mushroom bed well mixed with it. If given a position in the warm fernery and shaded from bright sunshine the plants will succeed well. Older plants that are now flowering must be given less heat, and they will need frequent applications of liquid manure. Fumigate with the XL.-All vaporiser on the first appearance of green fly.

Ficus radicans variegata.—Insert cuttings of this variegated Ficus for raising plants to cover a wall in a stove or intermediate house. Seven or eight cuttings may be placed in a 6-inch pot, and they will quickly make roots. Afterwards place the pot against the wall, and in a very short time the plants will obtain hold of the wall. This is all that is required, as the Ficus will live upon the wall. This variety has a much brighter appearance than the type-species, and a wall covered in this manner gives little or no trouble in keeping it clean.

Winter-flowering Begonias.—Plants of Gloire de Lorraine raised from leaves that were propagated early in the spring are now ready for repotting into 6-inch pots. Use a compost consisting of leaf-soil two parts, sand one part, and light loam or peat two parts. Be careful not to damage the young roots during the process of potting. Therefore, only press the compost moderately firm around the ball. Begonias are moisture-loving plants. Therefore, it is the more necessary that the pots should be well drained. Place the plants close to the glass in an intermediate house, and promote an abundance of atmospheric moisture at all times. Provide the plants with shade from bright sunshine, and keep a sharp look-out for small yellow thrips, or these will be likely to spoil the foliage. Syringe the plants overhead twice each day during favourable weather. Cuttings of the Begonia Gloire de Sceaux inserted last April will also be ready for potting now. Employ a compost of loam two parts, leaf-mould one part, sand one part, and a small quantity of manure from a spent Mushroom bed. In other respects this variety should be treated similar to Gloire de Lorraine.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Summer pruning and training.—All trees are now making rapid growth, and should be given attention at short intervals, pruning some shoots and tying in others to extend the trees or to replace worn-out branches. Pears are generally the first to claim attention. Wall trees and cordons should be examined in the first instance when the shoots have made seven or eight leaves. Pinch such shoots to six leaves, and later, when the top buds have again commenced to grow, pinch the second growth back to two leaves. By this system the trees will not suffer much check, but the sunlight will have free access to all parts of them. This is much better than allowing the shoots to grow until July and then using a knife to shorten them, this latter being a method that encourages strong roots to form, even when the trees are worked on dwarfing stocks, and the trees eventually become gross and unfruitful, rendering root pruning necessary. Cordon trees growing on walls require frequent pinching to keep them in a fruitful condition. The same methods should be followed with pyramid Pears, Plums, Apples, and Cherries, with slight modifications according to varieties. Commence pruning the most forward trees first, and allow the leading shoots to extend according to the amount of space available, only shortening those that have filled their allotted space, and pinching the points from those that are growing too strong. As soon as the operations of stopping and disbudding are completed, tie, or nail in, the leading shoots in the desired direction. Gather all the prunings every day and burn them, and vigorously syringe the wall trees daily with clear water.

Thinning fruits.—Apricots should now be finally thinned. All trees growing in well-drained borders should be given another good soaking of water. Look over the trees at frequent intervals for maggots, which are unusually prevalent this year, and other insects, such as woodlice, ants, &c., which should be trapped before the fruits commence to colour. Thin the fruits of Plums on wall trees if they have set too thickly, and keep the roots well supplied with water. Pears should be thinned where necessary, but care should be taken not to thin them too freely if the Pear midge is in evidence. First pick off all deformed fruits from the trees and collect those that fall to the ground and burn them. If persevered with, this treatment will greatly lessen the pest. Early varieties of Apples, such as Mr. Gladstone, Beauty of Bath, and Irish Peach should be thinned if the trees have set heavy crops. American blight, which is now making its appearance, should be carefully watched and the trees sprayed with No. 2 fluid, as recommended in the "Calendar" printed in the issue for February 1 last.

THE FLOWER GARDEN.

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

Tender bedding plants.—Most of the plants having been already put into the beds, the more tender subjects having now been carefully hardened, may also be planted. Begonias that are in unheated frames are now good plants, and should be transferred to beds which have been specially prepared for them by the addition of leaf-mould and decomposed manure. It being necessary to water these plants frequently, we keep the revolving sprayer playing over their heads in the hottest weather, and it is very beneficial. Frequent attention must be given to such plants as Verbenas and Petunias in order to peg down the growths and to remove the flower trusses as soon as they become unattractive. Special attention in the matter of watering must be given to plants growing in vases, as these are generally in rather exposed positions, and therefore dry very quickly. Stake and thin out herbaceous plants as often as necessary. Dahlias will need to have their side shoots staked, and this is better done before the roots extend far into the ground. Leave about five shoots and the main leader to each plant. The centre growth should have been secured to a stake at the time of planting, and the four side growths must now be given a separate stake each. The effect will be quite spoiled if they are bunched up tightly.

The wild garden.—Myosotis and Narcissus are especially decorative plants in the wild garden. The Daffodils have flowered, but if there is Myosotis amongst them, in order that it may mature its seeds, the grass must not be cut quite so early as if Daffodils alone were cultivated. At the same time, strong-growing weeds that interfere with the development and flowering of other plants should be kept down. It is good practice, when removing Myosotis, Polyanthus, and Wallflowers from the flower garden, to plant a few of these in the wild garden, or on bare banks; the seeds then become scattered, and the seedlings flower in the following spring. Seeds of such plants as Honesty and the common Valerian may be sown broadcast. When banks planted with spring-flowering plants have been cleared, vacant spots may be very suitably filled with such plants as Delphinium "Blue Butterfly," Nemesia, dwarf Antirrhinum, Marigold "Legend of Honour," Viola, Tagetes, Gazania, Nasturtium, and Verbena.

Nymphæa.—The present is a good time for planting Water Lilies. They succeed best in natural pools or slow-running streams, where the depth of the water is from 1½ to 2 feet, and in a position that is exposed to sunshine. They require about 1 foot deep of soil to root into, and it is a good plan to have this soil in shallow baskets which will readily sink to the bottom. Casks or tubs may be used, but they must be sunk until they are level with the base of the pool. Other water plants suitable for planting at the present time include Sagittaria, Peltandra virginica, Aponogeton distachyon, Juncus zebrinus, and Butomus umbellatus.

Planting.—Such species as Rhododendrons (including those known in gardens as Azaleas), Kalmia, Lilac, Laburnum, Prunus, &c., which have been forced into flower in the houses may now be planted out into their beds in the open, or be plunged in pots into beds of ashes. The plants should be frequently syringed during the summer months, and every attention given them in respect to root-waterings. Lily of the Valley which has been forced may also be planted out into a shaded position. This plant requires deep, rich soil, and succeeds very well under the shade of a wall facing to the north. Hyacinths and Tulips may be planted in the wild garden.

Lawns and paths.—Lawns require very frequent mowings this season in order to keep the grass short and prevent it producing flower-stems. Sweep and roll the paths as often as may be necessary to keep the surfaces firm and smooth.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Cucumbers.—Plants that have been bearing fruit for a long time will become exhausted unless they are encouraged to make fresh growth, by being top-dressed with a new compost, which may consist of light, turfy loam, horse manure, and flaky leaf-mould, and by supplying the roots with occasional waterings of tepid liquid manure. High temperatures and moist atmospheres must be maintained, employing sufficient artificial heat at night and on dull days, carefully ventilating the house, but closing it early in the afternoon to conserve solar heat. Frequently damp the floors and syringe the plants in the morning and again at closing time. This practice, if well followed up, and accompanied by light cropping, will quickly renovate plants that have become weakened by heavy cropping, and it will keep them free from red spider, but old growths should be thinned out and young ones laid in and stopped at one leaf beyond the first fruit. If new plantations are required, young plants should be raised for the purpose. It is from young plants that fruits of the best quality are to be secured.

Cucumbers in frames.—The weather has not been favourable to crops recently planted in frames, and it may be found expedient to add fresh fermenting material around the sides of the frames. Keep the growths properly thinned, stopped and regulated, and be careful not to over-water the plants, or to create, by syringing, excessive atmospheric moisture. The best time to syringe the plants is on bright days, when the lights are being closed for the day, which should be done early to secure a good heat. Keep the lights covered at night, and lightly shade the plants during the middle of the day from powerful sunshine. In many gardens planting in frames is delayed until accommodation can be found for the plants in the frames from which the early crops of such vegetables as Cauliflowers or Potatos have been cleared. In such cases the fermenting material may require to be turned and an addition made to it, afterwards putting out the plants as recommended in a previous "Calendar."

Tomatos.—Houses containing plants with ripening fruits should be freely ventilated, and the atmosphere kept dry. Extreme fluctuations of moisture in this respect would damage the fruit by causing it to split. Careless watering of the soil will also promote similar evil effects, and the soil should, therefore, be kept in a uniformly moist condition, at no time allowing it to become very dry. Apply light top-dressings of fresh compost, artificial fertilisers, or water the roots with liquid manure. Gather the fruits as they ripen, both in order to prevent them being spoiled by over-ripening and for the sake of lightening the burden of the plant. Regularly remove lateral growths, but refrain from the practice, sometimes followed, of amputating the principal leaves. It is a custom at The Hendre, in the case of cordon plants, to leave, during the early stages of growth, a spur near the base of each plant, from which—after the lower part of the plant is relieved of fruit, and at the same time of leaves also—a young growth is trained over the old stem, ultimately entirely taking its place. By this means, fruit ripens upon the bottom of the new rod before the old one has finished the crop at its top, and a continual supply of fruit from the same plants is kept up for a long period. At this season accommodation can usually be found for Tomato plants in structures that have contained Strawberries, and such plants should furnish a supply of fruit until at least mid-winter. Avoid using a rich or a large body of compost, as, in either case, an over-luxuriant growth would take place while the plants were in a young state. A better plan is to secure sturdy plants and refrain from nourishing them with stimulants until they are laden with fruit.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Cymbidium.—This genus was never held in higher estimation than it is to-day. The plants have become special favourites, and in some gardens a house is set apart for their culture. The flowers of many are of great beauty, and some yield a grateful perfume, while for lasting qualities some of them have few equals. The following showy kinds are well deserving the attention of every Orchid grower, viz., the species C. erythrostylum, C. Lowianum, and its variety concolor; C. eburneum, C. Mastersii, C. Sanderi, C. Hookerianum, C. tigrinum, C. giganteum, and their hybrids, C. Bullianum, C. insigne Ansonii, C. Low-grinum, C. Lowio-eburneum, C. eburneo-Lowianum, C. Winnianum, C. Wiganianum, C. Tracyanum, C. Holfordianum, C. Colmaniæ, and C. Lowio-grandiflorum. That these plants grow best under cool, intermediate conditions is now generally recognised. Thus treated, they suffer less from insect pests, and they thrive and flower better than when grown in a higher temperature. I think it is the cooler treatment these plants have received of late years which has caused them to flower more freely and brought them into the repute which they hold at the present time. Cymbidiums are for the most part strong-growing plants, having thick, fleshy roots, and during their growing season, especially when making up their growths in autumn, abundance of water at the roots is needed. At all other times they should be treated as ordinary greenhouse plants, always allowing them to become dry before giving the roots a thorough soaking with water. The plants require shading from strong sunshine, and the atmosphere of the house should be kept sweet and fresh by a judicious use of the ventilators, while the surroundings should be kept moist, and the foliage freely syringed both morning and evening when the days are fine.

Repotting.—All the above-mentioned kinds are now past the flowering stage, and new growths for the present season are more or less advanced. Any necessary repotting should now be carried out, but refrain from disturbing the plants as long as the soil is not sour and the receptacles afford sufficient room for the development of the season's growth, as plants in a root-bound state are always more productive of flower-spikes. If large specimens are required, young, healthy plants should be shifted on, causing as little root disturbance as possible, breaking the pots of those that are root-bound to extricate the roots without injury. Large specimens that have become exhausted are best broken up and the pieces potted separately, it being much better to grow on young plants into specimens than to make up large pots from small pieces. The new pots, or pans, should be clean, and of sufficient dimensions to accommodate the plants for a period of two or three years. Plenty of good, open drainage should be afforded, and the crocks covered with a layer of thin turf. Cymbidiums, for the most part, require potting in strong soil, and this should be a mixture of three-fifths turfy loam, one-fifth turfy peat, and one-fifth sphagnum-moss. Use these in as lumpy a condition as possible, adding plenty of crushed crocks and silver sand to keep the whole porous. I have tried manures for these plants, but the plants did not succeed so well with as without it. Therefore, I do not recommend using manures of any kind in the compost. The only thing of the kind I find beneficial without having ill-effects is weak, liquid cow-manure, and then only when the plants are root-bound. In the process of potting the soil should be made moderately firm about the roots, and the base of the plant kept about 1 inch below the rim of the pot. Use the materials in a moderately moist state, thus no water will be needed for a week or 10 days after repotting, when they should be given a thorough soaking, which will suffice for a long time.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Potatos.—By this date the Potato crops in all localities should be sufficiently advanced to complete the work of earthing up the plants. Make sure that the surface of the soil is first thoroughly freed from weeds by flat hoeing it. When extra fine tubers are required for any special purpose the growths should be thinned to two or three of the strongest shoots. This is easily accomplished by placing the feet near the plant and drawing the weakest growths out with the hand.

Vegetable Marrows.—Plants which were started early in portable frames should now be in full bearing, the lights and frames being entirely removed. A thorough good surface dressing of loam and half-decayed manure should be applied in equal parts, and the growths thinned, regulated, and pegged down. The value of this practice over that of the ordinary way of cultivation will be fully demonstrated, as not only will the plants treated in this manner be in the height of bearing when those grown in the open are only just planted, but they will continue to bear quite as freely, if not more so, until frosts occur in the autumn. Plants raised from later sowings may now be put out on well-prepared beds.

Turnips.—After this date, and during dry, hot weather, much trouble is often experienced in keeping up a regular supply of sweet, tender bulbs. The Turnip flea frequently is very troublesome, arresting the growth in its early stages, and often completely eating up the plants when in the seed-leaf. Frequent small sowings should be made of the varieties Snowball, Jersey Lily, and Red Globe, choosing as far as possible the coolest and most shady part of the garden. The seed should be watered in when sown, and I have found it a capital plan to strew the surface with finely-mown lawn Grass about half an inch thick, which not only keeps the ground cool, but is also distasteful to the Turnip flea. Earlier sowings should be thinned before the young plants become drawn. Apply fresh soot once a week and a little vegetable manure. Keep the ground constantly stirred with the Dutch hoe. Early sowings which have matured should be lifted and stored in sand in a cool place at the foot of a north wall.

Spinach.—Few vegetables are more in request the whole year round than Spinach, or more difficult to procure during the height of summer, especially on shallow soils and in the southern districts. The most satisfactory way to ensure a constant supply is to make a small sowing once about every 10 days on land which has been well enriched and where there is a certain amount of shade, the most suitable places being between the rows of tall beans and peas. Thin out the plants to 6 inches apart. New Zealand Spinach which was raised in heat ought now to be planted out on a well-prepared piece of ground, either on a south or west border.

Cardoons.—These should now be firmly established and growing away freely. It is essential that plenty of moisture be afforded them all through the growing season. The plants should be not less than 18 inches apart and a stout stake placed to each. Give the surface a good mulching of horse-droppings. Cardoons should be grown quickly, and from eight to 10 weeks is necessary to blanch them well.

Dwarf Beans.—Plants that are growing in unheated frames will now need an abundance of ventilation, and the lights may be removed entirely during genial weather. Apply a dressing of half-decayed horse manure to the roots just before the plants come into bearing. Continue to make small sowings in the open garden at fortnightly intervals.

Water supply.—One of the most serious hindrances to successful vegetable gardening in many places is due to the inadequate provision that has been made for a suitable supply of water, for during some seasons, in the absence of a good supply, it is impossible to obtain crops of the highest merit. No kitchen garden should be formed without making arrangements for sufficient water, and wherever it is possible a basin or pond should also be provided. Though water obtained fresh from the pipes is preferable to none at all; it is not to be compared with that which has lain for some time exposed to the influences of the atmosphere. The best time for applying water to plants is during the afternoon and early in the evening. Sewage or drainage from the farmyard are both of great value for most crops, but in all cases such liquids should be properly diluted. If the foliage of nearly any kitchen garden crop be damped by spraying in the evening after a hot day, the effect is beneficial, especially if the water is tepid at the time it is applied. This is the case even if the soil is sufficiently supplied with moisture at the time.

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Letters for Publication, *as well as specimens of 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.*

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APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JUNE 17—
Roy. Bot. Soc. Summer Exh. (3 days). Yorkshire Gala, York, Jubilee Exh. (3 days).

THURSDAY, JUNE 18—Linnean Soc. meet.

SATURDAY, JUNE 20—German Gard. Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—59·1°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, June 10* (6 P.M.): Max. 75°; Min. 58°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—*Thursday, June 11* (10 A.M.): Bar. 30·2; Temp. 67°; *Weather*—Bright sunshine.
PROVINCES.—*Wednesday, June 10* (6 P.M.): Max. 70° Cambridge; Min. 55° Lancaster.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Bedding Plants, Gladioluns, Pansies, Palms, Plants, Bays, Conifers, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
Imported and established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Principles of Manuring.

It is a philosophical commonplace that we can only apprehend the external world through the medium of thought; indeed, it may be maintained that we know nothing of the external reality, but merely the workings of our own minds. But without pushing our scepticism to such a point, we must recognise in all our science, i.e., our attempts to reconstruct nature in terms of our mind, a tendency to rest content with explanations which fit in with our habits of thought, and to substitute simple, compact theories for the very complex operations of things in themselves. In other words, it is easier to let our minds work on straightforward "logical" lines than to puzzle out things as they are.

These somewhat trite reflections have been prompted by reading a recently-published work on manures by Dr. A. B. Griffiths,* the author of a long series of communications on questions connected with the nutrition and composition of plants, which have not always received a very cordial recognition. In this book we find developed at considerable length two ideas which we have every reason to consider fallacious, but which for the last half-century have exercised a powerful influence both on agricultural and horticultural practice. These two fallacies are, firstly, that the composition of a particular plant, as ascertained by an analysis of its ash, affords a guide to the manure it should receive; and secondly, that the sulphate or other compound of iron is a desirable ingredient of a fertiliser, because it will give colour to fruit or flowers.

The first opinion is due to Liebig, who, putting aside for a moment the question of the supply of nitrogen, laid down the general principle that, after ascertaining what a given crop is accustomed to take away from the soil, it is only necessary to add the same materials beforehand in order to satisfy all the requirements of the plant. Now, such a point of view is at first sight eminently logical; so conformable, indeed, to our ways of thinking that it has taken 20 or 30 years of experiment and hard controversy to demonstrate its insufficiency; in agriculture the idea has practically disappeared, but in horticultural matters it is constantly recurring, owing to the lack of systematic experiments on the nutrition of garden plants. The cardinal defect of Liebig's theory is that it takes no account of the soil; it might be true if one started to grow a plant in a pot of pure sand containing no nutriment but that which one added to it, but since the plant is placed in soil containing enough food for at least a hundred crops, though mostly in a more or less dormant condition, manure is only really wanted to make good certain deficiencies which are special to the soil and the crop, and these can only be ascertained by actual experiment. Different plants have very different powers of getting hold of particular elements of nutrition, and experience shows that the analysis of the ash of the plant does not enable one to predict in which direction the difficulty will lie.

We must draw our examples from farm crops, because it is only in regard to them that there is a sufficient weight of experimental evidence, and we will simply instance Wheat and Barley among cereals and Turnips and Mangolds among root crops. In the growth of Wheat it is very rarely that any other manure than a nitrogenous one will be required; nitrogen is what Ville calls the dominant for Wheat, and all field experiments, confirmed by the working experience of two generations of farmers, have demonstrated that under normal conditions, if Wheat be supplied with from one to two hundredweight of nitrate of soda or sulphate of ammonia, no profitable increase of crop will be obtained by adding phosphates or potash salts. Yet the analysis of the Wheat plant does not show that it takes much nitrogen from the soil; in fact, it takes more potash; only under the usual conditions of Wheat-growing does the plant find a special difficulty in making use of the reserves of nitrogen in the soil. As far as the ash goes, Barley has much the same composition as Wheat, yet Barley requires much less nitrogen than Wheat, and it is very desirable to supply it with some phosphoric acid. The analysis of Swede Turnips would show that the crop takes away from the soil about 100 lb. per acre of nitrogen, 30 lb. of phosphoric acid, and perhaps 120 lb. of potash; yet there cannot be a shadow of doubt but that the proper manuring for a Turnip crop is primarily 60 to 80 lb. of phosphoric acid, then from 10 to 20 lb., but not more, of nitrogen, and only potash in rare cases. Mangolds do not differ greatly in composition from Swedes, yet Mangolds must be manured with nitrogen and potash, phosphoric acid counts for very little, and may often be omitted. Now, these are facts which have been demonstrated to weariness; they may be paralleled for Clover, for Potatos, for Beans, and for all our other farm crops; they form the basis of the practice of farmers in every civilised country. And yet Liebig's theory—fallacy, we prefer to call it—still is supposed to hold for garden plants, and Dr. Griffiths' book is made up of a series of analyses of the ash of shrubs—analyses which must have cost him endless labour—and recommendations of manure mixtures based on those analyses. We will not labour the point, we will only repeat that in whatever instance the plant itself has been asked by systematic experiment what kind of food it wants, what elements of nutrition it will be grateful for, the answer has borne no relation to the comparative richness or otherwise of its ash in those elements, hence we conclude that an analysis of the plant can afford no guide to its appropriate manuring, and that Griffiths' toils are essentially useless for the purpose to which he devotes them.

Now let us turn to the iron question; it has always been recognised that the rich, red sands and loams of Hereford and neighbouring counties give rise to highly-coloured fruit and brilliant flowers; Tea Roses, in particular, have been thought to take on a special richness of colour. As these red soils owe their colour to oxides of iron, and as iron is known to be essential to the formation of chlorophyll and the red material in animal blood, it seemed a natural step to conclude that an exceptional amount of iron in the soil accounted for the brilliancy of colour in its products. But the least examination will show how very defective the chain of reasoning is, and whatever experimental evidence exists is entirely adverse to the view that the heightened colour is to be attributed to a direct effect of the iron upon the plant. In the first place, however great the part it may play, the amount of iron taken up from the soil is very small, 4 or 5 lb. per acre at the utmost, whereas the amount present in the soil is enormous, 20,000 to 30,000 lb. per acre in the top 9 inches only of soil, and that, too in forms which could easily be appropriated by the plant if it wished to obtain more.

Secondly, the red soils in question are not, in fact, exceptionally rich in iron; most soils—and we have the analyses of many scores before us—yield from 2 to 3 per cent. of oxide of iron, but the red soils from the old or the new red sandstone formations which have come under our review, contain rather less than usual. The conspicuous colour may be due either to a slight difference in the mode of combination of the iron, or to its prominence when spread over a somewhat coarse-grained soil, which exposes a comparatively small surface.

Furthermore, we are acquainted with one or two soils derived from the marlstone, which contain altogether exceptional amounts of iron, at least ten times as much as usual, yet these soils give rise to no exceptional colour in fruit or flowers. Lastly, there is but little experimental evidence in support of the connection between iron and colour, in the majority of cases at any rate; we have in our mind a series of experiments upon dwarf Apple trees in large tubs, where, year after year, the Apples

* *Manures for Fruit and other Trees.* By A. B. Griffiths, Ph.D., pp. 264, xxii. London: Sutton, 1908.

supplied with sulphate of iron were the greenest of the series. There is on record also a series of experiments made by Mr. H. H. Cousins at Wye College for the National Carnation Society, in which the use of sulphate of iron made no difference to the colour of yellow-ground fancies. There was some evidence that a scarlet self did not show white flecks so readily in sunshine when they had received iron, but the experiments were not pushed far enough to exclude a possible secondary cause. The action of soluble iron salts upon garden plants is worthy of further investigation, but the evidence, as far as it goes, is all adverse to the supposition that high colour is necessarily or habitually correlated with an abundance of iron in the soil.

We have dwelt at some length on these two matters, namely, the relation supposed to exist between the ash and the manure appropriate to a particular plant, and the supposed connection of iron with the colour of fruit, for we regard the one as a fallacy, and the other as an unproven hypothesis.

OUR SUPPLEMENTARY ILLUSTRATION shows a bed of Campanula persicifolia in the Botanic Gardens at Kew. The Campanulas, or Bell Flowers, are amongst the most valuable of garden plants, not only on account of their floriferous character, but also because of the ease with which they are cultivated. The genus Campanula is a very large one, and the enumerations of the species and synonyms occupy no fewer than 20 columns in the *Index Kewensis*. Amongst so wide a range are found varieties suitable for all quarters of the garden. Some are showy border subjects, and of these the two best known are C. persicifolia and C. pyramidalis, both of which are represented in gardens by several excellent varieties. The flowers of C. persicifolia are very broadly campanulate, and although the type colour is blue, there are shades intermediate to white; and some of the varieties possess double flowers. The culture of this Campanula is easy, but it undoubtedly thrives best and blooms most freely on chalky soils. Its propagation is readily effected by seeds, which may be sown out-of-doors in a shady border, either in March or when the seeds are ripe in August; it will also reproduce itself naturally from seedlings if the ground about the old plants be left undisturbed. Propagation may also be effected by means of young shoots inserted in March or April. These should be placed in a light soil in a cold frame. It may also be increased by division of the root stock. The double forms are very beautiful, and these appear to have been raised many years ago, for, according to the *Botanical Magazine*, in the year 1798, the double varieties had become so common as to almost usurp the single varieties from gardens. The older of the double white and double blue forms are known respectively as C. p. alba fl. pl., and C. p. cærulea fl. pl. On June 19, 1900, a beautiful double white variety was exhibited by Messrs. T. S. WARE, LTD., Feltham, at a meeting of the Royal Horticultural Society under the name of C. p. Moerheimei. This plant was figured in our issue for June 30, 1900; the flowers, which are reproduced a natural size, average from 2 to 3 inches in diameter. Another variety of C. persicifolia was illustrated in the *Gardeners' Chronicle*, October 23, 1883, under the name of C. p. Backhouse's variety.

THE NATIONAL ROSE SOCIETY.—The great summer exhibiton of this flourishing Society will again be held in the Botanic Gardens, Regent's Park, the date being Friday, July 3. The classes are more numerous than ever, and only fall one short of one hundred. There are 13 new classes added this year, four in the open classes and nine in those devoted to amateurs. An exhibition of Roses will be held under the Society's auspices in the Royal Botanic Gardens (The White City), Manchester, on Tuesday, July 21. The autumn Rose Show will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Thursday, September 17.

ASPARAGUS SHOW AT EVESHAM.—The twelfth annual show of Asparagus was held in the Town Hall, Evesham, on Monday, the 1st instant, the proceedings being opened by the Mayor of that town. The whole of the exhibits are annually sold by auction at the close of the exhibition, many of the buyers of the best exhibits being Covent Garden salesmen. The heaviest bunch of 120 "heads" weighed 27 lbs. 4 ozs., and sold for 46s.: this was grown by Mr. FAULKNER, of Pershore, who usually obtains the prize offered for the heaviest bunch. The bunch, to which was awarded the 1st prize for size and quality, was grown by Mr. G. KNIGHT, of South Littleton: it weighed 19 lbs. 11 ozs., and was sold for 38s. Other weights and prices were:— 19 lbs. 4 ozs., 22s. 6d.; 20 lbs. 14 ozs., 23s. 6d.; 18 lbs. 12 ozs., 25s. 6d.; 17 lbs. 7 ozs., 21s. 6d.; 13 lbs. 12 ozs., 20s. 6d.; 18 lbs. 12 ozs., 20s. Only three bunches were sold for less than 6s. per bunch. There are about 5,000 acres of land devoted to Asparagus culture within a radius of six miles of Evesham, and still more is being planted each year. One grower is planting 20 acres with Asparagus this season.

BRITISH GARDENERS' ASSOCIATION.—A meeting of the London branch will be held at Portland Road Station, on June 13, at 3 p.m., when Mr. HAWES will conduct the party to the Regent's Park and Royal Botanical Gardens. Gardeners, whether members of the association or not, are invited to attend this meeting.

R.H.S. GARDENS GUILD.—We are asked to announce that the first annual general meeting will be held on Wednesday, July 8, the second day of Holland House Show, at 7 p.m., in the CHARLES DICKENS Rooms, Carr's Restaurant, Strand. It is particularly hoped that all who have at any time been students or employees in the R.H.S. Gardens at Chiswick or Wisley will endeavour to be present, and will give early notice of their intention to the acting hon. secretary, Mr. R. WALLIS, R.H.S. Gardens, Wisley, Ripley, Surrey.

FLOWERS IN SEASON.—A selection of flowering shrubs has been sent us by Messrs. JAMES VEITCH & SONS, LTD., from their Combe Wood Nurseries, Kingston Hill. All are from the open grounds, and they mainly represent improved varieties of well-known subjects. The Lilacs include the exquisite double white variety named after Mme. Lemoine. Guelder Roses include the globose-flowered Viburnum plicatum, with inflorescences of snowy whiteness, and the flat corymbose heads of V. tomentosum var. Mariesii. The Mock Orange (Philadelphus) is greatly improved in the variety Boule d'Argent, the shoots having axillary racemes of white, fragrant flowers. Another, P. purpurea maculatus, is not so crowded with blossoms, but a tinge of crimson at the base of the petals is an additional attraction, and against this colouring the yellow stamens are prominent. Ceanothus Veitchianus has deep blue flowers, against which those of C. thyrsiflorus appear pale. The Deutzias are all floriferous subjects, D. discolor and D. gracilis being both valuable garden plants. The former is represented in a large-flowered form, labelled D. d. grandiflora, the latter by D. g. venusta. Purple, yellow and white-flowered varieties of Cytisus, the showy Weigelas, of which W. rosea is now so prominent a feature in suburban gardens, a double-flowered Wistaria, and many others form an interesting collection.

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, June 23, at 6 p.m., at the Hotel Windsor. Mr. H. HITCHCOCK, of Victoria, Australia, will lecture on "The Development of Gardening in Victoria during Recent Years."

FORCED BULB SHOW.—We are asked to state in connection with the special prizes for Hyacinths and Tulips to be competed for on Tuesday, March 9, 1909, at the meeting of the Royal Horticultural Society, that the Council would be glad if this date could be made a general one for the exhibit of collections of forced spring bulbs, specially with a view to showing which varieties (of Daffodils for instance) are best suited for forcing. The Council invite the exhibition of small collections from amateurs as well as from the trade.

FRENCH HORTICULTURISTS IN LONDON.—A party of excursionists, limited to 200 members and friends of the National Horticultural Society of France, will visit London on the 22nd inst., and return to France on the 29th. The excursion will include a visit to the Franco-British Exhibition for the flower show of the 24th, a visit to Kew Gardens, Windsor, and the principal parks and nurseries in and around London.

M. PHILIPPE DE VILMORIN.—We observe with pleasure that this eminent French horticulturist has recently been appointed a Chevalier of the Legion of Honour. This gentleman has done much for international horticulture, and the honour is well deserved.

PRESENTATION TO PRESIDENT FALLIÈRES.—On the occasion of the recent visit to London of the President of the French Republic, a committee was formed, of which Sir ALBERT ROLLIT was appointed chairman, to make a presentation to M. FALLIÈRES, in the name of British members of the Legion of Honour and other French Orders. The presentation consisted of a gold and silver casket containing an illuminated address on vellum, and the presentation was made to M. FALLIÈRES by Sir ALBERT ROLLIT at St. James's Palace. Many gentlemen connected with literature, art, and science were among the number of subscribers, and it is interesting to note that English horticulture was also represented, for in the list we observe the names of Sir ALBERT ROLLIT, Mr. GEORGE STANTON, Mr. MARTIN SUTTON, and Mr. HARMAN PAYNE.

UDO OR OUDO.—Mr. J. G. BAKER informs us that this vegetable, to which reference was made on p. 317, consists of the young blanched shoots of Aralia cordata, a native of Japan. It has long been cultivated by the Japanese as a vegetable. It was originally described by THUNBERG in 1784, and was re-described and figured by SIEBOLD and ZUCCARINI in 1835 under the name of Aralia edulis. There is a full account of it by Mons. EDOUARD ANDRÉ in *Revue Horticole*, 1896, p. 55. This nurseryman cultivated it in his garden in Touraine, and warns us that, as a vegetable, it possesses a resinous flavour that would not be palatable to everyone. It can easily be procured from the Japanese nurserymen.

GARDEN COMPETITION AT CUPAR.—A very interesting gardening competition in Cupar, Fifeshire, held under the auspices of the Edinburgh and East of Scotland College of Agriculture and the Fifeshire Education Committee, has just been completed by the issue of the prize list. A class was conducted by Mr. G. P. BERRY, and at the close a paper was set. The competition was in three sections—one for practical and market gardeners, another for amateurs and cottagers, and a third for ladies. In the practical section the competitors were asked to describe the best method of laying down in the open an acre of fruit trees—Apple, Pear, and Plum—with under-planted small fruit, giving the most up-to-date cultural treatment over a period of six years. Also, the most approved cultural details in the growing of the first early Potatos, early and late Cauliflower, and Onions for bulbing purposes in a private garden. The amateurs' and cottagers' problem consisted of the laying-out of a small piece of ground as a cottage garden from old pasture land, including soil, working, manuring, cropping, propagating, planting, and pruning; also, the best culture for Roses in a small garden. The ladies were asked to give their views on the history of the Sweet Pea, emphasising its adaptability for decorative purposes inside the villa and mansion, and their ideas with regard to arrangement of flower foliage in vases and for table decoration were also asked. A large number of papers were sent in, and the premier places were taken as follow:—Practical and market gardeners, 1 (Silver Medal), DAVID DALRYMPLE, gardener, Dura House; 2, PETER WALKER, gardener, Cairnie. Amateurs and cottagers, 1 (Silver Medal), W. OLIPHANT, Bonnygate; 2, CHARLES STORRAR, architect, East End Park. Ladies, 1, Miss INNES, Rosemount; 2, Mrs. E. M. LENNOX, Castlefield.

NEW BOTANIC GARDEN IN AMERICA.—The large amount of money that has been given for educational purposes in America has provided for the establishment and endowment of universities in many parts of the States, and in most of them the claims of botany are recognised in the provision not only of a chair for the science, but also of a suitable botanic garden. The Johns Hopkins University, at Homewood, Baltimore, has, according to *Gardening* (Chicago), made provision for a new botanical garden, which is to be under the care of Prof. D. S. JOHNSON. It is contemplated to commence at present with a biological garden and one greenhouse for biological work. Later on there will probably be added a systematic garden of about two acres. In addition to these, plants, trees, and shrubs of botanical and ornamental value will be planted on suitable sites in Homewood Park conforming to the general landscape plans. Mr. WM. H. WITTE is to be the garden superintendent.

FIG. 175.—IRIS × AMETHYST: FLOWER VIOLET IN VARIOUS SHADES.

A NEW JAPANESE ROSE.—Rosa yedoensis of MAKINO has now been brought into cultivation. It has the foliage of Rosa rugosa, with an inflorescence like that of Rosa multiflora, with numerous rather small pink flowers. Plants of it may be procured through the Japanese nurserymen.

STREET TREES.—Although there are so many handsome trees suited for town planting, we are accustomed to see the same species planted with almost monotonous frequency. One of the reasons given for this is that other suitable trees are not procurable in quantity from British nurserymen, but if a demand existed for them, surely the nurserymen would not be slow to propagate and stock them. In the First Garden City at Letchworth the streets have been planted with trees that are not commonly used for the purpose, and which are found there to be equally as valuable as the more common Plane, Horse Chestnut, and Sycamore. Fraxinus monophylla has proved to be an excellent subject at Letchworth if given a fairly deep root run. Pyrus Aria is valuable for planting in windy and exposed streets. Many forms and species of Acer have been employed. Of these the gardener, Mr. F. J. COLE, has sent us examples of A. Pseudoplatanus Leopoldii, A. P.-p. lutescens, A. platanoides digitatum, A. p. Schwedleri, and A. dasycarpum.

CULTIVABLE LAND FOR THE USE OF THE POOR.—The Poor Law administration of Posen have created a new institution. Town land suitable for cultivation and letting is divided into sections of 200 square metres, and let to deserving poor persons for gardening purposes. The annual rent for such small areas is fixed at two shillings. The authorities hope, from this arrangement, to improve the domestic condition and health of the poor. It is also hoped to foster an educational purpose and stimulate the alms receivers, who by means of *petite culture* will be working out a part of their subsistence.

BIOLOGICAL PROFESSORSHIP AT CAMBRIDGE.—Mr. W. BATESON, F.R.S., has been appointed to the Professorship of Biology founded at Cambridge about five years ago by an anonymous donor. Professor BATESON is well known as one of the leaders in the experimental study of heredity at the present time, and his appointment will strengthen the University of Cambridge, which is already doing so much to further the advancement of biology, both pure and applied. Our readers will remember that Professor BATESON presided at the third International Conference on Genetics held under the auspices of the Royal Horticultural Society in 1906.

FRANCO-BRITISH EXHIBITION.—Mr. J. JAQUES, superintendent of the horticultural shows at the Franco-British Exhibition, asks us to state that the flower show to be held on June 24-26, will be arranged in the spacious Palace of Music, adjoining the Court of Honour, the most prominent and central position in the exhibition. No. 3 gate in Wood Lane will be the most convenient entrance for exhibitors' vans, &c.

IRIS × AMETHYST.

THIS hybrid (see fig. 175) is the result of inter-crossing Iris sindjarensis and I. persica purpurea, the progeny partaking largely of the habit and floriferous nature of the first-named parent. The colour is violet, in pleasing shades, the deepest colour being found in the falls. The upper portion of the blade renders this part of the flower very conspicuous. Iris × Amethyst was shown at the meeting of the Royal Horticultural Society on March 31 last, when the Floral Committee granted it an Award of Merit.

AMERICAN GOOSEBERRY-MILDEW.

PRECAUTIONS FOR SUMMER AND AUTUMN.

THE Board of Agriculture and Fisheries desire to call the attention of fruit growers and horticulturists generally to the fact that the operations now being carried on against the disease of Gooseberries and Currants, known as American Gooseberry-mildew, cannot be expected to prove successful unless all growers are prepared to give active and vigorous assistance in checking the spread of the disease. The disease exists in two forms known as the winter and summer stages. The summer stage occurs on Gooseberry bushes from May or June until November, or even later if the season is mild, and in this stage the disease is highly infectious. The following suggestions are made for the purpose of assisting growers whose gardens have been affected, and all other persons who have reason to fear infection, to check the further spread of this dangerous disease:—

1. Those who do not already possess the Board's leaflet describing American Gooseberry-mildew, should send an unstamped postcard addressed to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, asking for Leaflet No. 195, which gives full particulars of the appearance of the disease and of the time when it may be expected.

2. A supply of liver of sulphur, for spraying purposes, should be procured. This will cost from 4d. to 7d. per lb., according to the district and the quantity purchased, but if 14 lb. or more are bought the price should not exceed 6d. per lb. The liver of sulphur must be kept in air-tight tins or in well-corked bottles or jars, since if exposed to air it soon becomes useless, while if stored in airtight vessels it will keep good for a long time. Liver of sulphur is one of the most useful fungicides, and if no Gooseberry-mildew should appear, it can be employed for spraying other plants, so that fruit growers will lose nothing by keeping a supply in readiness. On the other hand, if liver of sulphur is not at once available when American Gooseberry-mildew appears, crops may suffer severely before the remedy is obtained.

3. Arrangements should be made for the purchase or use of a sprayer. Hand sprayers of the syringe pattern, suitable for small gardens, may be purchased for from 7s. 6d. to 15s., and knapsack spraying pumps for from 35s. to 40s.

4. Gooseberry bushes in a district where disease exists, or has recently existed, should be carefully examined every day, as the disease passes into the summer stage and develops very rapidly. On discovering disease in his garden a grower should proceed as follow:—

(*a*) The bush should be marked so that it may be readily found, but should not otherwise be interfered with. The disturbance of a bush would be likely to spread the disease.

(*b*) A wash should be made up consisting of liver of sulphur and water in the proportions of 1 lb. to 32 gallons. The affected bush and neighbouring bushes should be drenched with the wash. If a sprayer is not immediately available, a watering can should be used.

(*c*) If the liver of sulphur wash comes in contact with the mildew, the fungus is destroyed; but it is almost certain that some diseased parts will escape. As soon, therefore, as the bushes are dry, they should be carefully examined, and any twigs, leaves, or fruit showing signs of disease should be removed and burnt.

(*d*) When an infected twig is found on a bush, the probability is that many other twigs on the same bush, and on other bushes near to the diseased bush have become infected. As soon, therefore, as the diseased twigs, leaves, &c., have been destroyed, the bush itself and bushes in contact therewith should be destroyed, or the wood of the current year on a diseased bush and on adjacent bushes must be removed and destroyed, otherwise this wood may become infectious in the course of a few days, and disease will be carried through the garden on the clothing of labourers, on baskets, and by other means. *If a bad case of disease occurs, much the best plan is to root up and destroy the bushes, after spraying.*

(*e*) The ground beneath a diseased bush must be sprayed with a wash containing not less than 1 lb. liver of sulphur to 24 gallons of water.

5. When the disease has thus been dealt with, all Gooseberry and Currant bushes in the garden should be sprayed with a solution of 1 lb. liver of sulphur in 32 gallons of water. This treatment should be repeated at intervals of 10 days to a fortnight during the summer months. If rain should fall before the spray has had time to dry on the bushes, the work should be repeated as soon as practicable.

6. For spraying in the summer months there is no material so efficient as liver of sulphur, and the Board do not at present recommend anything else. The Board have not formally approved spraying materials prepared by private firms, but in those cases in which County Councils have asked for guidance in approving proprietary sprays, the Board have recommended for approval sprays which, when prepared for use, contain not less than 1 lb. of liver of sulphur to 32 gallons of water.

7. In the autumn, when bushes have nearly finished growing, copper sulphate, instead of liver of sulphur, may be used for spraying, at the rate of 1lb. copper sulphate to 16-20 gallons of water; but copper sulphate, although cheaper and very effective in destroying mildew, should not be used early in the season as it would injure the crop. Liver of sulphur will not damage the fruit.

8. The discovery of the mildew should at once be reported to the Inspector of the Local Authority, but the spraying of the bushes should on no account be delayed. Prompt action on the part of Gooseberry growers may save them and their neighbours a good deal of trouble. *T. H. Elliott, Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W. May 23, 1908.*

LAW NOTE.

LIMITED LIABILITY.

IT may be well to remind those commercial firms who carry on business as private limited companies that it will be to their interest to pass certain resolutions during the present month if they have not already taken steps to comply with the provisions of the Companies Act, 1907. The principal provisions of this Act will come into force on July 1 next, and special privileges are given to what are defined by the Act to be "private companies"; these privileges include, for instance, exemption from the necessity of filing at Somerset House an annual balance-sheet containing such particulars as will disclose amongst other things the general nature of the companies' assets and liabilities and how the value of the fixed assets is arrived at. As this balance-sheet will be open to the inspection of any person who chooses to call at Somerset House and pay a search fee of 1s., private limited companies will naturally prefer to avail themselves of the exemption from complying with these requirements. A limited company which desires to become a private company within the meaning of the Act cannot, however, achieve its purpose merely by alleging that it comes within this definition. For the purposes of the new Act the expression "private company" means a company which by its article (a) restricts the right to transfer its shares; (b) limits the number of its members (exclusive of persons who are in the employment of the company) to 50; and (c) prohibits any invitation to the public to subscribe for any shares or debentures of the company. These resolutions have to be passed at a general meeting of the shareholders, and confirmed at a subsequent general meeting which has to be held not less than 14 *clear* days and not more than one month after the first meeting. It should be noted further that, unless the company's Articles of Association otherwise direct, at least seven clear days' notice of a meeting should be given to shareholders, and in computing this period the day on which the notice will reach the shareholder in the ordinary course of post and the day fixed for the holding of a meeting should not be included. It will be seen therefore that companies which desire to be recognised as private companies before the new Act can inconvenience them, ought to take the necessary steps at the earliest possible moment. With regard to private limited companies about to be formed, it is desirable that the actual registration should take place before July 1 next, as various harassing rules and requirements, which will come into force on that day in connection with the registration of companies, will thus be avoided. In considering the question of limited liability, it may be noted that surprise is frequently expressed at the fact that the provisions of the Limited Partnerships Act of 1907 have not been more generally utilised in this country. It will be recollected that under this Act it is possible for a person to invest in a commercial firm by way of "sleeping partnership" without becoming liable for any part of the firm's debts and liabilities beyond the amount which he has invested in the concern. In other words, the sleeping partner stands to lose his capital in the event of disaster, but runs no further risk. In certain cases this is obviously a convenient mode of investment, but from the investor's point of view it has to be borne in mind that there are various restrictions upon the rights of a sleeping partner who avails himself of the benefits of this Act. In the first place, it is impossible to avoid a certain amount of publicity, as particulars of the transaction have to be registered at Somerset House. Secondly, a sleeping partner cannot on any account take any part in the management of the partnership business with the exception that he may "inspect the books of the firm and examine into the state of the business and advise with the partners thereon." Thirdly, he cannot withdraw any part of his invested capital during the continuance of the term of partnership agreed upon, and if he does so he will be liable for the debts of the firm to that extent. Fourthly, the active partners may introduce a new partner into the business without the consent of the limited partner. Fifthly, the death or bankruptcy of a limited partner will not operate to dissolve the partnership before the expiration of the term of partnership, so that his assets may be thus locked up for a considerable period after death. There are, in addition, certain further provisions to be borne in mind by an intending investor, but want of space forbids detailed explanation of them in these columns. It will be seen, however, that the rights of a person investing money in a limited partnership are not even so great as those of a shareholder in a private limited company. The shareholder, even if not also a director, has the right to attend at general meetings and to give his vote on any matters which may be proposed for resolution, and in this sense he is able from time to time to take at least some active part in the management of the concern. Again, a person who invests money in the debentures of a limited company stands practically in the position of a mortgagee, and is entitled to be repaid his capital out of the assets before the general creditors of the company receive anything. His position is therefore far superior to that of a limited partner who is not entitled to recover any portion of his invested capital until all the debts and liabilities of the firm have been provided for. It is probably for these reasons that the Limited Partnerships Act has not yet been generally utilised in this country, although in Germany and other foreign countries somewhat similar methods have for some time past been successfully adopted in commercial circles. Looking at the matter, however, from the point of view of the borrower and not from that of the lender, there is a good deal to be said in favour of the Limited Partnerships Act. It enables the trader to obtain an introduction of fresh capital into his business without incurring the expense and trouble involved in turning a business into a private limited company, while at the same time the regulations are somewhat less troublesome than those which have to be observed by firms registered under the Companies Acts. *H. M. P.*

THE APIARY.

Queens and supposed queenlessness.—Some weeks ago I had to make an examination of a stock and found it in a most flourishing condition; eggs and brood were plentiful; in fact, eight frames out of the ten were filled. Just over a week ago some frames of brood were needed for a weaker hive, and I naturally concluded I might borrow a frame of brood from this hive. My surprise may be imagined when I noticed that there was only sealed and hatching brood, with plenty of vacant cells. The frames were carefully searched for a queen, but none was to be discovered, and I came to the conclusion that the hive was queenless through some accidental cause. At the same time, I was reluctant to accept this verdict, and promised to visit the apiary a week later. How different things were then! Nearly every vacant cell was occupied and the queen was discovered without any difficulty. Those who discover a similar condition must therefore not be in too great a hurry to give a new queen to such a colony. I can only suppose that the queen had temporarily ceased laying because of the excessively cold weather.

Adding supers.—When the upper cells in the brood chamber have a white edge, that is a sign that we may add room for storing above. If it be intended to use sections principally, then it will be an advantage if shallow frames containing drawn-out comb be first added, for bees are very reluctant to store in sections.

Swarms.—We may expect swarms any time, and it will be well to keep a sharp look-out for them between 9.30 a.m. and 3.30 p.m. Some swarms, especially on hot days, do not attempt to settle near the hives. It is a good plan to have at hand a bucket of water and a syringe, as well as the skep and cloth ready for hiving. Should it be thought that the bees have decided to leave the apiary, a few sprays from the syringe in their midst will soon cause them to settle, as the bees imagine it to be a shower of rain. When the bees have clustered, a sprinkling of cold water will cause them to fall in a more solid mass into the skep, held underneath to receive them. When the major portion of the swarm has been shaken into the skep, overturn the skep on the cloth which has been previously spread on the ground to receive stragglers which missed the skep, and in order to facilitate matters, keep the skep well raised by placing a stone under one side. Sometimes bees settle in awkward places. After an unfavourable spring some years ago, I was called out to see to a swarm in a hedge, as the bees were dangerous to passers-by. The bees came from a hive which had little food in it, and, consequently, they were not well fed with honey, as they usually are, and were, in consequence, in a very bellicose state. The hedge was of thick thorn, so I placed the skep on the top above the swarm, which was in the centre of the hedge, and, having filled my smoker with plenty of fuel, I soon dislodged and hived them. Sometimes they settle on the trunk of a tree and even on a wall. A dust-pan and a stout quill will be best to dislodge them. Use the quill with great care, or the bees will be irritated, and on no account use a brush. After 6 p.m. the bees can be removed to permanent quarters. Sometimes the bees will not settle in the skep from some cause or other, even when we know that the queen is safely hived. When this is the case, take a frame containing brood in all stages and hive them at once in permanent quarters with this frame in the centre, for bees will rarely desert brood.

Brood frames.—Bees seldom build drone comb during the year in which they were taken as a swarm, and as they are prepared for extensive comb building, it is wise to only fix starters in the brood frames, and to place on sections or shallow frames above with full sheets or drawn-out comb. These latter provide storing accommodation for the honey which they gather, and thus prevent the bees from using the brood chambers for any other purpose than brood raising. *Chloris.*

HOME CORRESPONDENCE.

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

THE TEMPLE FLOWER SHOW.—*A Fellow* on p. 373 draws attention to what has undoubtedly been in the minds of many other persons who have visited the Temple Flower Show in recent years. There is no doubt that this show has been of infinite service to the R.H.S., for it has helped the Society to secure large numbers of members and has added materially to the Society's prestige. In the early days, the Temple Gardens were probably all that could then be desired, but, like many other things, the exhibitions have outgrown their quarters, and the difficulty is to find another equally suitable site. Whenever I go to Paris and see the splendid site comprising the two large greenhouses on the Cours de la Reine, and the grounds adjoining in which the National Horticultural Society of France has held its spring and autumn shows since 1900, I ask myself where in London could similar quarters be found for our great horticultural exhibitions. These greenhouses at Paris will be demolished after November next, and then the French Society may possibly be in some difficulty as to a place for its future shows. The Temple Gadens are central. That is an immense advantage. No flower show to be successful in London can be held elsewhere than in a central and easily-accessible spot. But even if that be found, there still remains the great disadvantage of having to hold the shows in tents instead of in a pemanent glass structure. On reading *A Fellow's* communication, it has occurred to me that one of the difficulties in the matter is the short length of time the Temple Show is open to the public. The Paris Show is open for a week, and the price is gradually reduced as the time draws to a close. The Temple Show is open for three days only. If it could be extended over another day with, say, a sixpenny admission, more visitors might be induced to attend, the pressure that exists at present might be reduced, and the funds increased. The Temple Show has now become a fixed institution and an annual society function, and there would be some danger in moving it anywhere, but the fact remains that it has practically outgrown its present quarters, that the exhibits are not presented to the public view to the best advantage, and that visitors now attend in numbers so great that there is very little comfort for them in making a tour of the show. One of the great features of the Paris site is the fine promenade leading from the entrance to the greenhouses. Vast number of visitors can, and do, overflow into this promenade when the pressure inside becomes severe. Seats are provided, and the numerous exhibits outside afford ample means for those out-of-doors to enjoy themselves. *A Fellow* reminds us that so long as tents of the ordinary type are used they admit of little variation on stereotyped methods. This, of course, is so: a table in the middle, a table round the sides, with a narrow path between is the inevitable arrangement, instead of numerous wide paths in different directions to relieve the pressure, as is customary at the Continental shows. Unfortunately for the present no site can well be found that will pay simply to hold flower shows, any one at all suitable would have to be utilised for other purposes as well. *C. Harman Payne.*

EFFECT OF SPRING FROST IN WESTERN SCOTLAND.—As the frost in Easter week, 1908, has proved more destructive in the south-west of Scotland than any we have experienced since the memorable May frost of 1907, it may be useful to record the behaviour of some of the tenderer forms of exotics. The thermometer at Monreith registered 14 and 12 degrees of frost (viz., it fell to 18° and 20° Fahr.) on two successive nights, which had serious consequences upon such plants which the foregoing warm weather had encouraged into forward growth. Among Himalayan Rhododendrons injury was very general. The only species that escaped unscathed were R. Hodgsonii, Fordii, niveum, cinnabarinum, Smirnowi fulgens, and a few plants of R. arboreum. Most of the R. arboreum had their leading buds destroyed; so had R. Falconeri, R. eximium, R. barbatum, R. Aucklandii, R. exioniense grande (argenteum), R. Kewense, R. glaucum, R. Luscombianum, R. Thomsonii, Beauty of Tremough, Gill's Triumph, &c. R. campanulatum suffered partially. None of these was killed, and all are now pushing forward secondary shoots, but the effect upon next season's display remains to be proved. Of the early-flowering hybrids, of course, the blossom was ruined, but the new growth does not seem to be checked, and the later-flowering Rhododendrons, as a rule, are peculiarly fine this season. Pink Pearl, George Hardy, the Queen, and Lawson's hybrids × Fortunei are specially good. The following shrubs have not been injured, and are now (June 6) in full bloom:—Solanum crispum, Sophora tetraptera, Grevillea rosmarinifolia, all on walls; Buddleia globosa, in the open, had not a leaf damaged, but B. variabilis was cut back a long way. Desfontainea spinosa and Tricuspidaria lanceolata, both in the open, were badly browned, all the flower-buds of the latter falling off. Deutzias have been badly injured, but among the Berberis, only B. Knightii was hurt, and that not badly. Eucryphia pinnata and cordifolia, Coriaria torminalis, Olearia macrodonta, O. stellulata, O. Gunnii, and O. nummularia; Illicium religiosum, Chamærops excelsa, Escallonia macrantha, E. exoniensis, E. × Langleyensis, E. Phillipiana, and E. rubra; Choysia ternata and Griselinia littoralis have not been injured, except slightly where exposed to the wind, but Olearia nitida and Hypericum patulum are badly cut, as are also Fuchsia Riccartonii, Fatsia japonica, Indigofera Gerardiana (30 years old), Rosa bracteata (on a wall), Schizophragma hydrangoides, and, strange to say, the common white Jasmine. Raphiolepis japonica is killed outright, as are many plants of Cordyline australis, although others on poorer soil have escaped. Azara microphylla and Ceanothus azurea (on a wall) are unharmed. Among forest trees little harm has been done. Larix leptolepis was already in leaf, yet suffered not at all either in the woods or in nursery beds; Picea morinda and the Scots Pine are the only evergreen Conifers browned, but both are now growing strongly. The Chilian Fagus obliqua, the foliage of which expands early, had its young growth killed back, which bodes unfavourably for its future as a British forest tree. Among plants of humbler growths, the following may be noted as being none the worse for the severe weather: Crinum Moorei and C. Powellii, Agapanthus Moorei, Romneya Coulteri, Incarvillea grandiflora and Primula Cockburniana, but Gerbera Jamesonii, having stood out the winter of 1906-7 in a wall garden, put in no appearance this spring. The Androsaces differed. A. carnea, A. Vitelliana, and A. villosa were unharmed, but A. sarmentosa, A. lanuginosa, and A. foliosa were frosted back to their centres, whence they are now springing afresh. None of the Campanulas or Wahlenbergias suffered, except a few plants of C. fragilis (Barrelieri), but even of this delicate species most are now fresh and green. To revert to shrubby growths, in a considerable collection of Cistus only two or three plants of C. florentinus, C. undulatus, and C. cretieus succumbed. Embothrium and Davidia are almost scatheless, so are Erica arborea, E. lusitanica, Piptanthus nepalensis, and Nandina domestica, but a young plant of Rhus cotinoides was killed. In a neighbouring garden Callistemon rigidus (?), which has grown against a wall for more than 25 years, protected by a mat in winter, is growing strongly and bearing many flower-buds. *Herbert Maxwell, Monreith, June 6.*

THE BUSHEY PARK CATASTROPHE.—It was a swift tornado, almost momentary in its duration, which swept over the well-known Bushey Park, Teddington, on the evening of the 1st inst., and left behind it such evidence of devastating force as English people can rarely see. The catastrophe is no common one, seeing that Bushey Park is one of the nation's open spaces, and the grand old avenue of Horse Chestnuts and their background of double rows of tall Limes one of the greatest attractions to the visitors to the Park and Hampton Court Palace. If there is in connection with this destruction anything to be thankful for, it is that the tornado spent its force on the end of the great avenue farthest from the Palace, rather than near to it. Coming from Richmond Park, the wind passed over low-lying

Kingston, and it drove against the outer or eastern side of the Lime trees, sweeping down scores of these, then the next line of Lime trees and later the Chestnuts, creating, in space of time, too brief to estimate, a terrible slaughter of trees that had been planted in the days of William and Mary, and for generations had lifted their lofty heads proudly to Heaven, defying the seasons and storms. Who, seeing this arboricultural wreck, could help exclaiming "How are the mighty fallen!" Whilst the lofty Limes, ranging from 90 to 100 feet in height, had all been torn up by their roots, the Chestnuts had more generally broken off above ground, their huge stems presenting masses of splinters. Not one of the Limes had sent their roots deeper into the sandy soil than 2 feet, hence they had no great grip of the ground. Some Elms, not in the avenue, but near to it, also fell with a terrible crash, and these showed the same root weakness. That very weakness should point its moral to those in authority, if the rest of the noble trees of the famous Bushey avenue, as well as those not less tall, but all too rapidly decaying Limes in Hampton Court Gardens and Park, are to be saved from some similar catastrophe. Had all these been heavily topped or lopped some fifty years ago, how different might have been their case to-day. In the case of those remaining it is not too late to take off some 40 feet from their too lofty and rapidly weakening heads, thus compelling the roots to become more active and the trees to create younger branches. There exist in this country numbers of lofty trees that, like these Bushey Park Limes, have far too poor roothold of the soil, and which may fall preys to a wind storm at any moment. These might all be saved for possibly generations were their tall heads reduced and the stems compelled to clothe themselves with branches lower down. It may be a matter of pride to point to lofty trees that thus lift their tall heads to Heaven, but as the old adage says, "Pride goes before a fall," and if there had been less pride in height and more in density and endurance, which early beheading would have created, then the fall might have been postponed. Many trees have had their lives indefinitely prolonged by early beheading. *A. D.*

BALDERSBY PARK, THIRSK.—Visitors to the York Jubilee Exhibition, to be held on the 17th, 18th, and 19th inst., should take advantage of the opportunity for inspecting the gardens and grounds at Baldersby. The present owner, Mr. Brennand, purchased the estate from Lord Downes a few years ago. In the interval the whole of the glasshouses have been renewed and extensive additions made. No doubt Mr. Hathaway, the gardener, would be pleased to give information as to the best route, and the most convenient time to visit the gardens. *H. J. C.*

THE BEST DAFFODILS.—I think the time has now come when we should have some authoritative list of the best Daffodils in the different sections. In the first instance the R.H.S. Narcissus Committee is the body we might expect to do the work. The list should be divided into the following sections:—The best yellow trumpet varieties for naturalising; the best white trumpets for naturalising; and the best in each other section for naturalising; also the best in each section for market purposes. The best market sorts would be equally useful for the amateur and private gardener, as the best for the market grower must also be the best for all who force Narcissi. So far as naturalising is concerned, there would probably have to be several lists, for different soils vary so much. The number of varieties is now so bewildering that no one can easily select the best for any purpose. In the course of the selection it will probably be suggested that the very worst varieties should be buried at least 10 feet deep! *T. Smith. Newry.*

A VALUABLE HYBRID PÆONY.—Through the courtesy of Mons. René Rouhard, of the nursery of the Museum of Natural History of France, I have been able to see what promises to be a valuable break in Pæony hybrids. In 1900 Mons. L. Henry crossed Pæony "Ville de St Denis" with the new Pæony lutea, and the resulting cross has now flowered for the first time in Paris. It produces flowers both on the terminal and the lateral shoots, thereby following the habit of Pæony lutea. The flowers produced on the terminal shoots are large, well formed, double, and yellow in colour; but that on the lateral shoot is as interesting as it is beautiful. The shape it has assumed is that of a large, double, yellow Begonia, tipped with rose, and on the first examination it can hardly be distinguished in shape from the latter flower. If only this form can be definitely fixed, we shall at once obtain a valuable and original addition, in shape as well as in colour, to our herbaceous Pæonies. The "Jardin des Plantes" is to be sincerely congratulated upon the success of the first attempt of this cross. *R. H. Beamish.*

APPLE CHARLES ROSS.—I was surprised to read, on p. 314, *A Working Grower's* unfavourable report of the cropping qualities of this Apple, for whilst opinions may differ as to its edible quality, this is the first time I have heard or read anything against it as a bearer; with me, it is most prolific, producing fruits on two-year old Paradise trees most freely, and on young standards, grafted on the Crab of only four years' growth; in fact, it bears well when grafted on either of these stocks, and on trees of every shape and form. A dozen young transplanted cordons on the Paradise stock were, last season, clustered with fruit; judiciously thinned, they produce handsome fruits rather larger than Cox's Orange Pippin. It appears to be the rule with this variety that the smaller the fruit the better the flavour, and I am of opinion that as trees, with age, produce smaller fruits, the flavour will improve; some growers are inclined to over-feed their young trees of this variety. As stated by *One of the Judges*, "Charles Ross" obtained the first prize in the "any other variety" class for dessert Apples at the R.H.S. Fruit Shows of 1906 and 1907, and I understand that in this class the decision is determined by flavour. *A Devonshire Grower.*

——— I have seen the original tree of the above Apple for the past three seasons, and it has produced each year a good crop of fruits for the dessert table. As I write it is studded with flowers, each bunch having been thinned to one flower, and after setting will be thinned again, whilst Peasgood's Nonsuch never bears a crop with my neighbour, Mr. C. Ross. I think I am correct in saying that the Apple Charles Ross is unique as being the only Apple to obtain an Award of Merit and a First-Class Certificate from the R.H.S. in the same year. I consider this variety to be the best that Mr. Ross has raised, and he has distributed a round dozen. The above-mentioned Apple was raised from one of four seeds out of the same fruit, which also yielded the Houblon and Rival. At the fruit show last autumn, C. Ross Apple was shown in the class for "any other variety." Mr. Chas. Ross and one of his sons (a schoolmaster at Winchester) were in opposition, and the son beat the father with his own Apple, taking the 1st prize. I should advise *A Working Grower* not to despair, but give it a further trial in a different position. *E. Y., Newbury.*

CANADIAN WOOD PULP.—A new company has been organised in Vancouver to utilise the enormous waste material from the saw and shingle mills of the country. Most of this refuse is at present burned to prevent accumulation, but as raw material for paper-making it has a considerable value. The abundant water power will enable the machinery to be run cheaply, and it is stated that a process has been discovered which will render it possible to make use of the Douglas Fir and other resinous wood for paper-making. The wood, when brought to the works, is reduced to small shavings or chips, and is then digested with a hot solution of caustic soda for several hours—after being washed and bleached and further pulverised it is fit for the final paper-making machines. The industry ought to be a paying one, having regard to the amount of lumber waste that is ready for use. No doubt care will have to be taken that the local forests are not injured by cutting the young trees, in order to supply additional material for the mill, seeing that stuff which is too small for ordinary lumbering can readily be converted into paper.

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 9.—Although there was a beautiful display of floral subjects at the meeting held on this date, there was a small attendance of the Fellows, due, of course, to the show being on a day immediately following a Bank Holiday, and before many of the members had returned to town. This is unfortunate, as the gathering and preparing of such a show involves much work on the part of exhibitors the day preceding, when other folks are keeping holiday. The show was very largely comprised of hardy garden plants, amongst which Irises, Pyrethrums, and Pæonies predominated. There were also many fine displays of Orchids, greenhouse plants, including Carnations in number, and a few exhibits of fruit. Both the FLORAL and the ORCHID COMMITTEES had many novelties brought before their notice, and of these several were selected for awards. In the afternoon a lecture was delivered by Sir George Birdwood, K.C.I.E., C.S.I., on "Wild Flowers and Wild Sh[illegible]."

Floral Committee.

Present: W. Marshall, Esq. (in the Chair), and Messrs. H. B. May, W. Bilney, Chas. T. Druery, E. Bowles, T. W. Turner, Geo. Reuthe, C. R. Fielder, W. Howe, John Jennings, C. J. Salter, W. Bain, Geo. Gordon, Chas. Dixon, J. T. Bennett Poe, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, H. J. Cutbush, Edw. Mawley, E. T. Cook, and James Hudson.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, showed eight tall pyramidal-trained Fuchsias, Gloxinias in variety, some grand pans of Cypripedium spectabile, Primula Cockburniana, a blue-flowered Meconopsis from the Himalayas, a collection of annuals in flower, Eremurus, Aquilegias in variety, Anchusa italica, and many other hardy garden plants. (Gold Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, N., displayed a beautiful exhibit of Carnations all of high quality and staged with skill; many pretty flowered Rhododendrons; the new variegated variety of Ivy raised by Mr. Russell, and many other interesting plants. (Silver-Gilt Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, arranged a collection of Verbenas, in various colours, and all of named varieties. There were also Heliotropes, Swainsonia galegifolia, white variety, a large-flowered Abutilon named Triumphans, with many beautiful Ferns interspersed. (Silver Flora Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, again showed Meterosideros floribunda, also Carnations, Roses, Hydrangeas, Pelargoniums, &c. (Silver Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, arranged a semi-circular group of Cannas in most of the improved varieties. (Silver Flora Medal.)

Mr. C. F. WATERS, Deanland Nurseries, Balcombe, showed Carnations in variety. (Silver Banksian Medal.)

A batch of well-cultivated plants of Schizanthus wisetonensis and another of Rehmannia angulata were put up by Mr. H. Prime, gardener to the Marquis of SALISBURY, Hatfield House, Herts.

J. A. YOUNG, Esq., West Hill, Putney (gr. Mr. G. H. Street), showed some large plants of Gloxinias well-flowered, and a number of herbaceous Calceolarias.

Messrs. DOBBIE & Co., Rothesay, showed Violas and Pansies in variety; whilst another display was made with these flowers by Mr. H. F. PATMORE, Lymington.

Mr. H. BURNETT, Guernsey, showed Carnations in variety, all finely cultivated and attractively displayed. (Silver Banksian Medal.)

Messrs. CARTER, PAGE & Co., 52 and 53, London Wall, London, showed Dahlias, Fuchsias, Antirrhinums, Viscarias, Phloxes, &c.

Messrs. ROBT. VEITCH & SONS, Exeter, displayed their hybrid Calceolaria that was figured in the *Gardeners' Chronicle*, June 29, 1907, p. 426; a magenta-coloured Stock, with very large inflorescences; a form of Rehmannia angulata, with deep pink-coloured flowers, the blue Lathyrus pubescens, Ononis fruticosa, &c.

Adjoining Messrs. VEITCH'S Calceolarias were other plants of the same variety displayed by

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Hudson).

Mr. ROBT. NEAL, Trinity Road, Wandsworth, had several vases of Sweet Peas.

Messrs. W. BULL & SONS, King's Road, Chelsea, staged a number of stove and greenhouse plants of an ornamental-leaved type.

Messrs. GILBERT & SON, Dyke, Bourne, Lincolnshire, had some pretty Anemones, Aquilegias, &c.

Messrs. PAUL & SON, Cheshunt, had sprays of many interesting trees and shrubs in flower, also an assortment of Roses. (Silver-Gilt Banksian Medal.)

Messrs. KELWAY & SONS, Langport, Somerset, exhibited a very large group of Pæonies, including many of the choicer varieties for which the firm is noted; also Pyrethrums, Delphiniums, &c. (Silver-Gilt Banksian Medal.)

Messrs. BAKERS, Codsall, Wolverhampton, exhibited a choice strain of Aquilegias, also Oriental Poppies, Pyrethrums, and other showy garden flowers. (Silver Banksian Medal.)

A meritorious exhibit of hardy flowers was from Messrs. R. H. BATH & Co.'s Wisbech Nurseries. The usual seasonable subjects were included, such as varieties of Pyrethrum, Delphiniums, Poppies, Irises, &c. (Silver Flora Medal.)

Messrs. GEO. BUNYARD filled a long table with border flowers in fine assortment, a goodly portion of the table being occupied with Irises in variety. (Silver-Gilt Banksian Medal.)

Messrs. JOSEPH CHEAL & SONS, Crawley, Sussex, had an interesting lot of Lupins, both tree and border varieties; the flowers were of white, yellow, blue and pink colours. (Bronze Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants, had an extensive array of seasonable garden flowers, all presented in an attractive manner and including many rarities. (Silver-Gilt Banksian Medal.)

Exhibits of hardy flowers were also shown by Mr. G. REUTHE, Keston, Kent (Silver Flora Medal); Messrs. G. & A. CLARK, LTD., Dover (Silver Flora Medal); Mr. AMOS PERRY, Enfield, Middlesex (Silver Flora Medal); Misses HOPKINS, Mere Gardens, Shepperton-on-Thames; Messrs. GEO. JACKMAN & SONS, Woking (Silver Banksian Medal); GUILDFORD HARDY PLANT NURSERY; JOHN PEED & SONS, West Norwood. (Silver Flora Medal); KING'S ACRE NURSERY Co., Hereford (Silver Banksian Medal); and Messrs. R. & C. NOTCUTT, Woodbridge.

AWARDS OF MERIT.

Pyrethrum "*Langport Crimson.*"—A handsome, single-flowered variety of a shade of rich velvet-crimson. The plant appears to possess a vigorous habit of growth. Shown by Messrs. JAMES KELWAY & SON, Langport.

Iris × *Carthusiana.*—This variety is said to have resulted from the intercrossing of an unnamed species collected near Mardin, in Syria, and I. pallida Dalmatica, the latter being the pollen parent. The hybrid has a similar fragrance to varieties of I. pallida, but the whole flower is of more uniform build, and the leafage has not the broad, glaucous, erect character typical of the pallida section. Save for the white and gold reticulations near the base of the falls, the large and handsome blossoms are coloured a lavender-blue shade. Exhibited by J. W. MARSHALL, Esq., Charterhouse, Godalming.

Zephyranthes aurea.—This Peruvian species has a rich, golden-coloured perianth, nearly 3 inches across the widest part: the tube is glaucous, and especially so near to its base. The leaves are rather more than 1 foot in length, narrow-channelled, and distinctly glaucous beneath for about half their length, less so as the acutely-pointed tip is reached. The plant flowered during the early autumn of last year, the scape then appearing in advance of the leaves, but the inflorescence has now developed contemporaneously with the foliage. The plant was exhibited by Sir TREVOR LAWRENCE, who received it from his son in South Africa, whither it had been introduced from Peru.

Philadelphus Lemoinei rosace. — Flowering sprays of this shrub were also exhibited by Sir TREVOR LAWRENCE. The solitary flowers are white, semi-double, and not unlike a Rose, save from the diminished size of the inner petals.

Rhodothamnus Kamtschaticus.—A dwarf-growing shrub, whose leaves approximate somewhat to those of a miniature Rhododendron sinense. The hooded or cupped blossoms are a shade of purple, and are produced in small clusters, supported by inch-long pedicels. The species is a fit subject for planting in the rock-garden. Shown by Mr. GEO. REUTHE, Keston, Kent.

Carnation Snowball—This white variety possesses excellence of form and fulness of petals, and is representative of an excellent type of Carnation, equal to a good border variety, although belonging to the "tree" section. The petals are not pure white, but just suffused with a blush tone. Exhibited by Mr. H. BURNETT, Guernsey.

Stock, Veitch's Magenta strain.—An Award of Merit was granted for a strain of Brompton Stock shown under the above name by Messrs. ROBERT VEITCH & SON, Exeter.

Rosa Moyesii.—A new species from China, with vigorous habit of a pronounced briar-like character. The stems are abundantly furnished with strong spines. The leaves are long, firm in texture, 10-11-lobed. The blossoms are 2 inches or more across, and in the expanded flowers of a pleasing ruby-red tone, but in the bud state they are cardinal red; the petals are leather-like in texture. The species should prove of value to the hybridist.

Deutzia Wilsonii.—A Chinese species, with firm, slightly-notched, lance-shaped, oppositely-placed leaves. The terminal and axillary clusters of large, pure-white flowers are very freely-produced, the shoots being closely set with flower-buds for almost their whole length. These two last-named were presented by Messrs. JAS. VEITCH & SONS, LTD., Chelsea.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Sir Jeremiah Colman, Bt., H. Little, W. Boxall, Stuart Low, F. Sander, H. G. Alexander, J. Cypher, C. H. Curtis, A. A. McBean, R. G. Thwaites, A. Dye, J. Charlesworth, H. A. Tracy, Gurney Wilson, F. J. Hanbury, and R. Broomman-White.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a select group of exceptionally finely-flowered plants among which were Renanthera Imschootiana with over 40 leaves and a strong spike of bright-reddish, scarlet flowers; fine Lælio-Cattleya Canhamiana and L.-C. Canhamiana alba, with five flowers; L.-C. Fascinator, an intensely dark L.-C. Dominiana; L.-C. G. S. Ball, with 13 apricot-yellow blooms; and a selection of hybrid Odontoglossums.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an interesting group, in which, among a good selection of varieties of Cattleya Mossiæ and C. Mendelii, were a large specimen of Lælio-Cattleya exoniensis with many flowers, Odontoglossum ardentissimum, O. Hallio-crispum, and other hybrid Odontoglossums; good Lælia purpurata, Phaius Cooksoniæ, &c. Among species were noted the true Oncidium ampliatum majus with showy, yellow flowers, Lycaste lanipes with many cream-white blooms, the reddish-scarlet Renanthera Imschootiana, and Bulbophyllum orthoglossum, a fine Malayan species of the B. mandibulare section, with yellow flowers striped and marked with red-brown. Messrs. SANDER also showed the new Sobralia Siebertiana (macrantha alba × Hodgkinsoniii), a large mauve-purple flower with white tube to the lip, which is very broadly developed.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Flora Medal for a large and well-arranged group, in which the forms of Cattleya Mossiæ were very fine, and included two C. M. Reineckiana. Good forms of C. Mendelii, C. intermedia alba, Lælia purpurata, the richly-coloured Cypripedium Gowerianum, Schofield's variety, C. Wm. Lloyd magnificum; and a good selection of Odontoglossums, Lælio-Cattleyas were also included.

Messrs. J. & A. A. McBEAN, Cooksbridge, secured a Silver Banksian Medal for a pretty group, all the specimens staged being excellently well grown. Cattleya Mossiæ Aureola was a very distinct variety, with white sepals and petals slightly tinged with lilac, and having silver-white midribs, the lip being white with pale-orange disc. C. Mossiæ Jaffa had deep, rose-coloured sepals and petals and orange-coloured lip, on which were white veinings, the crimped margin being tinged with rose. A good form of C. M. Reineckiana; a distinct form of Lælio-Cattleya Martinetti; some very fine Odontoglossum crispum, including O. c. Xanthotes; a grand specimen of O. luteo-purpureum, with a spike of 14 large blooms; and the new O. gloriosum citrinum.

De B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed an interesting and pretty group of hybrid Odontoglossums, for which a Silver Banksian Medal was given, and which included several of his superb strain of O. Queen Alexandra (Harryanum × triumphans), the best, the variety Crawshayanum, which secured a First-Class Certificate, being superior to the variety Carmen, for which Mr. CRAWSHAY received an Award of Merit, June, 1906. Two varieties of O. crispodinei (crispum × Coradinei) showed it in much better form than when first exhibited, one plant having three spikes of cream-white flowers, with a large, reddish blotch in the middle of each segment. O. Urania (crispum × cristatellum), O. Lambeauianum of very pretty type, O. Persephone (Pescatorei × Adrianæ), and other Rosefield hybrids were also shown.

Messrs. STANLEY & Co., Southgate, were voted a Silver Banksian Medal for a very fine display of Cattleya Mossiæ, some 80 specimens being used in the group. The coloured varieties were very bright, and the best of the light forms was C. Mossiæ Thompsonii, with white sepals and petals slightly tinged with rose, the large disc of the lip being yellow, with slight rose markings on each side.

Mr. A. W. JENSEN, Lindfield, Sussex, was awarded a Silver Banksian Medal for a group of Cattleyas and Odontoglossum crispum, all of excellent quality.

Messrs. JAS. VEITCH & SONS, Chelsea, staged a group of remarkably fine Cypripedium spectabile. The specimens were dwarf and compact, and probably among the best yet shown.

Monsieur MERTENS, Mont St. Amand, Ghent, showed a selection of hybrid Odontoglossums.

G. W. BIRD, Esq., Manor House, West Wickham (gr. Mr. Redden), sent as Odontioda Wickhamensis a hybrid said to be between Odontoglossum crispum and Cochlioda rosea, but which some members of the Committee pronounced to be Odontioda Heatonensis (O. cirrhosum × C. sanguinea).

WALTER COBB, Esq., Normanhurst, Rusper (gr. Mr. C. J. Salter), sent a fine plant of Lælio-Cattleya Martinettii Dulcotensis, with two spikes of seven flowers having bronzy, salmon-coloured sepals and petals, and near to Messrs. Sanders' fine variety Flambeau.

AWARDS.

FIRST-CLASS CERTIFICATE.

Miltonia St. André (M. Roezlii × *M. Bleuana, Sanders' variety)*, from Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. Ballantine). The delicately-tinted flower is rounder than M. Bleuana, and the fine violet-purple tint on the inner halves of the petals strongly indicates M. Roezlii. The sepals and outer halves of the petals are white. Lip broad, white, with a brownish-red mask of radiating lines at the base, the three central lines being tinged with ruby-red; a few very thin, dark lines form a tracery on each side of the column.

Odontoglossum Phœbe (cirrhosum × *crispum)*, from Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. Ballantine).—A grand form of this pretty hybrid, with flowers equal to some of the varieties of O. ardentissimum, and very brightly coloured. Ground colour white, uniformly blotched with deep, purplish-red, a band of purple extending up the petals from the base; crest yellow.

Odontoglossum "*Queen Alexandra,*" *var. Crawshayanum (triumphans* × *Harryanum)*, from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks. A grand flower resembling the phenomenal O. triumphans Lionel Crawshay in shape, size, and substance. Sepals and petals yellow, the ground colour almost obscured by large, deep, purple-brown blotches. Front of lip white, the basal three-fourths prettily marked with rose-purple.

AWARD OF MERIT.

Odontoglossum gloriosum citrinum, from Messrs. J. & A. A. McBEAN, Cooksbridge. A very pretty variety, which comes under the albino class, the brown spotting usually seen in the species being suppressed, and the flowers entirely of a pale citron yellow, with a slightly darker tint where the spotting would be if developed. It is a pretty and fragrant novelty.

Miltonia Bleuana Stevensii (Roezlii alba × vexillaria Leopoldii), from WILLIAM THOMPSON, Esq., Walton Grange, Stone, Staffordshire (gr. Mr. Stevens).—A very pretty, dwarf and floriferous variety, with white flowers, having thin, red-brown lines at the base of the lip. Six plants, each well bloomed, were shown.

CULTURAL COMMENDATION.

To Mr. May (gr. to J. B. JOEL, Esq., Childwickbury, St. Albans, for a fine specimen of Cypripedium Rothschildianum, Northaw variety, with fine spikes, one of which bore six flowers and one bud.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the Chair), and Messrs. Alex. Dean, Jos. Cheal, John Basham, Chas. D. Walter, A. R. Allan, Thos. Coomber, James Vert, Joseph Davis, Geo. Reynold, J. Jaques, Chas. Foster, Geo. Wythes, A. H. Pearson, and John Harrison.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, displayed two varieties of Cucumbers, named respectively Faultless and Evergreen. They are the result of crossing Market Rival with Improved Telegraph, the cross being effected both ways. Faultless is the larger fruit, Evergreen being the darker in colour. (Silver Banksian Medal.)

Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, exhibited a number of pot plants of Peaches and Figs, all well fruited and having healthy, vigorous foliage. The Figs included Violette Sepor, St. John's, White Ischia, and Early Violet; and the Peaches Duchess of Connaught and Duke of York. (Silver-Gilt Knightian Medal.)

A box of very large fruits of Nectarine Early Rivers, shown by S. HEILBUT, Esq., The Lodge, Holyport, Maidenhead, was granted a Cultural Commendation.

A Silver Banksian Medal was awarded to an exhibit of preserved fruits shown by Miss C. E. MARTIN, Willowbrook, Auburn, New York, U.S.A.

VISIT OF THE R.H.S. COMMITTEES TO WINDSOR.

JUNE 11.—Glorious weather favoured the visit of the Council and Committees of the Royal Horticultural Society to Windsor Castle and Frogmore gardens on Wednesday last. About 100 members availed themselves of the King's gracious permission. At one o'clock the party was entertained as guests of the Mayor of Windsor at luncheon in the Windsor Town Hall. His Worship was supported by Sir Trevor Lawrence, Bart., Major Holford, C.I.E., C.V.O., Sir J. T. D. Llewellyn, Bart., Sir Albert Rollit, J. Gurney Fowler, Esq., the Rev. W. Wilkes, M.A., Mr. A. Mackellar, head gardener at Frogmore, and nearly all the members of the Council, as well as some of the Society's officials. The speeches at the luncheon were very brief. The Mayor proposed the health of the King, the Queen, and the Royal Family. Sir Trevor Lawrence then voiced the thanks of the guests to the Mayor, and proposed his health, this toast being received with musical honours.

It had been proposed that at the close of the luncheon the party should proceed in brakes direct to the gardens. That programme had, however, to be altered in consequence of a visit from the Maharajah of Nepaul and his suite to the Royal Gardens. As a result, the Horticultural party was invited to first visit St. George's Chapel; then the State apartments in the Castle, and later passing from those over the beautiful East Terrace, through the Home Park to the Frogmore Mausoleum—a weary walk, but through glorious surroundings. Thence over the lawn to Frogmore Cottage, where there are some noble trees, to the gardens. In these, the party, breaking up into several groups, was conducted by Mr. Mackellar and Mr. E. Harris, and in every house, no matter what its contents, Orchids, Carnations, Palms, Hydrangeas, Grapes, Peaches, Nectarines, Melons, Cucumbers, or Tomatos, everything was so excellent as to evoke on every hand the highest praise. The wall and other fruit trees, the huge expanses of vegetables, the wonderful long and gay hardy plant borders, the bothies, everything was in the most perfect condition, and Roses by thousands were blooming gloriously on every side. If Mr. Mackellar had a critical party of visitors, at least their criticisms were all of an admiring kind. It was a visit which all who shared in it will remember for a long time to come.

SCOTTISH HORTICULTURAL.

JUNE 2.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date, Mr. Whytock, the president, occupying the chair. There was a good attendance of members. Mr. James Harris, Inverleith Park, Edinburgh, read a paper, illustrated with lantern slides, on "Some Principles Governing Practice in Horticulture." Mr. Harris explained the physiology of such ordinary gardening operations as budding, grafting, cutting, striking, pruning, &c. It was intimated that the paper for the meeting on July 7 would be one on the Strawberry by Mr. D. Kidd, Carberry Tower, Musselburgh, and that a Strawberry conference will be held on July 14. It was also announced that the annual excursion will be to Drummond Castle, Crieff, on July 18. The money collected on behalf of the Royal Gardeners' Orphan Fund at the monthly meetings from January to May has amounted to £2. Thirteen new members were elected.

ROYAL SCOTTISH ARBORICULTURAL.

(ABERDEEN BRANCH.)

MAY 23.—Mr. William Dawson, the lecturer in forestry to the Aberdeen and North of Scotland Agricultural College, gave a lecture within the Botany Class-room, Aberdeen University, on the above date to the members of this branch on the subject of "Forestry in Germany."

Mr. Dawson said that in Germany there were a little over 34½ million acres of forest, equalling 26 per cent. of the total land surface. Of this, about one-third belonged to the Crown, one-fifth to various institutions, and the remaining half was private property. It was difficult for the people in this country, with its 4 per cent. of forest, to fully realise what it meant to have a quarter of the land surface under timber. Germany was not by any means the most densely wooded country in Europe, but only stood about the middle as regarded land surface under timber. Russia had 38.5 per cent. of its land surface in timber, or 5 acres per head of the population; Switzerland had 20.5 per cent., or 6.5 acres per head; France had 18 per cent., or 0.6 acre per head; while Britain had only 3.9 per cent., or .075 acre per head. Britain was thus an easy last with its 363 square yards of forest per head of the population. Although the area under forest in Germany was great, it was being increased by 2½ million acres of moorland, which has been considered fit for growing timber. This land is being gradually afforested by the State. As in this country, about one half of the forests was owned by private individuals, but there was little fear of these private owners lessening the area under wood. In most of the German States reafforestation was compulsory, the time limit being three years, with a penalty where this law was infringed. The German Government provided a staff of officials to assist private forest owners. These officers were on the same level as other Government forest officers, and their sole duty was to help private owners where assistance was needed. The system of afforestation pursued was interesting in the extreme. The ground was ploughed and cultivated in the ordinary way—when on a large scale the steam plough was brought into requisition. Then a Rye crop or Oat crop (in most cases Rye) was sown, and along with the corn the tree seeds were sown broadcast. In autumn the cereal crop was cut, a high stubble being left, and was harvested in the ordinary way. In the shelter of the long stubble the seedlings came away well, and generally a full crop was secured. The advantages of such a system were obvious—the cost of laying down was nil.

The State supplied plants at cost price where necessary, the plants being reared in the ordinary nurseries attached to the Government forests. As showing the activity of recent years in this department of German economics, it was found that in Bavaria, in 1885, 15 million plants were distributed, whereas in 1905 the annual output had reached 50 millions. The species of trees grown in Germany were practically the same as in this country. In 1900, 67.5 per cent. of the land bore coniferous wood, and the remaining 32.5 per cent. were hardwood trees. A remarkable feature was the position of the Larch, which only occupied .1 per cent. of the total forest area, i.e., 34,000 acres, while Spruce occupied nearly 7,000,000 acres, and Scotch Pine 15,500,000 acres. The outstanding general principle of management was that the annual felling did not exceed the annual production, and, consequently, a regular annual income was got, and not a spasmodic one, as in Great Britain.

Coming now to the profits that are derived by Germany from her forest area, the results are truly astonishing. In Saxony, the profits of late years have been upwards of 20s. per acre, after accounting for all expenses—cost of laying down, compound interest, value of the land, cost of management, &c.—during the life of the wood. The interest on the money expended is calculated at from 2½ to 3 per cent. In the period 1895-9 it was calculated that the net average profit from the State woods all over Germany was about 9s. per acre. Then there was a clear annual profit of £4,500,000 added to the national coffers from this source. And then consider the employment it offered. Roughly speaking, every 120 acres gave employment to a man. The economic effect on the German nation was enormous. There, afforestation is looked upon less as a lucrative investment for capital than as an industry of the utmost importance for the well-being of the country.

Another feature to be noted in the German system was the grand system of forest roads. Every part was accessible, and a regular network of lanes and paths run over the whole woods. Love of the woods was deeply ingrained in the German people, and it was to the woods the German holiday-maker invariably went. These State woods are all open to the public, who can wander about them at their own will.

But one of the most interesting features of afforestation in Germany was the vast number of people for whom it finds employment. There was a total of 230,000 men on the State insurance list as State wood workers, and the year's wages bill for felling, planting, &c., approached £9,000,000. Between sawmills and factories using wood another £25,000,000 was spent in wages. The importance of the making of wood-pulp as an industry was also seen from the fact that since 1851, when the first wood-pulp mill was started in Saxony, the number had increased to 633 in 1903, using altogether about 35,000,000 cubic feet of wood.

Mr. Dawson's paper, which went to prove that the afforestation of this country ought to be under State control, was listened to with much interest, and an animated discussion followed, taken part in by Mr. Crozier, forester, Durris; Mr. C. S. France, Aberdeen; Mr. James Hendrick, Agricultural College; Mr. Braid, factor, Durris; Mr. Rule, Huntly; and Dr. James W. H. Trail, Professor of Botany in Aberdeen University.

COMMONS AND FOOTPATHS PRESERVATION.

JUNE 6.—Lord Eversley, who presided over the monthly meeting of this Society on the foregoing date, reported that a deputation from the Society had waited upon the Board of Agriculture to urge that consent should not be given to several applications under the Allotment and Small Holdings Act for power to enclose common land, and that the agreement between the War Office and the verderers of the New Forest to secure proper regard to public interests in connection with the holding of military manœuvres in the forest during August and September had now been approved by the Society's solicitors and signed. It was decided to hold the annual meeting of the Society in the theatre of the Royal United Service Institution, Whitehall, on Wednesday, June 17, at 3 p.m., when it is expected that Lord Eversley, Lord Farrer, Sir John Brunner, M.P., Mr. J. Ramsay Macdonald, M.P., Sir Robert Hunter, Mr. E. N. Buxton, Mr. C. Trevelyan, M.P., Mr. St. Loe Strachey, and other members of the Society will take part in the proceedings.

ANSWERS TO CORRESPONDENTS.

ABNORMAL ASPARAGUS: *G. T. H.* Your very large shoot of Asparagus affords an example of fasciation which is due to fusion of growth. The five shoots, totalling 1¾ lb., constitute a greater weight than any we have recorded in our "Record" Book. The entry having the largest weight in our book is on June 7, 1831, when 112 heads, grown by Mr. Grayson, Mortlake, are said to have weighed 30 lbs. This works out at about 4 2-7 ozs. per shoot, whereas yours are considerably more than 5 ozs. each. The plant could, of course, be propagated from seed, but it is questionable if the character of fasciation is a desirable one to perpetuate. Some of the seedlings might show a disposition to develop this abnormality, and it may be some would produce shoots of a larger size than the parent. The surest way, however, would be by division of the old crown, but the work of separation needs to be carefully performed.

ABNORMAL FOXGLOVE: *S. C.* The flower-spike you send shows an example of Peloria, a condition in which the top flower has become regular. This is common to the plants of the Foxglove family, and it is often seen in Antirrhinums. The supposition that your flower has been crossed with a Hollyhock is erroneous, for the plants belong to entirely different families.

ASTERS DYING: *G. W. R.* Our expert states that the injury is not caused by a fungus, but is the result of some unsuitable cultural treatment.

BEECH HEDGE INFESTED WITH FLIES: *H. J. Webb.* The small black fly is a species of Bibio, allied to the so-called St. Mark's fly (B. marci), if not specifically identical with it; but the specimens were so much damaged by moisture that the specific characters were destroyed. However, the flies are harmless, and will, in all probability, disappear in a few days. They are not known to be injurious to vegetation, as the larvæ feed chiefly on decayed vegetable matter. The Beech aphis is in no way related to them.

BEGONIA RUST: *Anxious.* The plants are badly infested with the mite that causes the leaves, especially on the under-surface, to present a brown appearance. Dip the foliage in tobacco water, and be careful to burn any fallen leaves and all of them in the autumn when they are shed.

BOOKS: *J. T.* There is no book on Sempervivum and no recent monograph of the genus. Nobody appears to have attempted a classification of the species since Mr. J. G. Baker did so in the *Gardeners' Chronicle*, 1874, ii., p. 103. You will find nothing better on the garden species of Sempervivums than that given in *Nicholson's Dictionary of Gardening*. Jordan and Fourreau's *Icones ad Floram Europæ*, vol. i., includes descriptions and coloured plates of numerous species, but this work is very costly, and would supply only a partial knowledge of the genus. In course of time the whole of the Crassulaceæ will be monographed in Engler's *Pflanzenreich*, but the part containing this Order has not yet appeared.

CARNATION DISEASE: *Carnation Rust.* The foliage with the black marking is attacked by a fungus, Helminthosporium, and the other is apparently suffering from eelworm. If the disease and eelworm are present in considerable quantities, it will be best to commence afresh with new stock, being careful to first burn the old plants, thoroughly sterilise the soil, and cleanse the structure in which the Carnations will be cultivated.

CATERPILLARS ON EUONYMUS. The best plan for ridding plants of this pest is to spray them with an arsenical poison, such as Paris green or London purple, the former for preference.

CHIONODOXA ROOTS: *Nedos, Chard.* The large fleshy roots are examples of contractile roots. They are common to many bulbous plants, and serve, later on in the season, to pull the bulb down into the soil.

CONIFERS AND CATTLE: *J. E. D.* Most of the Conifers, including the common Scots Fir, are not harmful to cattle, but should there be any Yew trees in the park you must keep the cattle from them, as dangerous results follow when cows, &c., browse upon their shoots.

EGGS IN SOIL: *W. H. G.* The eggs when received were dried up. They are either worms' or snails' eggs.

FRUITERER AND FLORIST: *G. W.* We cannot undertake to recommend a firm; you had better advertise.

GARDENER'S NOTICE: *J. S.* In the issue of February 29 last, p. 144, a reply was given to a correspondent on this subject. If you are paid weekly you would probably be held entitled to a week's notice. It has been decided that a head gardener, paid at a yearly rate, is entitled to a month's notice. In your own case, as a foreman gardener paid weekly, you can only claim a week's notice.

GOOSEBERRIES DISEASED: *H. C.* The disease attacking your Gooseberry leaves is nothing serious. It is caused by Gloeosporium ribis. If the diseased leaves are collected and burned a recurrence of the injury will be prevented.

GREENHOUSE PLANTS: *S. S.* We suppose that by the term greenhouse plant is meant a species that is generally cultivated in a cool house as distinguished from the stove. But in using the term in an Exhibition schedule there is liable to be some misunderstanding, because whilst some cultivators have a particular species in the stove others prefer to keep it in the greenhouse. Instances are afforded by the two plants you mention. Bougainvillea glabra is frequently to be seen in the hottest stoves, but it will succeed in moderately cool houses and corridors; for instance, the large plant in the exhibition hall in the Edgbaston Botanical Gardens, and in very mild situations, such as the Under-cliff at Ventnor, and sheltered spots in Cornwall and Devonshire, the Bougainvillea will thrive out of doors until killed by a frost of unusual severity. Coleus is generally regarded as a stove plant, but it will thrive very well during the summer period in the greenhouse or conservatory. In such a matter, and assuming that a list of plants is not printed in the schedule, the judges are left to exercise their discretion, and in the circumstances you will do well to exhibit species that are not likely to afford grounds for dispute. Such species might include the tuberous Begonia, Celosia, Pelargonium, Fuchsia, Schizanthus, Cestrum, Plumbago, Crassula, Cineraria, Camellia, Rhododendron indicum, and cool-growing Palms, Ferns, and other ornamental foliage plants, selecting those in season at the time the exhibition is held.

HAIL STORM INSURANCE COMPANY: *E. B H.* The address of the secretary, Mr. A. J. Munro, is 4, King Street, Covent Garden, London, W C.

INSECTS: *G. & S.* Your plants are attacked by one of the millipedes, "the spotted snake millipede" (Blanjulus guttulatus), a very destructive pest, and one which appears to have attacked your plants in unusual numbers. They may be killed at once by very hot water; but the usual insecticides have little or no effect on them. The only practical way to rid your soil of them is to remove all vegetable matter on which they can feed, and give the ground a good dressing of gas lime or "Vaporite," letting it remain fallow for some months after the application of gas lime.

INSECT ON ROSE: *J. S.* and *F. D. & Co.* The insect is the common clay-coloured weevil. See reply to *T. C.* in our issue for May 23, p. 340.

MAGNOLIA GRANDIFLORA: *W. F.* This plant does not require much pruning, but only to have the least promising growths thinned out that the better ones may be trained on the wall. The proper time to do this thinning is directly after the plant has flowered in spring. If the specimen has already made much growth, you had better defer the operation until next spring.

MARROWS: *G. M.* It is possible the roots would be able to utilise a small quantity of sugar, but quite insufficient to repay you for applying sugar as a manure.

NAMES OF PLANTS: *F. L.* 1, Lastrea Filix-mas var. cristata; 2, Vancouveria hexandra; 3, Epimedium musschianum; 4, Too crushed to recognise *H. W.* 1, Pernettya mucronata; 2, Gaultheria Shallon; 3, Rubus nutkanus; 4, Polygonum cuspidatum; 5, Leucothoë Catesbæi; 6, Anchusa italica.—*Vius.* 1, Tellima grandiflora; 2, Centaurea montana var.; 3, not recognised; 4, Saxifraga hypnoides; 5, Kerria japonica, variegated variety; 6, Skimmia japonica.—*Correspondent.* 1, Coloured form of Chenopodium Bonus-Henricus; 2, Epimedium alpinum.—*C. W.* 1, Gerbera Jamesonii; 2, Fair Maids of France (Ranunculus aconitifolium); 3, Anchusa sempervirens.—*G H.* Veronica spicata.—*Miss E.* 1, Cornus Kousa; 2, Brodiæa congesta.—*T. S.* 1, Stachys sylvatica; 2, Nepeta Glechoma; 3, Marrubium vulgare; 4, Lamium album.—*A. M.* 1, Luzula campestris; 2, next week.

PEARS DISEASED: *J. B.* The fruits are infested with the Pear midge maggot. At this stage you can do nothing better than pick off all the diseased Pears and burn them. Kainit sprinkled on the ground under the trees at the rate of 5 cwt. per acre destroys the larvæ as they drop from the fruits to hybernate in the ground.

ROSE ROOT: *C. H. P.* The root-stock you forwarded appears to be perfectly healthy, with the exception of one large centre root, which is dead. The roots are in as good a condition as can be expected from an old root-stock There is no fungus present.

TOMATOS DISEASED: *H. A.* The foliage is attacked by a fungus—Macrosporium solani. Spray the leaves with the Bordeaux mixture and ventilate the house freely, maintaining a dry atmosphere. — *J. H.* The plants are affected with "Sleepy disease." Water the roots thoroughly with a solution of sulphate of potash. The infected soil should be sterilised with lime before being used again.—*G. W. R.* Your Tomatos exhibit the disease caused by Macrosporium solani. Destroy all the infected fruits by burning.

TWIN TULIPS: *G. C. P.* These are not uncommon: we receive many branched Tulips at this office during the season.

VINE LEAVES SCORCHED: *W. S. H.* No disease is present in the leaves you send; the injury has been caused by scalding. We do not think the drain pipes have any connection with the injury. Be careful to ventilate freely, and avoid wetting the leaves during very bright sunshine.

WEED IN LAWN: *W. E.* The plant is a species of Trifolium, probably T. minus. Its presence in quantity indicates an excess of potash in the soil and a deficiency of nitrogen. Give the grass a dressing of sulphate of ammonia, after which the growth of the grasses will soon crowd out the Clovers.

WILLOW CULTURE: *Information.* A lengthy article on this subject appeared in the *Gardeners' Chronicle* of October 23, 1880, p. 538. Much information on the subject may also be found in *Practical Forestry* and *Forester's Diary*, both of which can be obtained from our publishing department. The best Willows for basket-making are the purple Osier (Salix purpurea), S. viminalis and S. triandra. Probably the most valuable is S. viminalis. Willows will not succeed well in peaty, sandy, or water-logged soil—rich, well-drained loam that can be flooded at will being most suitable. Prepare the ground by trenching or ploughing, and thoroughly cleanse it from weeds. Insert the cuttings from November to March, avoiding such as are bark-chafed, and make the soil about them firm. Keep the beds clean and free from weeds. The cost of forming Osier beds varies from £15 to £20 an acre. The crop matures in about four years, and yields, on an average, £15 an acre

WIREWORM IN SOIL: *T. H.* and *A. W.* This pest is difficult to destroy in the case of land on which vegetation is growing. The best plan is to apply a dressing of "Vaporite" now, and then dress the land with gas lime in the autumn when the crops are harvested. "Vaporite" can be obtained from the horticultural Sundriesmen.

COMMUNICATIONS RECEIVED.—S. J. P. (Thanks for the stamps for R.G.O.F.)—C H.—A. B.—P. P. P.—A. J. H.—I. N. L. O.—W. M. G.—H. N.—Islander.—H. R.—C. B.—S. J. R.—K. & Son—G. W. T.—A. D. W.—G. W. S.—W C.—N. K. W. W.—Ltd—J. O'B.—A. D.—J. G.—Miss Anson—J. J. W.—Capt. A. A. D. S.—P. A.—R. H. D.—J. Whitton—C. H. P.—F. J. C.—W. T.—I. C.—W. G.—F. J.—T. L.—J. F. Mc. L.—W. C.—H. J. W.—W. G. S.

Photograph by C. P. Raffill.

A Fine Bed of Campanula persicifolia. Flowers pale blue.

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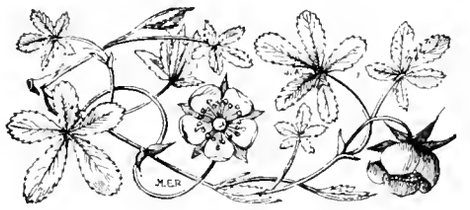

THE

Gardeners' Chronicle

No. 1,121.—SATURDAY, June 20, 1908.

CONTENTS.

ILLUSTRATIONS.

THE FLOWERS OF SPENSER.

WE have four great pre-Elizabethan and Elizabethan poets: Gower (1320 (?)-1402), Chaucer (1328-1400), Spenser (1553-1599), and Shakespeare (1564-1616). Like all English poets, each of the four has something to say about flowers, but he says it in his own peculiar way; Gower, as might be expected from his constant residence in London, mentions only between thirty and forty plants, and of these he gives little beyond the names; in no case does he at all describe them. Chaucer is very different; he delighted in the country and in all country sights and sounds. The number of plants he mentions is not great, but where he mentions them, he does so as if he had closely observed them and loved them; nothing has been written that at all approaches his supreme delight in the Rose and the Daisy. Spenser surpasses Chaucer in the number of the plants named, but is far behind Shakespeare, and the different way in which the two poets speak of flowers is very marked. Shakespeare noted the flowers he met with in his daily walks and gathered them, not because he wanted them in his poetry, but because they met him as he walked, and he loved them. Spenser also noted the flowers, but the flowers he gathered were not those that he saw in the fields or gardens, but they were for the most part culled from his reading in the Latin and Greek classics. In fact, with few exceptions, he seems to have cared little for any flower or plant if it had not the hall mark of some well-known classic. Even in such a poem as the "Shepheard's Calender," where we might have expected English scenery peopled by English workmen, the scene is more suggestive of Sicily and Italy than of England; and we seem to be listening to Theocritus and Virgil rather than to an Englishman. Still, with all these drawbacks, I think the flowers of Spenser are worth studying, and I have written the following paper in the endeavour to determine what special flowers he had in his mind when he wrote about them. The account of the flowers does not profess to be a positive or scientific account; and the papers are rather an annotated index, or perhaps a concordance. I have quoted, but as shortly as possible, his allusion to each plant, and added short notes on those of them that seemed to require it. The work has been to me very pleasant, and I hope the result may be pleasant and useful to those who feel an interest in the gardens of our forefathers, as well as to students of Spenser.

The edition from which I have quoted is Pickering's "Aldine Poets" edition in five volumes, published in 1839.

ALDER.

1. Keeping my sheepe amongst the cooly shade
Of the green Alders by the *Mullaes* shore.
Colin Clout, 58.

2. Catching hastie holde
Of a young Alder hard beside him pight.
Virgils Gnat, 58.

The Alder is a native British tree, and has had its present name certainly since the seventh century, yet, as in most of its European names, it comes from the Latin *Alnus*. It is a water-loving tree, and the wood is said to be indestructible under water, so that the Rialto at Venice is traditionally said to be built on piles of Alder. The prehistoric Glastonbury was built on piles of Alder; the remains still exist and are fairly sound.

ALMOND.

Like to an Almond tree ymounted hye,
With blossoms brave bedecked daintily.
F.Q., I. vii. 32.

Though the Almond bears a Greek name which, in different forms, is found in all European languages, yet it is not a European tree, but is native in Western Asia. The ease with which it is raised from the ripe kernels soon led to its growth all through Southern Europe, and both fruit and tree were known in England in very early times. In Spenser's day it was grown in English gardens, and has always been popular from its beauty in early spring and its Biblical associations.

AMARANTH.

Sad Amaranthus made a flower but late—
Sad Amaranthus, in whose purple gore
Me seemes I see Amintas wretched fate.
F.Q., III. vi. 45.

Dr. Murray defines Amaranth as "an imaginary flower reputed never to fade; a fadeless flower (as a poetic conception)"—and this describes the flower as named in Latin, Greek and English poets. But I think Spenser, by speaking of its "purple gore," had some special plant in view, but it is almost impossible to say what. It could not have been any of the plants now called Amarantus, which include "Love-lies-bleeding" and "Prince's Feathers," for they were introduced after Spenser's day. Amyntas is named by Virgil in several places as a lover, but nothing more is said of him. In Spenser, Amyntas is supposed to be the celebrated Earl of Derby, who died in 1594.

APPLE.

Like as a withered tree, through husband's toyle,
Is often seene full freshly to have florisht,
And fruitful apples to have borne awhile—
F.Q., IV. iii. 29.

Apples here only mean fruit of any sort; as was the common use of the word in the sixteenth century.

ASH.

The Ash for nothing ill. *F.Q., I. i. 9.*

Ovid, in the Metamorphoses, Book X., gives a list of trees with short descriptive epithets, from which Spenser evidently took his list of trees in this passage. Ovid's description is "Fraxinus utilis hastis," which Spenser enlarged to "for nothing ill."

ASPEN.

1. The Aspene good for staves. *F.Q., I. i. 8.*
2. his hand did quake
And tremble like a leafe of Aspen greene.
F.Q., I. ix. 51.

The Aspen is a Poplar, but it has been called Aspe or Aspen in England from the earliest time. The tremulous character of the leaves has been a favourite subject for similes with hundreds of English writers.

ASTROPHEL.

Feede ye henceforth on bitter Astrophell.
Daphnaida, 346.

The name has long been obsolete, and the plant has not been identified; but is conjectured to be the wild Aster of our marshes.

BALM.

Embathed Balme. *Muiopotmos, st. 25.*

The writers of Spenser's time, when speaking of balm, generally meant the imported drug; but as Spenser places it amongst many other sweet-scented flowers and calls it embathed, i.e., bathed in perfume, he was probably thinking of the Bastard Balm (Melittis Melissophyllum), which is found wild in a few places in the southern counties, and is a handsome plant, but the scent is found more in the dried leaves than in the living flowers.

BARLEY.

Which cockle for corne, and chaffe for barley bare.
Shepheards Calender, December.

BASIL.

Bazil hartie-hale. *Muiopotmos, st. 25.*

Basil is an Eastern plant (*Ocimum*), but was grown in England from very early times. Though it did not rank so high as its name, from Greek *basilicon*, i.e., royal, would suggest it was in high repute as a pot-herb, so that Gerarde says of it: "It taketh away sorrowfulnesse, and maketh a man merry and glad." *H. N. Ellacombe.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

AN OVERLOOKED *MALVASTRUM.

THE Malvastrum shown in fig. 176 has been cultivated in Britain for at least a century, but has hitherto remained undescribed. It is allied to Malvastrum divaricatum, Gray and Harv., from which it differs in the serration of the leaves and the perfectly glabrous lower part of the ovary—whence the name, M. hypomadarum. Perhaps the earliest specimen of it in the Kew Herbarium is one from the herbarium of the well-known botanist, Dr. Samuel Goodenough, one of the founders of the Linnean Society, and Bishop of Carlisle, in compliment to whom the genus Goodenia was named. Goodenough's herbarium, which was presented to Kew in 1880 by the Mayor and Corporation of Carlisle, comprises not only the various species which he was the first to describe, but an extensive selection of the plants which were cultivated at Kew in the beginning of the nineteenth century, and published in the *Hortus Kewensis* (*Kew Report*, 1880, p. 64).

Goodenough's specimen of Malvastrum hypomadarum is labelled "Malva africana; Kew; an sp. nov.?" but this name does not appear in either edition of the *Hortus Kewensis*. A "Malva africana, Mill.," however, appears in Steudel's Nomenclator, and is reduced to Malvastrum capense in the *Index Kewensis*, and Goodenough's specimen was subsequently referred doubtfully to the latter species, from which it differs in the cutting of the leaves and the long stellate bristles at the apex of the carpels.

In 1810 Malvastrum hypomadarum was cultivated as "Malva capensis" in the Liverpool Botanic Garden, and it has since passed in gardens under the names Malvastrum capense, M. virgatum, and M. grossulariæfolium (see specimens in the Kew Herbarium). A specimen of it in Bentham's herbarium is labelled as received from G. A. Walker Arnott in 1827 under the name Malva divaricata, and was referred by Bentham to Malvastrum tridactylites, which may be distinguished by its perfectly glabrous carpels. M. hypomadarum, therefore, has passed under the names of at least five species of Malvastrum, with none of which it agrees.

The specimen figured was communicated for the purpose by Messrs. James Veitch & Sons, Ltd., who received cuttings of the species from the Royal Botanic Gardens, Glasnevin, whither it had come from the Royal Botanic Garden, Edinburgh.

M. hypomadarum is a free-flowering shrub, 2 or 3 feet high, with long slender branches, which are rather densely pubescent with stellate hairs. The stipules spread horizontally, and are obliquely lanceolate and ciliate. The leaves show considerable variation in size, shape and cutting, being usually deeply three-lobed, the middle lobe considerably longer than the lateral ones, and all the lobes slightly narrowed to their base and sharply toothed or serrate above, rarely toothed below also, as in the figure; the base of the leaf is conspicuously wedge-shaped. Forms sometimes occur, however, as in the specimen figured, where the leaf is much less deeply divided, and in which indications of two additional side lobes appear, so that the leaf is imperfectly five-lobed, and in correlation with this the base of the leaf becomes much more obtuse; in the uppermost leaf of the figure, however, the wedge-shaped base may be made out. Both surfaces of the leaf are softly and sparsely pubescent with stellate and simple hairs, and the veins are impressed on the upper surface and prominent on the lower.

The peduncles bear from one to three flowers, and are suppressed in the upper part of the stem, so that the flowers often arise two together in each axil, as in the illustration. In the same axils as the peduncles there arise one or two accessory leafy branchlets, 3 inches long or less, which in their turn produce flowers, after those on the primary peduncle have withered. In this way, branches 18 inches long or more may bear flowers of about the same age along their whole length, those on the upper part being borne on the primary peduncles, and those on the lower on the leafy branchlets. The three bracts, which arise immediately below the calyx, are spathulate-linear, ciliate, and puberulous outside. The calyx-lobes are ovate, acuminate and ciliate, three-nerved or indistinctly five-nerved, and are twice as long as the calyx-tube. The corolla varies a good deal in size, being about an inch and a half across in well-developed flowers, and often considerably less. The obliquely obovate, retuse petals are white, with a rose-purple blotch near the base. The staminal tube has a dense band of hyaline stellate hairs about the middle; in the diagrammatic longitudinal section these hairs, as well as those on top of the ovary, have been omitted for the sake of clearness. The anthers are crowded in a subglobose head, overtopped by the stigmas, as in other species of Malvastrum.

FIG. 176.—MALVASTRUM HYPOMADARUM SP. NOV.
(From specimens exhibited by Messrs. Jas. Veitch & Sons.)

* MALVASTRUM HYPOMADARUM (*Sprague*), SP. NOV.—Affinis M. divaricato, Gray et Harv., a quo foliis serratis nec crenatis, carpellis apice tantum stellato hirsutis ceterum calvis differt. Frutex vix 1 m. altus, ramis gracilibus densiuscule stellato-pubescentibus. Stipulæ patentes, oblique lanceolatæ, 3-5 mm. longæ, ciliatæ. Petioli circiter 6 mm. longi. Folia trilobata, 2.5-4 cm. longa et subæquilata, basi conspicue cuneata, utrinque pilis simplicibus et stellatis parce molliter pubescentia, nervis supra impressis subtus prominentibus, lobis oblongis vel in basin angustatis, medio quam lateralibus majore, dentato-serratis præsertim superne, dentibus interioribus patulis vel leviter retro curvatis. Pedunculi 1-3-flori, ei axillarum superiorum plus minus contracti, inferiorum usque ad 1.3 cm. longi, omnes ut pedicelli calycesque extra stellato-pubescentes. Ramuli accessorii 1 vel 2 ex iisdem axillis orti, 4-7 cm. longi, foliati, 2-5 flori. Pedicelli 1.3-2 cm longi, 3 mm. infra apices articulati. Bracteæ spathulato-lineares, 6-8 mm. longæ, 1 mm. latæ, longe ciliatæ, extra puberulæ, intra glabræ. Calyx intus minute appresse pubescens; tubus 3 mm. longus, circiter 20-nervius; lobi ovati, acuminati, 6 mm. longi, trinervii vel indistincte quinquenervii, ciliati, nervis lateralibus in tubum separatim currentibus. Corolla 2.5-4 cm. diametro; petala oblique obovata, retusa, alba, circa basin purpureo-maculata, inferne dense ciliata, intus infra stellato-pubescentia vel puberula. Columna staminea tota 1 cm. supra insertionem petalorum producta, medio dense stellato-hirsuta. Carpella apice longe stellato-hirsuta, ceterum glabra; stylus 1.5 mm. supra basin articulatus, ramis purpureis.—Planta capensis, per sacculum in hortis anglicis culta, loco natali exacto incognito.

The pollen grains, as in all Malvaceæ, are prickly and form an interesting object for the microscope; the Bombacaceæ or Silk-cotton Tree family, which were formerly included with the Malvaceæ, have smooth pollen, and are now separated from them, partly on that account. The carpels are ten in number, one opposite each sepal and petal, and are quite glabrous except at the top, where they are densely covered with rather long, hyaline, stellate bristles. The ripe fruit is not known.

The writer is indebted to Messrs. James Veitch & Sons for the excellent specimens from which the description of Malvastrum hypomadarum has been drawn up, also for the following notes on its cultivation:—"It may be propagated by means of cuttings placed under a hand-light in May or June; these will flower the following season in a cool greenhouse. It succeeds best potted in a light turfy loam to which an equal proportion of either peat or leaf-mould is added with a sprinkling of silver sand. It flowers best when kept in moderately small pots, and lasts in flower for several weeks."

The systematic relationships of Malvastrum hypomadarum seem to be rather complex. In addition to the close relationship, already mentioned, with Malvastrum divaricatum, Gray and Harv., it appears to have affinities in two directions. On the one hand, the similarity in the habit and lobing of the leaves of M. tridactylites is sometimes so great that it is hardly possible to distinguish the two species without dissection; and it is quite possible that this is really its nearest affinity. On the other hand, there is an obvious relationship with two as yet undescribed species collected by Dr. R. C. Alexander (afterwards Prior) in the George District of Cape Colony. One of them was collected by him in Lange Kloof in November, 1847; it may be distinguished by the purple bracts and purple margins of the calyx-lobes, as well as by the firmer texture and the shape of the leaves, and the more densely hirsute carpels. This was collected along with Malvastrum Alexandri (E. G. Baker, in *Journal of Botany*, 1891, p. 166) by Alexander, who took them for the same thing, and mounted them on the same sheet in his herbarium as Malvastrum tridactylites. M. Alexandri may be distinguished at once, however, by the perfectly glabrous staminal tube, as already noted by E. G. Baker. A glabrous staminal tube occurs in two other South African species only, M. albens, Harv., and Malva divaricata, Andrews.

The second undescribed species was collected near Warnhop on the Zwartberg Range. Both are in the Kew Herbarium.

As will be gathered from what has been said, the South African Malvastra are extremely critical, and stand in great need of revision. The genus Malvastrum was established by Asa Gray in 1849 (*Plantæ Fendlerianæ*, p. 21), and can be distinguished from all other Malveæ by the single whorl of carpels, the solitary ascending ovule, the capitate or truncate stigmas, and the free peduncles. The involucral leaflets are three in the South African species, and often afford useful diagnostic characters. Although placed in the sub-tribe Enmalveæ, it appears to be most nearly related to Sphæralcea, which is put in the sub-tribe Abutileæ on account of having two or three ovules in each cell; and it does not seem possible to distinguish the two genera without dissection.

In 1857 Garcke pointed out (*Bonplandia*, vol. v., p. 296), that all the species of De Candolle's sixth section of Malva, the "Capensis" (*DC. Prodromus*, vol. i., p. 433) belonged to Malvastrum; and in 1859 or 1860 Harvey redescribed them under that genus in the *Flora Capensis*, vol. i., pp. 159-164. Harvey's revision was severely criticised by Garcke in 1864 (*Botanische Zeitung*, vol. xxii., pp. 10-11), partly on the ground that the primary division into fruticose and suffruticose species was unworkable in practice, and partly because Harvey's identifications of some of Cavanilles's species of Malva were wrong in his opinion. He stated that Malvastrum grossulariæfolium, Gray and Harv., was certainly distinct from Malva grossulariæfolia, Cav., as it did not agree with the figures in Dillenius's *Hortus Elthamensis*, t. 169, fig. 207, and in Cavanilles's *Dissertationes*, t. 24, fig. 2, but with Malva triloba, Thunb.; and he accordingly renamed the species Malvastrum trilobum, Garcke. So far, he may have been right, but his further identification of Malvastrum albens, Harv., with Malva grossulariæfolia, Cav., seems untenable. A careful botanist such as Cavanilles would certainly have noticed the *glabrous* staminal column of Malvastrum albens had he been describing that species, whereas in his description of Malva grossulariæfolia (*Dissertationes*, p. 71), he writes of the staminal tube, "Reliqua ut in præcedenti," that it is to say *villous* below, as in Malva virgata. I am also unable to follow Garcke in his reduction of Malvastrum setosum to M. tridactylites, although the two species are doubtless closely allied.

In 1891 E. G. Baker described four new South African species of Malvastrum in his Synopsis of Genera and Species of Malveæ (*Journal of Botany*, 1891, p. 165). Writing in the days before the publication of the *Index Kewensis*, he not unnaturally overlooked Garcke's little-known paper, and his account of the previously-described species differs little from that of Harvey in the *Flora Capensis*, the division into "Fruticosa" and "Suffruticosa" being retained. Malvastrum fragrans is reduced by him to M. capense, however, and Malva retusa, Cav., is definitely transferred to Malvastrum, where it is placed between M. albens and M. divaricatum.

Co-ordinating the results attained by Harvey, Garcke, and Baker, the following list of the South African species is obtained:—(1) fragrans, Gray and Harv.; (2) capense, Garcke; (3) calycinum, Garcke; (4) strictum, Gray and Harv.; (5) asperrimum, Garcke; (6) trilobum, Garcke; (7) bryonifolium, Garcke; (8) virgatum, Gray and Harv.; (9) tridactylites, Gray and Harv.; (10) setosum, Harv.; (11) albens, Harv.; (12) divaricatum, Gray and Harv.; (13) racemosum, Harv.; (14) procumbens, Harv.; (15) dissectum, Harv.; (16) retusum, E. G. Baker; (17) trilobatum, E. G. Baker; (18) Burchellii, E. G. Baker; (19) Pappei, E. G. Baker; (20) Alexandri, E. G. Baker; (21) hypomadarum, Sprague. No attempt has here been made to arrange the species in order of supposed relationship, but the first 15 correspond to those described by Harvey, and the remaining six are those since added. It should be noted that Malvastrum divaricatum, Gray and Harv., is certainly distinct from Malva divaricata, Andrews, the former having a villous, the latter a glabrous, staminal tube. I have seen no specimens corresponding to Andrews's figure and description, and have not included the species in my list. *T. A. Sprague.*

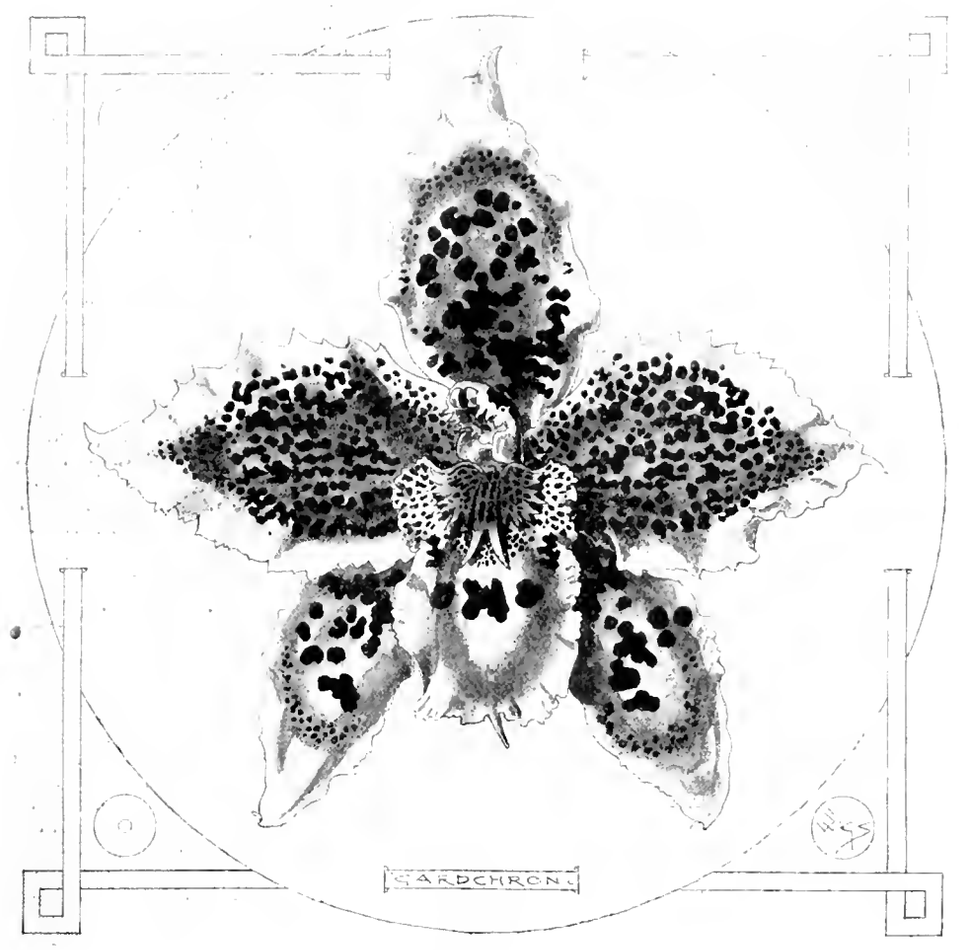

FIG. 177.—ODONTOGLOSSUM PERCULTUM VAR. J. R. ROBERTS.

ODONTOGLOSSUM PERCULTUM VAR. J. R. ROBERTS.

AT the meeting of the Royal Horticultural Society on March 31 last J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), obtained an Award of Merit for a plant of this beautiful Odontoglossum. The charm of the flower is largely due to its exquisite colouring. The large, flatly-displayed petals and sepals are coloured with a suffusion of pink that is brought into relief by a broad band of white around the margins of the segments. There are dense purple spottings on the inner parts of the segments; the lip is large, white, with rose-purple markings on the basal half.

BELGIAN HORTICULTURE.

MONS. A. A. PEETERS, BRUSSELS.

AT the end of April we paid a visit to Mons. Peeters' Orchid establishments. At the Home Nursery, situated in a suburb of Brussels, all the Orchids are cultivated for supplying blooms for cutting. The visitor is surprised to learn this as he passes through house after house containing different species, including many Cattleyas, for some of the cultures appear so expensive that the sale of the flowers would hardly seem to be remunerative, but there appears to be a demand for considerable quantities of cut flowers of the most costly type. In one house, for instance, there were hundreds of plants of Vanda cœrulea and other species that are certainly not often regarded as market plants. Madame Peeters, who, by the way, is a native of Suffolk, acted as our guide on this occasion, and informed us that the flowers are sent principally to the markets at Brussels and Paris. In the latter city especially the demand for expensive Orchid flowers is considerable.

Mons. Peeters, however, is best known by reason of the superb blotched varieties of Odontoglossum crispum that he has introduced to commerce. Therefore, after a somewhat hurried inspection of the cut flower plants, we drove to the other nursery, situated at a greater distance from the city of Brussels, and, therefore, in a clearer atmosphere, for Mons. Peeters would not care to subject the more valuable plants to the conditions prevailing in the city. The collection at this latter nursery is a very fine one. Cattleyas and Lælio-Cattleyas, Cypripediums and Phalænopsis, Odontoglossums, and others are grown in large quantities, and with the greatest success, and many fine varieties were in bloom. The Odontoglossums, however, attracted us most, partly on account of the rapid progress which is being made in raising these beautiful Orchids from seed, and partly because of the number of striking plants in flower.

There were seven long houses, mostly devoted to Odontoglossums, and in several of them we observed as many as 200 beautiful forms in flower. Odontoglossum Lambeauianum furnished a wealth of variation, and it was at first difficult to realise that such an amount of difference was possible between seedlings from the same capsule. There were forms with both white and rosy grounds, with few or many large or small spots, and forms more or less dotted or marbled, with an equally wide range of differences in shape and in the details of the lip, yet there were points of resemblance in many cases between them, and a numbered label in each pot helped one greatly in identifying them. These numbers have been applied very carefully, and it gave one the greatest satisfaction to see the origin of the plants so carefully recorded. Many of the plants from this batch were very handsome.

A batch of Odontoglossum Fas inator was even more remarkable, for it showed not only forms with white and rosy ground, but various shades of yellow, while the variation in size and the amount of spotting were equally wide. This batch of seedlings was raised from Odontoglossum Adrianæ (Hunnewellianum × crispum) crossed with a blotched form of O. crispum, and the yellow forms show a reversion to the ground colour of the original O. Hunnewellianum. Some of them were very good in form, and exquisitely marked.

Various seedlings obtained by inter-crossing fine forms of Odontoglossum crispum included some handsomely-blotched varieties, a batch from O. c. Mariæ × O. c. Luciani being very variable, and one almost suffused throughout with colour. Other seedlings from blotched crispums are coming on, and by this means the number of these beautiful forms is being steadily increased. Other valuable plants were some very richly-coloured varieties of O. Hallio-crispum, a plant of the original O. Wilckeanum albens (which, of course, came as an imported plant); a seedling from O. triumphans crossed with O. excellens Prince of Orange, and most resembling the former, a very bright yellow seedling from O. triumphans × polyxanthum, O. loochristiense, and numerous others, with a quantity of the well-known species which flower at this season.

One of the houses was being largely utilised for propagating choice forms of O. crispum and others from ba k pseudo-bulbs, and in another we noted batches of numerous interesting crosses in various stages, from the tiniest globules upwards, in some cases the compost being literally covered with germinating seedlings. The choicest forms obtainable are used for crossing, and the results will doubtless be known in due time. A number of Cochlioda crosses were also growing freely, but this remark does not apply in every case, for a few plants of C. Nœtzliana crossed with both Odontoglossum crispum Cooksoniæ and with O. Lambeauianum make very slow progress. Other evidence of hybridising operations in progress was observable in the number of capsules in various stages on the plants.

There were, of course, batches of imported Odontoglossums, but the centre of interest has now been transferred to the seedlings, and we passed through them quickly, observing, however, some good forms coming into flower.

A very interesting plant was here pointed out, namely, one of the original Oncidium Leopoldianum, for which £20 was paid a good many years ago, but which still refuses to flower. It proves to be a bad grower—at all events, no means of successful treatment has been discovered. Only two or three other plants are known, and the one which flowered a few years ago in the collection of E. Ashworth, Esq., proved to be Oncidium corynephorum, Lindl., a fact which gives additional interest to the few remaining ones. It is hoped that one of these days this plant will acquire enough strength to flower, but a little more patience will have to be exercised.

M. Peeters may be congratulated not only on his success in raising and growing these beautiful plants, but also on the careful records of parentage he maintains, which should afford some valuable information later on.

NOTES ON IRISES.

IRIS MINUTA.—The yellow variety of this Iris, which is noticed by Baker in his handbook of the Irideæ, flowered here for the first time on May 4. It agrees with the type in all respects, except in colour, which is a bright yellow. The falls are marked with fine brown dots and lines down the haft and centre of the blade, and the edges of the standards are also brown. The plants were imported from Japan.

IRIS KUMAONENSIS CAULESCENS.—A few months ago I received from Messrs. Barr & Sons a small piece of the rootstock of an Iris, with a note to the effect that it came from the Sikkim Himalaya. In appearance the rootstock resembled that of I. Duthiei, and I therefore planted it in a stony soil rich in humus, adding a little peat. The first flower opened on May 11th, and proved that the Iris was a variety of kumaonensis, distinguished from the type by having a stem nearly 6 inches long. The standards, of a pale mauve-lilac, are not held erect, but incline outwards, giving the flower a likeness in shape to I. tectorum. The falls are of a deep purple-lilac, mottled with a still deeper shade, while the deep orange tips to the fine white hairs of the beard are a distinct feature. The flower, unfortunately, only lasts for 12 hours, but 36 hours after it fades the second flower is fully expanded. The following is a detailed description:—Rhizome slender, short-creeping; tufts crowded; outer sheaths splitting up into fine fibres. Leaves linear, pale green, rigid, 4 to 6 inches long by ⅓rd inch broad at flowering time. Peduncle 4 inches long, one-headed. Spathes two-flowered; valve lanceolate, pale green, 2 inches long; pedicles very short. Perianth tube 1½ inches long, dark purple; falls obovate-cuneate, 2 inches long, the outer 1¼ inches reflexed, 1 inch broad, dark purple lilac mottled in the centre of the blade with a darker shade; beard of fine white hairs tipped deep orange, arising from a white crest; standards spreading, oblong-unguiculate, 2 inches long ¾ inch broad, pale mauve-lilac; crests deltoid.

THE CULTURE OF ONCOCYCLUS IRISES.—Everyone who has ever grown these beautiful Irises knows the difficulties under which they are cultivated. The chief of these perhaps arises from the fact that, whether the rhizomes are in or out of the ground, they begin to develop shoots in October. They must, therefore, be planted in the autumn, and our variable winters play sad havoc with the young leaves, and the percentage of losses among a number of these plants is often high. In their homes in Central Asia these Irises are frozen hard all through the winter, and cannot grow until the snow melts in spring. In order to reproduce these conditions as nearly as possible, I packed up a number of rhizomes last August in dry moss in a wooden box, and sent it up to the Imperial Cold Stores Co., at South Tottenham. There the box remained in a temperature of 28° to 30° until the first week in March. On opening the box then the roots were precisely as they had been in August. I planted the rhizomes on March 9, and the plants soon made healthy growth in warm, sandy soil, with a layer of old cow manure a foot beneath the surface. The buds are now showing, and the plants apparently in the best of health. *W. R. Dykes, Charterhouse, Godalming.*

CONTINENTAL NOVELTIES.

TWO NEW PINKS.

THE number of varieties of white Pinks is large enough in all conscience, and every gardener is acquainted with Mrs. Sinkins, Her Majesty, Bridesmaid, The Bride, Diamond, La Reine, &c., and many coloured varieties. Apart from the common, small-flowered Feathered Pinks, almost every one of the coloured Pinks in commerce, such as Rose de Mai, Cattleya, Early Blush, La France, Excelsior, &c., has one or more faults; the blooms are either too small, the colour not clear, or pleasing, the calyx bursts too early, they bloom too sparingly, or the flower stem is short and weak, so that the blooms fall upon the ground. It is said that none of these blemishes are met with in the new Feather Pinks Delicata and Gloriosa, raised by a gardener in a Saxon hill-town, and which are to be distributed this year by the firm of Otto Mann, of Leipzig-Eutritzsch. These two varieties are the products of a cross of Diamond (Diamant) and Rose de Mai, and were selected from amongst 30 different seedlings. The flowers possess beauty of colouring, pleasing form, and unusual size for a Feather Pink. The flower-stalk is of great length and strength. Delicata is of a very distinct Cattleya-like colour, in the centre of a pale creamy-white, without any zone or trace of any; it is 2½ to 3 inches in diameter, semi-globular in shape, and with stems 1¼ feet high. Gloriosa is the earliest to flower, which it does at the end of May in the open air. The stems are of the same height as those of Delicata. The colour is clear lilac-rose, and the flower is without a zone. The variety is an abundant bloomer. *F. M.*

TREES AND SHRUBS.

SHRUBBY SPIRÆAS.

It is doubtful whether any genus of flowering shrubs has such a lengthened season of blooming as the Spiræa, provided that a judicious selection of species and varieties is made.

Spiræa Thunbergii unfolds its tiny white blossoms quite early in the spring, and from that time forward a succession of different kinds is kept up till the frosts of autumn appear. Among the latest to flower are the dwarf forms of S. japonica (S. callosa of gardens), the white-flowered variety alba being particularly noticeable in this respect.

The list of original species and garden forms in cultivation is a lengthened one, hence in gardens of limited extent a careful selection is absolutely necessary.

Opinions vary considerably, and any selection, however thoughtfully made, is not likely to meet with the approval of everyone, but the following series will, I think, be difficult to improve upon :—

SPIRÆA AITCHISONII (see fig. 178).—This is one of the pinnate-leaved species, being a native of Afghanistan. For some years it was confounded with the better-known S. Lindleyana, from which it differs in the whiter flowers, the leaves of a deeper green, and the reddish colour of its stems, as well as in other minor features. A writer in the *Gardeners' Chronicle* for January 18 last, directs attention to this Spiræa so fully that nothing further need be said concerning it.

SPIRÆA ARGUTA (see fig. 179).—Like the preceding, this species is of comparatively recent introduction, but it has become very popular within the past few years. This was to be expected, for it is one of the best of the early-blooming Spiræas, and forms a delightful flowering bush from 4 feet to 6 feet high, and is the same distance through. The branches are slender yet twiggy, and are disposed in a graceful manner. The flowers are arranged in clusters on the upper sides of the shoots, and so numerous are they that when at their best a bush of this Spiræa is quite a mass of white. It flowers, as a rule, towards the end of April, and it possesses the great merit of being less affected by late spring frosts than many other flowering shrubs. This Spiræa is also valuable for flowering under glass early in the year.

SPIRÆA BRACTEATA (see fig. 180).—A freely-branched shrub 5 feet in height or thereabouts, and flowering towards the end of May and in June. The flowers are white, and are borne in flattened clusters, which extend for a considerable distance along the shoots. It is a native of Japan.

SPIRÆA CANESCENS.—A Himalayan plant which, in the *Kew Hand List of Trees and Shrubs*, is provided with a longer list of synonyms than any other species. In habit of growth it is quite distinct from many other Spiræas, the main shoots being more or less upright, while the secondary ones droop gracefully on all sides. In a vigorous specimen the branches are of considerable length, and during the flowering period are thickly studded for some distance with little flat clusters of white blossoms. This Spiræa flowers from the end of June onwards. One of its synonyms is S. flagelliformis, and as such it is more often met with in gardens than under the specific name of canescens.

SPIRÆA DISCOLOR, SYN. S. ARIÆFOLIA.—This is a large-growing species that sometimes forms a bush as much as 10 feet in height. The creamy-white flowers are borne in large plume-like masses. They are at their best in July, at which time this Spiræa is fully entitled to rank among the very finest of flowering shrubs. It is a native of North-West America. *W.*

(To be continued).

THE FERNERY.

FERN SPORES.

To those who have mastered the principles governing success in Fern spore sowing, the operation is extremely interesting, especially if good varietal forms are concerned, for they are very liable to vary again and thus to give rise to further new and improved types. Every Fern genus has its own peculiar way of bearing its sporangia, and however much the species or varieties which comprise the genus may differ, the same character will be evident in all. Thus, for instance, if we examine the common Polypody (Polypodium vulgare) we shall find the frond backs dotted with large golden-yellow sporangium heaps, round or, it may be, oval and devoid of anything in the nature of a cover. Close by, in the same wall or hedgebank, we may find the Black Maidenhair Spleenwort (Asplenium adiantum-nigrum), and on the backs of its fronds we find long black lines arranged herring-bone fashion, these consisting of long heaps of sporangia, which are, moreover, partly covered with a thin skin springing from one side of the linear heap. Now there are great numbers of Ferns in the world which bear their sporangia in these ways, *i.e.*, in uncovered roundish heaps and covered longish lines, arranged as described, but whenever we see them we shall be justified in calling the first a Polypodium and the second a Spleenwort. We turn to the common Bracken (Pteris aquilina), and we find a third variant, for here the sporangia lie along the edges of the sub-divisions, and are covered by the edge being turned down over them. Every such Fern is a Pteris. Some Ferns, such as the Royal Fern (Osmunda regalis), have their sporangia confined to the tips of the fronds, where so much energy is devoted to their construction that none is left for leaf building, and the result is a contracted Spiræa-like mass of sporangial heaps. This type of spore bearing appears in several distinct genera, but is differently characterised in each. On examining the sporangial heaps of any class of Fern with a lens, we find them to consist not of bare, loose spores, capable of being shaken out like seeds from a ripe pod, but of an immense number of minute oval capsules attached to the frond by short stalks and densely massed

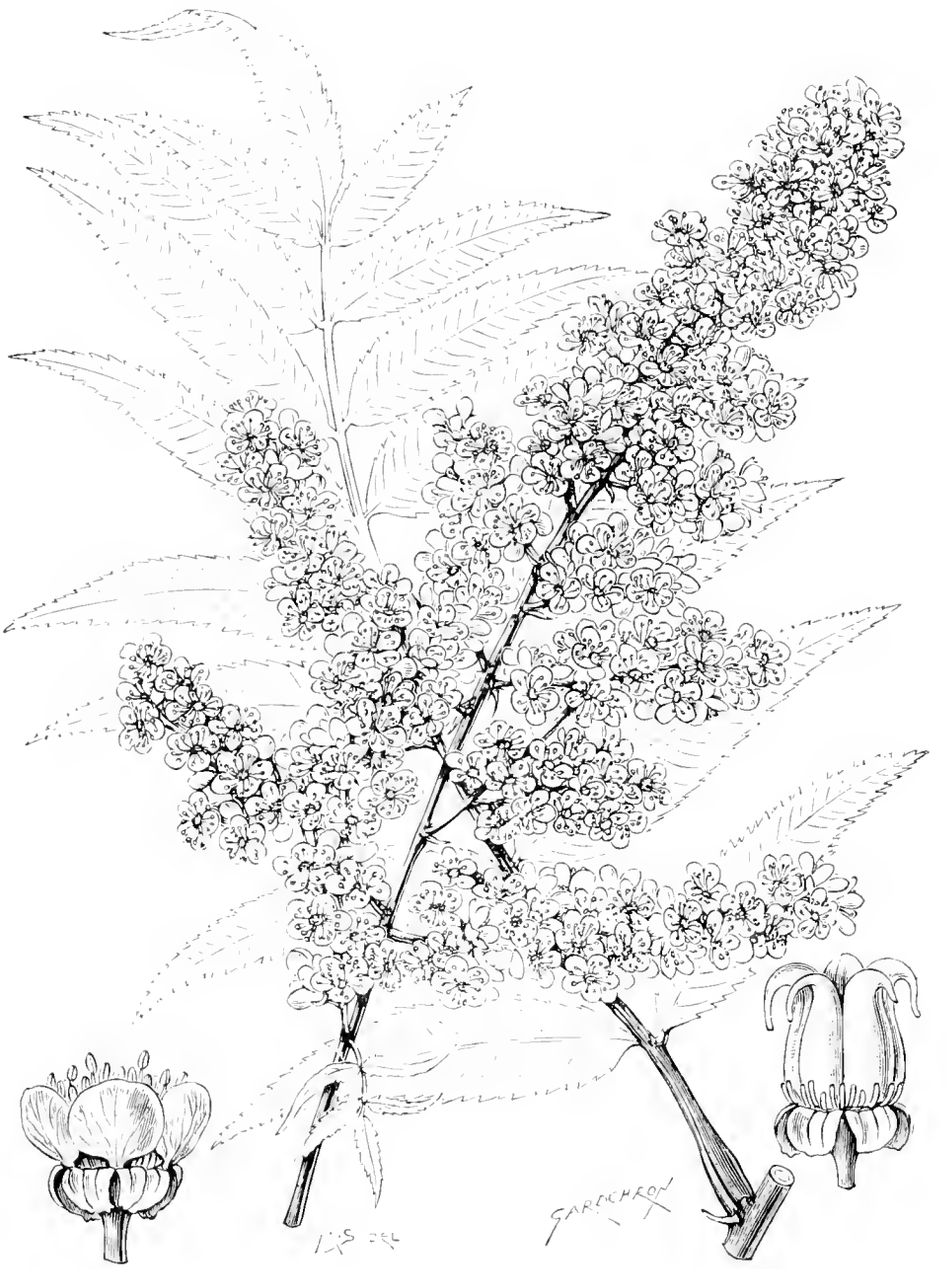

FIG. 178.—SPIRÆA AITCHISONII: FLOWERS WHITE, STEMS REDDISH.

together to the number of many thousands. If we scrape some of these capsules out on to a glass slip and place them under a microscope we may behold a most astonishing performance. Quiescent at first, the heap presently begins to move uneasily in twitches, and here and there we may see that this is caused by the capsules splitting on one side and slowly gaping, until the gape becomes an exaggerated yawn, showing the spores within. At this juncture, however, it is probable that the entire heap under observation will suddenly disappear as if blown away by dynamite, and on the clear space left we may see a rain, or rather hail, storm of far smaller bodies, which are the spores proper. Half-open capsules may be projected into the field of view, only to yawn a little wider and suddenly spring out of it with another hail shower. The fact is that, with few exceptions, the spore capsule is nearly surrounded with a ribbed band, and when the spores are ripe this band dries and shrinks so much that it tears open the front of the capsule, bends the top half back so as to expose the spores, and then suddenly doubles completely backwards, jerking the spores afar and itself to some distance by the recoil. This dislocation, however, only occurs when the spore cases have been removed from the frond as described; normally they merely burst and eject their spores then remaining attached to the frond, so that late in the season there may be nothing left but empty spore cases, a point to be remembered when sowing. We may now turn to the mode of collection for sowing, and as a general rule it may be said that the sooner they are collected and sown the better. As a rule, ripeness is indicated by the dark brown colour of the spore cases, but in Polypodium they are orange-yellow and in Osmunda olive-green. These are, however, rare exceptions. If time be precious, it may be noted that very often a few spore cases ripen long before the rest, and by noting and collecting these some weeks may be saved in the season. Each spore case contains a score or two of spores, and hence a very tiny portion of fertile frond affords an ample supply, a very minute pinch representing thousands of potential plants. Our own plan is to sever a small fertile portion, lay it back downwards on a glass slip, and leave it for an hour or two under a tumbler. On putting this slip then under a low-power microscope, we are able to judge of the quantity of spores shed and to be certain we are not merely sowing empty capsules. In fact, we know whether we are starting on a satisfactory basis or not. The next thing is to sow them, and here we must remember that although the annual spore crop of a single Fern may be hundreds of millions, it is abundantly evident that not one in a million succeeds in reproducing a Fern, even under congenial conditions; and that, therefore, the incipient germs must be peculiarly liable to perish. Worms and other animals, invading vegetation of other kinds, accidental floodings, &c., all upset the young beginners, and hence if we want a good crop we must take steps for their protection from these adverse influences. Having prepared small pots or pans with ordinary Fern compost, topped with a little loam, it is best to saturate this repeatedly with boiling water so as to kill all worms, germs, spores, &c.; and give our spores a fair field. The pots being cooled, we gently tap the glass slip aforesaid so as to distribute the spores very thinly and evenly over the surface. This being done, we cover with a glass slip and stow away in a cool, shady corner. A simple plan is to bed the little pots up to the edge in cocoanut fibre, packing them close in boxes or pans, and covering them with a frame of glass. All we have then to do is to keep the cocoanut fibre moist and await developments. In a week or two we may perceive a faint green tint appearing, showing the spores are germinating, and in time the whole surface becomes covered with small green heart-shaped scales, about the size of herring scales. If too thickly sown, it may be necessary to pinch out little patches of these into other pots or pans. The next thing, after a lapse of apparent inactivity, is the rapid appearance of tiny fronds springing from dents on one side of each scale, and after this it becomes purely a question of pricking out, potting in, and giving more and more room until specimen plants are acquired. Despite every care in collecting spores, it frequently happens that spores of other Ferns have previously been scattered over the fronds of the one desired, and hence when the youngsters appear the brood may be somewhat mixed. If so, the inferior ones should be *destroyed* as soon as recognisable, since the retention of inferior forms is bound eventually to be the bane of the collector, usurping valuable room and materially reducing the value of the collection. *Chas. T. Druery, V.M.H., F.L.S.*

NEW CHARACTER IN LEPTOSPERMUM SCOPARIUM.

LEPTOSPERMUM SCOPARIUM is a very common species in nearly all parts of the New Zealand botanical region, and occupies vast tracts of usually barren country, and it presents the unusual phenomenon of an indigenous plant becoming a "weed" in its own region, which shows, therefore, that the species is eminently adapted to changes of environment, and from such one might easily expect modifications to appear in one way or another. It flowers in great profusion, and at nearly all seasons of the year, and is conspicuous by the snowy whiteness of its flowers, so that any change of colour would easily be recognised should it occur. This has happened in several instances, especially in the north island of New Zealand, where I have observed individuals more or less deeply stained with pink in some of their parts; while

FIG. 179.—SPIRÆA ARGUTA: FLOWERS WHITE.

(For text see p. 397.)

there is a variety which is fairly abundant, the flowers of which are invariably stained with pale pink. In this form the colour is confined to the base of the petals, the calyx, the base of the filaments, the upper surface of the ovary, and the style and stigma.

Some years ago a plant was discovered in the south island with flowers of a bright rose colour, and it is now known in commerce as Leptospermum Chapmannii, and it has been found that this form produces itself fairly "true" from seed. I have seen a hedge of seedlings in Messrs. Nairn & Son's nursery in Christchurch where the most beautiful shades have been produced, many identical with the parent plant, while a few have reverted to the white form. Another point is the fact that the foliage of the pink-flowering plants differs from the ordinary in that it is of a brownish hue rather than green. Not long ago a remarkable individual plant was discovered growing on the sand hills a little north of Christchurch, and separated from the original habitat of L. Chapmannii by over 200 miles, which has blood-red flowers. This must have originated only a few years ago from these white-flowered forms, which alone are found in its immediate neighbourhood. It appears, therefore, that a plant has quite recently come into being which possesses a character non-existent in the parent plant, or, if present, has been for some time dormant. The foliage also of this plant is much darker, of a "Copper Beech" hue, and not green. Messrs. Nairn & Son again took this in hand, and have so far fixed it that a percentage of the seedlings come true, and they now possess a fair stock of this remarkable plant, which is quite distinct from the bright rose-coloured L. Chapmannii, not only in the colour of its flowers, but in the general habit of the plant, it being more drooping and slender, while its flowers are axillary and not terminal.

In conclusion, I would remark that this plant is now known as L. Nichollii, and is easily propagated by cuttings, and, from my observations of Leptospermum scoparium generally, I should say that it is a plant which might be much more generally grown in gardens in England than it is, and that it should be quite hardy here. *A. A. Dorrien Smith (Capt.)*

FLORISTS' FLOWERS.

THE POLYANTHUS.

CONSIDERABLE difference of opinion exists as to the best time for the sowing of the seeds of this plant. From 25 years' experience I find that to have them in bloom the following season they should be sown early in May. When this is done, the cultural requirements are different to those of plants raised from autumn-sown seeds. The seeds of Polyanthus, in common with all the species of Primula, germinate most quickly if they are sown as soon as they are ripe. If the seed is to be sown in the open border, now is a suitable time for the work, and it should be finished not later than the end of August. This will enable the seedlings to become established before winter, and they should not be removed till the following spring. Last year two plants that I wished to remove early in October had produced hundreds of healthy seedlings, and these I transferred to a portion of ground which I prepared for them, thinking they would become established before winter, but after every attention was paid them not 5 per cent. remained in the following spring. Other seedlings raised from seed sown in a box during the middle of September almost all survived the winter, the only protection being a sheltered position. Others, again, raised from a portion of the same seed in a box early in the year in a cold frame are now, in June, almost as forward as seedlings from seed sown in a warm frame early in March. *J. C.*

VEGETABLES.

WINTERING VEGETABLES.

DURING the next few weeks many vegetables will require to be planted in positions they will occupy during the winter, and upon the proper selection of the site depends in a great measure the success attending their culture. In my garden last season I planted Purple Sprouting Broccoli in two positions, the soil of which differed: in the one case it was loose and rich, and had borne a crop of early Potatos; the other plot was somewhat poor land, hard in texture. The plants on the rich land developed large, coarse heads and thick stems, whilst those on the other breadth appeared starved in comparison and the stems were very hard and woody. The inclement weather experienced during the first week of January proved a severe test to these plants, and two out of three on the rich soil perished, whilst not one in a hundred suffered on the poor land. This proves that vegetables should not be grown too soft and luxuriant if they are to withstand severe weather. I have noticed similar conditions in my Lettuces. In a neighbouring garden most of the green crops suffered from the cold of winter, but similar vegetables planted in an exposed field escaped unharmed. *John Crook.*

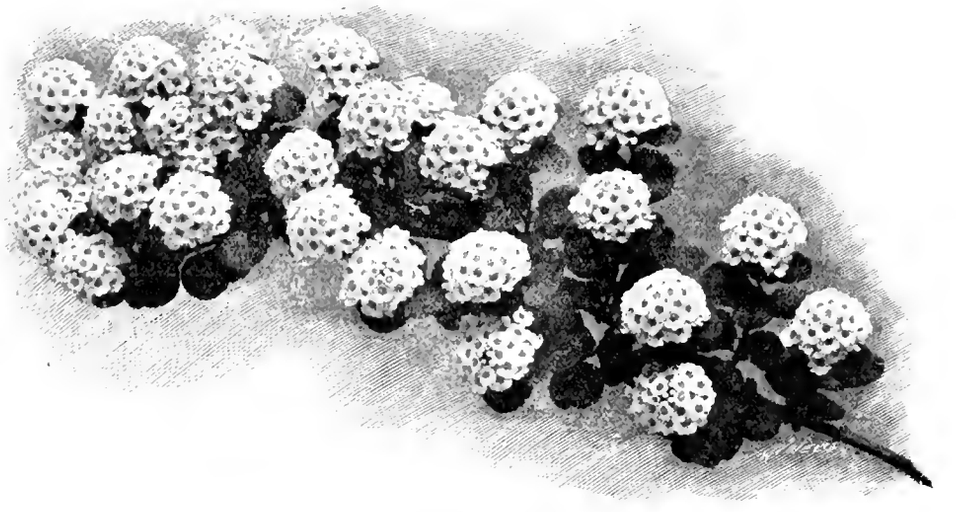

FIG. 180.—SPIRÆA BRACTEATA: FLOWERS WHITE.

(For text see p. 397.)

WINTER LETTUCES.

IN gardens suitably provided with glass accommodation a supply of compact Lettuces may be had throughout the winter and early spring months. Although Lettuces may be considered hardy, they frequently succumb in the winter months, probably not altogether through severe frost, but rather owing to the presence of damp, foggy weather. I have tried wintering in the open many different varieties in varying stages of development, and, although in some seasons they have survived well, the same kinds the following year have proved almost a failure. The great point in obtaining success in the culture of this vegetable under handlights or frames is to provide for a free circulation of air amongst the plants on all favourable occasions. I usually employ handlights for a portion of my crop of spring Lettuces, the remainder being planted on a sunny border. But for winter and very early spring use, the plants are raised in August, and lifted and planted at the foot of a long stretch of glasshouses and close to the brick wall. It is remarkable how well these Lettuces stand the cold of winter, and are useful at a time when salads are much appreciated.

I usually depend upon Cabbage Lettuces for a winter supply, the varieties being Tennis Ball, Tom Thumb, Lee's Hardy Green, and All the Year Round. The small, compact varieties such as Tom Thumb and Tennis Ball can be lifted and planted very closely together, and although they do not attain to a large size, they form compact hearts. If the seed be sown from the beginning to the middle of August rather thinly in shallow drills, and the seedlings be duly thinned and kept watered in dry weather, they will be ready for lifting by the first week in October. Care should be exercised to see that they are taken up with a good ball of soil adhering to the roots; they can then be planted rather closely together at the foot of a south wall. *H. Markham.*

PLANT NOTES.

CLIANTHUS PUNICEUS.

FOR the past fortnight, and at the present time, we have a splendid specimen of this handsome shrub in full bloom. It is situated on a south wall, and was planted in its present quarters from a 6-inch pot about six years ago. Since then it has made good progress, and has reached the top of the wall, which is about 14 feet high, and the plant covers a wall space about 18 feet in breadth. The bright scarlet flowers, of which there is a great profusion, are displayed well against the dark green leathery foliage, making it a conspicuous feature from a distance. The soil here is rather heavy in texture, but it suits the Clianthus. The plant is afforded protection during the winter by means of Spruce branches placed amongst the foliage. Our climate is exceptionally mild, severe frosts being practically unknown, which makes the cultivation of choice shrubs such as the Clianthus a far less difficult matter than it otherwise would be. Cuttings of shoots, inserted about the end of September, in sandy, peaty soil, in a cold frame, have rooted freely, and several raised in this manner have been recently transplanted. Quite close to where the Clianthus is planted a specimen of Solanum crispum is also in full bloom. *R. H. Donaldson, Culzean Castle Gardens, Ayr, N.B.*

EPACRIS LONGIFLORA.

THIS species of Epacris, which is generally seen in gardens and nurseries under the name of miniata, forms a very bright and showy feature in the greenhouse. In most of the garden varieties of Epacris, which have been obtained chiefly from Epacris impressa, the habit of growth is more or less upright, but in the species under notice the shoots are spreading, so that the plant never forms so regular a specimen as

do most of the others. This informal growth is not unpleasing. The flowers are remarkably effective, being considerably longer than those of the other kinds. Their colour is red or scarlet (according to the variety), tipped with white, and hanging as they do from the undersides of the almost horizontally disposed shoots they have an exceedingly pretty effect. One of the best varieties is that known in gardens as Epacris miniata splendens. There is also in cultivation a double-flowered variety of Epacris purpurascens, which, under the name of Eonosmæflora flore-plena, was given a First-Class Certificate by the Royal Horticultural Society in 1876, and was distributed by the late Mr. William Bull, of Chelsea, about half a dozen years later. It was for a time much sought after, but is now little grown, though I have met with it in a few places this season. The individual flowers, resembling tiny rosettes, are borne for a considerable distance along the stout upright shoots. *W.*

The Week's Work.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

Early Muscat Grapes.—Examine the borders of those vines upon which the Grapes are just commencing to ripen, and if water is necessary, thoroughly moisten the soil throughout, for if drought in any degree is permitted, the berries will not develop their proper colour. After this has been done, apply a mulch of clean straw on the surface, which will hinder evaporation. The berries of White Muscats, or, indeed, of any other White Grape, will not finish well without exposure in some degree at any rate to direct sunshine. This amount of exposure can be easily secured without having to tie any of the leaves out of their proper position, that is if the vines have been allowed ample space, and have had their laterals properly thinned out. It is essential that no more bunches should be allowed to ripen than bear a proper proportion to the amount of foliage upon the vines, and for this reason I have known bunches of Muscat Grapes to be reduced in number even after the berries have commenced to colour. The atmospheric temperature at night should now be 65° to 70°, allowing a rise by sun heat during the day. There should be sufficient ventilation during the night to cause the atmosphere to circulate, and during the day it should be increased considerably, varying in degree with the external conditions. Careful attention to all these details is necessary, but even then success will not be obtained unless the foliage is kept in a healthy condition and free from red spider.

Late Muscat Grapes.—Encourage the vines to develop the berries, that these latter may become coloured before the days become short. It is most important that the berries should pass through the stoning stage without suffering a shock. Stop the laterals at frequent intervals and thus prevent the growths becoming crowded, or the need arising for cutting away a quantity of fully-expanded leaves. Do not allow the roots to suffer from lack of moisture, and if the vines need manurial assistance let this be given. This will be especially necessary in the case of healthy old vines that have filled their borders with roots, and are now carrying full crops of fruit. Great care, however, is necessary before applying manures to any young vines that have not exhausted the plant food in the borders. If the roots are in outside borders, examine the soil at short intervals, and do not rely upon the moisture afforded by the rains.

Strawberries.—In early districts, especially in cases where plants are grown expressly for affording runners, the work of layering is now being commenced. Sufficient plants should be obtained to allow a surplus to stand in the place of any that may subsequently become "blind." The runners may be layered into pots 3 inches in diameter filled with loam mixed with fine manure obtained from a spent Mushroom bed and a sprinkling of soot. As soon as the young layers have commenced to form roots their extending growths should be removed. The pots should be plunged in the mulching material that was placed on the surface of the bed. Relieve the parent plants of superfluous runners and syringe them and the layers overhead in the evening after hot days. When the pots have become filled with roots detach them from the parent plants and place them in a shady position upon a bed of ashes. When they have recovered from the check caused by the detachment they will be ready for shifting into the pots in which they will fruit. There is no variety equal to Royal Sovereign for pot cultivation.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Celery.—Although not generally expected in large quantities before about the middle of August, Celery can be brought to the highest state of perfection even as early as the month of July, and it is often much esteemed at that time. Less time is needed to carry out the blanching at that season than later, and this is best accomplished by using bands of brown paper about 4 inches in width, which will only very slightly impede the growth. The plants may be readily supplied with water at the root, and the blanching will be cleaner and better than if any other material were used. Successional plantings should be kept well supplied with water, and all side growths and bad leaves carefully removed. A diligent search should be made for any trace of Celery fly, and on the first appearance steps should be taken to eradicate the pest; frequent dressings of soot will do much to prevent it causing much damage if dealt with in good time. Green fly is frequently a source of annoyance in the early stages of growth, but if tobacco powder be puffed on to the leaves when they are damp, it will prove an effective cure for this pest. Continue to get out trenches as ground becomes vacant for the latest plantings, and manure all liberally. It is a capital plan to make these plantings between the rows of early and mid-season Peas, which will afford the Celery just sufficient shade to enable the plants to get quickly over their move.

Coleworts.—Few crops are more useful during the early autumn than these small Cabbages, and they seldom fail if proper attention is shown them. The seed should be sown at the present time in a fairly cool and shady place, and again in the first week in July. Immediately the plants are of sufficient size to handle, plant them at one foot apart all ways on well-prepared ground which has had a liberal supply of farmyard manure incorporated. Make the soil very firm, and if clubbing is feared, fill in the holes with fine cinder ashes. The two varieties I especially recommended are Rosette Colewort and Hardy Green. They are both excellent, being of hardy constitution and good quality.

Winter Greens.—These, which include Broccolis, Borecoles, Kales, Savoys, and Brussels Sprouts, should be planted out in their winter quarters as fast as the ground becomes available. It frequently happens that at this season almost every part of the garden is occupied with growing crops, and it will be necessary to plant between such vegetables as Peas, Broad Beans and Potatos, and if attention is paid to removing the various crops in good time, the green crops will be little the worse, and in some cases all the better. An important item to observe is to plant as far as possible on firm ground, and allow a good distance, both between the plants and rows to ensure the growths becoming well ripened.

Late Peas.—The final sowing of these should now be made on a south border. Pay strict attention to those plants just coming through the ground, as to thinning, mulching, watering and staking them.

PUBLIC PARKS AND GARDENS.

By JAMES WHITTON, Superintendent of the Parks and Open Spaces in the City of Glasgow.

The culture of hardy plants (continued).—I would direct attention to another genus of plants as deserving of more attention than it generally receives, viz., the Scillas, which are popularly known as Squills. For ordinary garden purposes much use can be made of the early-flowering Scilla sibirica, and to a lesser degree of S. bifolia. These, however, can only be utilised for minor effects, being fit companions to the Grape Hyacinth (Muscari) and the Glory-of-the-Snow (Chionodoxa). There are also one or two other species, such as the noble S. patula, which must, partly on account of its scarcity, be kept for favoured corners of the garden only. We have, however, in our native S. nutans—the Bluebell or Wood Hyacinth—and its varieties, along with its Spanish congener, S. campanulata, and their white forms all that is necessary so far as colouring in the flowers is concerned. These also best suit our purpose, because they are procurable in quantity at moderate prices. Anything that is rural in character should be carefully preserved in a city park, but it is surprising how few attempts are made in our modern public parks to reproduce simple, natural features. Such a beautiful portion of natural scenery as that exemplified in the grounds about the Queen's Cottage in Kew Gardens is rarely eclipsed in any of our public pleasure grounds; indeed, it is doubtful if Kew, with all its wonderful resources has anything more delightful than this display of the homely Bluebell and other wildings in their season of flowering. We have in three of our Glasgow parks, in which the natural conditions have not been greatly disturbed, displays of this simple flower, and though they offer a temptation to children to gather, they afford the greatest pleasure to town dwellers. Where ordinary rough woodland exists, the common Bluebell should be planted, and, if possible, the bulbs should be obtained from local sources. In parts of the park which pass from the wild to the cultivated portions some of the finer and bolder garden varieties of Bluebells may be utilised. One of the best of these forms I have obtained under two names, viz., Azurea and Cœlestina, but I believe the latter is the correct name. There also exists two white forms, one of which is greatly superior to the other. We have a good purplish form, which was obtained from a private garden, but without a name. This is a very effective plant when cultivated in the Grass, and it is a robust grower. There are several rose-coloured varieties, which, while affording a variation in colouring, are not very effective when seen at a distance, and they should not be mixed with any of the other varieties. The Spanish Squill (S. campanulata) and its variety alba are as effective as the common Bluebell, and they have the advantage of flowering earlier than the native species. An additional feature of the Scillas is their suitability for combination with other plants. More than 30 years ago I had occasion to visit an estate, and, being a stranger to the district, I ventured through a wood, when I reached a shallow glen or gill—to use the local term—wherein I met with a breadth of Bluebells that were growing in conjunction with the Leopard's Bane (Doronicum Pardalianches). Never shall I forget the pleasure experienced by the sight. We have established a similar combination in one of our parks, which, though increasing slowly, promises in time to prove a success. Last year, when on a visit to one of the Midland counties of England, in passing through a copse partly grazed with cattle, I came across a clearing of perhaps half an acre or more in which Bluebells were growing in company with Cowslips. This combination was also charming, and to me unique, as Cowslips are not generally found in numbers in Scotland. There are many other common plants which can be utilised in woodlands; for instance, the Foxglove and the Campanula latifolia. I have also seen the Martagon Lily growing in quantity in a wood, where it produced an effective display. The plants had probably escaped from an adjoining garden. In one of our most recently-acquired parks there is a part known as the "Swiss Meadow." This was formed by the wife of the former owner, and, although the results have fallen short of the lady's ideal, partly on account of unsuitability of the situation and also through the depredations of rabbits, it is nevertheless a source of great interest, and indicates possibilities in this direction. Such schemes are, of course, best suited to the rougher parts and glades in parks where no mowing of the Grass or dressing of the land is practised, and where the ground is undisturbed except in late autumn, when the ground is made tidy. Scillas may be planted on ordinary lawns, provided the mowing of the Grass is deferred until early in July, when much of the foliage has died. We have several lawns thus planted, and, although the sward is kept close cut with the mower, the flowering plants appear to suffer little from their defoliation in the previous year.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Strawberries.—It is necessary to protect the berries early from the birds by netting suspended from a framework made of light materials, just strong enough to hold the nets. If the structure is 4 feet high, the fruits can be gathered easily and quickly. A good plan is to run wire netting 4 feet wide around the outside of the Strawberry bed, and to place the fish netting over the beds at this height. See that everything is in position before the berries begin to colour. Afford a layer of litter beneath the plants to keep the fruits clean and, if extra fine berries are required, thin the trusses and support the stalks, so that the berries may be fully exposed to air and sunlight. Should the weather continue dry, afford a thorough soaking of clear water to early varieties planted on warm borders. Later fruiting kinds should be watered with liquid manure, which will induce them to continue growing for a long period. Make a note of those varieties that succeed best, and provide for next year's stock by potting a number of the runners in 3-inch pots as soon as they form. Plant these runners out as soon as they are rooted to furnish an early supply of fruit next year.

Gooseberries and Currants.—In these gardens the bushes of small fruits have been badly attacked by aphis and other insect pests, which have been very destructive amongst other fruit trees. Only by incessant warfare can these pests be kept in check. Shorten back the shoots to five or six leaves, and thoroughly syringe the trees with some approved insecticide. This shortening of the shoots will favour an early maturation of the wood, especially on cordon-trained bushes; in addition, the fruits of this season will be greatly improved thereby. Mulch the roots of old trees that are carrying heavy crops of fruits, and others whose fruits will be required later in the season.

Cherries.—Early Rivers', Mayduke, and other early varieties should receive a final cleansing of their shoots before being netted to exclude the birds, which attack the fruits directly they commence to change colour. The trees require plenty of water during this stage. Later fruiting varieties should also be given copious supplies of water, and the foliage must be kept clear of all pests by a free use of the garden syringe. Fasten the shoots as previously recommended.

General remarks.—Raspberries must have their young canes tied and their roots mulched with rich manure well soaked with water after it is applied. Old plantations of Black Currants will be much benefited by mulchings, also doses of liquid manure. Continue to shorten the breast wood of Pear and Plum trees, tying in any branches that are required for furnishing the trees, and wash the foliage with a stream from the hose or garden engine. Continue to pinch the shoots of bush and pyramid trees as previously recommended.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Major G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Epidendron prismatocarpum.—It is now the season of flowering of this handsome species. The flowers possess lasting properties in addition to their beauty, and the plant is therefore a very suitable subject for exhibition purposes. When the flowers are over, examine the root system, and if it be found to need new rooting material, this should be given forthwith, using a similar compost to that advised for Cattleyas. The pots, or pans (the latter being the best receptacles) should be first filled two-thirds with material for drainage, as it is essential that water passes readily away from the roots. This plant is best accommodated in a structure having an intermediate temperature, such as a Cattleya house, in which structures they are usually accommodated. During their early stages of growth water must be afforded sparingly, sufficiently only to keep the rooting material moist being necessary. This dry treatment should be continued until new pseudo-bulbs commence to be formed, after which an abundant supply of moisture may be given until the growths are fully developed.

Odontoglossum grande.—After a season of rest, during which time they have been kept on the dry side, these plants are now starting into growth afresh, both above and below ground, and will therefore need repotting or resurfacing with fresh material, as may be necessary. If it is decided that entirely new compost is necessary, employ a mixture of two-fifths Osmunda fibre, two-fifths Polypodium fibre, and one-fifth moss, mixing the whole well together. Use ordinary flower pots, in which are placed plenty of material for drainage, and press the soil moderately firm in the potting, surfacing them with a layer of clean picked Sphagnum-moss. Place the plants in a house having a cool or intermediate temperature, selecting a light, airy position for their staging. A small amount of water at the roots will suffice for some time, and it must be applied with care, so that none of the moisture falls on the young growth, as this generally results in their damping off. When the plants are growing freely they should receive liberal supplies of moisture, and then the syringe may be freely applied whenever the weather conditions will permit, wetting the foliage on all sides.

Odontoglossum citrosmum.—This Orchid is now in flower, the inflorescences being seen to advantage when the plants are suspended in baskets from the roof. They succeed best in an intermediate temperature in a position close up to the roof glass, that must not be too densely shaded. The plants may be grown either in well-drained pots or in baskets, but the latter receptacles are preferable. If any plants require new rooting material, it should be afforded them soon after they pass out of flower, using a similar compost to that advised above and in a like manner. These plants usually shrivel very much after they are disturbed at the roots, therefore the repotting should be done with care, and the plants should be given every attention until they establish themselves again in the new rooting medium. When growing freely, they delight in a liberal treatment and enjoy water in abundance, also sprayings of clear water overhead, which can be afforded on bright days and continued until growth is completed.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Anthurium Scherzerianum.—Plants passing out of bloom should be given a top-dressing of fresh sphagnum-moss and wood ashes, in which has been distributed a few small portions of broken brick or charcoal. Remove a portion of the old top soil down to the roots, but be careful not to break or otherwise injure any of these organs. Place the new compost close up to the neck of the plant, sloping it towards the outside of the receptacle. Anthuriums are greatly benefited by frequent top-dressings.

Cinerarias.—Seedlings raised from spring-sown seeds should now be pricked out into boxes, which are better than small pots for the purpose. Fill the boxes with a soil of a light texture, and in which has been placed a considerable amount of leaf-mould. Afford the seedlings a space of about 4 or 5 inches apart either way, and then stand the boxes in an unheated frame under a north wall if possible, and on a bed of ashes, which should be previously well damped. Keep the frame closed for a few days, syringing both morning and evening. On warm nights the lights may be removed to allow the dew to settle on the plants, but in the morning the glass should be again put on the frames, and if the sun's rays reach them shading must be afforded. Guard against green fly and thrip, and directly any insect pest appears fumigate with tobacco smoke. If the ashes on the floor of the frame be kept well damped Cinerarias are seldom troubled with insect pest.

Primulas.—Primulas raised from seed this season should now be potted into pots having a diameter of 3½ to 4 inches. A suitable compost is formed of good fibrous loam (one-half), leaf-soil (one-fourth), and fine sand (one-fourth). Use perfectly clean pots, or the soil will cling to the sides when the plants are turned out of the receptacle and some of the roots will become damaged. Place the small plant firmly in the pot and sufficiently low in the soil to prevent it breaking at the neck. Stand the pots in a structure having an intermediate temperature, and well shade the plants from the sun's rays. Stand them near to the glass, for if they are far from the light they become drawn and spindly. As soon as they become established in the fresh soil, remove them to an unheated frame. During the summer months these plants prefer an abundance of light, although not direct sunlight, for which reason it is necessary to afford them a position that is shaded from the sun's rays.

Aralia Veitchii.—Old plants that have become leggy, and therefore unfit for decorative purposes, can, if in robust health, be cut down to within 3 or 4 inches of the rim of the pot, and be made to break into growth afresh. Young shoots will soon form if the plants are placed in a position close to the glass, and of these three of the best should be chosen, and the remaining ones be removed. Of the three selected, one will soon take a lead, and this one should be pinched back so that by the time it breaks again into growth the other two will have developed to the same size. The second year cut each of these three stems down to within an inch of their previous season's growth, and by continuing the treatment of the past year a fine bushy specimen will be formed.

THE FLOWER GARDEN.

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

Ripening bulbs.—Most bulbous plants have now finished their flowering, and as the beds are required for other subjects, they should be lifted and carefully ripened. Choose a dry day for the work, and place the bulbs thinly in boxes or on mats, and stand them in some shady spot, where they may be allowed to dry slowly. When they are quite dry, remove the old foliage, the small roots, and any offsets. Label each variety, and place them in a dry, airy house or shed where they can remain until required for planting again next season.

Wallflowers.—Plants raised from seeds sown early in May will now be ready for transplanting. Choose ground that is not too rich, and, in planting, remove the end of the tap root in order to induce the plant to develop a fibrous root system, for this conduces to a dwarf, compact growth above ground. Seeds of Wallflowers may still be sown with success.

Polyanthus seedlings will now be large enough for transplanting. Choose a site on a shady border, such as provided by one under a north wall. Plant them at a sufficient space apart to enable the hoe to be plied between the rows. Old plants may now be divided at this time; these divided portions will form good plants that will furnish an abundance of flowers next spring. The Polyanthus prefers a gritty soil, having an open texture.

Hollyhocks.—Pluck off any of the leaves that are affected with the Puccinia disease so prevalent among these plants, and encourage a vigorous growth by copious waterings and liberal applications of liquid manure. Use the Dutch hoe freely in dry weather in order to retain the moisture in the soil and to destroy weeds.

Gladiolus.—Plants growing in light soil need frequent applications of moisture, and, as a mulching to prevent undue evaporation, spread evenly over the surface of the roots a layer about 2 inches deep of horse-droppings. If they are planted in beds by themselves see that all weeds are destroyed by the hoe. Stake the plants early in order that the flowering spikes may be secured before they become damaged by wind. Arrange the stakes so that the top of the stake is just below the lowest flower, otherwise the blooms will become rubbed and bruised against the stake.

Perennial Asters will also need staking. In the case of varieties of medium height, the best stakes are formed of twigs, as the effect is more natural than is the case when stiff, formal stakes are used.

Hardy Ferns, including Osmundas, Polystichums, Scolopendriums, &c., need copious supplies of water at this season, for even in very rainy weather the dense canopy formed by the fronds prevents the moisture from reaching the roots of the plants. It will be good practice to sprinkle these plants overhead both morning and evening during hot weather.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

Illustrations. *The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but he cannot be responsible for loss or injury.*

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

Local News.—*Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, JUNE 20—German Gard. Soc. meet.

TUESDAY, JUNE 23—
Roy. Hort. Soc. Coms. meet. Oxford Fl. Sh. Hort. Club.

WEDNESDAY, JUNE 24 -
Richmond Fl. Sh. Hort. Sh. at the Franco-British Exhibition, Shepherd's Bush (3 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—61·2°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, June 17* (6 P.M.): Max. 68°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June 18* (0 A.M.): Bar. 29·9; Temp. 65°; Weather Bright sunshine.

PROVINCES.—*Wednesday, June 17* (6 P.M.): Max. 61° Guildford; Min 49° Durham.

SALES FOR THE ENSUING WEEK.

FRIDAY—
200 specimen dwarf and rare Japanese Trees and flowering plants, Vases, &c., Palm seeds, Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Colours in Plants.

Few phenomena of nature are more striking than the brilliant and varied colours of the flowers, or the splendour of the tints in an autumnal woodland. But although the matter has formed the object of innumerable researches, much still remains to be done before we shall be in a position to give anything like a complete explanation of the nature of the colouration in plants. Nevertheless a good many facts have been gleaned, and they are not without interest for those who are not merely satisfied with things as they are, but want to know something about their causes and properties.

There are very many classes of colours, but for the sake of convenience it is easy to group them into two classes.

In the one of these, the pigment is dissolved in the cell sap, and so forms a coloured liquid which is contained in the spaces of the protoplasm of each of the cells, whilst in the other class the colour is associated with small but definite solid structures embedded in the cell. Very many of the blue and red colours are of the former nature, and it often happens that it is only those cells which form the superficial skin of the organ leaf or petal which contains the dissolved pigment. The reddish-purple of the Copper Beech and the various tints on a Tulip belong to this class. It seems almost impossible, when one sees a feathered or flamed "broken" Tulip, to realise that the pattern is only skin-deep, but anyone may easily enough convince himself that it is so, by simply peeling off the epidermis from such a flower.

Many of the blue or red flowers possess pigments that can be changed the one into the other by acids or alkalis respectively, and it often enough happens that the two colours are present on the same plant, as, for example, in the coloured bracts of Salvia Horminum. The blue (or violet) tint means the presence of alkaline, whilst the red colour betrays an acid, cell sap. The change from one to the other can often be brought about by holding the coloured organ over some volatile alkali, for example, ammonia, or an acid such as hydrochloric acid.

Some plants are easily induced to assume red tints in their otherwise green leaves, and this is often connected with their nutrition. The Dock tribe furnish well-known examples of plants which often exhibit splashes of red on their foliage, and this can, in suitable instances, be produced by the simple device of severing some of the "veins" of the leaf, and so interfering with the passage of substances away from it into the stems. Temperature is another indirect agency in the production of colour: thus a low temperature and bright illumination tend towards the production of pigments, and perhaps helps to explain the astonishing brightness of the Alpine flowers.

Other causes also intervene to modify normal colour. Iron is recognised as essential to the formation of green colours in leaves, and there is also evidence to show that it is at any rate one of the causes which may promote a bluish colour in Hydrangea. Unfortunately we do not as yet know how the effect is produced in the latter case; we do not understand the chemistry of the process, nor why a blue colour should be produced in this plant, whilst in other flowers different tints seem to be related to the presence of the same element. Analogous examples will occur to everyone, such as the vivid brightness of the blue and yellow flowers of plants growing on limestone as compared with the same species on other soils to select merely one striking and familiar example.

The second class of colours is not due to the presence of coloured sap, but to the existence, within the cell, of coloured corpuscles. The best known of these are, of course, the chlorophyll corpuscles, to which leaves owe their green colour. In leaves these corpuscles are for the most part absent from the epidermis, and are especially abundant in the cell layers just underneath it, on the surface directly exposed to the light. As is generally known, they have a most important function to discharge, namely, that of enabling the plant to build up food, under the influence of appropriate light, from very simple raw materials. It is not too much to say that the whole of the animal kingdom is ultimately dependent on the existence and functions of the chlorophyll corpuscles, for they build up, directly or indirectly, practically the whole of the food on which animal life subsists.

The chlorophyll granules are moveable within each of the leaf-cells, and they take up different positions which are related to the intensity of the light. The relatively pale green of the leaves on a bright summer day is due to this cause. The corpuscles are so arranged as to shelter each other. But by shading a part of the leaf, with a bit of darkened paper for example, the deeper tint will be seen to have returned if the paper be removed after a little time, and this change is due to the corpuscles having again spread themselves out in the cells thus temporarily shaded.

Now the chlorophyll corpuscle is by no means a simple body. It consists of a dense framework coloured by an oily green substance. The latter can readily be extracted from the solid matrix by soaking the leaves in alcohol, and the difficulties of investigating it then begin. Without going into details, we may say that there are at least two colouring matters present, a blue-green, and a yellow one, the latter closely resembling, and perhaps identical with, that which gives Carrots their orange colour.

Everyone knows that plants grown in the dark are not green, but are of a sickly yellow or white colour. Nevertheless plants grown under these conditions possess chlorophyll corpuscles, but the colouring matter is not developed. It needs only a short exposure to light to cause them to turn green, just as an exposed photographic negative only needs the developer to bring out the image which was latent in the film. In each case the transformation from the invisible antecedent to the finished product is associated with chemical change, and can only take place under suitable conditions.

Now the green and yellow (or red) constituents in the chlorophyll corpuscle may change their relative proportions a good deal, according to circumstances, and further colour changes may also go on accompanied by the formation of even crystalline substances in the corpuscle which may so distort it as to render it almost unrecognisable. Most yellow colours are thus produced, and also some red ones. Thus when a green Trollius bud unfolds to a yellow flower, the colour is due to changes such as we have indicated, and the same occurs in the reddening of Rose hips. Autumn leaves also owe their brilliant tints largely to changes that occur within the chlorophyll corpuscles, depending on the disappearance of the green and the increase of yellow or orange colour-bodies. Sometimes the chlorophyll corpuscle simply loses all its colour, and then the organ assumes a white appearance such as is seen when the Snowberry (Symphoricarpus racemosus) ripens its fruits.

A puzzling case is observed in many plants with variegated leaves. The causes of the local loss of colour are not well understood, and they are complicated by the fact that in some cases the variegation of a scion will affect the stock on which it may have been grafted. Such an example illustrates the truth of the statement we have already made, that the causes that are responsible for the colour changes in plants are often very complex, and at present lie for the most part outside our knowledge. But although this is the case, the whole subject is one of fascinating interest, and it will long continue to repay scientific investigation.

OUR SUPPLEMENTARY ILLUSTRATION affords a view of some flower-beds at Wynyard Park, near Stockton-on-Tees, the residence of the Marquis of LONDONDERRY, K.G. The scroll-shaped beds, are outlined by an edging of Box, the paths between being surfaced with spar. Last season, when our photograph was taken, the small circular beds in the centre were each planted with a specimen of White Queen single Dahlia, and edged with Perilla; the S-shaped beds contained dwarf plants of Ageratum and Ivy-leaved Pelargonium Mme. Crousse alternately. The Pelargonium was mainly pegged to the ground, but at intervals a plant was trained to a stake 2 feet high to furnish relief. The outside portions, which at intervals are pointed inwards, were planted as follow: the points and portions opposite the end of the Ageratum beds had a plant of the dwarf Dahlia "White Bedder," and this was surrounded by plants of Ivy-leaved Pelargonium Mme. Crousse. The portions opposite the inner beds of these latter plants was furnished with blue Lobelia, the variety being Mrs. Clibran. The arrangement is altered annually, but the effect is always good. Most of the beds seen on the lawn are filled with tuberous-rooting Begonias in distinct colours of crimson, pink, white and yellow. The colours of the flowers in the borders are planted so as to produce a pleasing effect from a distance; for instance, crimson shading up to white or the reverse, white shading up to crimson. The flowers in the borders are planted so as to produce a good colour effect. This season the east end border is planted with flowers having shades of blue, the west end with white and yellow. A large ribbon border which runs parallel with the scroll is bedded as follows, commencing at the front:—Two lines each of Alyssum minimum, Lobelia Mrs. Clibran, Ivy-leaved Pelargonium Mme. Crousse, Pelargonium Henri Jacoby, P. Paul Crampel, Perilla macrophylla compacta, Dahlia White Bedder, and D. Sydney Hollings. Mr. H. E. GRIBBLE, the able gardener at Wynyard Park, makes the flower gardening one of the most attractive features, over 7,000 tender plants being used for this purpose.

THE FLOWERS OF SPENSER.—The science and art of gardening are essentially practical questions, and in the economic culture of plants there is not always room for sentiment or poetry. But the study of flowers, if regarded as something separate to their cultivation, has led many to appreciate the sentiment connected with them, and to rejoice that their interest and beauty have given inspiration to most of the greatest writers and poets in the world's history. Even the more practical among us have moments when the poetry or sentiment of the flowers we tend from day to day charm us, and we turn to SHAKESPEARE or our favourite poet to see what he has said of them. The Rev. Canon ELLACOMBE, himself a devoted gardener, has studied the poetic qualities of flowers whilst cultivating his well-stocked garden at Bitton, and has already published a small volume under the title of *Plant Lore and Garden Craft of Shakespeare*. His contributions upon the "Flowers of Spenser," which commence in our present issue, will appeal to all those who are interested in the literature of plants.

ROYAL HORTICULTURAL SOCIETY. — The next exhibition of flowers and fruit will be held at Vincent Square, Westminster, on Tuesday, June 23. At 3 o'clock a lecture on the "Absorption of Rain and Dew by the Green Parts of Plants" will be given by Rev. Professor G. HENSLOW, V.M.H.

JUBILEE OF THE YORKSHIRE GALA.—To commemorate the jubilee of the Grand Yorkshire Gala, which has been held during the present week, the committee has issued a pamphlet containing interesting information respecting the shows that have been held since 1858 until the present time. It appears that the gala was inaugurated on November 30, 1858, at the Old George Hotel, in the Pavement, York, the first meeting of the subscribers to the Guarantee Fund being held under the chairmanship of the late Mr. WILLIAM HOLLIDAY. There were nine other gentlemen present, and each member guaranteed a sum of £20. The guarantee was subsequently shared by 30 members forming a standing committee, and it was decided that the profit from the concert and first day's exhibition, after deducting all expenses, should be paid to York charities. It is interesting to note that the first exhibition held on June 14 and 15, 1859, was attended by 17,920 people, and the gate money amounted to £1,026 17s. 6d. The charities benefited to the amount of £120. In looking through the records for each year, we note that in 1861 a regrettable incident was the death of a boy accidentally killed by fireworks. In 1896 the Society was honoured by the attendance at the gala of a deputation from the Royal Horticultural Society. The gala of 1897 being in the 60th year of the reign of her late Majesty QUEEN VICTORIA, an extra grant of £50 was voted for a class for groups of Orchids, and £29 contributed to the Day of Thanksgiving Fund. This proved one of the most disastrous galas the Society has held. On the morning of the first day there was such a gale that the marquees containing the exhibits, and covering an area of about 3 acres of ground, were blown down, the poles snapped in twain, and the canvas in many instances was torn to ribbons. Many of the exhibits were removed, but the gala, as far as possible, proceeded, the admission on the first day being reduced to half-price, and the loss on the gala altogether amounted to £500. In 1906 the tents were for the first time lighted by electricity. During the 49 years of its institution, no fewer than 1,844,817 persons have paid for admission to the grounds, exclusive of subscribers and other ticket holders, the record attendance for three days being in 1899, when the numbers reached 57,383. Nearly £2,600 have been disbursed in prizes in the floral department. The Society has contributed the sum of £2,682 5s. to charitable objects, including a sum of £62 10s. to the "Gardeners' Orphan Fund, &c." The garden charities do not appear to have benefited to an undue extent. The official souvenir contains many photographs of past and present presidents and officials, and also scenes from some of the galas.

MONS. EDOUARD ANDRÉ.—In a paragraph on page 385 of our last issue, MONS. EDOUARD ANDRÉ was inadvertently referred to as a nurseryman. MONS. ANDRÉ, who has been editor of *Revue Horticole* for many years, is a landscape gardener of great fame throughout France, but he has never been what is termed in this country a nurseryman. We regret to know that our colleague is so seriously indisposed that he is at present unable to continue the work in which he distinguished himself so brilliantly.

A FIXTURE LIST. — Messrs. AUSTIN & MCASLAN, nurserymen, 89, Mitchell Street, Glasgow, have compiled a list of fixtures of flower shows and other horticultural functions to be held principally in Scotland. The towns are arranged in alphabetical order, which renders it an easy matter to at once determine the date of a particular flower show. The chief London, provincial, and Irish fixtures are included at the end of the booklet.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are asked to again remind our readers of the 69th Anniversary Festival Dinner in aid of the funds of the Gardeners' Royal Benevolent Institution, which will take place on Wednesday next, June 24, at the Hôtel Metropole, under the presidency of the Lord ALDENHAM, who will be supported by an influential and distinguished company. Donations to be placed on the Chairman's List are earnestly solicited, and may be sent direct to the Lord ALDENHAM, to HARRY J. VEITCH, Esq., the Treasurer, Chelsea, S.W., or to the Secretary, Mr. GEORGE J. INGRAM, at the offices, 175, Victoria Street, Westminster.

ROYAL HORTICULTURAL SOCIETY OF IRELAND. — Mr. EDWARD KNOWLDEN has been appointed secretary of this Society. The address is 5, Molesworth Street, Dublin.

RATS AND MICE IN THE GARDEN.—These little creatures are a pest to the gardener, who often bewails the loss of his seeds and fruits owing to their depredations. Not long since we visited a garden, in which the culture of Sweet Cherries had been abandoned because these rodents were so troublesome in eating the ripe fruits. Poisoning is the surest method of destroying them, but poison cannot always be employed for fear of injury to domestic animals. The E. SCALES MANUFACTURING CO., of Station Road, Sidcup, London, S.E., send us particulars of a new patent trap. It is called the "Go-bang," and kills the creature by means of a falling bar, which, when released, is sent down by a powerful spring. There is a larger size for the trapping of rats. The trap is made either in wood or in galvanised iron.

AMERICAN GOOSEBERRIES. — A large proportion of the Gooseberries cultivated in the United States and Canada (writes Mr. J. G. BAKER), are descended from Ribes oxyacanthoides of LINNÆUS, and not from the nearly allied European and Asiatic Ribes Grossularia. Ribes oxyacanthoides differs from Ribes Grossularia in having a less erect habit, more spreading branches, usually simple spines, thinner, less glossy leaves, often hairy beneath, and smaller berries, with a thinner skin and rather different flavour. Ribes oxyacanthoides is widely distributed as a wild plant in the North American continent, extending from Newfoundland and the Northern American States, northward through Canada to Hudson's Bay, and westward to New Mexico and California, where it reaches a height of 6,000 to 9,000 feet on the Sierra Nevada. It appears to bear the hot summers of the United States better than R. Grossularia, which is also widely cultivated in America under the name of the English Gooseberry. R. oxyacanthoides seems to vary greatly in the armature of its stems, the hairiness of its leaf-stalks, and the lower surface of its leaves, and the colour of its flowers and fruit. A less prickly, glabrous form is figured in the *Botanical Magazine*, tab. 6892. A form with hairy leaves is R. hirtellum of MICHAUX, and a variety armed with copious setæ between the true prickles is R. setosum of LINDLEY, tab. 1237. Although it has been known in England from the days of DILLENIUS, who figured it in *Hortus Elthamensis* in 1732, it does not seem to have been cultivated in Britain, except occasionally as a botanical curiosity; but it might be worth while for some of our enterprising fruit-growers who are in search of a novelty to try it, for it reaches so far north that it must be adapted to our English climate. A commonly-cultivated American form is known as the "Downing Gooseberry." Another species, Ribes Cynosbati, is also occasionally cultivated in the United States.

ASPARAGUS PLUMOSUS, so much used for decorative purposes, is cultivated out of doors for market purposes near Naples. According to a writer in *Revue Horticole*, Sig. M. TRAVERSO has succeeded by a cheap and ingenious device in overcoming the difficulties due to excessive dry heat and the dangerous winds that occur in that part of Italy. His plantation, which is situated in the district known as the Phlegræan Fields, is surrounded with close lattice work, and is roofed over with the same material at about 7 feet from the ground. The results are said to be excellent, and the plants grow freely and give very little trouble.

QUALITY OF SEEDS.—The influence of the character of the seed on the crop that will be produced from it is well known as a general fact. But it is probable that more detailed attention than is very often given to the matter would well repay the trouble entailed. It is becoming better understood than formerly that the very early life of a plant has an overwhelmingly important influence on its subsequent growth. Thus it is a matter of common experience that some plants rapidly improve, if grown even for a few generations under specially favourable conditions. This is certainly to be attributed, in great part at any rate, to the cumulatively favourable start in early life enjoyed by the plants themselves. The environment thus continues to influence the development through several generations, and in a cumulative fashion. This circumstance has given rise to a certain amount of confusion as to the existence of inheritance of acquired characters. Probably what has really occurred is that the accumulated wealth of one generation serves to endow the seeds of the next with more capital in the form of food, and this will produce its effect during the youthful and most important period of growth in the seedling. This view is supported by the ease with which such improved races degenerate when favourable conditions are relaxed. Such considerations, which are borne out by facts, serve to emphasise the desirability of more thoroughly studying the relations that exist between the various properties of the seed and the quality of the progeny that will arise from them. The matter is not new, but it is still worth a very careful scientific investigation, and the results are certain to be of practical value.

AN AMBITIOUS DINNER-TABLE DECORATION.—A writer in the *Florists' Exchange* (American) recently described a Japanese dinner decoration carried out by a gentleman who has spent a great many years in Japan. The occasion, he states, was a birthday party, the table being set for 12 covers. The decorator stepped out of a touring car with a collection of mysterious-looking boxes and bundles, and immediately took possession of the dinner table The first package to be undone contained several sheets of dyed green moss; the next a shallow oval tin basin about 2 feet in diameter and 2 inches deep; this was placed in the centre of the table and banked around with crumpled papers taken off the packages. Several other bundles were placed here and there on the table, which, covered with the sheet-moss, formed miniature mountains and valleys. Other packages revealed Ferns, pagodas, huts, bridges, boats and a host of other things which go to make a Japanese landscape. The tank in the centre formed the lake; this was covered on the bottom with white gravel; a rugged piece of tuffa rock made a perfect island, which was surmounted by a pagoda, with an industrious angler sitting at the water's edge. Diminutive goldfish and a very young alligator seemed quite at home in the water. Paths were formed by sprinkling fine gravel over the green moss, a stone lantern being placed here and there along the walk. Japanese flowering Almonds (Prunus biloba), in full flower and growing, were placed on the ends of the table and mounded over with moss; wires were stretched from one to the other across the tables on which were hung tiny lanterns; these were fitted with two candle-power electric lights; this was the only lighting used and the effect was extremely pretty. Small white mice were used for favours for the ladies; these were imprisoned in small gilded cages. Small turtles were given to the gentlemen, and goldfish were used in the finger bowls.

THE RAILWAY TO JERUSALEM, AND ORANGE CULTIVATION.—Reporting on the trade of Palestine for the past year (Annual Series, No. 3,974), Mr. Consul BLECH refers to the projected railway from Haiffa to Jerusalem. He says this undertaking has been decided upon, and that it is to be completed within two years. A new means of access to Jerusalem will thus be afforded, which should prove a great boon, as the dangerous and frequently impossible landing at Jaffa will be avoided. But it will be necessary to build a port at Haiffa, which, though possessing natural advantages, is at present but little better than Jaffa. The construction of the projected railway, which will probably be some 100 to 120 miles in length, will no doubt injure Jaffa by diverting from it a portion of the pilgrim and passenger traffic, and it is feared that the Government will do all in its power to favour Haiffa at the cost of Jaffa, in the interests of the Hejaz State Railway. But it is unlikely that Jaffa will ever lose its position as the port for Jerusalem and the neighbouring region, while the growing export trade in Oranges will maintain its importance as long as the fruit finds a ready sale in the United Kingdom. The future prosperity of the plain of Sharon seems in great measure to depend on the Orange export. In 1897, only 290,000 cases were exported; the total has now risen to 630,000 cases, and it is confidently expected that within a very few years the output will reach 1,000,000 cases. The case contains from 100 to 150 Oranges, according to the size of the fruit; the weight is about 80 lbs., and the freight to Liverpool about 1s. 3d. per case. It is usual for the owners of Orange gardens to sell the produce long before it is ripe to speculators, who thus take off their hands all further trouble and responsibility. The price so obtained by the grower is about 2s. 4½d. per case; the cost of packing is estimated at 1s. 2d. Anything obtained over 4s. 9½d. per case at Liverpool represents the speculator's profit, on whom, however, falls all loss incurred through hailstorms, such as have lately prevailed, as well as all other risks, until the fruit is shipped. It would seem from these figures that the grower gets a little less than a farthing apiece for Oranges sold in London shops at 2d. *Journal of the Royal Society of Arts.*

THE RUNNING TO SEED OF THE CABBAGE LETTUCE.—During the hot summer months the gardener finds that many of the Cabbage Lettuces are running to seed. Although this mishap cannot be wholly prevented, everyone may, by following the practice here given, bring about an essential improvement in his stock. The chief condition is to cultivate only such varieties as are found to succeed in the district. When the plants begin to form hearts, the finest of these should be marked throughout the bed, and as soon as these marked plants begin to shoot they should be pulled up for use, and this practice is to be persisted in till only so many plants remain in the bed as will suffice for affording a crop of seed. By this process of selection, carried on for some years, plants may be raised which will fully resist the effects of hot weather. *B. Ebensberger* in *Moller's Deutsche Gartner-Zeitung.*

NURSERY NOTES.

VIOLAS AT MESSRS. DOBBIE'S.

ON Saturday, June 13, a visit was paid to Messrs. Dobbie & Co.'s Seed Farm at Mark's Tey, to inspect a collection of Violas which was planted out in an open field, with a view to testing their hardiness and relative values. There were 76 sorts, which had been procured from various sources; they were planted last October, and arranged in colours. All had succeeded fairly well, and though quite unprotected, had stood the weather well. Some were in flower quite early in the year, and they have kept up a succession ever since, appearing likely to continue to do so until the end of the summer. It was interesting to note that some of the old varieties are still among the best for bedding purposes; whilst some of those with the most perfect-shaped flowers, though the specialist or exhibitor may value them, cannot be recommended for market-growers or for general bedding.

Taking the varieties in order, there were 19 white sorts. As a pure white, Snowflake was selected as the best variety. Alexandra, with a slight ray in the centre, came next, but was a little taller. Marchioness, though not quite so good in form of flowers, was very free, and one which should be useful for supplying the market. Pencaitland, a very free-flowering sort, with a yellow marking on lower petals, Countess of Hopetoun, and Duchess of York, were recognised as good varieties. Sylvia had good qualities, but should have been included with the creamy shades. Mrs. H. Pearce had large, well-formed flowers, but may be regarded more as an exhibition plant than as a bedder.

In the creamy shades there were only two varieties included, and of these Cream King was considered to be far better than Devonshire Cream.

In primrose varieties there were six, and of these Primrose Dame was regarded as the best, but Sulphurea was also good. Ardwell Gem is well known, and though the flowers were not of such good form, it is one of the best bedders. Maggie Clunas had large flowers; Iliffe should have been included with the creams.

Of yellow sorts there were eleven, and all had some points of merit. Redbrass Yellow was selected as the best rayless (or clear yellow) variety, and Walter Welsh as the best with a slightly rayed centre. Bullion was reported to be one of the earliest, and was very showy. Kingcup was good, but of a paler shade. Royal Sovereign has a deep colour, but as seen was not so good as the others in habit of growth.

In lavender shades it was difficult to decide which was the best. In the first place there was some range in the shades of colour, but of the six varieties grown, Florizel was decidedly the best in habit for bedding. Kitty Bell was, perhaps, of a better tint, and was reported to be one of the earliest to flower. Belfast Gem was good, this had a light centre to the flowers.

Of light blues there were seven, and Maggie Mott was selected as the best. Mauve Queen was also good. Blue Duchess was likewise selected as a useful variety. Favourite is very dwarf and compact, and Lilacina is one of the best varieties for bedding.

In dark blue varieties Councillor Waters was considered the best, but Jubilee might be regarded as identical with it. True Blue was of a very compact habit. Admiral of the Blues was of a rich, deep colour, but had grown rather tall. Archibald Grant was another good variety with the same fault. Ophelia met with appreciation.

Royal Scott was very dwarf. Chas. Jordan had better-formed flowers. All of the 11 varieties had some merit. Lady Warwick was planted rather later, and had not had a fair chance; the flowers were good, but the habit could not be properly judged.

In those varieties which were termed Fancies (or unclassed), of which there were 12, Glencoe, a deep bronze shading off to old gold, was one of the favourites; it had grown rather tall, but it is a colour that would sell well in the market. Dr. Macfarlane, a deep, shaded variety; Blue Cloud, free and early; Ada Anderson, white with a blush lavender shading; William Neil, a rosy-shaded variety, dwarf; Mrs. Chichester, white shading off to reddish mauve; and Crimson Bedder were approved. An unnamed seedling of a bronzy-red shade was attractive.

NOTES FROM A "FRENCH" GARDEN.

At the present time all our attention is directed to the culture of Melons. The general conditions underlying this culture are as follow: (1) Plenty of heat to cause the seeds to germinate; (2) potting off the young plants before they become weakly from inattention; (3) planting them out as soon as they are ready for cultivation in specially prepared beds; (4) a proper supply of water and ventilation, increasing with the growth of the plant and applied always with discretion; (5) careful selection of the fruits allowed to ripen on each plant.

If attention is given to each of these items and an intelligent interest taken in carrying out all the details, success may be assured.

FIG. 181.—ZEPHYRANTHES AUREA: FLOWERS YELLOW.
(Award of Merit R.H.S. meeting June 9.)

SWEET PEAS AND AQUILEGIAS.

All the new varieties of Sweet Peas are on trial; most of them had some flowers open, but it was too early to judge of their relative merits. A large breadth of the long-spurred varieties of Aquilegias which were being grown for seed were of the best type; almost every colour that could be imagined was seen in a large bed of mixed varieties.

Most of the large farm is devoted to growing vegetables and flowers for seed, and a little later there will be a great show of colour. Some herbaceous plants are grown, also bulbs, and a large bed of Spanish Irises included some very fine varieties of this section of Iris.

During the past week we have pinched the growths upon plants set out during the first part of May. Owing to genial weather the female flowers which appeared early in the growth set freely, and the fruits commenced to swell. It may cause surprise, therefore, when I say that we cut off all these little fruits, as the plants were not sufficiently established to properly develop them. Had we left these fruits to ripen, this crop would have immediately followed the first batch, and it would have been inferior in quality. Watering is done every morning between the hours of 6 and 9, the plants being divided into two groups, which are watered on alternate days.

Air is admitted in varying degree from 7.30 a.m. until 6 p.m., unless the presence of wind or rain obliges us to close the lights earlier.

We are still planting Melons, and it is probable that owing to pressure of work we shall not finish the planting before June 20.

We are fast clearing away the Carrot crops, and there are only a few beds left. The crops are rather later than usual, owing to our having cultivated a rather later variety than was the case last year. I strongly advise the cultivation of "Early Parisian" Carrot, even if the saleable value is not equal to that of a bigger rooted variety, because the Cauliflowers have needed extra room these last two weeks, and what was gained in getting larger Carrots has been lost in the hindrance they caused to the Cauliflowers.

We have already cut some Cauliflowers. The early batch of 2,400 plants keeps one man busy all day in watering them. Every morning they are examined in order that the developing flower on particular plants may be covered with leaves taken from the base of the plant. By this attention we obtain Cauliflowers as white as milk, and, therefore, they are the more appreciated in the market.

The Endives raised from seeds sown at the beginning of March and planted outside are ready to be tied for the purpose of blanching. This work is always done after a thorough watering has been given, and when the leaves have again become dry. The Endives intended to follow the Cauliflowers will be ready as soon as they are required for planting out. We are now sowing a batch of Endive of the variety known as Ruffec for autumn supply.

We are clearing our last batch of Cos Lettuces; these always sell for a good price, and at present realise 25 per cent. more than Lettuces grown in the neighbourhood from plants raised from seeds by us. The reason for this is that other growers have cut their plants too early, and have never given them any water.

All the Celery plants have been pricked off into beds previous to the final planting. We shall not grow very many, as being gross feeders they take too much goodness out of the manure on which they are planted. This manure being required for use as soil in the following year, we cannot prejudice future crops for the sake of the Celery.

The dry weather experienced during the past few days has demonstrated the value of a well-considered system of irrigation. No money should be spared in making provision at the outset for a proper water supply, as this lies at the root of success in a "French" garden. This will be the better understood when it is remembered that all the crops are of a sappy nature, and they are cultivated in very porous soil, which, if allowed to get thoroughly dry once, can hardly be properly soaked through, the crops therefore linger on the soil rather than develop, and thus prevent other crops from being planted, and this naturally causes loss to the grower. *Paul Aquatias, Mayland, Essex, June 11.*

ZEPHYRANTHES AUREA.

THE illustration at fig. 181 represents this interesting and pretty Peruvian bulbous plant, which was shown by Sir Trevor Lawrence, Bart., K.C.V.O. (gr. Mr. W. Bain), at the last meeting of the Royal Horticultural Society, where it received an Award of Merit. It is one of the brightest yellow-flowered, bulbous plants of compact growth which has been yet introduced, and it is singular that the species, which was known many years ago in gardens as Pyrolirion aureum, should now be regarded practically as a new plant in cultivation, and that its recent introduction should have been from South Africa, from whence Sir Trevor Lawrence's son sent it, and where it must have been an introduced species.

BULBOPHYLLUM ORTHOGLOSSUM.

THE remarkable species illustrated at fig. 182 was shown by Messrs. Sander & Sons, St. Albans, in their group at the Royal Horticultural Society's meeting on June 9. The species was first introduced by Messrs. Sander & Sons through their collector, Micholitz, and described by Dr. Kranzlin in the *Gardeners' Chronicle*, March 14, 1896, p. 326, from a specimen sent by Herr Wendland, of Herrenhausen, near Hanover. The species in general appearance is nearest to B. mandibulare. Its flowers are greenish tinged and striped with red-brown, and the more deep red-tinted labellum is peculiar in the genus. Of it the author states: "The lip of this new species is perhaps unique in the genus. At first it is really three-lobed, the side lobes being comparatively small, bent forward, toothed at the margin, and covered with little warts on the inside; the mid-lobe has a cushion-shaped, thick base, and a tongue-shaped, fleshy, acute, straight apex. It is a warm-house species."

KEW NOTES.

KEW IN EARLY JUNE.

IN the heat of the early days of June Kew Gardens were delightful. The Lilacs were nearly over, but the Azaleas were in their glory, with their brilliant hues of scarlet, orange, yellow and sulphur. Numbers of Rhododendrons were in flower, but, apparently, many had failed to bloom, probably owing to last year's gloomy and damp summer. Magnolia stellata was past its best, but M. Soulangeana, M. obovata, M. tripetala, the pale yellow M. Fraseri, M. acuminata cordata, with small greenish-white flowers, and the clear yellow M. cordata were in bloom. The Rose dell was not as yet at its best, the only flowers out being Rosa altaica, R. spinosissima lutea, Carmine Pillar, the Dawson Rose, and R. spinosissima hispida, pale yellow. A mass of Viburnum plicatum made a fine show, and a bed of Crambe orientalis had a handsome effect, while Petteria ramentacea, with clusters of yellow, pea-shaped blossoms, was pretty. The beds of Flag Irises made a welcome display of colour, and I. sibirica, growing in the water, was very ornamental. The rock garden, compared with last year, was rather disappointing. Of the many rare Gentians then to be seen, none was in evidence, and the handsome Meconopsis integrifolia and M. punicea were conspicuous by their absence. The only Meconopsis present was the small blue M. racemosus. The Ramondias, in the perpendicular rock walls, were in full flower, interspersed with sheets of the pretty little Arenaria balearica in full bloom, creeping over the stones. Below were Primulas japonica, Chamælirion carolinianum, with white flower-spikes 9 inches high, and Orchis latifolia. Rodgersia podophylla was blooming finely, and R. æsculifolia was coming into flower. Of the Saxifragas, S. lantoscana, S. cochlearis and S. c. minor, S. lingulata, S. Portæ, S. Hostii, S. Cotyledon, S. Macnabiana, S. Aizoon, S. cuneifolia, and S. punctata were blossoming, and among the plants in flower were Dianthus acaulis (pink), D. alpinus (rose), Anemone baldensis (with yellowish-white flowers), A. sylvestris, Geranium cinereum (pale pink), and G. c. album, the purple-bis tectorum and I. grammea, Podophyllum versipelle, from China, with large, deeply-cut leaves 18 inches across and clusters of maroon-brown flowers, Helianthemum umbellatum, a small shrub with white blossoms, Wahlenbergia tenuifolia (pale lavender), Veronica pectinata rosea, Dicentra eximia and D. formosa, Potentilla alba and the yellow P. nevadensis, the orange Erigeron auranticum, and E. salsuginosus, with lavender-pink flowers 2 inches across, the orange Primula Cockburniana, Myanthemum Convallaria, a mass of white bloom, Phlox divaricata and P. reptans, the dwarf Pentstemon pubescens, with lavender-pink flowers, Dodecatheon Meadia, Valeriana tripteris, with heads of tiny pinkish-white blossoms 6 inches in height; the rose-coloured Hedysarum obscurum, the dwarf and pretty Vicia pyrenaica, bearing carmine, pea-like flowers, Viola gracilis, Hippocrepis comosa, Verbascum phœniceum, the charming Oxalis enneaphylla, with white flowers and grey foliage, from the Falkland Isles; the crimson Silene Asterias, Cypripedium montanum and C. Calceolus, a fine form of Anthericum Liliago, Alyssum saxatile citrinum, Mertensia ciliata (pale blue, 2 feet high), Saponaria Weinmanniana, the yellow Linum arboreum, Delphinium trollifolius, Polemonium cœruleum, the rose-coloured Lychnis Sartorii, and Achillea ageratifolia. In the herbaceous garden Lathyrus filiformis, a native of Southern Europe, a foot in height, with lavender-purple flowers, was pretty, and the giant Ornithogalum lacteum was imposing. In the temperate house Echium Wildpretii was bearing its handsome

FIG. 182.—BULBOPHYLLUM ORTHOGLOSSUM: FLOWERS GREENISH, TINGED AND STRIPED WITH RED-BROWN

flower-spikes, Elæocarpus cyaneus, with white fringed blossoms, followed by blue berries, was attractive, and the rare, white-flowered Cantua pyrifolia showed to advantage, while on the pillars the brightly-coloured Lathyrus splendens and the lavender-flowered L. pubescens were in fine bloom. *S. W. Fitzherbert.*

FORESTRY.

THE CORSICAN PINE.

YOUR correspondent, who, in the number of June 13, discussed *Planting Failures*, attacked the Corsican Pine, under the name of "Corsican fir," by placing it "at the very bottom of the list as a bad transplanter between November and April." He added praise of the Austrian Pine, apparently in this connection. My own experience is so entirely opposite, that I think it worth noting that results, described by me in the *Field*, some years ago, as obtained with Corsicans, upon dry-blown sand in Surrey, continue to hold good. I have twice lost by drought a large number of nurserymen's Austrians, transplanted, no doubt, somewhat too old, but Corsicans transplanted at the same age, as well as in smaller sizes, have invariably succeeded, and have, from the first, made growths averaging 2 feet a year, and sometimes reaching 3 feet for several years in succession. They are, with Cupressus Lawsoniana glauca, by far the most successful trees that I have tried for over 22 years in bad soil. The Austrians are by far the worst with me. The Scotch do badly in a dry year (and we have the least rainfall in England), and are not safe except in shade, while the Corsicans have stood, as have the blue variety of Lawson's Cypress, in the full sun. I have now learned that in planting Scotch in the open it "pays" to give them the shelter of a sandbank on the southern side. Corsicans do without a bank. It would be useless, in my sands, to plant "between April and the end of May." *Charles. W. Dilke.*

THE BULB GARDEN.

PARENTAGE OF NARCISSUS KING ALFRED.

MORE than 22 years ago (April, 1886), by special desire, and after a sitting of the Daffodil Committee, I visited the chambers at Lincoln's Inn of the late Mr. John Kendal. This gentleman was anxious to chat about Daffodils, for he was a great enthusiast, and at the time was forming a collection at his garden in the West of England. In the previous year, 1885, he had obtained bulbs of N. maximus longivirens, and was anxious to raise a good yellow Daffodil from seeds. That day the Daffodil Committee conferred the name on the well-known "Golden Spur" variety, and I related to Mr. Kendal the discussion which took place on its naming. It was at first suggested by most of the committee that "Golden Spur" was the same as Ard Righ, and I maintained that it was not. Mr. Kendal said, "I must have some bulbs of 'Golden Spur.' When will you send them to me?" I told him in the autumn. He then stated that N. maximus should make a good cross with Golden Spur, and I agreed. From this I suspect the parentage of King Alfred to be N. maximus and Golden Spur. *Wm. Baylor Hartland.*

HOME CORRESPONDENCE.

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

THE BAMBOO GARDEN AT KEW.—Mr Bean, writing in the *Kew Bulletin* No. 6, of last year, on "The Flowering of Cultivated Bamboos," is without information, which perhaps I may be allowed to supply. He says: "The formation of the Bamboo garden at Kew in the winter of 1901-2 not only marked the beginning of a more general cultivation of these plants in Britain, it helped largely to bring it about. It was the first, and still remains the most important, collection open to public inspection." It might be assumed from this that Mr. Bean supposes the Bamboo garden at Kew to be the original in ornamental treatment of a collection, and that no considerable influence had previously been exercised from any other garden open to the public. The facts of the case, however, are quite different. A garden partly for Bamboos was made at Cambridge about 10 years before the present Bamboo garden was made at Kew, and I remember very well the remarks made upon it by Mr. Watson, the present curator at Kew. He regarded this new idea as a good one, and he took great interest in its development at Kew. The few hardy Bamboos then at Kew were planted in a dry position, where they made little growth, whilst the collection at Cambridge was planted ornamentally near water. I have, therefore, always supposed that Cambridge started the modern interest in Bamboos as forming a decorative collection in

gardens, although the fine collection subsequently formed at Kew naturally did far more to popularise these plants. One never quite knows what may be happening elsewhere at the same time, or independently afterwards, but I believe it is a fact that neither Bamboos nor water-plants were usually regarded as ornamental collections in 1881. While original in its treatment of Bamboos, it may be of interest to point out that Cambridge was also original at the same time in the ornamental free-ground treatment of its scientific collection of water-plants. I have always believed that this treatment led very largely to the present popular interest in the cultivation of this class of plants. Undoubtedly it had a very important influence, and in early years, so far as I am aware, there was no other collection treated in the same way. While referring to Cambridge features, it may be worth while to mention the lead made in the cultivation of outdoor Cactaceæ, which at the present moment remain, I believe, the finest to be seen anywhere in Britain. It has also a lead in the cultivation of certain Bromeliaceæ out-of-doors, and there are exceptional features, too, in the number of Crinums and Zingiberaceæ, all grown in the shelter of plant-house recesses. The Bromeliaceæ include a Puya chilensis (single crown) 5 feet high and 5 feet through; Rhodostachys pitcairniifolia (many crowns), together 3 feet 6 inches across and 2 feet high; R. littoralis, 3 feet across and 2 feet high; and Greigia sphacelata, 3 feet high and 4 feet across. Referring again to Bamboos, it may be of interest to mention that last year the Cambridge collection was replanted in a new position, in order that it might further develop and retain something of its former importance. *R. Irwin Lynch, Botanic Gardens, Cambridge.*

NEW MELONS (see p. 350).—I would advise the Council of the Royal Horticultural Society to delete the clause in Regulation 38 referred to by *D.*, at p. 350, from the next issue of its list of rules and regulations. It is asking too much in requesting the raisers of new Melons to send seed of novelties to the Royal Horticultural Society for trial at Wisley prior to the ripe fruit being submitted to the Fruit Committee for its opinion. I fail to see what good could result from compliance with this unreasonable request on the part of the Council of the Royal Horticultural Society, seeing that all that it is necessary to know about the quality of a new Melon—flavour, size and shape—can be ascertained and determined when cut and tasted by the members of the Fruit Committee sitting in the Society's hall. The constitutional and cropping qualities of the new Melons need not be considered by the Committee in making an award, as experience goes to show that plants of old and new varieties of the Melon crop freely enough under ordinary cultural treatment. With all due respect to the capable and able management of the Royal Horticultural Society's gardens at Wisley, I question whether the quality of the fruits resulting from the seed of new Melons sent to Wisley for trial and subsequently submitted to the Fruit Committee would be equal in point of flavour to that possessed by fruits sent up at the same time by the raisers of the respective seedlings. I repeat that it is asking too much of raisers of new Melons to submit seed of the same to the cultural treatment of the Society's staff at Wisley, with the remote chance of subsequently receiving an award from the Fruit Committee. Flavour should be a sine quâ non in determining an award. According to the Royal Horticultural Society's existing clause (indicated at p. 350), the expert in the production of new Melons is placed at a disadvantage. Does the clause in Regulation 38 also apply to the raisers of new Grapes, Peaches, Plums, &c., namely, that they must send plants to Wisley for trial before an award can be made. *Pro Bono Publico.*

THE HARDINESS OF CERTAIN SHRUBS.—After giving a lecture on "Hardy Trees and Shrubs" on April 21 last, I was much impressed with a discussion that arose on the hardiness of certain shrubs, notably Desfontainia spinosa, which was stated by some of the members to have withstood several winters uninjured in the Guildford district. In speaking of the hardiness of certain shrubs, such as Escallonias, Desfontainia, &c., it must be remembered that it is not so much the latitude and longitude of the district that are the determining factors, but the variations of temperature throughout the year, rainfall, freedom from spring frosts, and other items that go to make up what is usually termed a genial climate. A considerable difference may often be found in the same latitude in places that are not many miles apart. For example, this district is a cold one in winter, and we suffer practically every May from frosts of varying severity. Kew Gardens, Haslemere, and Guildford are in practically the same latitude, and within a radius of 30 miles, and many shrubs thrive outdoors in suitable spots that are a failure here, yet the mean temperature of these places is higher than that at Bagshot. Broadly speaking, a line drawn from north to south through the centre of England from Berwick-on-Tweed to Poole in Dorset divides the warm western half from the colder eastern half of the country. But this division is a purely arbitrary one, as parts of Lancashire, Cheshire, Shropshire, and Worcester are not as warm as Hampshire, Sussex, and Kent. In speaking, therefore, of the hardiness of various shrubs in certain localities it must always be borne in mind that climatic conditions are very variable in this country, even within a comparatively small radius. I have always disagreed with the old dictum that certain plants require a sheltered position, as I have found by experience that shrubs which are generally regarded as tender withstand severe weather better when they are fairly exposed. Shelter from the morning sun is necessary, as a quick thaw after a frost often damages a plant that would be scarcely injured if allowed to thaw gradually. The side of a hill facing west or south-west is an ideal spot for tender shrubs, as the hill shelters them on the east, and they are also in the position for receiving the full benefit of the sun during the greater part of the day. There is one way in which many plants can be made hardier, and that is by raising them from seeds ripened in this country. This is being done by a few persons, but if it was generally practised much might be done towards making these shrubs of a hardier constitution. This is shown in the Laurel (Prunus Laurocerasus) and the Aucuba. These, when first introduced, were found somewhat tender, but when raised from seeds ripened in this country they were found to be much hardier. Some shrubs usually considered on the tender side are found to be hardy in unlikely places, and this is possibly the reason. *J. Clark, Bagshot, Surrey.*

SPRING FROST IN WESTERN SCOTLAND.—By a slip of the pen I wrote of the frost of April 24 last having proved more destructive than any since May, 1907. Of course, I intended to write 1887. Lomatia ferruginea may be added to the list of shrubs which suffered no injury in the open. *Herbert Maxwell.*

NEW COLOURS IN WALLFLOWERS. — The Wallflower has, up to the present, gained nothing from recent introductions of new colours, but, on the contrary, it has suffered depreciation. The mixed patches of washed-out shades of red, purple, pale yellow, brown, and mahogany are very poor substitutes for the time-honoured fragrant masses of dark brown and bright yellow. The change is, perhaps, chiefly noticeable in cottage gardens, whose owners have (temporarily, I hope) too easily parted with one of the chief glories of the year. Of the newer colours the sulphur-yellow is pretty, especially in a partially shaded site; but nothing can equal masses of a good dark form of the (so-called) "Blood Red" and a bright yellow variety, such as Cloth of Gold. *Harold Evans, Cardiff.*

SOCIETIES.

ROYAL HORTICULTURAL.

COLONIAL EXHIBITION.

JUNE 11, 12.—An exhibition of Colonial fruits, &c., was held under the auspices of the Royal Horticultural Society at the Society's Hall, Vincent Square, on these dates. Australia and New Zealand were extensively represented in exhibits of Apples, Pears, and preserved fruits, and the West Indies by a quantity of tropical fruits, yams, liquers, sugar and by-products of the sugarcane, &c. It was remarked how splendid in size, colour, and general good quality appeared the numerous varieties of Apples from New Zealand and Australia. Most of the varieties were of English origin, although scarcely recognisable as such, and others were from America.

In the New Zealand exhibit very fine were Tasmanian Blenheim Orange, a greenish-yellow fruit destitute of russet colouring; Guntip's Seedling, a highly-coloured fruit, in shape like an enlarged Cox's Orange Pippin; Munroe's Favourite, a large yellow and pink-coloured fruit; Prince Alfred, &c. (Gold Medal.)

A Silver Knightian Medal was awarded G. ANDERSON, Esq., Adelaide, for South Australian fruit (Karrosa Brand). The London agents are G. S. Yuill & Co., Ltd., 120, Fenchurch Street, E.C. We noted Cleopatra (syn. New York Pippin) and Jonathan (both are dessert varieties), Rome Beauty, Dunn's Seedling, and Œsopus Spitsbergen. The fruit was high in colour and over-ripe.

H. C. WILLIAMSON, Esq., Melbourne, received a Bronze Banksian Medal for four cases of Apples. They were packed in boxes in layers of 30 fruits, as was general with all the Australian Apples.

Mr. E. BLAKENAY, Christchurch, New Zealand, South Island, displayed Apples and Pears, for which a Silver-Gilt Banksian Medal was awarded.

Fruit preserved in tins and bottles came from the WESTERN PROVINCE PRESERVING CO., South Africa. (Silver Knightian Medal.)

Messrs. R. JACKSON & Co. were awarded a Silver-Gilt Knightian Medal for preserved fruits in bottles, jars, and tins. Besides the commoner kinds of fruit, there were noted Cape Gooseberry jam, Guava jelly and jam, and mixed green Apricot and ripe Peach jam.

A Silver-Gilt Knightian Medal was awarded to Messrs. J. SEDGWICK & Co., of Cape Town, for wines and liqueurs.

A Silver-Gilt Banksian Medal was awarded the DOMINICA FRUIT GROWERS' ASSOCIATION for a large exhibit of Limes.

A Silver-Gilt Knightian Medal was awarded to Messrs. E. WESTMACOT & Co., 180, Leadenhall Street, London, E.C., for an exhibit of Cape wines, tobacco, preserves, &c.

The WEST INDIAN PRODUCE ASSOCIATION, LTD., 4, Fenchurch Buildings, London, E.C., and West Indies, made an exhibit of Natal tea, Pineapples, Oranges, Shaddocks, sauces, Capsicums, Bananas in variety, sweet Potatos, Limes and limejuice, ripe Mangos, honey, ginger, tobacco, &c. (Gold Medal.)

Messrs. T. RIVERS & SON, Sawbridgeworth, were awarded a Silver-Gilt Knightian Medal for an exhibit of fruit trees in pots, and Messrs JAS. VEITCH & SONS, LTD., Chelsea, a Silver Knightian Medal also for fruit trees in pots.

Scientific Committee.

JUNE 9.—*Present:* E. A. Bowles, Esq., M.A., F.L.S., F.E.S. (in the chair); Dr. M. C. Cooke, Dr. A. Voelcker, Messrs. A. W. Sutton, J. T. Bennett-Poe, W. Cuthbertson, H. T. Güssow, G. S. Saunders, W. Hales, W. C. Worsdell, E. M. Holmes, de B. Crawshay, J. W. Odell, and F. J. Chittenden (secretary).

Brugmansia leaves injured.—Mr. GÜSSOW reported that he had examined the leaves of Brugmansia shown at the last meeting by Mr. SAUNDERS, and found that they had been injured by some insect which had punctured the leaf, and around this puncture corky cells had developed.

Malformed Orchids.—Mr. W. C. WORSDELL reported that he had examined a specimen of Cattleya intermedia referred to him in which three flowers had become fused together so that there were eighteen perianth pieces in the resulting fasciated specimen and three properly formed columns. The ovaries, however, were completely absent. Mr. GURNEY WILSON, of Glenthorne, Haywards Heath, Sussex, sent flowers of Odontoglossum crispum which were referred to Mr. WORSDELL.

Oxalis bupleurifolia. — Mr. W. HALES, showed the interesting Oxalis bupleurifolia, a Brazilian species with small yellow flowers, having the petioles developed into phyllodes, which are remarkable in being placed horizontally instead of vertically, as in most plants possessing phyllodes. In several cases

the phyllodes possessed at their tips the three leaflets normal in species of Oxalis, though occasionally the terminal one was represented only by a small linear outgrowth, and sometimes all were absent. These leaves are sensitive to contact. The plant grows in shady woods in Brazil, which probably accounts for the horizontal position of the phyllodes.

Malformed Streptocarpus.—Mr. J. W. ODELL, showed very fine flowers of Streptocarpus having in some cases two linear petaloid outgrowths arising between the calyx and the corolla on the dorsal side of the flower, in others stamens were produced in this position. Mr. ODELL found that the later produced flowers bore stamens, while the first flowers had the petaloid outgrowths. He had seen similar growths in Gloxinia, and in the present case he removed the first developed flowers as soon as the petaloid outgrowths were noticed, and the flowers next produced developed stamens in the position occupied by the outgrowths in the first produced flowers.

Rosa lutea.—In June, 1906, Mr. A. W. SUTTON, F.L.S., showed before the Committee dried specimens of a yellow Rose which had been named at Kew Rosa Eglanteria (= R. lutea) from Baalbec. Mr. SUTTON subsequently obtained through a lady missionary at Baalbec some pods and shoots of this Rose, but they were dead when they arrived. Later, however, he received other seeds, from which three plants had been reared, and which were now flowering in his garden. He exhibited a flower of a beautiful clear yellow colour, measuring 3 inches in diameter. A full account of the history of this plant, which Colonel PRAIN thought when he saw the dried specimens from Baalbec to be identical with the Indian Rose Eglanteria, is given in the *Gardeners' Chronicle*, July, 1906.

Yellow stripe in Daffodils.—Specimens of this well-known disease were received, and some discussion took place concerning it. Various members of the Committee detailed their experiences concerning it, and regarded as contributory causes the use of fresh manure, late planting, and too wet a soil. The precise primary cause is at present unknown, but, as Mr. DARLINGTON suggested in his lecture at the general meeting, imperfect root action may be a cause, but whether primary or secondary is not clear.

Abnormal Daisy.—Mr. A. W. SUTTON showed an abnormal Daisy having the head inverted so that the florets pointed downwards instead of upwards as in the normal inflorescence; while the stalk passed completely through the centre of the head and was attached at the upper side where there were the usual bracts forming the involucre, but in this case occupying the upper portion of the inflorescence.

CHESTERFIELD CHRYSANTHEMUM.

JUNE 8.—The spring show of this Society was held on the above date at Wingerworth Hall, Chesterfield.

Mr. Nelson, gardener to A. T. H. BARNES, Esq., of Ashgate Lodge, put up an excellent exhibit of flowering and foliage plants, and also well-fruited Strawberries in pots. H. WESTLAKE, Esq., Brimington Hall (gr. Mr. Boult), had a fine display of well-grown Calceolarias, Schizanthus retusus, S. Wisetonensis, &c. J. E. CLAYTON, Esq., Thornfield (gr. Mr. Dent), staged a group of plants of considerable merit. Mr. W. Parks, gardener to Rev. H. N. BURDEN, of Whittington Hall, also arranged an attractive group of plants. Mr. Bloxham, gardener to R. F. MILLS, Esq., Tapton Grove, made a fine display of hardy flowers in variety. The president's gardener, Mr. LOVATT, showed table decorations, as also did Mr. Money, gardener to Dr. BOOTH, Chesterfield.

BRITISH GARDENERS' ASSOCIATION.

JUNE 9.—At the last meeting of this association, Mr. E. F. Hawes, Superintendent of the Royal Botanic Society's Gardens, Regent's Park, was elected chairman of the executive council for the ensuing year, and Mr. Chas. Foster, vice-chairman for the same period.

Nineteen new members were elected, bringing the total up to 1,308. Messrs. Hawes, Foster, Winter, Castle, Raffill, and Weathers were appointed on the publication committee. *J. W.*

YORKSHIRE GALA.

JUBILEE EXHIBITION.

JUNE 17, 18, 19.—The management must be congratulated on the great success attending their efforts to make this, their jubilee show, a record one, but they are to be commiserated in that their efforts were so largely negatived by the unpropitious weather conditions which obtained on the opening day. The rain was torrential and in addition it was cold, so that the attendance was meagre, and a gloom was in consequence cast over the show. Inside the tents, however, there was seen a bright floral display, and never before in the history of the York Society has so meritorious an exhibition of horticultural products been gathered together. The show attracted most of the best cultivators in their various sections, and in addition the function was honoured by a deputation from the Royal Horticultural Society, consisting of the president, Sir Trevor Lawrence, Bart., Rev. W. Wilks (secretary), J. Gurney Fowler, Esq. (treasurer), Sir Albert Rollit, and Messrs. H. J. Veitch and H. B. May. The premier Society granted many medals and cups, a list of the winners being given at the end of the report. Special attention may be directed to the many fine groups of plants in the competitive classes, the Orchids from Westonbirt and elsewhere, the collections of vegetables and arrays of hardy garden plants. That the adverse weather experienced this year is no new feature at the York Shows may be seen from the following extract taken from the official account of the Society's history: "The Society has always had one persistent and implacable enemy—the weather."

SPECIAL JUBILEE CLASSES.

In order to commemorate the 50th year of the Society, the management provided four special classes, in which were offered prizes of considerable value. The first was for a festal display of plants and flowers, grouped for effect, and occupying an area of 30 feet by 14 feet. There were three contestants, the 1st prize being won by Mr. W. A. HOLMES, West End Nurseries, Chesterfield, but he was very closely followed by Mr. JOSEPH PICKERSGILL, Bardon Hill, Weetwood, Leeds (gr. Mr. J. Donoghue), and very few points must have separated the two competitors. The groundwork of the premier exhibit was especially handsome, and in addition the plants were remarkably well cultivated. Codiæums, Caladiums, Coleus, Begonias, Dracænas, Saxifragas, Acalyphas, Abutilons, and other similar plants were all of remarkably fine colour, whilst Roses, Orchids, Liliums, Verbenas, Carnations, Kalanchoe flammula, and many other pretty flowers added an additional touch of colour. Tall plants of Rambler Roses, Codiæums, epergnes of Carnations, Cocos Palms, &c., were disposed with taste and good judgment in the display. The exhibit from JOSEPH PICKERSGILL, Esq., was a charming group, having at the back Rambler Roses in variety, intermingled with Palms, &c. Two hanging pillars, covered with Vitis Henryana and supporting at their extremities baskets of Odontoglossum crispum, were not the least pleasing features. 3rd, Mr. WM. VAUSE, Warwick Street, Leamington.

The next special class was one for a display of garden products arranged for effect and instruction, occupying an area of 20 feet by 6 feet. There were three groups, but we were not greatly impressed with either. The 1st prize group, shown by CHAS. E. SIMPSON, Esq., York (gr. Mr. F. Nutbrown), had many stiff formal floral devices, with an assortment of flowering and foliage plants, also fruits in variety, such as Grapes, Melons, Peaches, Pineapples, Cherries, &c. The 2nd prize was won by Messrs. W. ARTINDALE & SON, Sheffield. This firm did not include fruits in their group, but they had many choice cut flowers, and several imposing floral devices. 3rd, Messrs. J. BACKHOUSE & SON, LTD., York.

Another of these special classes was for an exhibit of bulbous and allied plants, also cut flowers associated with retarded plants. This met with a poor response, only one display being forthcoming. It was shown by Messrs. WALSHAW & SONS, The Nurseries, Scarborough.

A special class was also provided for a display of produce from Yorkshire gardens only, and again only one group was staged. This was from the gardens of Lord LONDESBOROUGH, Londesborough, Market Weighton (gr. Mr. J. C. McPherson). One portion of the exhibit consisted of a collection of fruits—Peaches, Nectarines, Grapes, Figs, Melons, Cherries, &c., and at the other end was a display of vegetables, with vases of Sweet Peas, Schizanthus, &c., separating the two. The background was of ornamental-leaved plants, with Schizanthus Wisetonensis intermixed.

GROUPS OF PLANTS.

An important class was one for a group of miscellaneous plants, flowering or otherwise, and arranged for effect, the allotted space being 300 square feet. This formed a fine feature, there being five groups, all of choice quality and well arranged. A bold design was attempted by Mr. Skinner, gardener to J. W. COULTHURST, Esq., Gargrave House, Leeds, and he was worthily awarded the 1st prize. A feature was introduced in the foreground in a water scene, and another character was a mossy groundwork, amongst which moss-covered branches were introduced. Handsome columnar-trained Roses, tall Codiæums (Crotons), Humea elegans, a fitting background well disposed, and bright flowering plants at intervals, formed the general design. The 2nd prize was awarded to Mr. JOE S. SHARP, Valley Nurseries, Huddersfield, and although the design was quite different to the foregoing it appealed strongly to one's sense of the artistic. It included plants of a highly decorative character, all shown in fine form. 3rd, JAMES BLACKER, Esq., Thorpe Villas, Selby (gr. Mr. Walter Curtis).

Nine stove or greenhouse plants.—Large specimens of Ixora Fraseri, I. Pilgrimii, Clerodendron Balfouri, Erica ventricosa magnifica, E. Cavendishii, Francisca eximea (a handsome specimen), and Anthurium Scherzerianum obtained the 1st prize for Messrs. JAMES CYPHER & SONS, Cheltenham. 2nd, Mr. W. VAUSE, Leamington. Messrs. CYPHER were also successful in the class for six stove or greenhouse plants, and Mr. VAUSE again followed.

In the class for three stove or greenhouse plants the order of these exhibitors was reversed, with Mr. JAMES SUNLEY, Ashleigh, South Milford, 3rd.

Messrs. CYPHER & SONS showed the best single specimen of a greenhouse plant in flower.

In the class for six fine foliage or variegated plants, to include two Crotons, the winning exhibit was displayed by Mr. JOE S. SHARP. Mr. W. VAUSE excelled with three ornamental-leaved or variegated plants.

Carnations.—A well-grown collection of Carnations was exhibited by Mr. J. PICKERSGILL, Bardon Hill, Leeds, the exhibit being awarded the 1st prize. 2nd, Messrs. WALSHAW & SON, Scarborough. 3rd, Mr. J. E. SKAIFE, York.

Cannas.—These flowers were not largely shown, and in the class for a group not exceeding 12 feet by 5 feet, Mr. W. LANGSTAFFE, York, received the 1st prize, and Messrs. WALSHAW & SON, Scarborough, the 2nd prize.

Gloxinias.—For a group of Gloxinias in bloom, arranged for effect with foliage plants or Ferns, the 1st prize was awarded to Sir J. GRANT LAWSON, York (gr. Mr. J. Dobson), for an excellent exhibit of well-flowered plants. The 2nd prize was awarded to RICHARD LAWSON, Esq., York, who had a choice display. 3rd, Messrs. SEAGRAVE & Co., Sheffield.

Begonias.—A class was provided for a group of tuberous-rooting Begonias in flower and arranged for effect. This was well contested, resulting in Mr. F. STYAN, Clifton, York, winning the 1st prize with a good display well arranged. 2nd, Mr. S. LEETHAM, The Mount, York. 3rd, Mr. SCHMIDT, Fulford, York, who had many good flowers, but they were rather flat in arrangement.

Calceolarias.—There were four exhibits of these flowers. Much the best, and to which the

1st honours were awarded, was shown by Mrs. VON BEVERHOUDT, Elvington Hall, York (gr. Mr. H. Mason). 2nd, GEORGE LEE, Esq., York.

Pelargoniums.—In a class for six double-flowered Pelargoniums of distinct varieties, Mr. F. W. CROWTHER, York, was awarded the 1st prize, Mr. J. W. CLARKE, York, the 2nd, and Mr. HENRY PYBUS, Leeds, the 3rd prize; whilst for three double-flowered Ivyleaved Pelargoniums Mr. JOHN R. WEDGWOOD, York, was placed 1st; 2nd, Mr. HENRY PYBUS.

In a class for a group of show Pelargoniums in flower and arranged for effect with foliage plants or Ferns, to occupy a space not exceeding 8 feet by 5 feet, there were five exhibitors. Mr. J. E. SKAIFE, York, won the 1st prize with a well-arranged group, and Mr. W. LANGSTAFFE, York, the 2nd prize.

For an exhibit of six Pelargoniums Mr. GEO. LEE was awarded the 1st prize; 2nd, Mr. J. E. SKAIFE.

A good exhibit of 12 Zonal Pelargoniums, of a type suitable for buttonholes, &c., was staged by HENRY PYBUS, Esq., Monkton Moor, Leeds, and it received the 1st prize. Second honours fell to JAMES SUNLEY, Esq., Ashleigh, South Milford.

Fuchsias.—A pleasing group of Fuchsias in flower and arranged for effect with foliage plants and Ferns was shown by Mr. W. KETTLEWELL, York, and in a class allotted to these flowers it received the 1st prize. The 2nd prize was won by Mr. J. W. CLARKE, Clifton, York.

ORCHIDS.

There were many choice groups of Orchids, and several classes were provided for them. Chief honours must be given to Lt.-Col. HOLFORD, Westonbirt, Tetbury, Gloucestershire (gr. Mr. Alexander). He had many of his magnificent hybrids and varieties, all exhibiting the high standard of culture for which his plants are famed. We may instance a fine specimen of Miltonia vexillaria, Thunia Marshallii, with 60 flowers; Dendrobium Dalhousianum nobile, having six spikes of bloom; Miltonia vexillaria var. Chelsiensis, with 13 spikes carrying 53 flowers; Cattleya Dusseldorfei "Undine," Lælio-Cattleya Canhamiana, having two spikes bearing altogether 250 flowers; Odontoglossum crispum in numerous choice forms, Lælia tenebrosa Walton Grange variety, Brasso-Cattleya Striata, a magnificent plant; Cattleya gigas, having six flowers on one spike; Dendrobium Wiganiæ xanthochilum, Brasso-Cattleya Digbyano-Mendelii, Dendrobium Dalhousianum luteum, Vanda teres, Cochlioda Noezliana, with very fine flower spikes; Cattleya Whitei splendissima, a plant of Miltonia vexillaria bearing altogether 130 spikes, and Odontoglossum citrosmum having 12 spikes with 202 flowers.

A collection of twelve Orchids.—This class was contested by two exhibitors, the class being open to amateurs only. Lt.-Col. HOLFORD (gr. Mr. Alexander) had the better dozen, and was awarded the 1st prize, his plants being Dendrobium Dalhousianum nobile, Miltonia vexillaria Chelsiensis, M. v. Empress Augusta, Lælio-Cattleya Chamiana, L.-C. Martinettii Flambeau, Cattleya Dusseldorfei var. Undine, C. Whitei splendissimum, C. fulvescens, C. gigas, C. Mossiæ Wageneri, O. crispum Erebus, and Cypripedium callosum Sanderæ. All were alike good and deserving of the highest commendation. The other exhibitor in this class was W. P. BURKINSHAW, Esq., West Hill, Hessle (gr. Mr. J. T. Barker). He had some well-grown specimens, including Cattleya Mme. Myra Peeters, Brasso-Cattleya Digbyano-Mossiæ, C. Mossiæ Reineckiana, Lælio-Cattleya Canhamiana alba, L.-C. fascinator, L.-C. Eudora Princess Ena, Vanda Imschootiana, and Cypripedium niveum.

A class was provided for a table arranged with Orchids, and measuring 12 feet by 5 feet. There were three competitors, and so excellent were two that the judges awarded them equal 1st prizes. These were shown by Messrs. J. MOORE, LTD., Rawdon, Leeds, and Messrs. J. CYPHER & SONS, Cheltenham. Messrs. MOORE showed some very good plants of Odontoglossum crispum, Brassavola Digbyana, Vanda suavis, Cypripedium bellatulum, C. callosum Sanderæ, Lælia majalis, Sobralia macrantha, Lælia-Cattleya Eudora, Cattleya Mendelii, Epidendrum aromaticum, Oncidium pumilum, Vanda Bensoniæ, Anguloa Clowesii, Promenæa citrina × P. Stapelioides, Maxillaria tenuifolia, Cœlogyne pandurata, &c. Messrs. CYPHER had Miltonia vexillaria in fine condition, Dendrobium atro-violaceum, D. Dalhousianum luteum, D. clavatum, Oncidium papilio, Cypripedium callosum Sanderæ, Odontoglossum crispum with five flower spikes, O. Pescatorei, Lælia purpurata, Oncidium leucochilum, and Lælio-Cattleya Canhamiana.

Amongst the non-competitive exhibits was a grand display of Orchids shown by Messrs. CHARLESWORTH & Co., Heaton, Bradford, who filled the space they usually occupy at this show with a miscellaneous collection, including Cattleya Mendelii alba, having pure white petals and sepals and a light rose-coloured lip; C. Mossiæ Wageneri, a home-raised seedling; Dendrobium regium, Lælio-Cattleya King Edward VII., a fine large flower with very dark richly-coloured lip; Miltonia vexillaria alba, Odontoglossum amabile, O. Phœbe var. splendens, Lælio-Cattleya Canhamiana in variety, L.-C. fascinator, Phalænopsis Rimestadtiana, &c.

There were other exhibits of Orchids, amongst which may be mentioned a remarkable plant of Dendrobium thyrsiflorum, having ten excellent inflorescences, shown by Miss BARSTOW, Garrow Hill, York (gr. Mr. T. Douthwaite); and a plant of Dendrobium densiflorum, with ten flower spikes, shown by R. J. FOSTER, Esq., Stockeld Park, Wetherby (gr. Mr. J. Turton).

ROSES.

The principal class for a collection of Roses in pots and cut blooms was that in which a table space of 18 feet by 5 feet was allowed. There were four groups in all, the whole of them being arranged on tables. The 1st prize was won by Mr. GEO. PRINCE, Longworth, Berks, who showed a number of single blooms of good quality in boxes, with vases and epergnes filled with garden varieties at the back. The adjoining exhibit put up by Messrs. W. & J. BROWN, Peterborough, received the 2nd prize, the blooms being very fresh and bright in appearance. 3rd, Mr. GEO. MOUNT, The Nurseries, Canterbury, who had excellent blooms, but of fewer varieties.

A group of Roses occupying 15 feet by 7 feet.—The groups in this class were arranged on the ground, and in each case were semi-circular in form. There were five groups shown, the best being arranged by Mr. J. E. SKAIFE, Burton Lane, York, who showed healthy plants with rather full blown flowers. Use was made of Rambling varieties to break the formal appearance of the group. 2nd, Mr. WM. TODD, 19, Vyner Street, York, with a rather thin exhibit: the plants gave promise of abundant flowering later; the few flowers developed were of good quality. 3rd, Mr. GEO. MOUNT, Canterbury, who largely utilised Rambler Roses.

Group of Roses with decorative plants.—Three somewhat stiff groups, and one mainly of Rambling varieties, formed the complement of exhibits in this class. The 1st prize was awarded to the exhibit presenting the most blooms, and consequently the brightest in colour. It was shown by Mr. W. LANGSTAFFE, 16, Sydney Street, York. 2nd, Mr. J. E. SKAIFE, Burton Lane, York.

Cut blooms.—The classes for cut Roses were well represented, but generally the quality was not very good. In the important one for 72 blooms, there were three exhibits. The decision was in favour of Messrs. D. PRIOR & SONS, Colchester, who had a fairly good display, considering the earliness of the season, notable blooms being Madame Gravereaux, Maréchal Niel, Captain Hayward, White Maman Cochet, Frau Karl Druschki, Lady Mary Fitzwilliam, &c. We could find no 2nd prize exhibit, but the 3rd was awarded to Messrs. B. R. CANT & Co., Colchester, some of the best flowers being those named after Mrs. Ed. Mawley, Maman Cochet, Frau Karl Druschki, White Lady, and Souvenir d'Un Amie.

Forty-eight blooms of Roses.—There were four competitors in this class, much the best collection being shown by Mr. GEO. MOUNT, Canterbury. He had Aimee Cochet, Rev. Allen Cheales, Richmond (of exquisite colour), Mildred Grant, Mrs. John Laing, Frau Karl Druschki, &c. 2nd, Messrs. D. PRIOR & SONS, Colchester.

Thirty-six blooms of Roses.—The best of six exhibits was that put up by Messrs. HARKNESS & SONS, Hitchin. There were some choice blooms in this exhibit, notably Wm. Shean, Dean Hole, Lady Ashtown, White Lady, Mrs. Ed. Mawley, Ulster, Killarney, and Mrs. David M'Kee. 2nd, Messrs. D. PRIOR & SONS.

ROCK GARDEN EXHIBITS.

The schedule required a naturally-arranged exhibit of hardy herbaceous and perennial plants and flowers, with a pool of water for the inclusion of water-loving plants. There were five displays, and they required the whole side of one of the large tents for their accommodation. The exhibits were all good, but the chief competition was between Messrs. J. BACKHOUSE & SON, LTD., York, and Messrs. WM. ARTINDALE & SON, Sheffield: the judges decided in favour of the former firm. The stone-work was massive in its proportions, several tons of solid sandstone being employed. As to the arrangement, nothing but praise can be bestowed, for so realistic did the exhibit appear it might have existed for years. One corner, cleverly arranged, had a dripping pool, which wandered along the whole front, all tastefully planted with Nymphæas, Irises, Aponogeton, and other water-loving subjects. Ferns peeped from the recesses of the rock, and other parts had an admirable assortment of Alpine plants cleverly disposed. Room was found for a bog garden at one end, in which hardy Cypripediums, Primulas, &c., appeared to revel. Some of the "bluffs" were topped with dwarf Conifers, and up the sides scrambled Saxifragas, Veronicas, Helianthemums, Gentians, Dianthus, and other subjects. The 2nd prize, as stated, was awarded to Messrs. ARTINDALE for a bold design, very rich in flowering plants, and containing not a few novelties. The background was formed of tall Eremurus, Delphiniums, Aquilegias, Liliums, &c., with many Rhododendrons covered with their stately blooms. 3rd, Mr. J. WOOD, Boston Spa, York.

Ferns.—The only class for Ferns was one for six hardy Ferns of distinct varieties. Mr. J. ARCHER, York, won the 1st prize with six good specimen plants in 15-inch pots. 2nd, Messrs. R. SIMPSON & SON, Selby.

FRUIT CLASSES.

Decorated tables of ripe fruit.—This class brought good competition, and attracted some noted fruit growers, the exhibits generally being of a high order of merit. Amongst keen competition, the Duke of PORTLAND, Welbeck Abbey (gr. Mr. J. Gibson), carried off the premier prize with a beautiful exhibit of high-class produce, well arranged. A central epergne of flowers had on either side a bunch of Grapes of Black Hamburg and Muscat of Alexandria varieties respectively; magnificent Peaches of the Grosse Mignonne variety, Nectarine Cardinal (highly coloured), Cherries Bigarreau de Schrecken and Governor Wood, Strawberry Kentish Favourite, Melon Royal Jubilee, with Plums, Figs, &c., all of the choicest quality. The points awarded were as follow:—Cherries, 11; Figs, 8; Grapes, 6 (weak); Melons, 12 (maximum); Nectarines, 9; Peaches, 12; Plums, 5; Strawberries, 6; beauty of flower and foliage, 6; colour blending, 6; general arrangement, 8; total, 89 out of a possible 136. 2nd, the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), who had one point less than the 1st prize winner, Nectarines, Peaches, Pineapples, and Figs being his finer dishes. The Nectarines were of admirable quality, and the arrangement left little to be desired. 3rd, the Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. R. Searle), with 82 points. A bunch of Foster's Seedling Grape was noteworthy in this collection.

COLLECTIONS OF FRUITS.

The schedule required ten kinds, but not more than two varieties of Grapes, in the class for the largest collection. This class brought three contestants, the most successful being the Rt. Hon. Lord LONDESBOROUGH, Londesborough, Market Weighton (gr. Mr. J. C. McPherson). The dishes were Muscat of Alexandria and Black Hamburg Grapes, both of mediocre quality, Lord Napier Nectarine (good), Royal George Peaches, Brown Turkey Figs, a small Orange, Strawberry Royal Sovereign, Early Rivers'

Cherry, and a Queen Pine. The 2nd prize exhibit was from the gardens of the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). His Black Hamburg Grapes were choice, as were also the Brown Turkey Figs, a seedling Melon, and Lady Sudeley Apples. 3rd, Messrs. COLEBROOK BROS., Burton-on-Trent.

Six kinds of fruits.—Six exhibits were seen in this class, the best being shown by Lord LONDESBOROUGH (gr. Mr. J. C. McPherson). Foster's Seedling and Black Hamburg Grapes, Cardinal Nectarine, Strawberry Leader, a big Melon of the Ringleader variety, and Royal George Peaches were the varieties shown, all good but not of outstanding merit. 2nd, the Rt. Hon. Lady BEAUMONT, Carlton Towers, S.O., Yorks. (gr. Mr. Wm. Nicholls). A grand dish of Transparent Gage Plums was the outstanding feature of this display. 3rd, Messrs. COLEBROOK BROS.

Four kinds of fruits.—This smaller class brought only two groups, although six originally entered. The Nectarines were of remarkable quality in both exhibits, but neither group was adjudged worthy of the 1st prize.

GRAPES, PEACHES AND MELONS.

The best two bunches of Black Hamburg Grapes were shown by Lady HAWKE, Wighill Park, Tadcaster (gr. Mr. Herbert Bray), the berries being large and well coloured; bunches of medium size. 2nd, Lord HOTHAM, Dalton Hall, Beverley (gr. Mr. W. Jackson). The bunches required a little longer time for ripening, when they would have eclipsed those in the 1st prize exhibit. 3rd, Lady BEAUMONT (gr. Mr. Wm. Nicholls).

White Grapes.—The last-mentioned exhibitor was successful in winning the 1st prize with bunches of Buckland Sweetwater, well matched and well ripened. 2nd, larger bunches of the same variety but not quite so well finished, shown by Lord HOTHAM, Dalton Hall, Beverley (gr. Mr. W. Jackson). The Grapes generally were not of outstanding quality and small in bunch.

Peaches and Nectarines.—Col. HARRISON-BROADLEY, M.P., Welton House, East Yorks. (gr. Mr. Chas. Lawton), secured the 1st prize for six Peaches with fruits of Grosse Mignonne, in a strong competition, and the premier award for Nectarines was taken by the Earl of HARRINGTON (gr. Mr. J. H. Goodacre), with superb fruits of Early Rivers.

Melons.—The classes for Melons were strongly contested, and the best scarlet-fleshed variety was shown by Lord ELPHINSTONE, Carberry Tower, Musselburgh (gr. Mr. D. Kidd); the best green-fleshed variety by the Duke of PORTLAND, Welbeck (gr. Mr. James Gibson); whilst the 1st prize for a white-fleshed Melon was awarded to W. C. GRAY, Esq., Tunstall Manor, West Hartlepool (gr. Mr. Thos. Pattison).

VEGETABLES.

For a collection of vegetables of six distinct sorts, grown from seed supplied by Messrs. Webb & Sons, Wordsley, Stourbridge, the 1st prize was won by the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), who staged Vegetable Marrow Moore's Cream, Cauliflower Early Mammoth, Carrot Prize-winner, Potato Wordsley Pride, Tomato Sensation, and Pea Stourbridge Marrow. The 2nd prize was secured by the Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. R. Searle). 3rd, the Earl of LATHOM, Lathom House, Ormskirk (gr. Mr. Ben. Ashton).

Messrs. Sutton & Sons, Reading, offered prizes for similar exhibits grown from their seeds. The 1st prize was won by the Duke of PORTLAND, Welbeck Abbey, Worksop (gr. Mr. J. Gibson), who showed superb samples of Dwarf Bean Magnum Bonum, Cauliflower Magnum Bonum, Carrot Favourite, Potato Gladiator, Tomato Eclipse, and Pea Duke of Albany. The 2nd prize was won by the Earl of LATHOM (gr. Mr. Ben. Ashton), who had also some excellent produce.

Messrs. James Backhouse & Son, Ltd., York, offered prizes for collections of 10 distinct varieties, the 1st prize being won by the Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. R. Searle). 2nd, P. NEVILLE, Esq., Skelbrooke Park, Doncaster (gr. Mr. J. Newbold).

NON-COMPETITIVE EXHIBITS.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, put up an imposing group of exotic plants, many of which were ornamental-leaved subjects, with here and there a few bright batches of flowering plants and a bank of showy Orchids in the centre. There were examples of the beautiful Dracæna Doucettii de Grootei at either corner, and another feature were tall stands furnished with Asparagus and carrying finely-pitchered plants of Nepenthes. A plant of the handsome Dracæna Victoria found a prominent place in the group, the body of which was composed of choice foliage plants.

Messrs. RICHARD SMITH & Co., Worcester, staged a group of Pæonies and other hardy flowers of a showy character, such as Irises, Pyrethrums, Campanulas, Delphiniums, Anchusa italica, &c. Adjoining their garden flowers Messrs. SMITH displayed an exhibit of greenhouse flowering plants arranged with pleasing effect. Tall vases filled with Carnations were prominent objects.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged a handsome exhibit, arranged with the skill for which this firm's groups are noted. They had graceful sprays of Bambusa gracilis and Rambler Roses overhanging a mixed collection of Carnations, dwarf Roses, Hippeastrums of considerable merit, Andromeda speciosa, Astilbe (Spiræa), Metrosideros floribunda, Verbena Princess of Wales and others, yellow-flowered Richardias, &c., all pleasingly relieved with Adiantum Ferns, Codiæums (Crotons), and Dracænas.

Messrs. KER & SONS, Aigburth Nursery, Liverpool, had a fine exhibit of Hippeastrums (Amaryllis), and amongst them were Masterpiece, Monarch, President, The Premier, White Lady, Crimson King, Goliath, and Lady Roberts, the whole well staged and relieved with Ferns.

Opposite their very fine exhibit of a rock garden, Messrs. JAMES BACKHOUSE & SON, York, showed a group of stove and greenhouse plants, principally flowering subjects, amongst which were Hydrangeas, Carnations, show Pelargoniums, Roses, Liliums, Begonias, Rhododendrons, Metrosideros floribunda, with suitable greenery, of which choice varieties of Ferns formed a considerable part.

Messrs. G. LONGSTER & SONS, Derwent Nurseries, Malton, staged a pleasing collection of plants, principally of hardy subjects, the groups being freely relieved with ornamental-leaved plants. Metrosideros floribunda, Pyrethrums in variety, Lobelias in shades of blue, Geums, Carnations, Calceolarias, and Celosias are a selection of the more showy flowers displayed.

Messrs. DICKSONS, Chester, arranged a very large group of hardy flowers. Pæonies formed a large portion of the exhibit, and these embraced most of the varieties of merit. The pale-blue coloured Delphinium "Persimmon" was a prominent subject in a tall epergne. The new pink-flowered Astilbe (Spiræa) japonica, Iris hispanica in variety, Lilium rubellum, Gerbera Jamesonii, Watsonia Ardernei, Hencheras, Poppies were included.

Messrs. GEO. BUNYARD & Co., LTD., Maidstone, had a large exhibit of hardy herbaceous flowers, including Pæonies, Pyrethrums, Irises, &c., and a prettily-arranged rock garden, in which we noticed Spiræas, also Irises, Nymphæas, Dianthus in variety, Campanulas, &c.

Messrs. W. & J. BROWN, Stamford, staged a collection of greenhouse flowers, such as Fuchsias, Heliotrope Lord Roberts, &c.

Messrs. KELWAY & SON, Langport, Som., exhibited a collection of their noted strains of Pæonies, Pyrethrums, and Delphiniums.

Mr. JOHN FORBES, Hawick, exhibited a collection of Pentstemons of a fine strain, including the varieties Crimson Gem, Mrs. Callendar, Marconi, John Michie, also many good forms of garden Phlox, amongst them Duchess of Roxburghe, Madame G. Marie (white and of exceedingly large size), and Aviation, in colour salmon-pink. He also showed Violas and Pansies, and Pelargonium Black Vesuvius.

Messrs. WEBB & SONS, Wordsley, Stourbridge, staged a collection of Gloxinias of their noted strain, relieved with a background of Liliums and Kentia Palms. In the foreground they exhibited Cucumbers, Melons and Tomatos.

Messrs. R. H. BATH, LTD., Wisbech, exhibited a fine collection of Pæonies, amongst which we noted such beautiful varieties as Fiancée (white, of large size), Her Grace, Amazone (white with crimson tips), Hypatia, and others, all giving evidence of first-class culture.

A good collection of Caladiums came from Messrs. JOHN PEED & SON, West Norwood, S.E.

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Middlesex, filled a large table space with Orchids, including Cattleya Mendelii, Cypripedium Schröderæ, Lælia tenebrosa, and choice forms of Odontoglossum crispum, also Bush and Rambler Roses, including Baby Rambler and Baby Dorothy, hardy greenhouse plants and Carnations.

Messrs. REAMSBOTTOM & Co., Alderborough Nurseries, Geashill, King's Co., Ireland, exhibited a collection of Anemones.

Messrs. JARMAN & Co., Chard, showed Centureas, Pelargoniums, and Carnations.

Mr. C. W. BREADMORE, Deanland Nursery, Balcombe, Winchester, had an array of Sweet Peas.

Mr. C. F. WATERS showed Carnations, some of which were of the Souvenir de la Malmaison type.

Messrs. E. J. BATCHELOR & SONS, Station Square, Harrogate, staged varieties of Nephrolepis exaltata.

Mr. H. N. ELLISON, 5 & 7, Bull Street, West Bromwich, showed Ferns in pots.

Messrs. WM. ARTINDALE & SON, Nether Green, Sheffield, displayed Violas and Pansies.

Messrs. SUTTON & SONS, Reading, displayed a collection of Melons in about 20 varieties, a number of Tomatos, all well selected fruits, 15 varieties of early culinary Peas, with many Cucumbers, including very large berries of Sutton's A1 variety. The exhibit was pleasingly arranged, a centrepiece being formed of Streptocarpus of a good strain, with Palms at the back and a number of small Ferns, vases of Sweet Peas, &c., interspersed.

Messrs. LAXTON BROS., Bedford, staged Strawberries, also Early Rivers' Nectarine, Hale's Early, Early Alexander Peaches.

AWARDS OF MERIT.

Marguerite Pink Queen Alexandra.—A sport from the double-flowered Queen Alexandra variety, having a pink tinting in the disc florets. Shown by Messrs. R. P. KER & SONS, Liverpool.

Nepenthes × excelsa.—A hybrid raised from N. Veitchii × N. sanguinea. The pitchers possess the reddish colouring of the last-named parent, the rim, which is remarkably handsome, being of a mahogany red colour. The plant is a robust grower: the young specimen exhibited had half a dozen pitchers, the largest of which measured 12 inches or thereabouts in length. Shown by Messrs. JAMES VEITCH & SONS, LTD., Chelsea.

HONORARY AWARDS.

The GOLD JUBILEE MEDAL offered for the best exhibit in the show was awarded to James Backhouse & Son, Ltd., for their rock-garden exhibit.

GOLD MEDALS.—Lieut.-Col. Holford, Messrs. James Veitch & Sons, Ltd., Wm. Cutbush & Son, James Backhouse & Son, Ltd.

AWARDS MADE BY THE ROYAL HORTICULTURAL SOCIETY.

GOLD MEDAL.—Mr. J. Coulthurst.

SILVER CUPS.—Messrs. James Pickersgill, Joe S. Sharp, James Blacker, George Prince, James Cypher & Sons, the Duke of Portland, the Earl of Harrington, R. Smith & Co., Ltd., R. H. Bath, Ltd., Geo. Bunyard & Co., Ltd., Hugh Low & Co., Kelway & Sons, R. P. Ker & Sons, Dicksons, Ltd., Artindale & Son.

HOGG MEDAL.—Messrs. Laxton Bros.

SILVER BANKSIAN MEDAL.—Messrs. Batchelor & Son, J. E. Skaife.

SILVER-GILT FLORA MEDALS.—Messrs. John Peed & Sons, W. Vause, J. Wood, W. & J. Brown, George Mount, W. P. Burkinshaw, J. Moore, Ltd., G. Gibson & Co., Harkness & Son.

SILVER-GILT KNIGHTIAN MEDAL.—Messrs. Sutton & Sons.

SILVER FLORA MEDALS.—Mr. John Forbes, C. W. Breadmore, W. Kettlewell, W. F. Crowther, Kent & Brydon.

GOLD VEITCH MEMORIAL MEDAL to Lt.-Col. Holford (gr. Mr. Alexander).

BRONZE VEITCH MEMORIAL MEDAL to W. P. Burkinshaw, Esq. (gr. Mr. J. T. Barker).

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JUNE 11.—The first of two special summer flower shows arranged to be held at the Birmingham Botanical Gardens, Edgbaston, during the present year, was held on the above date. Orchids, Roses, and hardy cut flowers were well shown. The weather was cool but fine, and the show was well supported by visitors. Eight medals were awarded to groups of plants and cut flowers, and one Award of Merit was given to an Odontoglossum.

ORCHIDS.

The Right Hon. JOSEPH CHAMBERLAIN, M.P., Highbury, Birmingham (gr. Mr. J. Mackay), sent a well-arranged group of superbly-grown Orchids, consisting principally of Cattleyas, Lælio-Cattleyas, Miltonias, and Odontoglossums. In the centre of the group was a grand lot of Odontoglossums in variety, and on either side of these Cattleya Mossiæ and Miltonia vexillaria were displayed in batches. Several forms of Lælio-Cattleya Canhamiana were of outstanding merit, and Cochlioda Noezliana was represented by seven well-flowered specimens. Phalænopsis amabilis Rimestadtiana, Masdevallia Harryana, M. ignea, Aerides Lobbi, A. affine superbum, Anguloa eburnea, and A. uniflora splendens were also included. (Silver-Gilt Medal.)

W. WATERS BUTLER, Esq., Southfield, Norfolk Road, Edgbaston (gr. Mr. R. H. Jones), occupied a table 30 feet long by 6 feet wide with a rich collection of Orchids, in which were good examples of Odontoglossum crispum, Oakwoodiense, O. c. gloria, O. citrosmum and its variety punctatum, Cypripedium Cassandra, Westfield var., C. hirsutissimum, C. bellatulum Wellesleyanum, and C. barbatum Rex. Cattleya Mossiæ, C. Vulcan, many choice Lælio-Cattleyas, Phalænopsis amabilis Rimestadtiana, Dendrobiums, Thunia Marshalliana, and T. Winniana. A number of plants of white Liliums were much admired at the back of this very fine exhibit. (Silver-Gilt Medal.)

Messrs. SANDER & SONS, St. Albans, sent a group of Orchids, in which was a remarkably good form of Lælio-Cattleya Canhamiana, with very large, richly-coloured flowers. Two other forms of L.-C. Canhamiana, namely, Marguerite and Rex, were noteworthy. Renanthera Imschootiana, with many flowers; Oncidium ampliatum majus, Odontoglossums, Cattleyas, Lælia purpurata alba, and Lycaste lanipes were shown in excellent condition. (Silver Medal.)

R. FENWICK, Esq., Edgbaston, contributed a small group of Orchids, mostly Odontoglossums. (Vote of Thanks.)

MISCELLANEOUS PLANTS AND CUT FLOWERS.

Messrs. BAKER'S, Codsall, Wolverhampton, staged a choice collection of long-spurred Aquilegias and varieties of large, showy Oriental Poppies. (Silver-Gilt Medal.)

Messrs. ROBERT SYDENHAM, LTD., Tenby Street, Birmingham, sent a beautiful collection of 20 varieties of Spanish Irises, together with the same number of varieties of South African Ixias. (Silver Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, were represented by Roses in pots arranged in a semi-circular group on the floor. Teas, Hybrid Teas, Hybrid Perpetuals, Weeping and Pillar varieties were splendidly shown. Some of the best varieties were Madame Abel Chatenay, Richmond, Madame Falcot, Paul Transon, Lady Gay, Queen Alexandra, and Blush Rambler. (Silver Medal.)

Mr. H. ELLISON, West Bromwich, showed a collection of Ferns. (Bronze Medal.)

From Messrs. RICHARD SMITH & CO., Worcester, came a display of Pæonies, Pyrethrums, Campanulas, Heucheras, Irises, Incarvillea Delavayi, &c. (Bronze Medal.)

AWARD OF MERIT.

Odontoglossum crispum, Southfield var., from W. WATERS BUTLER, Esq., Edgbaston (gr. Mr. R. H. Jones). A very fine white flower, 4¼ inches across, the sepals suffused with purple, and spotted with chocolate brown.

COMPETITIVE CLASSES.

In a class provided for six Orchids in flower, dissimilar, the Right Hon. JOSEPH CHAMBERLAIN, M.P., Highbury (gr. Mr. J. Mackay), was awarded 1st prize. The three best specimens were Lælio-Cattleya Aphrodite, having four spikes and 13 large flowers, Miltonia vexillaria covered with shapely flowers, and Cattleya Mossiæ.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JUNE 15.—The monthly meeting of this Society was held on the above date at the Horticultural Hall, Vincent Square, S.W., Mr. C. H. Curtis in the chair. Four new members were elected. The amount of sick pay was, since the last meeting, £35 8s. A member over 70 years of age was put on the benevolent fund, subject to rule 19, clause 3. The Committee hope that members will do all they can to induce young gardeners to join the Society.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending June 13, is furnished from the Meteorological Office:—

GENERAL REMARKS.

The *weather* was generally fine over the greater part of England although slight rain was experienced in most places. In the north west of England, and in most parts of Ireland and Scotland falls of rain were rather frequent, and the general state of the sky was more cloudy. Thunder was heard at Dover on Monday evening, and at Stonyhurst on Thursday. On Sunday night "mock moons" were observed at Raunds.

The *temperature* was below the average, the defect varying between 2° and 3° in some of the northern and north-western districts. The highest of the maxima were registered at most stations on the 9th or 10th, and ranged from 74° or 75° over the south-eastern half of England to 66° in Ireland N., 65° in the English Channel, and to 64° in Scotland N. At several stations in the north and north-west the maxima were frequently below 60°. The lowest of the minima occurred on the 7th over the major portion of Great Britain, but on the 12th in nearly all parts of Ireland. In the English Channel the lowest value was only 46°, but in all other districts the thermometer sank to below 40°, in England S.E. and Scotland E. to 34°, and in England S.W. to 33°. The lowest grass minima reported were 25° at Llangammarch Wells, 27° at Crathes, 29° at Balmoral, Cockle Park, Morpeth, and 30° or 31° at Marchmont, Rauceby, Hillington, Cambridge, Wisley, Newton Rigg and Markree.

The *mean temperature of the sea.*—Except on some parts of the north-western and extreme northern coasts the water was warmer than during the corresponding week of last year. The actual values ranged from 60·6° at Margate, 57·0° at Eastbourne, and 56·0° at Newquay and Seafield to 50·1° at Aberdeen, and to about 47·5° at Wick and Lerwick.

THE WEATHER IN WEST HERTS.

Week ending June 17.

A moderate but welcome rain.—This was on the whole a cold week for the time of year. On three days the highest temperature in the thermometer screen did not rise above 60°, and on one night the exposed thermometer registered a reading within 1° of the freezing-point. The ground is now at about an average temperature at 2 feet deep, but 2° colder than is seasonable at 1 foot deep. Rain fell on four days, but to the total depth of less than half an inch. After a fortnight of dry weather the gentle but persistent rain which fell throughout the whole of last night was very welcome. On that occasion 1½ gallons was deposited on each square yard of surface in my garden. Considering the moderate quantity which fell it has already had a most beneficial effect on vegetation generally. This fall has not been sufficient to affect the percolation gauges, through which no measurable quantity of rain-water has passed for nearly a fortnight. The sun shone on an average for 5¼ hours a day, which is half an hour a day short of the average duration in June. Light airs, as a rule, prevailed during the week, but on one day the mean velocity for the windiest hour reached 13 miles—direction west. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 10 per cent. *E. M., Berkhamsted, June 17, 1908.*

TRADE NOTICES.

WE are informed that the business of John Laing & Sons, Seed, Plant and Bulb Merchants, Forest Hill, S.E., has been transferred from Mr. David T. Russell to Mr. W. H. Russell (trading as John Russell), as, and from the 25th of May, 1908.

E. WRIGHT & CO., LTD.

THE above-named company has been registered with a capital of £6,000, in £1 shares (1,500 preference). Objects: To acquire the business of a manufacturer of a plant mildew destroyer (known as Mo-Effic Mildew Destroyer) and the business of a chemical manure merchant carried on by E. Wright, at 55, Brook Street, Bradford, as the Mo-Effic Chemical Co., Ltd., and E. Wright & Co., and to carry on the said business and that of manufacturers of artificial manures, fungicides, insecticides, fumigators, garden syringes and horticultural implements, &c. No initial public issue. Registered office, 55, Brook Street, Bradford.

MARKETS.

COVENT GARDEN, June 17.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.
Azalea, white, per dozen bunches	4 0	5 0
— mollis, p. bch.	0 9	1 0
Calla æthiopica, p. dozen	2 6	4 0
Carnations, per dozen blooms, best American various ...	2 0	3 0
— second size ...	1 6	2
— smaller, per doz. bunches	9 0	12 0
— Malmaisons, p. doz. blooms ...	8 0	12 0
Cattleyas, per doz. blooms ...	8 0	10 0
Cyclamen, per doz. bunches ...	6 0	8 0
Cypripediums, per dozen blooms..	2 0	2 6
Eucharis grandiflora, per doz. blooms ...	4 0	5 0
Gardenias, per doz. blooms... ...	1 6	3 0
Gladiolus Colvilei vars., per doz. bunches ...	7 0	10 0
Gypsophila per dz. bunches ...	3 0	5 0
Iris (Spanish), per dozen bunches	3 0	6 0
Ixias...	4 0	6 0
Lilium auratum ...	2 0	3 0
— candidum ..	2 0	3 6
— longiflorum ...	2 6	4 0
— lancifolium, rubrum and album	2 0	2 6
Lily of the Valley, p. dz. bunches	6 0	9 0
— extra quality ...	12 0	15 0
Marguerites, white, p. dz. bunches	3 0	4 0
— yellow, per dz. bunches ...	2 0	3 0
Mignonette, per dozen bunches	3 0	6 0
Myosotis, per doz. bunches ...	2 0	3 0
Odontoglossum crispum, per dozen blooms	2 0	2 6
Pæonies, per dozen bunches ...	1 6	3 0
Pelargoniums, show, per doz. bunches ...	5 0	6 0
— Zonal, double scarlet... ...	4 0	6 0
Pyrethrums, dozen bunches ..	3 0	6 0
Roses, 12 blooms, Niphetos ...	1 0	2 6
— Bridesmaid ...	2 0	5 0
— C. Testout ...	2 0	4 0
— General Jacqueminot ...	1 6	2 6
— Kaiserin A. Victoria ...	2 0	4 0
— C. Mermet ...	2 0	4 0
— Liberty ...	2 6	4 0
— Mme. Chatenay	3 0	6 0
— Mrs. J. Laing	2 0	4 0
Statice, per dozen bunches ...	5 0	6 0
Spiræa, per dozen bunches ..	5 0	8 0
Stocks, double white, per doz. bunches ...	3 0	4 0
Sweet Peas, per dozen bunches	3 0	5 0
Tuberoses, per dz. blooms ...	0 4	0 6
— on stems, per bunch	1 0	2 0
Tulips, per dozen bunches ...	6 0	12 0
— Darwins ...	9 0	12 0
Violets, per dozen bunches ...	2 0	3 0
— special quality	3 0	4 0
— Parmas, p. bch.	1 6	2 6
Wallflowers, per dozen bunches	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.
Adiantum cuneatum, dz. bchs.	6 0	9 0
Asparagus plumosus, long trails, per doz.	8 0	12 0
— — medium, bunch ...	1 0	2 0
— Sprengeri ...	0 9	1 6
Berberis, per doz. bunches ...	2 6	3 0
Croton leaves, per bunch	1 0	1 3
Cycas leaves, each	1 6	2 0
Daffodil leaves, per doz. bunches..	2 0	3 0
Fern, English, per dozen bunches	2 0	3 0
— French, per dz. bunches ...	1 0	3 0
Galax leaves, per doz. bunches...	2 0	2 6
Grasses, per dozen bunches ...	1 0	2 6
Hardy foliage (various), per dozen bunches	2 0	6 0
Ivy-leaves, bronze	2 0	2 6
— long trails per bundle... ...	0 9	1 6
— short green, per dz. bunches	1 6	2 6
Moss, per gross ...	4 0	5 0
Myrtle, per dozen bunches, (English) small-leaved... ...	4 0	6 0
— French ...	1 0	1 6
Smilax, p. dz. trails	3 0	5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0	8 0
Aralia Sieboldii, p. dozen	4 0	6 0
— larger	9 0	12 0
— Moseri... ...	6 0	12 0
Araucaria excelsa, per dozen ...	12 0	30 0
Aspidistras, p. dz., green	15 0	24 0
— variegated ...	30 0	42 0
Asparagus, p. doz., plumosus nanus ...	9 0	12 0
— Sprengeri ..	6 0	9 0
— tenuissimus	9 0	12 0
Azalea indica ...	24 0	36 0
Boronia elatior, per dozen ...	15 0	24 0
— heterophylla, p. dozen	18 0	24 0
Calceolarias, herbaceous, p. dz.	5 0	9 0
— yellow, per dz.	6 0	8 0
Callas, per dozen...	8 0	10 0
Cinerarias, per dz.	4 0	6 0
Clematis, per doz.	8 0	9 0
Cocos Weddelliana, per dozen	18 0	30 0
Crassulas, per doz.	8 0	12 0
Crotons, per dozen	18 0	30 0
Cyclamen, per dozen	6 0	10 0
Cyperus alternifolius, dozen ...	4 0	5 0
— laxus, per doz.	4 0	5 0
Dracænas, per doz.	9 0	24 0
Erica, per dozen ...	9 0	15 0
— candidissima...	15 0	18 0
— Cavendishii ...	18 0	24 0
— persoluta alba	21 0	30 0
Euonymus, per dz.	4 0	9 0
Ferns, in thumbs, per 100... ...	8 0	12 0
— in small and large 60's ...	12 0	20 0
— in 48's, per dz.	4 0	10 0
— in 32's, per dz.	10 0	18 0
Ficus elastica, dz.	8 0	10 0
— repens, per dz.	6 0	8 0
Fuchsias, per doz.	6 0	9 0
Hardy flower roots, per dozen ...	0 9	2 0
Heliotropiums, p. dozen	4 0	6 0
Hydrangeas, per dozen	10 0	18 0
— paniculata, per dozen	18 0	36 0
Kentia Belmoreana, per dozen	18 0	30 0
— Fosteriana, dz.	18 0	30 0
Latania borbonica, per dozen ...	12 0	18 0
Lilium longiflorum, per dz.	1 0	24 0

Plants in Pots, &c.: Average Wholesale Prices *(Contd.)*.

	s.d.	s.d.
Lilium lancifolium, per dozen	18	0-24 0
Lily of the Valley, per dozen	18	0-30 0
Lobelia, per dozen	4	0- 6 0
Marguerites, white, per dozen	6	0- 9 0
Mignonette, per dz.	6	0-10 0
Pelargoniums, per doz., Zonal	5	0- 8 0
— show varieties	12	0-18 0
— Ivy-leaved	6	0- 8 0
— Oak-leaved	3	0- 5 0
Petunias, per doz., (double)	6	0- 8 0
Rhodanthe, per dozen	4	0- 6 0
Roses, Ramblers, each	5	0-30 0
— Hybrid perpetuals, per doz.	9	0-18 0
Saxifraga pyramidalis, per doz.	15	0-18 0
Selaginella, p. doz.	4	0- 6 0
Spiræa japonica, p. dozen	5	0- 9 0
Verbena, Miss Willmott, per dozen	6	0-10 0

Fruit: Average Wholesale Prices.

	s.d	s d
Apples (Tasmanian), per box:		
— Cox's Orange Pippin	13	0-17 0
— Alexander	5	6- 6 0
— Wellington	6	6- 7 0
— Scarlet Nonpareil	6	0- 7 0
— Australian, per case:		
— Esopus	6	6- 7 6
— New York Pippin	8	0- 9 0
— Cox's Orange Pippin	13	0-16 6
— Wellington	8	0- 8 6
— Alfriston	6	0- 6 6
— Adams Pearmain	6	0- 6 6
— French Crab	6	0- 6 6
— Sturmer Pippin	5	6- 7 0
— Nova Scotian, per barrel:		
— Fallawater	17	0-19 0
Apricots (French), per box	0	9- 1 2
Avocado Pears, dz.	6	0-12 0
Bananas, bunch:		
— No. 2 Canary	6	0 —
— No. 1 ,,	7	6- 8 0
— Extra ,,	8	0- 9 0
— Giants ,,	10	0-12 0
— (Claret)	7	0- 7 6
— Jamaica	5	0- 5 6
— Loose, per dz.	0	9- 1 3
Cranberries, case	8	9- 9 0
Cherries (French), ½ sieve	3	6- 7 0
— (French), p.box	0	9- 2 6
Dates (Tunis), doz. boxes	4	0- 4 3
Figs (English)	2	0- 6 0
Figs (Guernsey), per dozen	2	0- 8 0
Grape Fruit, case	6	0- 8 0
Grapes (English, new) per lb.	1	0- 2 6
— Muscats (English, new), p.lb.	1	0- 3 0
Gooseberries (English), ½ sieve	3	0- 3 6
Lemons:		
— Messina, case	7	0-13 0
Lychees, per box	1	0- 1 5
Mangos (Jamaica), per dozen	4	0- 8 0
Melons (English)	1	0- 2 0
— (Guernsey)	1	0- 2 0
Nuts, Almonds, per bag	45	0 —
— Brazils, new, per cwt.	50	0-57 0
— Barcelona, per bag	30	0-32 0
— Cocoa nuts, 100	11	0-14 0
Nectarines, select'd	10	0-15 0
— best	6	0- 8 0
— seconds	3	0 —
Oranges (Valencia), per case	15	0-28 0
— Denia, p. case	14	0-25 0
— Californian Navel, p. case	20	0-25 0
Peaches (English), p. dz., selected	10	0-15 0
— best quality	6	0- 8 0
— second quality	2	0- 3 0
Pears (Australian), per box	3	6- 5 0
Pineapples, each	2	0- 6 0
Strawberries (English), per lb.	0	9- 1 6
— (French), per basket	1	3- 2 0
— Southamptons, per basket	1	3- 2 6

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (French), per dozen	2	0 —
Asparagus, per bundle:		
— Montauban	1	4- 1 5
— Toulouse	0	10- 1 0
— English	1	0- 1 6
— Giant	2	0- 3 0
Beans, Broad (French), p.pad	4	0- 4 6
— Guernsey, p.lb.	0	6- 0 8
— English	0	7- 0 8
Beetroot, per bushel	1	3- 1 6
Cabbages, per tally	3	0- 4 6
— Greens, p. bag	1	0- 1 6
Cauliflowers, p. dz.	1	0 2 0
— per tally	4	0- 8 0
Celery, per roll	0	8- 1 0
Celeriac (French), per dozen	2	0 —
Chicory, per lb.	0	3- 0 5
Chow Chow (Sechium edule), p. dozen	3	0 —
Cucumbers, per dz.	1	6- 2 6
— per flat	4	6- 6 6
Endive, per dozen	0	9- 1 3
Horseradish, foreign, per doz. bundles	9	0 12 0
Leeks, 12 bundles	1	0- 1 6
Lettuce (French), per dozen	0	8- 1 0
— (French), Cos, per dozen	1	6- 2 0
Marrow (English)	2	0- 6 0
Mint, per dozen bunches	1	0- 2 0
Mushrooms, per lb.	0	4- 0 6
— broilers	0	3- 0 5
— buttons, per lb.	0	6 —
Mustard and Cress, per dozen pun.	1	3 —
Onions (Egyptian), per bag	6	6- 7 0
— pickling, per bushel	1	6- 2 6
— Spring, dz. bun.	1	6- 2 0
Parsley, 12 bunches	1	6- 2 0
Peas (Guernsey), per lb.	0	6- 0 8
— French pad	4	0- 4 6
Potatos (Guernsey), per lb.	0	2-0 2½
— (Jersey), barrels, cwt.	18	0 —
— Teneriffe, cwt.	11	0-13 0
Radishes (Guernsey), dozen	0	6- 0 8
— round, p. doz.	0	4- 0 6
Rhubarb	1	6- 2 0
Salsafy, per dozen bundles	3	6 —
Tomatos (English), per lb.	0	6-0 6½
— second quality	0	4- 0 6
— seconds, per lb.	0	2 —
Turnips (French), per bunch	0	5- 0 6
Watercress, p. doz.	0	4- 0 6

REMARKS.—There are large arrivals of French Cherries, consequently prices are much lower except for the variety Reine Hortense. Apples from Australia are a little firmer. Southampton Strawberries are plentiful and cheaper; fruits grown indoors are now practically unsaleable. Mushrooms are plentiful and cheap. Trade is generally quiet. *E. H. R., Covent Garden, Wednesday, June 17, 1908.*

Potatos.

	s.d. s.d. per cwt.	
New Potatos—		
Jersey Flukes	8	0- 8 6
St. Malo Giants	7	6- 8 0
Cherbourgs (cases)	6	6- 7 0
Do. (barrels)	7	0- 7 6
	s. s. per ton	
Lincolns—		
Up-to-Date	80-	90
Maincrops	80-	90
Royal Kidney	60-	65
— (Blackland)	45-	50
	s. s. per ton	
Lincolns—		
Evergood	60-	65
— (Blackland)	45-	50
Dunbars—		
Up-to-Date (red soil)	110-	115
Maincrop (red soil)	115-	120
Scotch—		
Up-to-Date (grey soil)	80-	90
Maincrop (grey soil)	80-	90

REMARKS.—The trade for new Potatos is fair, but there is little demand now for old tubers. Jersey Potatos are showing traces of disease. English early crops are looking exceedingly well. *E. J. Newbon, June 17, 1908.*

COVENT GARDEN FLOWER MARKET.

During the past week all salesmen have complained of bad trade; yet I find that some have cleared out fairly well, and it is not safe to depend on the market for any special subjects. At the end of the season there are always some things which may be bought below market value, while it is very difficult to procure special subjects at the highest prices. Country buyers must never rely on what is reported as being in the markets one day, for it may be that it is the last of a large batch and the grower has none left.

CUT FLOWERS.

Supplies of choice flowers are very uncertain. Liliums vary from day to day: what may be bought one morning at 2s. per bunch may make 4s. per bunch a day or two later. The supplies during the last few days have been more than equal to all demands, and prices have been low, that is at the close of the market. It is the same with Carnations: those who have to buy for orders have to pay a reasonable price, but the surplus is cleared out at any price that can be obtained. Just now hardy flowers are a great feature. Poppies, Pyrethrums, Pæonies, and Gladioli being very prominent. Spanish Irises are also seen in large quantities, with these there is a very great difference in the prices: some are sold at 1s. 6d. to 2s. per dozen bunches, while others make from 6s. to 9s. per dozen bunches.

POT PLANTS.

Growers who have a surplus now clear out at low prices. The supplies of Zonal and also of Ivy-leaved Pelargoniums and Fuchsias are excessive. Of Marguerites, &c., there are now good yellow flowered plants, but since the yellow variety of Chrysanthemum coronarium has been so extensively grown, they do not sell so readily. Hydrangeas are still plentiful and good. Verbenas have not been making such good prices this season. Rhodanthe fetched but very low prices during the past few years and now it is difficult to obtain really well-grown plants. Mignonette is very good from all growers, but the autumn crop with the large flower heads is nearly exhausted.

There is not quite such a variety of foliage plants as we usually see at this season of the year, but cut foliage seems to have taken the place of plants to a large extent. Palms are in demand, also Ferns, but Crotons, Ficus and other coloured foliage plants are less in demand than formerly. *A. H., Covent Garden, Wednesday, June 17, 1908.*

ANSWERS TO CORRESPONDENTS.

*** *A report of the Royal Botanic Society's Show is held over until the next issue.*

A GARDENER'S TRAINING: *Father.* You state that the boy is a little defective in hearing and is no student or scholar, but is fairly apt at practical work and is willing and steady. We do not consider that he is calculated to become a first-rate gardener. In order to do this he should have received a good education and should be disposed to a considerable amount of study, but possessing sufficient intelligence to estimate the experience gained in practical work at its correct value. As a rule a young gardener should stay at least three years at his first place, but afterwards provided he can make a shift every twelve months into gardens that are well equipped and properly managed, he will gain by the varied experience thereby obtained. You state that you hope when the boy has attained the age of 21 years you will be able to start him in business with a capital of £100. We do not know what particular branch of the business you mean, but such a sum appears to us inadequate for any purpose except perhaps that of commencing a small market garden for the culture of outdoor crops.

APPLE BLOSSOM: *W. M. G.* There is nothing very remarkable in the blossom you send. Some of the stamens have become petaloid, and this duplication of the petals has resulted in a double flower.

APPLE TREE: *A. K., Dundee.* There are so many circumstances that may tend to make a tree unfruitful that it is impossible for us to give a definite opinion in your case without knowing something of the conditions under which the tree is cultivated. You have not even told us what variety of Apple it is. In these circumstances all we can do is to advise you to examine the roots next October or November, and if any are found that are growing directly down into the subsoil, cut these off, taking the opportunity to shorten most of the other roots which show considerable strength in order to induce the formation of root fibres, which are more valuable than thick roots.

CALANTHE LEAVES SPOTTED: *Constant.* The growth of Calanthe sent appears to be perfectly healthy. The small spots may have been caused by insects when the leaves were in course of development.

CARNATIONS: *D. I. D.* We are unable to help you in respect to the Carnations unless you can send specimens for examination.

LILIUM CANDIDUM: *D. W.* The plants are affected with the common Lily disease (Botrytis cinerea). Your best plan will be to burn the affected bulbs, and, after procuring fresh stock from an uncontaminated source, plant them in a fresh situation as far from the old site as circumstances will permit. The fresh plants may be sprayed very early in spring with a weak solution of potassium sulphide, or dusted with flowers of sulphur as a preventive. A suitable book is *The Book of Garden Pests and Plant Diseases*, by R. Hooper Pearson; it may be obtained from our publishing department.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *A. B. H.* 1, Veronica Teucrium var. dubia nana; 2, Veronica Teucrium var. dubia; 3, Oxalis corniculata; 4, Castilleja miniata: 5, Aceras anthropophora.—*A. N. T.* Aira caryophyllea. — *E. C.* Momordica balsamina, a native of East Indies.—*G. C.* Spiræa species, but the specimen is too withered for accurate determination.—*E. H.* 1, Mertensia virginica; 2, Eupatorium petiolare.—*G. G.* The plant is commonly known in gardens as Zygopetalum intermedium.—*Foreman.* 1, Cochlioda rosea; 2, Aerides odoratum; 3, Ada aurantiaca: 4, Stanhopea oculata; 5, Catasetum macrocarpum.—*P.* Liparis Bowkeri.—*W. F.* Hæmanthus multiflorus.—*W. H.* Odontoglossum crispum of the guttatum section, but for which we know of no definite varietal name. The class, however, is tolerably common.—*Vitis.* 1, Anthericum liliastrum major; 2, Helianthemum vulgare, garden variety; 3, Cypripedium spectabile; 4, Astrantia major. The other two specimens being withered are not recognisable. —*J. C. Gould.* Rhaphiolepis ovata.

OLD PLANT OF ERICA: *Erica.* It is too late to disturb your plant now, but you can reduce the risk of losing it if you loosen the soil with a fork and give a dressing of peat in order to encourage additional surface roots. The soil should be kept moist all through the summer, and the specimen lifted with as good a ball of earth as possible towards the end of March or early in April next year.

PTERIS FERN: *H. Reynolds.* There is no disease present in the fronds. The browning may be due to burning by the sun's rays, to excessive transpiration owing to a dry, heated atmosphere, or even to manure water having been shed over portions of the plants.

TOMATO DISEASE: *A. B.* You do not state which disease is attacking your Tomato plants, but we suspect it is Cladosporium fulvum. Spray the plants with the Bordeaux mixture at ordinary strength and admit plenty of ventilation to the structure in which they are growing.

TOMATOS: *H. N. H.* We should regard boggy land as being most unfavourable for erecting houses for the cultivation of Tomatos. These plants require to be grown in moderately dry conditions, such as are generally most prevalent on high land where fogs or mists are infrequent. But if you have no other choice you must make the houses damp-proof as far as possible, and by a proper use of fire-heat, accompanied by ventilation during favourable weather, endeavour to bring about atmospheric conditions in the houses which are opposite to those prevailing out of doors.

COMMUNICATIONS RECEIVED.—Mc. G.—S. (See article on "Colours in Plants" printed on p. 402)—W. G. M.—C. H. —J. D. G.—W. W.—S. & S.—A. W. —H. W. & Co.—J. H. —J. W.—S. W.—H. H.—F. E. A.—J. E. B. W.—L. E.— W. J. V.—L. F.—C. B.—G. N. S.—G. S.—F.—F. M.— G. W.—J. D. G.—T. H. S.—W. W., Ltd.—F. J.—H. G. A. —J. C.—Chevalier—W. R. D.—H. J. C.—J. C. C.—D. B. —G. B. M.—E. S. S.—R. M. L.—S. W. F.—W. B. H.— J. M. W., Natal—H. R.—A. D. B.—A. H.—B., Ltd.—H. W. —H. G. L.

Photograph by H. N. King.

SCROLL-SHAPED FLOWER BEDS AT WYNYARD PARK, THE RESIDENCE OF THE MARQUIS OF LONDONDERRY.

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THE

Gardeners' Chronicle

No. 1,122.—SATURDAY, June 27, 1908.

CONTENTS.

ILLUSTRATIONS.

MARKET STRAWBERRIES.

WHEN Strawberries of the best quality can be bought within a day or two of the middle of June at the retail price of fourpence and fivepence a pound, one begins to wonder whether the industry, which has now assumed such huge proportions, is not being overdone. Until Hampshire began sending Strawberries to London and other large towns, there was not much fear that the demand would fall below the supply, but during the last few years there have been indications that acres of Strawberries are increasing too rapidly for the population, and growers have been grumbling for some time past about unremunerative prices. Strawberries can be grown, of course, to sell retail at fourpence, and even threepence per pound, and still leave a fair profit for grower and retailer, but when, within a week of the crop appearing on the market, prices drop from one and sixpence and a shilling per pound to about a third of those sums, it shows that the market is being very heavily loaded and can hardly cope with the supply.

There is one reason why Strawberries, when they are plentiful, do not bring the prices that the grower had hoped to obtain, and it has to do with the way in which they are marketed. The Kentish grower still persists in using the clumsy peck basket, which is fit enough for marketing such hard subjects as Peas or Potatos, but is entirely unsuitable for a fragile fruit like the Strawberry. Even the gallon basket, as used by the Hampshire growers, is really too large when Strawberries are fully ripe, although it would be difficult to devise a style of package better than the handle-basket with which everyone is so familiar. If, however, four pounds of fruit were the limit for each package, it would be much better for everyone, and the fruit, being more attractive and in better condition, would realise a better price, besides stimulating a demand that can never arise for ill-conditioned berries. It is mere folly, when fruit gets squashed, even in a five-pound basket, to cram 12 pounds of it into a peck measure, but this is what the Kent and Sussex grower has been doing for years past and is still doing.

Another matter to which the fruit-grower ought to pay more attention is the grading of his fruit, but so far he has not profited by the example of the French, the Canadians, the Americans, and the Australians. Certainly, the home grower of Strawberries does at times send into the market what he calls "seconds," but this is usually when all his best fruit is gone and he has nothing to top up with! The extent to which "topping up" is still practised is absurd, and there is nothing which makes the British purchaser so unwilling to pay a good price. The writer has examined scores of baskets from the Southampton district this season, and in nearly every one of them there was a large proportion of berries which ought never to have found their way into a basket of first-grade fruit. This grading is admittedly a difficult matter and would necessitate the carrying by the picker of two baskets—one for the best fruit and the other for the "seconds"—but it ought to be quite as easy to put small and badly-shaped berries into a separate basket as to collect them carefully for filling up the space beneath the larger and better berries. Most of the French Strawberries which arrive in London are even in size and quality, and as a rule they have the appearance of having been just gathered from the bed. Yet they have received more handling than the English fruit and have travelled a far greater distance. These results are due, of course, to smaller packages, careful packing, and strict grading.

It is a little curious that Strawberries should have dropped in price so soon this year and thereby have curtailed the period when the grower reaps the richest portion of his harvest—when we recollect that the first consignments on the market were earlier than usual. This year the first of the Southampton berries, whose arrival may be said to mark the beginning of the season proper, appeared in London on June 10, and the first "Strawberry Special," carrying some 12,000 pounds of fruit, arrived early on June 12. Another train, with 8,000 pounds on board, arrived during the day. Last year the first of the Southampton crop did not reach London till June 13, but that was some five or six days earlier than 1906. Every year, in fact, the season gets a little earlier, owing, no doubt, to the improvement of varieties. At the same time, if we may judge by the returns of 1907, the season also lengthens at the other end—a fact doubtless due to the growing of late varieties. It is quite within the bounds of possibility that, before many more years are past, the Strawberry season will last from the beginning of June till the end of July.

Most people will be surprised to learn that last year was the best Strawberry season on record. Previously to that, the greatest crop in the Southampton district was that of 1904, when some 4,250 tons of fruit were carried by train in nearly 2,000,000 baskets. Last year, however, the London and South-Western Railway Company handled 2,100,148 baskets of Strawberries, aggregating a total weight of 4,705 tons. Swanwick, which is the chief centre of the industry, contributed more than half this gigantic total, the rest coming chiefly from Bursledon, Botley, Wickham, and Sholing. On the average, during the height of the season eight special trains are required to convey the fruit to London, Liverpool, Manchester, and other big towns. Some of it also goes to Scotland, and a few vanloads to Ireland. At the same time ordinary passenger trains take small consignments to every town, large and small, in Hampshire and the adjoining counties, besides which several tons are carried by road to Southampton and other places in the district.

The figures for this year's crop will not be available until August or September, but it is fairly certain that, with the continuance of fair weather to the end of the season, the crop will be as big or bigger than that of a year ago. But it is likely that, in view of the low prices now obtaining, a much larger proportion of fruit than usual will be made into jam. The jam-makers' prices are low, but when one takes into consideration the fact that he is not so particular as to quality and will come and fetch the fruit in his own vans, it is evident that the grower may sometimes obtain a better result by dealing with him than by sending his fruit to market for dessert. *East Sussex.*

NOTES FROM ISLEWORTH.

FRUIT PROSPECTS.

THIS season is one of extraordinary promise in the orchard, and most fruit trees will demand thinning if sizeable fruit is to result. Apples are generally carrying two or three times as many fruits as the trees should be allowed to bear, and Plums are also heavily overburdened. Pears are a full crop generally. Apricots and Sweet Cherries are failures in this garden. Peaches and Nectarines are nearly an average crop.

On the wall trees the set of fruit is also good; Apricots are thin and variable, owing to the tremendous crop of 1907, but Morellos are a good crop. I have taken the following notes as to some kinds of orchard-grown fruit, averaging out the results. The figure 100 represents the maximum crop that should be left on the trees after thinning, so that the figure 70 may be taken as representative of an average crop over a series of years:—

APPLES.—Cooking sorts (early) 300, cooking sorts (late) 250 (Lane's Prince Albert 350).

Dessert sorts (early) 150 (Irish Peach 200); dessert sorts (later) 220 (Cox's Orange Pippin 150, Ribston Pippin 300).

Various edible and fancy Apples 110 (Celini Pippin 50).

PEARS.—Best dessert sorts 80 (Marie Louise 55, Doyenne du Comice 150, Beurré Bosc 125, Louise Bonne of Jersey 10, Chaumontelle 70); latest dessert sorts 150; various dessert sorts 90 (Jargonelle 60).

Stewing Pears 25.

PLUMS.—Cooking sorts 200 (Victoria 400); Damsons 30.

Best dessert sorts 85 (Reine Claude de Bavay 100, Coe's Golden Drop 40); various dessert sorts 70 (Jefferson 40).

Japanese sorts are a complete failure.

Small fruits promise well, especially Strawberries and Black Currants, but Red Currants are variable, and Gooseberries a failure in most places. In exposed situations the crops will not be quite so good. *A. Worsley.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM VENTRICOSUM ALBUM.

At the recent Temple Show Messrs. Wm. Cutbush & Son, Highgate Nurseries, London, exhibited a fine batch of a beautiful rose-coloured Cypripedium as C. ventricosum, and the Orchid Committee awarded it a First-Class Certificate. In the group was a clear white variety, an illustration of which, on a reduced scale, is now given at fig. 183. The plant shown by Messrs. Cutbush is identical with that figured in Reichenbach's *Icones Floræ Germanicæ* as C. ventricosum, but in the letterpress is referred to as C. macranthos var. ventricosum, and there is no doubt that it has been cultivated as C. ventricosum, under which name Messrs. Cutbush imported it.

Some 20 or 30 years ago what was regarded as true C. macranthum was tolerably plentiful in gardens, and a coloured plate of it, taken from a specimen supplied by Messrs Backhouse, of York, together with a note by the late Mr. Burbidge, was given in *The Garden*, January 13, 1877. It is very doubtful whether the plants there illustrated now exist in gardens, and no one who knows C. macranthum as shown in *The Garden* figure could consider it the same species as the C. ventricosum shown by Messrs. Cutbush.

The original descriptions, with their stress on the size and relative length of the lip and the petals, and the form of the staminode, do not help, for those who have grown these Cypripediums know that these features vary as the flowers mature, and the relative proportions might depend on the age of the bloom being described. A good deal of confusion among herbarium specimens also seems to have been brought about by similar variation in the plants dried. From the same cause, the figures, too, are rendered unreliable in like manner, a marked instance of it being what is called typical C. macranthum and the plate of C. ventricosum in *Icones Floræ Germanicæ*, both of which might have been taken from the same plant, the former being much the smaller and evidently a freshly-opened flower. A marked feature in the C. macranthum referred to as being cultivated by Messrs. Backhouse and others 30 years ago is that the infolded sides of the labellum were coloured, whereas in the plant known as C. ventricosum they are white. The colour of the former is also different, although not so red, but more purple tinted than shown in the figure in *The Garden*.

With regard to their C. ventricosum, Messrs. Cutbust write:—"There is a difference in the root-stock, C. macranthum having a fine, fibrous root, whilst C. ventricosum has a fleshy root, the difference being most apparent. We have now pure white forms of C. macranthum, and also several brownish types, which, we think, proves that the species hybridise between each other in nature."

It is a native of Siberia, but appears to be cultivated extensively in Japan.

HARDY PLANTS AT HAYES COMMON.

In visiting Mr. Martin R. Smith's garden at Hayes, one expects to see Carnations in great numbers. But I was not prepared to find such a very ample collection of Alpine and other early hardy flowers as are cultivated there, many in a house especially set apart for them. Not only was this house at the time of my visit gay with flowers, but there was also in the open a very considerable number of choice plants whose flowering period had either passed or had yet to come. The house in which the plants are grown is a span-roofed structure, with ample side and top ventilation, much resembling the Alpine house at Kew in these respects, which is without doubt the best type for the purpose. The staging is on a level with the opening lights at the sides, and in this way the plants receive plenty of fresh air. The culture of Alpines and other hardy flowers under glass is a comparatively new feature at Hayes, and when this fact is remembered, the condition of the large and varied collection merits praise. At the time of my visit many species and varieties of Primulas were in bloom, including P. Veitchii, P. pulverulenta, P. frondosa, P. Cockburniana, P. Kewensis, P. Fisheri, P. verticillata, P. obconica in variety, P. japonica, and P. Sieboldii in variety. P. suffrutescens, a Californian species with reddish flowers, was also noted in quantity, and obviously flourishing, and there were many other species and varieties, such as P. viscosa, P. pubescens alba, P. Stuartii, &c., most of which were in flower at the time of my visit. Many of the choicer Saxifragas, too, are grown, the collection including S. Burseriana, S. lantoscana, S. squarrosa, S. cæsia, S. valdensis, and others of the encrusted type, with

FIG. 183.—CYPRIPEDIUM VENTRICOSUM, VAR. ALBA.

a representative gathering of the smaller-growing "mossy" kinds for variety. Of the Androsaces there were many choice examples. To state that such species as A. pyrenaica, A. arachnoidea, or A. argentea have white flowers, it may be with a yellow eye, or not, conveys but little idea of the dainty grace or charm of these denizens of Alpine regions, for the plants possess beauty in their miniature tufts of leaves crowned with their blossoms. Another species (A. Chumbyi) was gay with rosy-pink heads of blossoms, and the rare A. helvetica was also in bloom. Daphne arbuscula, a somewhat trailing species, with pink flowers in clustered heads, and the even more beautiful and rare D. tupestris (petræa) from the Tyrol were among the most beautiful plants in flower. The latter plant has rose-pink flowers of almost wax-like texture arranged in close heads on a 4-inch high tuft of leaves; the blossoms, too, are delightfully fragrant. Aubrietia, Fritillaria, Dianthus, Lithospermum, Gentiana verna and Houstonia are a few of the many other plants which add interest or beauty to such a gathering of early hardy flowers, and which assist in making this modern phase of gardening in cool or unheated structures one of the most fascinating and enjoyable. Obviously Mr. Martin Smith has entered upon the culture of hardy plants with enthusiasm, and in bringing it to its present state of excellence finds a willing helper in his gardener, Mr. Blick. *E. H. J.*

COLONIAL NOTE.

ENCEPHALARTOS WOODII.

In your issue of April 25, which has just reached me, I observe a short note on the plant of Encephalartos shown at Ghent by Messrs. Sander & Sons, and think that perhaps it may interest some readers of the *Gardeners' Chronicle* to learn the history of this plant so far as it is known to me.

In the year 1895 I was on a botanical collecting trip with wagon and oxen in Zululand, and having reached a spot where the country was very rough I stayed for several days botanising in the vicinity, and in so doing found a solitary clump of Encephalartos, consisting of four stems, the tallest of which was about 18 feet high, with proportionate girth of stem, and with a few offsets at base; the stems were all male, and not another plant of the species could be found in the vicinity, though we found a number of plants of E. brachyphyllus, of which we took away a number of specimens. Some years afterwards, our curator, Mr. J. Wylie, visited the locality, and I directed him to the place where these Encephalartos were. He brought back with him several of the smaller plants of the group, three of which were planted here, and in my report for 1906-7 I gave a photograph of one of them, with a very short note as to the habitat of the species. We have in the garden seven species of Encephalartos, and numerous specimens, but these three, as far as the foliage is concerned, are, in my opinion, not only the handsomest of all, but are strikingly different from any of the others, and I regret very much that such fine specimens as I saw should have been wantonly destroyed by the natives. I may conclude by saying that we have in the garden a plant, of which I believe there is a photograph in the museum at Kew. It has been known as the "Giant Encephalartos." This plant is a male, and this year has no less than 18 cones, arranged in more or fewer complete concentric circles. I think that this is a record number; the trunk has been partly buried in the side of an embankment, and it is intended to remove it to a position where its full length can be seen to better advantage. *J. Medley Wood, Director, Natal Botanic Gardens.*

ABNORMAL SEEDLINGS.

ACER PSEUDO-PLATANUS.

A seedling from Kew Gardens examined by me had one of the two cotyledons deeply bipartite. It is known that in some cases of the same kind, the first whorl of foliage leaves succeeding the cotyledonary whorl has either three members or one of the two leaves bifid, or partite; but this is not always the case. In the present instance a whorl of two foliage leaves occurs about a quarter of an inch above the insertion of the cotyledons. The remarkable point about this seedling, however, is that there is a *third* foliage-leaf situated at the extreme base of the first plumular internode, i.e., immediately above the cotyledons; it is much smaller in size than the two foliage-leaves higher up, is pitcher-shaped, and long-stalked. It apparently alternates on one side of the axis with the two cotyledons, and has displaced the whorl of foliage-leaves from its normal position in such a way that one

of these leaves appears to alternate with the two lobes of the bipartite cotyledon, and the other seems to be making an attempt to alternate with the two cotyledons on the side of the axis opposite to that on which the third foliage-leaf is situated. The most probable explanation of the latter is that it is the sole representative of a bud which is axillary to the undivided cotyledon, and, owing to the complete abortion of its own parent axis, it has become congenitally attached to the main plumular axis of the seedling. Its position on the latter, rather to one side of the median plane of the cotyledonary axil, might be explained by supposing it to be one of the first pair of transversely—not medianly—placed leaves of the axillary branch. No other hypothesis than the above will, I think, account for the presence of this third foliage-leaf. Its peculiar shape is probably the result of weakness of development, as is also seen in its diminutive size.

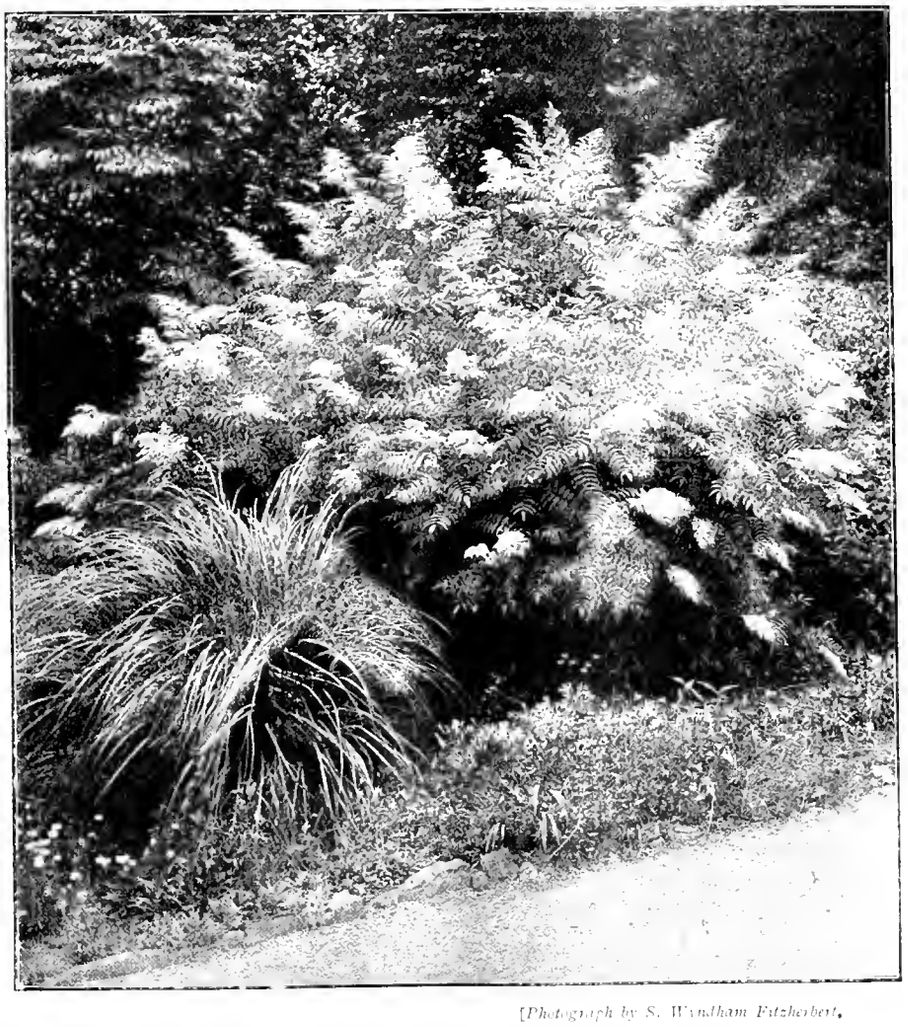
regarding the "double" seedling superficially, the impression obtained is that of a *single* seedling, which has two distinct radicles, which would be a sufficiently puzzling phenomenon. *W. C. W.*

TREES AND SHRUBS.

SHRUBBY SPIRÆAS.

(Concluded from page 397.)

SPIRÆA DOUGLASII.—Where favourably situated (for it is a great lover of moisture), this forms a mass of upright, reed-like stems, each of which is, in July, terminated by a dense, erect spike of bright rosy-red blossoms. When the main spikes have finished flowering, secondary shoots are often pushed out immediately below, thus extending the season of blooming till well on into the autumn. Spiræa Douglasii is a native of much the same region as the preceding species



[Photograph by S. Wyndham Fitzherbert.

FIG. 184.—SPIRÆA LINDLEYANA: FLOWERS WHITE.

EREMOSTACHYS LACINIATA.

AN example was seen of a double seedling, which seems to have arisen through an imperfect formation of twins. What has apparently happened is as follows.—The embryo, or rather, perhaps, the fertilised egg-cell, bifurcated above in one plane, and also below in a plane at right angles to this, and thus two radicles or primary roots were produced. As a result of the former process, viz., bipartition of the upper half of the embryo, we should expect that, in the developed seedling, four cotyledons would be produced; but this is not the case. There are only *two* cotyledons, but each is obviously a double one, and what has taken place is that, owing to lack of adequate space for the proper development of all four, the two cotyledons of each twin have become congenitally united to form a single "double" one. Hence,

SPIRÆA JAPONICA.—This has long been grown in gardens under the name of Spiræa callosa, but the first name is now accepted as the correct one. It is decidedly variable, some of the forms at one time or another having been regarded as distinct species. The type forms a rather upright bush, which in July is studded with flattened corymbs of rosy-red blossoms. A notable feature of this plant is the bright-crimson tint of the young leaves, particularly when grown in a spot fully exposed to the sun. The variety superba has flowers richer in colour than the common form. Of this Spiræa there is a group of dwarf-growing varieties, notably alba (white), Bumalda (pink) (see fig. 185), and Anthony Waterer (crimson).

SPIRÆA MEDIA, SYN. S. CONFUSA.—In gardens where hardy shrubs are forced into flower for the embellishment of the greenhouse or conservatory, this species is very generally met with, as it is a favourite for the purpose. Thus treated, the foliage is of a delightful shade of soft, glaucous-green, and the neat little bushes, thickly studded with clusters of pure white blossoms, are very beautiful. In the open it blooms late in the spring, but the growths are sometimes injured by frosts when the flower-buds are developing.

SPIRÆA PRIMIFOLIA FLORE PLENA.—The double flowers of this Spiræa form a markedly distinguishing feature. It is a loose-growing bush, 6 feet or more in height, the long wand-like shoots, about the latter part of April, being almost clothed with clusters of little white rosettes of flowers, whose purity is enhanced by the dark-coloured bark of the shoots. It is a native of China and Japan, and is one of the many good garden plants whose introduction we owe to the late Robert Fortune.

SPIRÆA SALICIFOLIA (see fig. 186).—A native of a considerable part of the northern portion of both hemispheres, this, as might be imagined from its wide geographical distribution, is a decidedly variable species. It forms a bush 6 feet high, and bears its flowers in spike-like panicles in the latter part of the summer. Some plants produce white flowers, others pinkish. The North American form, known as paniculata, is one of the best.

SPIRÆA THUNBERGII.—The earliest of all to unfold its blossoms, this is a neat twiggy bush, clothed during the summer with small, narrow leaves, that are borne in dense masses. The tiny white flowers remain expanded for some considerable time.

SPIRÆA LINDLEYANA (see fig. 184).—Although this plant and the nearly allied S. Aitchisonii are both members of the same section, the two species are so distinct from each other, and such valuable August-flowering shrubs, that a place should be found for both of them.

CULTURE OF SHRUBBY SPIRÆAS.—These shrubby species of Spiræas need liberal treatment, for when planted in an ordinary shrubbery they are often robbed of nourishment by their more vigorous neighbours. A good open loam forms the best rooting medium, and they are very impatient of drought at their roots. A liberal mulching of fairly rich manure is very helpful. Pruning is an important item, as plants are greatly benefited by the removal of old and exhausted wood, thus encouraging the development of young, vigorous shoots, on which flowers are produced. *W.*

The Week's Work.

THE ORCHID HOUSES.

By H. G. ALEXANDER, Orchid Grower to Lt.-Col. G. L. HOLFORD, C.V.O., C.I.E., Westonbirt, Gloucestershire.

Vanda teres.—This species is one of the most desirable Orchids for flowering at the present season. The plants are decorative, especially when bearing strong flower-spikes, and their beautiful blossoms last a long time, provided the plants are placed in a warm, well ventilated, shady house, and kept moist at the root. Plants that have flowered freely usually shrivel a little, but they soon regain their plumpness when returned to the growing quarters. The work of repotting, or surfacing, should receive attention soon after the flowers have faded. It is a good practice to cultivate Vanda teres fastened to teak-wood stakes, to which the young clinging roots attach themselves readily. Tie each plant separately to a stake of sufficient length to allow for one or two season's growth. The plants can either be placed singly in pots, or a number may be put together to make up specimens. When the latter system is adopted, sufficient space should be afforded between the stems to allow admission of sunlight. The plants may be fixed firmly by packing in pieces of crock edge-ways, filling two-thirds of the pot with clean pot-sherds and charcoal, and the remainder with clean-chopped Sphagnum-moss. It is sometimes neces-

sary to reduce the height of the plants to suit the position they occupy in the house. This may be done by removing the lower portion of the stem, cutting away about 1½ feet and lowering the plants to that extent. If an increase of stock is desired, pot up the portions cut away, and these will soon grow if afforded plenty of heat and moisture. These Vandas should be accommodated in the warmest house, such as the ordinary plant stove, and during the summer months they require an abundance of moisture, both at the root and in the atmosphere. A position should be chosen for them where they can be fully exposed to the sun's rays, and on bright days be frequently syringed overhead.

Vanda Hookeriana and its hybrid, Miss Joaquim, may be grown under similar conditions.

Thunias.—Most of these plants will now have ceased flowering, and they should be removed to a house where they can have plenty of air and be exposed to the full sunshine, so that the stems may ripen. Later on when the stems have hardened a little, the plants may be placed outside, provided the weather is favourable. Continue to give water in abundance at the roots, and in order to keep the foliage free from thrips and red spider syringe the foliage freely twice daily until the leaves begin to fall.

PLANTS UNDER GLASS.

By THOMAS LUNT, Gardener to A. STIRLING, Esq., Keir, Perthshire, N.B.

Agathæa cœlestis.—A batch of two or three dozen examples of this flowering plant arranged with a similar number of Primula × Kewensis affords an excellent effect in January and February. Cuttings of the Agathæa may be inserted at the present time. Place four cuttings in each pot of a diameter of 3 inches, and containing a compost of loam, leaf-mould, and sand. The cuttings should be rooted in an intermediate temperature. They require to be shaded from sunshine, and the atmosphere should be kept close. Let the rooted cuttings grow and be hardened off in the same pots until they are fit for shifting into pots 6 inches in diameter, and in these the plants may be allowed to flower. If treated as Cinerarias until the end of September they will succeed. No flower buds should be allowed to develop before the end of September, and the growths should be pinched two or three times during the summer in order to promote a bushy habit. In October the plants should be removed to a cool greenhouse, placing them close to the roof glass. As soon as the flowers begin to open the roots may be given liquid manure.

Cyclamen.—Seedlings growing in pots should be examined and repotted if necessary, afterwards placing them in an unheated frame. Be very careful to ascertain if the plants are affected with green fly or thrips, and fumigate them directly these pests are observed, failing which they will disfigure the foliage. Plants that were planted out into a frame are now making fresh growth. They require the frame to be well ventilated, and they should be syringed twice daily in favourable weather. When the growth is well advanced, the lights may be removed altogether on warm nights, as the plants will be benefited by the dews. Replace the lights early in the morning, and if the sun is very bright afford the plants shade.

Souvenir de la Malmaison Carnations.—Old plants that have finished flowering, and are not required for cultivation another season, should be planted out in an unheated frame for the purpose of layering. By this system the plants are enabled to increase their vitality before the shoots have to be pegged down as layers, consequently the young plants show greater vigour than is the case with those obtained from cuttings rooted in pots. A compost of loam, leaf-soil, and sand is suitable for the planting of the specimens or for the layering of the shoots. Syringe the plants twice a day at this season of the year, and ventilate the frames freely. Directly the shoots have been layered the frames should be slightly shaded from sunshine and kept close for a week or so.

Azaleas. Plants that were forced early and have made their growth should now be planted out-of-doors on the bed of ashes, or, failing this, each pot should be stood upon a large-sized slate. Select a well-sheltered, sunny position. While the plants are out-of-doors they will need attention in the matter of root waterings.

THE FLOWER GARDEN.

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

Climbing Roses.—Take care that no injury is allowed to affect the young shoots coming from the base of the plants, as these will furnish the main portion of the supply of flowers next season. Many of them require the support of stakes. Longworth Rambler and Paul's Carmine Pillar, now flowering, are excellent Roses for furnishing pillars or arches, and should be noted by prospective planters. Frequent syringings will be valuable in keeping the foliage free from insect and other pests. Occasional applications of liquid manure may be made to the roots. Any plants that are growing in positions near to buildings will need more frequent root waterings than the plants in exposed positions.

Flower beds.—In order to encourage the plants to grow quickly, give frequent root waterings if the weather is dry, and keep the beds scrupulously free from weeds. The hoe should be used to loosen the surface soil as often as convenient.

Herbaceous plants.—Many of the herbaceous plants require staking or thinning out at this season, and the borders need to be weeded; seedlings that have been raised this season may require to be transplanted, and in the case of other species seeds now need to be sown. If such plants as Oriental Poppies, Doronicums, and Pyrethrums have the old leaves and stalks removed after flowering and given a good dressing of short manure, and water when necessary, they may be induced to flower again in autumn.

Anemones.—These plants seed so freely that it is only desirable to save seeds from the brightest and best flowers. These can be marked when in bloom. The seeds are very woolly and are not easily separated from each other, but it is necessary that this should be done; therefore mix them with fine sand or soil and rub them together. A very fine surface is needed for the reception of these seeds, and if sown out-of-doors they had better be sown in drills than broadcast, as the beds afterwards will be so much more easily weeded. Make the soil moderately firm, and if it is well drained, but kept moist by added water, the seedlings may be expected to appear in about three weeks. The roots of the more select varieties may be taken up when the leaves have withered, but they will be planted again in autumn.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Runner Beans.—Attend to the staking of these plants immediately they begin to "run." There are few crops which yield a better return during summer and autumn, especially if the best varieties are grown and good culture afforded. One of the most important items essential to success is to provide the plants with long supports. These should be, except in very exposed places, at least from 8 to 10 feet in height. If the growths are stopped at this point and the plants allowed a sufficient distance to prevent overcrowding, they will continue to grow and to bear freely until frost puts an end to them in the autumn. Apply a good mulching immediately the staking is completed, and keep the roots well supplied with moisture. Those in earlier stages which were planted out from pots or boxes will soon be coming into flower, and to encourage a free and early set the growths should be syringed early every afternoon after hot days. Fortunately, few insect pests or diseases attack these plants, though black aphis sometimes causes trouble; these are easily and quickly destroyed by syringing with strong soft-soap and water.

FIG. 185.—SPIRÆA JAPONICA BUMALDA: FLOWERS PINK.

(For text see p. 415)

French Beans.—Those which are fruiting in cold frames should be liberally supplied with manure water and the foliage kept well syringed. If the variety is of the Canadian Wonder type, it will continue to bear freely until the plantations outside come into bearing.

Broad Windsor Beans.—Late sowings of Broad Windsor Beans should be heavily mulched and kept well supplied with water, or the yield will be poor. Stop the growths of mid-season sowings immediately a fair amount of bloom can be seen; the majority of the first flowers will fail to set if the shoots are not stopped. Those in full bearing should be liberally supplied with manure water, and if any special pods are required for exhibition or other purpose, these should be thinned somewhat severely, leaving the most promising.

Herbs.—Many of the varieties which are coming into bloom, unless required for cutting and drying purposes, should have their growths shortened back to ensure a plentiful supply of fresh, young shoots. Both annual and perennial kinds which were sown during the spring should now be thinned to a reasonable distance

to prevent overcrowding. Keep the crop free from weeds, and hoe the surface frequently.

Sorrel.—This is now very much in demand in many places, and to ensure a good crop of healthy young foliage the growths will need to be cut down occasionally to prevent them flowering. A good dressing of artificial manure should be given between the rows and well hoed in. Should the weather be dry, give a thorough watering.

Onions.—Early-sown transplanted crops are looking remarkably well this season in most places, and everything points towards seeing

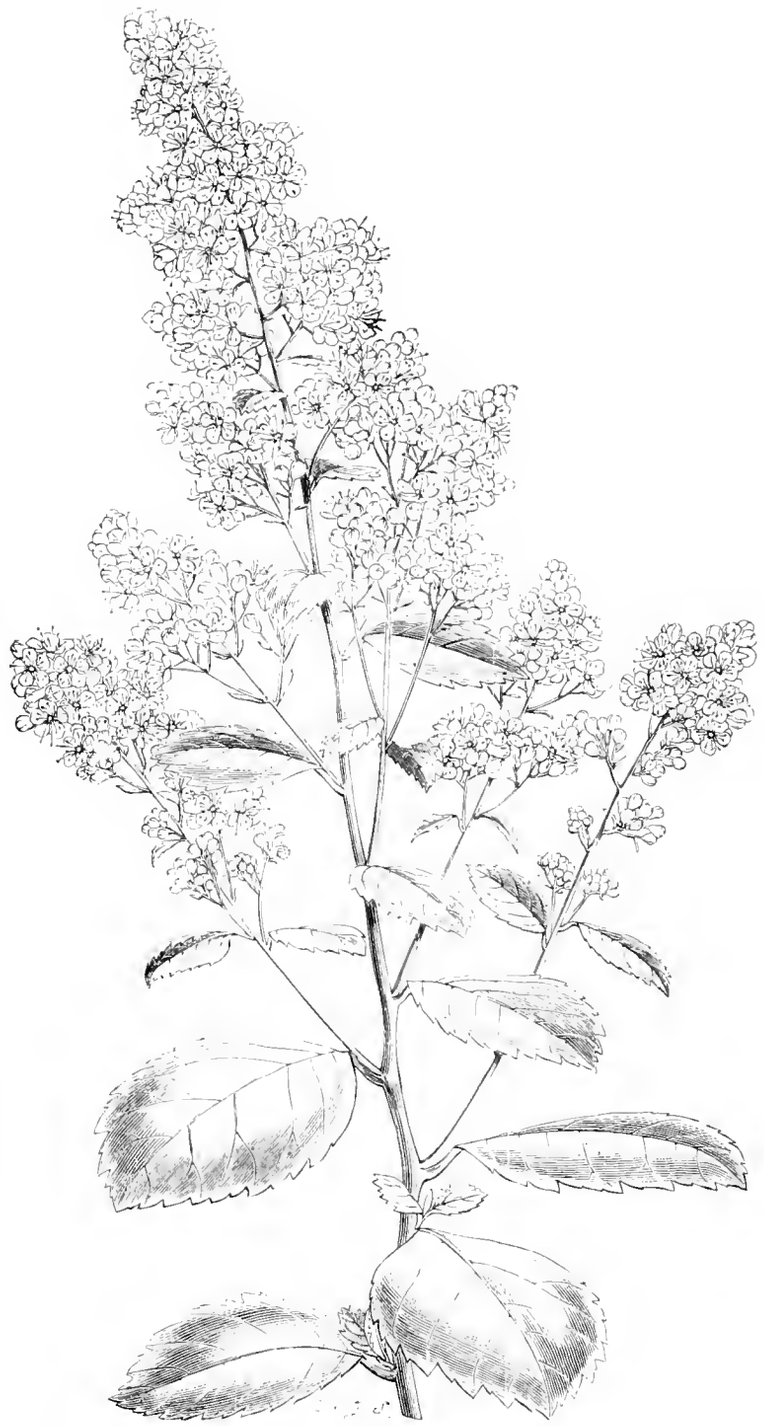


FIG. 186.—SPIRÆA SALICIFOLIA; FLOWERS PINK.

(For text see p. 415.)

these in very much better condition than has been the case for several seasons past. The plants will need judicious feeding and plenty of water for some time to come, but great care must be taken not to be too liberal in feeding, and especially in applying patent manures. Valuable as these are when properly applied, too many people often do not follow the directions given, the result being that more harm than good is done.

THE HARDY FRUIT GARDEN.

By F. JORDAN, Gardener to The DOWAGER LADY NUNBURNHOLME, Warter Priory, Yorkshire.

Insect pests.—Of the many items of work claiming attention during June and July, the combating of insect pests, including the numerous species of caterpillar, is one of the most important. It is almost impossible to save a crop of fruit when a tree has once become badly attacked by caterpillars, but at least the effort should be made by hand-picking and washing with insecticide to lessen their numbers that they may be less destructive another season. In bad cases where the crop is hopelessly ruined, and upon trees which are bearing no crop, the syringing may be done with Paris Green at the rate of 2 ounces to 30 gallons of water. This will quickly kill all insects upon the tree, and the liquid is quite safe to apply at this strength if the trees have already made considerable growth. Paris Green should only be applied with very great care upon trees bearing satisfactory fruit. It is not always possible to destroy the webs of caterpillars on large orchard trees, but a sharp look-out should be kept on smaller trees, such as pyramids and bush-trained specimens, while the operation of summer pruning is in progress, removing the webs carefully and casting them into a bucket containing some petroleum. Gather all fallen Apples and burn them, as they probably contain the caterpillars of the Codlin moth or other pest.

American blight.—Rub over any parts affected with American blight with a stiff brush dipped in methylated spirit, unless in cases where the trees are very badly affected, when they may be syringed, as recommended in a former Calendar.

Figs.—Fig trees should now be freely disbudded, to prevent the shoots becoming overcrowded and in order that the fruits may be fully exposed to the light and air. Remove the extra strong shoots and retain those that are short-jointed, as these latter will mature better and prove most fruitful. Trees growing in properly-constructed borders and carrying full crops of fruit require liberal waterings of liquid manure until the fruits show signs of ripening, when they must be discontinued, but do not apply manures of any sort to barren trees or specimens that are inclined to grow too strongly. Remove sucker growths from old trees and thin the fruits if necessary, but do not stop the shoots. Very little, if any, syringing is necessary for Figs out-of-doors.

Hoeing.—Use the hoe frequently in all the fruit quarters at this season, remembering that should the weather prove very dry, hoeings and mulchings have an excellent effect in conserving the moisture contained in the soil.

FRUITS UNDER GLASS.

By T. COOMBER, Gardener to LORD LLANGATTOCK, The Hendre, Monmouthshire.

The Orchard house.—Pot trees of Cherries Peaches, and Nectarines that are cleared of their fruits should be carefully watered, and have their foliage kept clean by daily syringings of clear water. The house should be kept freely ventilated at all times, and as soon as the shoots have become well hardened the trees may be placed in a warm, sheltered position out-of-doors. It will be an advantage if the pots are plunged in a bed of fine ashes. Later fruiting trees of the kinds named, also those of Plums, Pears, Apples, &c., that are swelling their fruits, should, if not been already done, be finally top-dressed with a mixture of loam, wood-ashes, and a suitable artificial fertiliser. Do not allow the roots to become dry, but examine them twice daily in this respect, and well water any that need moisture. Occasional doses of diluted liquid manure, made from deer manure, or from the droppings in cow-sheds will prove of great benefit, especially in the case of heavily-cropped trees. Syringe the trees with soft water daily, and ventilate the structure liberally both by day and night. Promote the formation of spurs upon Plum and Pear trees by stopping the shoots; also remove superfluous growths upon Peach and Nectarine trees, especially those that were overlooked when the trees were disbudded.

Fig trees in pots.—Large specimens that were forced early should, as soon as they have matured their second crop of fruit, be thoroughly cleansed of scale and red spider, if any be present, with a solution of soft soap made at the rate of 3 ounces to one gallon of water. In the case of red spider, the specific may be applied with a strong force from the syringe, but to eradicate scale a soft brush should be used. Remove exhausted soil from the surface of the pots, and replace it with a moderately dry compost, made firm by ramming. The plants at this stage are benefited by doses of diluted liquid manures. Young trees needing increased root room should be given a shift into larger pots, that must be provided with ample material for drainage. A compost consisting of fibrous loam, mixed with crushed mortar rubble, wood-ashes, and bone meal, or horse manure, should be used. The new soil should be in a fairly dry condition, and be made quite firm in the pots. Encourage fresh root action by placing the trees in a glass-house, where the atmospheric temperature can be maintained at 60°. Syringe the trees daily, and after a few weeks' time gradually increase the amount of ventilation until the trees are sufficiently hardened to be placed out-doors upon a firm bed of ashes.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

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

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

Appointments for July.

WEDNESDAY, JULY 1—
Newcastle-upon-Tyne Flower Sh. (3 days). Ipswich and East of Eng. Hort. Soc. Sh. Hanley Park Floral Fête (2 days). Sutton (Surrey) Rose Sh.

FRIDAY, JULY 3—Nat. Rose Soc. Exh. in Regent's Park.

SATURDAY, JULY 4—
Soc. Franc d'Hort. de Londres meet. German Gard. Soc. meet.

TUESDAY, JULY 7—
Roy. Hort. Soc. Summer Exh. at Holland Park (2 days). Wolverhampton Floral Fête (3 days). Nat. Amateur Gard. Assoc. meet. Bath Rose Sh. (2 days).

WEDNESDAY, JULY 8—Croydon Flower Sh.

THURSDAY, JULY 9—Newmarket Fl. Sh.

MONDAY, JULY 13—
United Hort. Ben. and Prov. Soc. Com. meet.

WEDNESDAY, JULY 15
Hereford and W. of England Rose Sh. Women's Agric. and Hort. International Union Exh. at Regent's Park.

SATURDAY, JULY 18—German Gard. Soc. meet.

TUESDAY, JULY 21—
Roy. Hort. Soc. Coms. meet. British Gard. Assoc. Ex. Council meet. National Rose Sh. at Manchester. Highland Agric. Soc. Sh. at Aberdeen (4 days).

WEDNESDAY, JULY 22—
Nat. Carnation and Picotee Soc. Exh. at Hort. Hall, Westminster. Cardiff Fl. Sh. (2 days).

THURSDAY, JULY 23—Roehampton Fl. Sh.

FRIDAY, JULY 24—
Nat. Sweet Pea Soc. Exh. at Roy. Hort. Hall, Westminster.

WEDNESDAY, JULY 29—
Bishop's Waltham Fl. Sh. Midland Counties Sweet Pea Soc. Exh. at Wolverhampton. Chesterfield Fl. Sh.

THURSDAY, JULY 30—
Royal Lancashire Agric. Soc. Sh. at Manchester (4 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich 61·6°.

ACTUAL TEMPERATURES—
LONDON.—*Wednesday, June 24* (6 P.M.) Max. 75°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June 25* (10 A.M.). Bar. 30·3; Temp. 59°; *Weather* Overcast.

PROVINCES.—*Wednesday, June 24* (6 P.M.). Max. 68° Chelmsford; Min. 54° Lancaster.

SALES FOR THE ENSUING WEEK.

FRIDAY NEXT—
Importation of Cattleya Trianæ, also choice imported and established Orchids, Orchids in flower and bud, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Index Kewensis.

Botanists, especially those engaged in the systematic study of plants, as well as serious students of horticulture will welcome a new Supplement to the *Index Kewensis**. This Supplement includes the names of species of flowering plants published during the years 1901-1905; and the thanks of all interested are due to the Director of the Royal Gardens, Lt.-Col. Prain, and the herbarium Staff for this useful compilation. Only those who were working before the publication of the *Index*, less than 20 years ago, can fully appreciate its value, and that of the supplements. It is so simple a matter to turn up the name in the *Index*, that those who have not been obliged to work without it can hardly realise the amount of research which was often required to get at the earliest publication of a name, or to collect the names of the various species of a genus. That the *Index* has been used in ways in which it should not have been used, for instance, as authoritative for generic or specific reductions, does not detract from its value as an index indicating the place of publication of genera and species. While it may be helpful to know that genus or species A has been referred to genus or species B, it is the duty of the worker to satisfy himself as to the botanical validity of such reference. An illegitimate use of the *Index* by careless or thoughtless workers has been the source of no little trouble, and added not a few names to synonymy.

A list of new species or new names which have appeared during a period of five years is of interest as giving some idea of the work done during that period, and the fact that the present Supplement includes 194 pages, each with three closely-printed columns, indicates that systematists have not been idle. A glance through the pages gives an insight into the character of the work done. The eight columns of new names under Crataegus, credited to three American botanists, shows that this genus is becoming as troublesome for workers in America as is Rubus in Europe; the latter, however, keeps up the running with eight columns also. It is an instance of the difficulty experienced in dealing with genera containing highly variable species, a difficulty which makes their critical study impossible except for the extreme specialist. The Hawkweeds (Hieracium) are disposed of in a column, but, in addition, a useful list is given of the literature dealing critically with European forms. A column and a half under Impatiens, the great majority credited to *Hook. f.*, is a gratifying record of another important contribution to Indian botany, and of the remarkable energy of the veteran botanist. Progress in important floristic works such as the *Flora Capensis* and the *Flora of Tropical Africa* accounts for a preponderance of new names in the genera of certain families, such as a column and a half of new Heaths from South Africa; and similar evidence is found of advance in the great series of monographs—*Die Pflanzenreich*—edited by Dr. Engler of Berlin. The fact that very much more remains to be done in careful botanical exploration, especially of the tropics, is shown by the large number of novelties which any good collector brings home. For instance, under Calceolaria 29 new species are recorded from the work of three collectors in Central and South America.

New or resuscitated views as to limitations of genera are responsible for many of the new names. Thus, the American botanist, Prof. E. L. Greene, is of opinion that the groups Bistorta, Persicaria, and Bilderdykia, which Linnæus put together under Polygonum, should be regarded as genera, hence we find under each of these three names a long list of new combinations due to Greene. This, by the way, affords an instance of a kind of botanical selection exercised by the compilers of the *Index*; Bistorta and Bilderdykia are printed in the roman type used for synonyms, whereas Persicaria is given the honour of clarendon type, and thus its claim to generic rank is allowed. Similarly with two genera of Ochnaceæ established by Van Tieghem, due not to a new discovery, but the result of a critical investigation of the order, one, Polyochnella, is allowed, the other, Campylospermum, is tabooed. These are instances of that kind of information which, though often extremely useful, we have no right to expect from an index, and with regard to which each worker must satisfy himself.

We cannot, however, refrain from regretting the omission of the date from the great majority of the citations; its inclusion would have been a useful addition, and would not have materially increased the labour of compilation.

* *Index Kewensis* Plantarum Phanerogamarum, Supplementum III. (1901-1905); Roy. pp. iv. 194. Clarendon Press, Oxford, 1908. Price 28s. net.

NATIONAL ROSE SOCIETY.—The summer exhibition, which is to be held on Friday, July 3, in the gardens of the Royal Botanic Society, Regent's Park, promises to be one of the finest the National Rose Society has held for many years. The weather generally has been favourable for Roses, and this year there has been an absence of late spring frosts, while during June the cold periods have never lasted more than a day or two, so that the growth of the plants has at no time received any serious check. Among interesting new features of this year's exhibition will be competitive groups of the varieties which obtained the first, second, and third places in the recent ballot for the best dwarf and climbing Roses for ordinary garden cultivation. The hon. secretary is Mr. EDWARD MAWLEY, Rosebank, Berkhamsted, Herts.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are informed by the secretary that the annual Outing will, this year, take place on Monday, July 27, when, by special permission, a visit will be paid to the Royal Gardens at Frogmore. The party will travel to Windsor Station, and immediately proceed to the gardens. Lunch will be served at Layton's Restaurant at 1.30 p.m. After lunch there will be time for a short visit to St. George's Chapel, and at 3.30 p.m. the party will embark at Windsor Bridge on the steam launch "La Marguerite" for a trip up the river. A halt will be made at Maidenhead for tea at the Dumb Bell Restaurant (about 5.30), and after tea the party will return so as to reach Windsor in time to catch the 8.28 p.m. train to Paddington. The price of tickets, inclusive of the railway fare to and from Windsor, launch to Maidenhead and return, lunch and tea, will be ten shillings and sixpence.

YORKSHIRE GALA.—Notwithstanding the adverse weather conditions of the opening day, this show proved a success, the attendance of the public on the second and third days being very large. The deputation of the Royal Horticultural Society, including the President, Sir TREVOR LAWRENCE, Bart., were entertained to a banquet on the evening of Wednesday, 17th inst., by the LORD MAYOR of York. Four Gold Medals were offered for the best exhibits of Orchids, stove plants, trees and cut flowers respectively. The winners of these medals were announced in our report, but after this was dispatched the Committee granted four additional Gold Medals, the recipients being Messrs. KER & SONS, Liverpool; SUTTON & SONS, Reading; WEBB & SONS, Wordsley; and JOHN PEED & SON, West Norwood. In addition to having the Gold Medals of the Yorkshire Society and the Veitch Memorial Trustees, Lieut.-Col. HOLFORD (gr. Mr. Alexander) was awarded the Gold Medal of the Royal Horticultural Society.

FLOWERS IN SEASON.—From Messrs. KELWAY & SONS, Langport, Somersetshire, we have received a beautiful bouquet of Pyrethrum roseum. There are single and double varieties, and the colours are variable and attractive. Double Pyrethrums are as ornamental for the flower border as they are for use in a cut state, and in this latter condition they will last effective for a considerable period. Some magnificent Pæonies have also been sent us by Messrs. KELWAY.

———Messrs. W. BULL & SONS have sent us unusually well-flowered sprays of Bougainvillea "Maude Chettleburgh." This variety formed the Supplementary Illustration to the *Gardeners' Chronicle*, November 12, 1904, and it is remarkable for the intense colour of the ornamental bracts.

———Some specimens of varieties of Cytisus scoparius Andreanus, sent us by Mr. T. SMITH, Newry Nurseries, Ireland, show what diversity there is now to be seen in this form of the common Broom. The varieties include The Ghost, with pale-coloured flowers, in which the crimson colouring is almost absent; Newry Seedling, in which the crimson markings are rather more pronounced; May Fly, a very handsome variety, with large flowers in which the rich orange and crimson shades are very conspicuous; Fire Fly, Daisy Hill, Butterfly, Moonlight (a very distinct variety, almost one shade of yellow), Sulphureus, Fulgens, and other attractive varieties that are at present unnamed.

———A consignment of specimens from the Coombe Wood Nurseries of Messrs. JAMES VEITCH & SONS, LTD., illustrate some of the choicer trees and shrubs in flower at the moment, some of which, although familiar at the exhibitions, are not planted nearly so commonly as they should be. Styrax japonicum (fig. 166 in *Gardeners' Chronicle*, December 12, 1885, p. 745), with its pure white, single flowers, is a handsome shrub, and the sprays, if cut and arranged in vases, are exceptionally pleasing. Rodgersia pinnata (fig. 44 in *Gardeners' Chronicle*, August 23, 1902, p. 131) is one of the boldest flowering plants suitable for planting near water or in the damper portions of a rockery, and has pinkish panicles of flower. The variety alba now received has white flowers and may also be used in a cut state in a bold scheme of decoration. Ozothamnus rosmarinifolius is a shrub with small white flowers that we have frequently described in these columns. Magnolia parviflora is one of the most striking species of this handsome flowering genus. Robinia Neo-mexicana, a species from the Rocky Mountains, and R. Decaisneana, a fragrant variety of the false Acacia. Lonicera etrusca superba is a very fine variety of this brightly-coloured species, and the other specimens include Euonymus fimbriatus and Berberis vulgaris integerrima.

———A strain of Streptocarpus sent us by Messrs. STORRIE & STORRIE, Glencarse Nurseries, Perth Line, are commendable for their large flowers and brilliant and varied colours. The individual spikes are very strong, usually reaching a height of about 12 inches, but occasionally as much as 20 inches. The colours range from white to crimson and violet.

———Messrs. HUGH LOW & CO., Bush Hill Park Nursery, have sent us a flower of a variety of Souvenir de la Malmaison Carnation. In appearance it is like an improved form of the pink-flowered type. Messrs. Low state that this variety is raised from Lady Grimston crossed with Princess of Wales. The outer petals are very much better in form than those of the original type, and the colour of the whole flower is of a softer yet richer tone of pink. It bears the name of "The Gala," and we are informed that the variety will be exhibited at the Holland Park Show.

MR. ATLEE BURPEE ON THE PARIS SPRING SHOW.—Writing in the *American Florist* of June 13, Mr. ATLEE BURPEE, now on a visit to Europe, says: "I was fortunate in spending May 23 in Paris and vicinity. I then had an unexpected treat in viewing the Cours la Reine exposition of the Societe Nationale d'Horticulture de France. By far the largest of the many fine exhibits and most notable was that of Messrs. VILMORIN, ANDRIEUX & CO. I could not have believed it possible that any firm would go to so much trouble and expense for an exhibition of one week; in fact, never have I seen at one time and in any one group such a variety and grand display made by any firm, even at the World's Fair." Mr. BURPEE then expresses the hope that such a display could be made in America and gives full details of the exhibit by Messrs. VILMORIN & CO., to which we also alluded briefly in our report of the Paris Spring Show, published in the issue for June 6, p. 374.

FIG. 187.—HELIANTHEMUM ROSEUM IN FLOWER. (See text p. 420.)

LAWES AGRICULTURAL TRUST.—The Committee of the Lawes Agricultural Trust held their annual meeting for the inspection of the Rothamsted Experimental Station on June 19. A vote of condolence was addressed to Lady EVANS, expressing the sympathy of the committee in the loss she had sustained through the death of Sir JOHN EVANS, who had been Chairman of the committee since the foundation of the Trust, and to whose endeavours the organisation and extension of its work had been largely due. In the afternoon the laboratory and field experiments were inspected by a small party, which included the Duke of DEVONSHIRE, Sir J. T. BRUNNER, M.P., Sir HUGH SHAW STEWART, Sir A. K. ROLLIT, Col. E. H. CARLILE, M.P., Mr. J. F. MASON, M.P., Mr. B. MUNRO FERGUSON, M.P., Mr. F. G. OGILVIE, Professor W. A. TILDEN, and Dr. B. DYER.

ROYAL SOCIETY OF ARTS.—The annual conversazione will take place at the Natural History Museum, Cromwell Road, London, S.W., on Thursday next, July 2. The reception, by Sir STEUART COLVIN BAYLEY, K.C.S.I., C.I.E., Chairman, and other members of the Council, will be held in the Central Hall from 9 to 10 p.m.

*** LONDON SOCIETY OF FRENCH GARDENERS.**—We have received for the nineteenth year in succession the annual *Bulletin* of this very flourishing and useful Society, which now occupies a prominent position among the leading European horticultural societies, for it is supported by most of the leading English, Belgian, and French nurserymen, besides others holding responsible positions as gardeners and curators of public gardens at home and abroad. The *Bulletin* for 1908 contains a record of the work during the past year, and is described by our contemporary, *La Tribune Horticole*, of Brussels, whose editor, M. LOUIS GENTIL, was once the secretary of the Society, as being decidedly the finest that has ever yet been issued. There are several excellent illustrations, Mr. THOMAS BEVAN, an old friend of the Society, being honoured by having his portrait as the frontispiece, accompanied by a biographical notice. The annual report, rules, list of officers, and the ever-increasing lists of members are also given, together with the Library Catalogue and reports of the monthly meetings. In the literary part of the *Bulletin*, we note with pleasure the heading "La Fête Schneider," which contains an account of the several meetings in England and in France at which Mr. GEO. SCHNEIDER was entertained to celebrate his well-deserved promotion to the rank of Officier du Merite Agricole. We also draw our readers' special attention to the lengthy and interesting article by M. P. AQUATIAS, entitled "Intensive Culture of Vegetables—French System," a subject that is now attracting much attention on the part of English growers. The article is written in English, an innovation for the benefit of English members of the Society. The subjects dealt with include choice of the ground, materials, lights, shed, disposal of the grounds, horse-dung, hot-beds, culture, winter crops, Spinach, Lamb's Lettuce or corn salad, Passion Lettuce, Sorrel, Chervil, Strawberries, a calendar of work for the various months, choice of seeds, diseases and insects, and an explanatory plan of a French garden, double-paged, is given for an area of 2 acres. Other literary matter includes papers in French on such subjects as Carnations in England, the Temple Show, Roses, enemies of horticulture, horticulture in Egypt, the Crystal Palace Chrysanthemum Show, report of a visit to Messrs. CUTBUSH & SON'S nursery, and notices of new books. These articles are written mostly by the young members of the Society who are resident in England, and are read at the monthly meetings of the Society. The meetings take place in the evening of the first Saturday in the month at the Society's meeting place. The French Horticultural Society is practically a mutual improvement society, and has no shows to help to increase its funds. Notwithstanding this fact, it has a balance in round figures of £232, besides a sum in the hands of the Paris Committee of the Society. The annual dinner is held in January, and this *Bulletin* contains a full report of the last one, at which Mr. H. J. VEITCH, of Chelsea, presided.

* *Bulletin de la Société Française d'Horticulture de Londres.* (Office of the Society, 66, Long Acre, London, W.C.)

FRENCH HORTICULTURISTS IN LONDON.—At the meeting of the Royal Horticultural Society on Tuesday last, the President and Council received a deputation of about 100 members of the Société Nationale d'Horticulture de Française, entertaining them to a light luncheon. The visitors included the President, Mons. VIGER, and MM. LEBOUF (treasurer), ABEL CHATENAY (secretary), and MAURICE DE VILMORIN.

HELIANTHEMUM ROSEUM.

THIS member of the "Sun Rose" family is now regarded as a variety of H. polifolium, a species coming very near the more woolly-leaved forms of H. vulgare. The variety is a most attractive one from the garden point of view, and the illustration at fig. 187 will serve to show how decorative the Helianthemums are when seen in a goodly mass. Like all the sub-shrubby species and their varieties, H. roseum is especially suited for sunny ledges of rockwork or sloping rocky ground, and in these positions the plants will thrive for a number of years with but little attention. Some of the species of Helianthemum are apt to become straggling in growth in certain localities, and where this is seen the garden shears should be used without hesitation, in order to induce a branching habit and increased vigour. H. roseum has blossoms of a rosy red hue, which are very showy when seen in the sunlight. *E. J.*

HOME CORRESPONDENCE.

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

THE PRINCIPLES OF MANURING.—The leading article on p. 384 places before its readers a subject of much interest to gardeners and agriculturists, but its use to the gardener is what concerns us most. The composition of the ash of plants and trees, as shown by analysis, is sometimes given as an indicator of what a plant may require, and it has been recommended in many works on this subject that all the cultivator has to do is to supply the particular ingredients set forth in the analysis to grow the plants and fruits to perfection. Now it appears to me that these scientific teachers and blenders of manures have started at the wrong end, for they seem to treat all soils the same. If when stating the results of their experiments they also gave the composition of the soil in which the subjects grew, we then might be on the right road to success. Take, for instance, Potato manures. There are several on the market, all recommended as being the one thing needful to ensure a good crop, either for table use or exhibition. They may produce some tubers for the latter purpose, but for consumption the crop may be worthless. I have tried many of these manures, and the results said to have been obtained by their use may be quite true in some soils, but that does not prove that they will be equally valuable in others. The same thing applies to other subjects grown. We want an analysis of the soil with which we have to deal obtainable at a moderate price. We then should be better able to supply any deficiencies which such analysis showed, or abstain from putting into the soil what was not required. The presence of iron in the soil has, as you say, long been recognised as being productive of high colour. This is most noticeable in the Hereford district, and in soils of Devon and Somerset. If it is not iron, what is the cause of this high colour which these red soils produce? Dr. Griffiths is evidently a great believer in the use of iron, for in his work on *Special Manures for Garden Crops* he frequently recommends it, and says "It is a direct and an indirect plant food." But if Dr. Griffiths had stated in what kind of soil he carried out his experiments, the value of his observations would have been greatly enhanced. I have used his recipes for many things, but in our soil they have been useless. For Palms he recommends with other ingredients iron sulphate, and also in addition a few crystals of iron sulphate being placed on the surface of the soil. With our soil the best colouring agent and fertiliser I have found for Palms is nitrogen. I think we have too much iron in our soil already, or some other similar substance. We certainly have something in it that Muscat vines cannot assimilate; this type of vine merely exists. Now the soil used for these vines is the top 2 inches of turf from the Deer Park, a soil that generally suits all else which we grow. Why should it not suit Muscats? *T. H. Slade, Poltimore Gardens, Devonshire.*

A NEW IVY.—In your issue of June 13, p. 389, we notice you report the new variegated Ivy exhibited by Mr. Russell as having been raised by him. We would point out that this variety (Hedera Helix dentata variegata) was raised by us in our own nurseries and was supplied to Mr. Russell by us. *Pennell & Sons, Lincoln.*

VAPORITE FOR WIREWORM.—Vaporite is often recommended for the destruction of wireworms, but it is absolutely useless on our gravelly land, even at double the strength recommended. It is better to apply sulphate of ammonia and superphosphate, as it stimulates growth, and thus assists the plants to resist an attack. *G. H. H. Wassell, Heath End House, Baughurst, Basingstoke.*

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 23.—There was a good display of flowers, fruits, and a few vegetables at the meeting on Tuesday last. Garden flowers formed the major portion of the exhibition, but there were also displays of Orchids, Crotons, Carnations, Roses, Gloxinias, Caladiums, &c.

The meeting was visited by a party of French horticulturists, who were entertained by the Council to luncheon. The Orchid Committee granted no fewer than five Botanical Certificates besides other awards; the Floral Committee conferred Awards of Merit upon thirteen novelties. At the afternoon meeting of the Fellows a lecture was given by the Rev. Prof. Geo. Henslow on the "Absorption of Rain and Dew by the Green Parts of Plants."

Floral Committee.

Present: H. B. May, Esq. (in the Chair), and Messrs. Chas. T. Druery, W. A. Bilney, Jas. Hudson, Jno. Green, G. Reuthe, C. Blick, R. W. Wallace, Jno. Jennings, Chas. Dixon, Jas. Dixon, Jas. Douglas, Chas. E. Pearson, J. H. Barr, W. Cuthbertson, H. J. Cutbush, E. H. Jenkins, R. C. Notcutt, E. A. Bowles, Walter T. Ware, R. Hooper Pearson, and R. C. Reynolds Nevill.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, contributed several pleasing displays. On the table they usually furnish with indoor plants, they displayed Gloxinias, Kalanchoe flammea, K. kewensis, Swainsonia galegifolia and Lobelia tenuior. The Gloxinias were noteworthy for their general excellence, both in regard to their culture and their wide range of colours. Opposite this exhibit was another of hardy annuals, and a selection of Spanish Irises. Under the wall opposite the entrance the same firm showed Pæonies in great variety, Campanula media, a batch of Eremurus Warei, Rodgersia pinnata, and other subjects. (Silver-Gilt Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed a representative collection

of Codiæums (Crotons)). Most of the old favourite varieties were included, and all gave evidence of skilful culture. A selection of the best kinds displayed includes Reidii, with broad, handsome foliage; Mooreanum, having handsome green and yellow leaves that recurve at their apices; Duke of Buccleuch, the young foliage being bright yellow; Edmontoniense, richly coloured with red and gold; Invicta, Imitabile, &c. (Silver-Gilt Flora Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, N., showed Carnations of fine quality, Metrosideros floribunda, Calceolaria "Decorator," Roses, the bronzy-red-leaved Coleus Cordelia, Astilbes (Spiræas), &c. (Silver-Gilt Banksian Medal.)

Messrs. JOHN LAING & SONS, Forest Hill, London, put up a semi-circular group of handsome Caladiums, with Selaginellas, Dracænas, Ficus elastica, Nertera depressa, &c., interspersed. (Silver Banksian Medal.)

Anthuriums of the Andreanum section were shown by Mr. A. TRUFFAUT, 40, Rue des Chantiers, Versailles. There were several varieties, all differing in the degree of colouring in the spathes. The largest inflorescence was labelled awarded a Silver Flora Medal. Other exhibitors of Roses were Messrs. W. & J. BROWN, Peterborough (Silver Banksian Medal); Messrs. BEN CANT & CO., Colchester (Silver Banksian Medal); Messrs. PAUL & SON, Cheshunt, who also displayed Pæonies and other hardy flowers (Silver Flora Medal); Messrs. W. PAUL & SON, Waltham Cross, Herts.; and Messrs. W. SPOONER & SON, Arthurs Bridge Nursery, Woking (Bronze Banksian Medal).

Mr. JAMES DOUGLAS, Edenside, Great Bookham, showed a large number of Pinks, in all 150 plants, embracing about 30 varieties. If we were to select one variety only, our choice would be the beautiful Snowflake, white, as its name implies, but with a suspicion of rose colour in the bases of the petals.

Mr. W. J. GODFREY, Exmouth, Devon, displayed a number of show Pelargoniums and a batch of small plants of Solanum Wendlandii, all well-flowered. (Silver Banksian Medal.)

Messrs. WM. BULL & SONS, King's Road, Chelsea, showed Spanish Irises in variety, and another exhibitor of these seasonable flowers was M. U. HOMAN, Holland. (Silver Banksian Medal.)

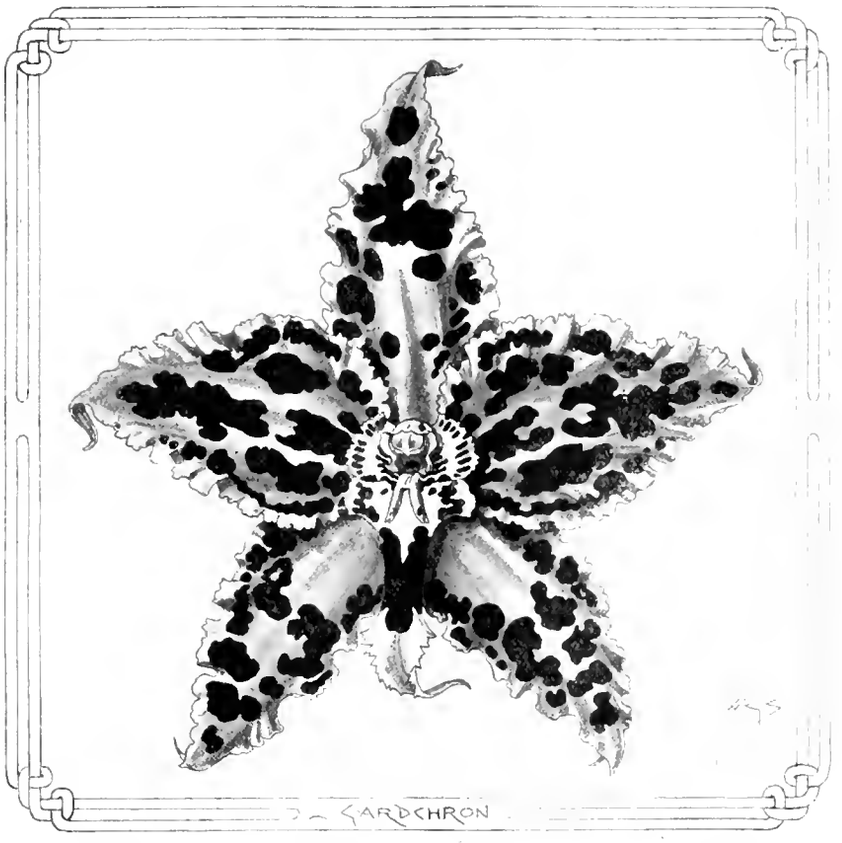


FIG. 188.—ODONTOGLOSSUM × PHŒBE: FLOWER WHITE WITH REDDISH-PURPLE MARKINGS.

(First-Class Certificate at R.H.S. meeting on June 9. See description on ante p. 390.)

Queen Alexandra, but the big bract was only partially coloured red, the remaining portion being leaf-like.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, exhibited pot plants of Souvenir de la Malmaison Carnations. The plants were examples of good culture, the blooms being very fine in quality. (Silver Banksian Medal.)

Mr. ROBERT NEAL, Trinity Road, Wandsworth, displayed vases of Sweet Peas.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a large batch of Gloxinias and boxes of Roses. The Gloxinias included such fine varieties as Lady Dyke, Miss Matthews, Purple Queen, Prince of Wales, &c. (Silver Banksian Medal.)

Mr. WM. PROFITSLICH, Twickenham, exhibited on behalf of Messrs. Waverin and Kruijff pink-flowered Astilbes (Spiræas), the variety Queen Alexandra being especially fine.

Several displays of Roses were seen. Mr. GEO. MOUNT, Canterbury, showed a group in his inimitable style, and for which he was awarded a Silver Flora Medal. Other exhibitors of Roses were Messrs. W. & J. BROWN, Peterborough (Silver Banksian Medal); Messrs. BEN CANT & CO., Colchester (Silver Banksian Medal); Messrs. PAUL & SON, Cheshunt, who also displayed Pæonies and other hardy flowers (Silver Flora Medal); Messrs. W. PAUL & SON, Waltham Cross, Herts.; and Messrs. W. SPOONER & SON, Arthurs Bridge Nursery, Woking (Bronze Banksian Medal).

Mr. AMOS PERRY, Enfield, Middlesex, staged a beautiful group of hardy flowers, amongst which spikes of Delphinium were a feature. The exhibit was well arranged, the foreground having a tank with Nymphæas and other water-loving plants. In the centre and at the back of the water-garden was a batch of tall Eremurus and Liliums in many varieties. The front was of stonework, among which were introduced Ferns, Funkias, Calla Rehmannii, Epimediums, &c. A selection of seasonable garden flowers was also included in the group. (Silver-Gilt Flora Medal.)

Messrs. DOBBIE & Co., Rothesay and Mark's Tey, showed vases of Spanish Irises in great variety and all of fine quality. Notable varieties were Soleil d'Or; Pearson, heliotrope and violet colourings, with yellow on the falls; Thunderbolt, having brown and yellow falls which are extremely pretty; L. Unique, white falls with blue in the other segments; L'Innocence, white with yellow marking; La Nuit, King of the Blues, &c. (Silver Banksian Medal.)

Messrs. BAKER'S, Wolverhampton, showed an assortment of choice garden flowers and some Alpine plants, disposed in a setting of Virgin cork. A large, deep-yellow-coloured Gaillardia was shown under the name of Lady Rolleston. (Silver Banksian Medal.)

Messrs. WALLACE & Co., Kilnfield Nurseries, Colchester, staged many select garden flowers, including several hybrid Heucheras, Pentstemon pygmæus, some splendid spikes of Lilium monadelphum Szovitzianum, L. Hansonii, Gladiolus Ne Plus Ultra, Allium albopilosum, &c. (Silver-Gilt Banksian Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited an assortment of hardy flowers, amongst which were varieties of Gladioli, Irises, Campanulas, hardy Nymphæas, Delphiniums, Geum, Pæonies, and other showy subjects. (Silver Banksian Medal.)

The GUILDFORD HARDY PLANT NURSERY, showed hardy succulent plants, principally Sedums and Sempervivums.

Messrs. JAS. KELWAY & SON, Langport, Somerset, showed Pæonies, Delphiniums, and Pyrethrums. Amongst the Delphiniums was a new variety with deep cobalt blue flowers, labelled King Edward VII. (Silver Banksian Medal.)

A batch of hybrid Delphiniums was shown by C. FERGUSON, Esq., Weybridge (gr. Mr. F. W. Smith). The best were labelled Samara (fine deep blue colour), Kandaules (magenta), Idaia (Cambridge blue), Polykrates, and Hammurabi

Other exhibitors of garden flowers were Messrs. JOHN PEED & SON, West Norwood, London; Mr. GEO. REUTHE, Keston, Kent (Silver Flora Medal); T. S. WARE, LTD., Feltham, Middlesex; Mr. J. R. BOX, West Wickham; the Misses HOPKINS, Shepperton-on-Thames; and the COTTAGERS' SOCIETY, Letchworth.

Flowering shoots of Schizophragma hydrangeoides were shown by Mrs. HOLDEN, Nuttall Temple, Notts.

A batch of small plants of Erica cinerea coccinea was exhibited by H. WHITE, Esq.

AWARDS.

AWARDS OF MERIT.

Anthurium "President Viger."—A very bold Anthurium with large, deep red-coloured spathe, similar to A. Andreanum. This was exhibited by Mons. A. TRUFFAUT, Versailles, who contributed several other additional varieties.

Begonia Col. Lausedat.—A neat-habited, tuberous-rooted variety, with double flowers of bright, rich yellow. It will be valuable for cultivation as a pot plant, and for bedding out in summer-time. Shown by Messrs. JAS. VEITCH & SONS, LTD.

Campanula Raddeana.—This is a new hardy species raised from seeds obtained from the Ural Mountains. The plant and flowers as shown were 9 or 10 inches high, and the growth very slender. The leaves are scarcely ½-inch in diameter, ovate, and much crenated. The corolla is 1 inch across, perfectly bell-shaped, deep violet-purple in colour, and having the yellow pistil obtruding ½ inch. The divisions of the calyx have very hairy margins. Shown by Mr. G. REUTHE.

Delphinium Cambyses.—This very fine variety, with large double flowers, coloured pale blue with white centre, was exhibited by C. FERGUSON, Esq.

Eremurus Bungei magnifica.—This is a very robust form of the yellow-flowered species E. Bungei, with much-enlarged inflorescence. Shown by Messrs. J. VEITCH & SONS, LTD.

Erica cinerea pygmea.—A dwarf form of this ornamental Heath, and the plants shown were not more than 4 inches high. With its brilliantly-coloured flowers this plant will be valued for the rockery. Shown by Mr. G. REUTHE.

Eccremocarpus Mikado.—A brilliantly-coloured orange-scarlet variety, with a suspicion of copper shade. Shown by Mr. W. H. GARDINER, Mill Street, St. Osyth.

Hybrid Sweet Briar Refulgens.—This variety, exhibited by Messrs. W. PAUL & SON, is probably the result of a cross between a hybrid Briar back again upon a Rose, as the fragrant foliage partakes much more after the Rose than the Briar. The semi-double flowers are 3 inches or more in diameter, and are produced in

moderate clusters The colour is purplish-crimson with a white centre.

Knipofia Goldelse.—A very slender-growing yellow variety of only moderate height (see illustration in *Gardeners' Chronicle*, July 21, 1906). Shown by Messrs. WALLACE & Co.

Pelargonium Fred. T. Hamilton.—This is evidently a cross between a zonal-leaved and an ivy-leaved variety. The green leaves are of sufficient thickness to cause them to break when doubled. The flowers are borne on spikes 1 foot in length, in excellent trusses, and each bloom is semi-double and of good form. The colour is a vivid shade of carmine-scarlet, with very slight violet markings on the upper petal. Shown by Messrs. W. H. ROGERS & SONS, LTD., Basset, Southampton, who submitted it as a "zonal" variety.

Stokesia cyanea alba.—This white variety of a well-known hardy plant was exhibited by Mr. AMOS PERRY.

Sweet Pea Dobbie's Mid-Blue.—A flower of moderate size with erect standard, the award being given for its degree of blue colouring.

Sweet Pea The King.—A variety having reddish-coloured flowers shaded with orange. Shown by Messrs. DOBBIE & Co.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, de B. Crawshay, H. Little, W. Boxall, J. Forster Alcock, Stuart Low, F. Sander, R. G. Thwaites, F. J. Hanbury, A. A. McBean, W. Cobb, J. Charlesworth, A. Dye, W. H. White, H. A. Tracy, H. Ballantine, Gurney Wilson, R. Brooman-White, N. C. Cookson, and C. H. Curtis.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a select group, containing choice plants throughout. At the back of the group were some splendid varieties of Lælio-Cattleya Canhamiana. Amongst other plants of special note were a home-raised Cattleya Mossiæ Wageneri, with four pure white flowers; C. Mossiæ Mrs. A. Goodson, the beautiful flower being coloured rose-purple, and handsomely flaked with white; and C. Mendelii alba, a finely-shaped, white variety, with a slight pink tinge on the front of the lip. Other plants included Odontoglossums, Miltonias, Phalænopsis, and Ornithocephalus grandiflorus.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), was voted a Silver Flora Medal for a very interesting group of hybrid Odontoglossums, all raised at Rosefield The plants were magnificently grown and finely flowered. Among them were several good forms from the same batch which gave the handsome Odontoglossum "Queen Alexandra" Crawshayanum. The selection of about 30 plants contained the new hybrid between O. Hallio-crispum and O. triumphans, a pleasing yellow flower heavily blotched, and nearest in appearance to O. Leo (Hallii × triumphans), which was also shown One of the largest and best was O. Crawshaynum (Harryanum × Hallii), which had a very large labellum; O. Amneris, O. Urania, O. Nemesis, and O. Astarte were also well shown, together with a very deep blood-red variety of Renanthera Imschootiana

Messrs. STANLEY & Co., Southgate, secured a Silver Banksian Medal for an effective group of varieties of Cattleya Mossiæ, C. Mendelii, C. Warneri, and C. Adaudiæ Among the examples of C. Mossiæ were many white forms, including C. M. Heather Bell, pearly-white, with a lavender-blue tint on the lip; C. M. Blue Bell, white, with a pale-pink tinge on the front of the lip; C. M. Trodiæ, clear white, with chrome-yellow tint in the centre of the lip, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya Mendelii Majestica, a very large flower, white, with a slight lavender tint on the petals, the tube of the lip being pure white, the broad front rosy-mauve; and C. Mendelii Venus, a broad-petalled, clear-white flower, the central area of the lip being yellow, a few purple lines extending from the base to the front, which is rose-purple veined with white

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), showed Lælio-Cattleya Iris-alba, Little's variety, a large, light-rose coloured flower, with claret-purple front to the lip

G. HAMILTON SMITH, Esq., Killoran, Finchley (gr. Mr. Coningsby), sent Lælio Pacavia Mrs. G. Hamilton Smith, a showy, rosy-lilac flower, with claret veining on the lip.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed Odontoglossum crispum Mrs. Humphrey, a good white flower with clusters of light-brown spots on the inner parts of the segments

J. FORSTER ALCOCK, Esq., Exhims, Northchurch, showed a seedling Sobralia, with flowers of medium size tinged with claret colour.

H. J. ELWES, Esq., Colesborne, staged a small group of well-grown Thunias.

Monsieur MERTENS, Ghent, showed six hybrid Odontoglossums.

Lt.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed a very fine plant of Dendrobium Dalhou-nobile, with flowers as large as those of D. Dalhousianum, but produced along the pseudo-bulbs, and coloured as in D. nobile.

SIR TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed the singular pale-green Catasetum planiceps; Epidendrum aromaticum, and others which will be found under Awards.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum Princess of Wales, from Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. H. Ballantine). One of the largest and best of the typical forms of O. crispum yet shown. The large, broad-petalled flowers are white, the sepals slightly tinged with rose, the labellum having a brown blotch in front of the yellow crest.

AWARDS OF MERIT.

Odontioda Wickhamensis (O. crispum × Cochlioda sanguinea), from G. W. BIRD, Esq., Manor House, West Wickham (gr. Mr. Redden). An elegant little hybrid, with flowers comparable with O. heatonensis (O. cirrhosum × C. sanguinea), but with segments rather broader and less acute than in that species. The flowers are tinted with rose-pink, and spotted with reddish rose.

Epidendrum varicosum, from SIR TREVOR LAWRENCE, Bart., K.C.V.O. (gr. Mr. W. H. White). A pretty and fragrant Guatemalan species, with erect, branched spikes of flowers. Sepals and petals pale green; lip white, with some purple lines at the base.

Dendrobium Jodomianum, from Sir TREVOR LAWRENCE, Bart. A very rare and pretty species received by SIR TREVOR LAWRENCE from Coorg, in the Western Ghats, India, and shown by him on February 29, 1900, when a Botanical Certificate was given. The plant is nigro-hirsute, dwarf, compact, and bears a profusion of orange-coloured flowers.

BOTANICAL CERTIFICATES.

Bulbophyllum fusco-purpureum, from SIR TREVOR LAWRENCE, Bart. A remarkable species from the Nilgiri Hills The flowers are produced in a terminal raceme, each on a long pedicel, and about an inch in length; deep brownish-purple in colour, the labellum darker The long filaments at the tips of the petals form a curious feature

Eulophia nuda, from SIR TREVOR LAWRENCE, Bart. An Indian species with stout spikes of pale-green flowers with white labellums.

Phalænopsis Imdoni, from Messrs. CHARLESWORTH & Co. The foliage is similar to that of P. Schilleriana; the flowers resemble those of P. rosea, but they are larger and with a broader and differently-shaped lip. Flowers white, tinged with rose colour. The species is a native of the Philippine Isles

Bifrenaria tetragona, from Messrs. CHARLESWORTH & Co. Flowers closely arranged around the pseudo-bulbs, wax-like, greenish, with a fleshy labellum that is white on the outside and dark purple within.

Vanda pumila, from Messrs. MOORE, LTD., Rawdon, Leeds. An extremely rare species from the Sikkim Hills, where it was found at an altitude of about 2,000 feet. It is dwarf in habit, and in general appearance resembles V. alpina and V. cristata. The flowers are borne in pairs, cream-white, with purple lines on the upper side of the ridged labellum, which differs from V. cristata in not having the diverging horns at the apex

Fruit and Vegetable Committee.

Messrs. DOBBIE & Co., Mark's Tey, Essex, showed two dozen baskets of Potatos, grown in the open in Cornwall. They were planted on February 3, and were remarkably fine samples, reminding one of best exhibition tubers. Midlothian Early, Climax, Cardinal (red), Sharpe's Victor, Beauty of Hebron, Milecross Early, and Russett Queen are some of the finer varieties shown. Adjoining the Potatos were some Radishes, both turnip-rooted and conical. White Delicacy (conical) was one of the largest kinds, and next to it was Long Ou Rave Rose a Bout Lance, the roots being as large as small Carrots. The variety labelled D'Eté Jaune d'Or Ovale was tinged with a yellowish bronze shade. White Olive Shaped, Violet Olive White Tipped, Half Long Scarlet, Long Blanc de Mai, and Woods' Early Frame appeared to be the pick of the varieties. (Silver Knightian Medal.)

The NEW SOUTH WALES GOVERNMENT exhibited a number of Apples, Seedless Oranges, and Lemons. Amongst the Apples was the handsome Rome Beauty variety, also Monroe's Favourite and Granny Smith; the latter is a large yellow-skinned variety of excellent flavour. (Silver Knightian Medal.)

An exhibit of Grapes came from the gardens of H. J. KING, Esq., Eastwell Park, Kent (gr. J. G. Weston). The varieties were Black Hamburg, Gros Maroc, Foster's Seedling, and Muscat of Alexandria. The centre bunch of three of the variety Foster's Seedling, was a fine sample; the Black Hamburgs were good bunches, and the Muscat of Alexandria, although small in berry, were well finished. (Silver Knightian Medal.)

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, exhibited vegetables grown under the "French" system of forcing. There were large Lettuces of the Green Market variety, Oxheart Cabbages, Bellot and Nantes Market Carrots, and very large Cauliflowers of the Lamblin kind.

HORTICULTURAL SHOW AT THE FRANCO-BRITISH EXHIBITION.

JUNE 24, 25, and 26.—The first of the few flower shows arranged to take place at the Franco-British Exhibition at Shepherd's Bush was opened on Wednesday last. The display was made in the Palace of Music, and the arrangement was of the stolid English type, long formal tables ranging lengthwise down the centre and sides of the hall, on which were placed the exhibits.

The one really artistic feature was seen on the Orchestra, where, on either side, Messrs. H. B. MAY & SONS, and Messrs. HILL & SONS had grouped fine collections of Ferns. But the centre, which, in the midst of such a mass of green foliage, should have been a bold bank of colour, had a low bank of hardy flowers, and some pot fruit trees. Large as the hall is, the fine arcade running all round it outside, and having one side quite open, also contained long formal banks of hardy flowers, some plants, and a considerable representation of vegetables. The most effective groups, apart from the Ferns, were of Orchids. Facing these were, on the floor, groups of ornamental foliage plants and Caladiums. On the tables behind, and throughout, were Begonias, Gloxinias, Roses, Carnations, Sweet Peas, hardy flowers; all these in very great quantities, and doubtless affording visitors much to delight them. Special features were the fine lot of fruit trees in pots from Sawbridgeworth, Cannas from Swanley, Begonias from Feltham, Sweet Peas from Mark's Tey, and the splendid vegetables from Aldenham Gardens, Reading, Wordsley, and Castle Ashby.

The primary French exhibits included a medium collection of Orchids, one of Carnations, a very large one of cut Nymphæas, set up in vases, probably 100, but not a flower open, one of gathered Strawberries, some sixty varieties, the fruits much coated with sulphur, and one of vegetables, which could not be compared favourably with the Lord ALDENHAM's collection.

The issue of a schedule of competitive classes brought very little competition, the exhibition being provided generally by means of traders' exhibits.

The awards were made by a body of jurors of both nationalities.

GARDENERS' ROYAL BENEVOLENT.

JUNE 24.—The sixty-ninth anniversary festival dinner took place on the evening of the above date at the Hotel Metropole. The Rt. Hon. the Lord Aldenham presided, and there were about one hundred and ninety subscribers and friends present.

In proposing and responding to the various toasts, speeches were made by the Chairman, and by Messrs. Harry J. Veitch (treasurer and chairman of committee), George Paul, George Munro, Mons. Viger (president of the Société Nationale d'Horticulture de Française), the Rt. Hon. Col. Mark Lockwood, M.P., and Mr. G. J. Ingram.

The secretary (Mr. G. J. Ingram) announced that the subscriptions and donations, paid and promised, amounted to upwards of £2,000.

ROYAL BOTANIC.

JUNE 17.—The summer show of the above Society was held on Wednesday in one large marquee, and though the exhibits were not very numerous, they were of considerable interest, and provided a display of varied and brilliant colours.

Messrs. PAUL & SON, Cheshunt, contributed a choice group of Pæonies, mostly double varieties, but including some excellent single varieties as well, diversified in colour and form.

Many other hardy flowers were also shown in this collection, but those which commanded most attention were the Heucheras. The same firm had a superb group of Roses in pots, and stands of cut Rose blooms representing numerous favourite old and new varieties. (Gold Medal.)

Messrs. KELWAY & SON, of Langport, Somerset, contributed an extensive and beautiful collection of Pæonies, Delphiniums, Pyrethrums and Amaryllises, for which the Royal Botanic Society's Gold Medal was awarded. The Pyrethrums included a fine double white variety named Aphrodite, a rich cream double named Alfred, and a very distinct form with primrose centre and blush outer florets.

A Silver-Gilt Medal was adjudged to Messrs. JOHN PEED & SONS, West Norwood, for a varied and interesting group of hardy herbaceous flowers, comprising large numbers of handsome Pæonies, Pyrethrums, and Irises of the leading varieties Delphiniums, Spiræas, and Heucheras were also employed with good effect.

Messrs. BARR & SONS, King Street, Covent Garden, secured a premier award, the Society's large Gold Medal, for a magnificent collection of Pæonies, Ixias, Gladiolus and Irises, with Heucheras and Campanulas. Not only were the varieties well selected and distinct, but the general arangement was also tasteful and excellent.

A Silver-Gilt Medal was awarded to Messrs. PAUL & SON, Waltham Cross, for a choice group of Roses and six boxes of the brilliant crimson hybrid Briar Rose Refulgence, a most charming addition to its class.

Messrs. T. S. WARE, LTD., Feltham, secured a Gold Medal for an excellent exhibit of single and double tuberous Begonias in fine condition. With them as a background were vases of Pæonies and Delphiniums, flanked by stands of Carnations.

Mr. S. MORTIMER, Farnham, had a charming group of Carnations, including some of the best varieties in cultivation, such as Harry Fenn (dark maroon), and Lady Bountiful (white), Victory (scarlet), Fair Maid (pale pink), and Winsor, a beautiful blush shade or delicate pink. A Gold Medal was awarded.

AWARDS.

Tea Rose Hugo Roller (PAUL & SONS).—An extremely beautiful novelty, with creamy flowers heavily margined with deep crimson, the flowers of good size and substance. (First-Class Certificate.)

Hybrid Sweet Briar Refulgence (W. PAUL & SONS).—An extremely beautiful, semi-double, fragrant Rose, deep glossy crimson, with the yellow centre stamens making a fine contrast. (Award of Merit.)

Pæony Langport Belle (Messrs. KELWAY).—A handsome full pink and white flower, very soft and delicate in tint. (Award of Merit.)

Pæony Fair Maid (Messrs. KELWAY).—A large, single flower, with incurving petals, bright rose, shading to the margins, and showing the dense cluster of yellow stamens. (First-Class Certificate.)

MARKETS.

COVENT GARDEN, June 24.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—ED.]

Cut Flowers, &c.: Average Wholesale Prices.

	s. d.	s. d.
Calla æthiopica, p. dozen	2 6-	4 0
Carnations, per dozen blooms, best American various	2 0-	3 0
— second size	1 6	2 0
— smaller, per doz bunches	9 0-	12 0
— Malmaisons, p. doz. blooms	8 0	12 0
Cattleyas, per doz. blooms	8 0-	10 0
Cyclamen, per doz. bunches	6 0-	8 0
Cypripediums, per dozen blooms	2 0-	2 6
Eucharis grandiflora, per doz. blooms	4 0-	5 0
Gardenias, per doz. blooms	1 6-	3 0
Gladiolus Colvillevars., per doz. bunches	7 0-	10 0
Gypsophila per dz. bunches	3 0-	5 0
Iris (Spanish), per dozen bunches	3 0-	6 0
Ixias		4 0
Lilium auratum	2 0-	3 0
— candidum	2 0-	3 6
— longiflorum	2 6-	4 0
— lancifolium, rubrum and album	2 0-	2 6
Lily of the Valley, p. dz. bunches	6 0-	9 0
— extra quality	12 0	15 0
Marguerites, white, p. dz. bunches	3 0-	4 0
— yellow, per dz. bunches	2 0-	3 0
Mignonette, per dozen bunches	3 0-	6 0
Myosotis, per doz. bunches	2 0-	3 0
Odontoglossum crispum, per dozen blooms	2 0-	2 6
Paonies, per dozen bunches	1 6-	3 0
Pelargoniums, show, per doz. bunches	5 0-	6 0
— Zonal, double scarlet	4 0-	6 0
Pyrethrums, dozen bunches	2 0-	4 0
Roses, 12 blooms, Niphetos	1 0-	2 6
— Bridesmaid	2 0-	5 0
— C. Testout	2 0	4 0
— General Jacqueminot	1 6	2 6
— Kaiserin A. Victoria	2 0-	4 0
— C. Mermet	3 0-	4 0
— Liberty	2 6-	4 0
— Mme Chatenay	3 0	6 0
— Mrs. J. Laing	2 0-	4 0
Statice, per dozen bunches	5 0-	6 0
Spiræa, per dozen bunches	5 0-	8 0
Stocks, double white, per doz. bunches	3 0-	4 0
Sweet Peas, per dozen bunches	2 0-	4 0
Tuberoses, per dz. blooms	0 4-	0 6
— on stems, per bunch	1 0-	2 0
Violets, per dozen bunches	2 0-	3 0
— special quality	3 0-	4 0
— Parmas, p. bch.	1 6-	2 6
Wallflowers, per dozen bunches	1 6-	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d.	s. d.
Adiantum cuneatum, dz. bchs.	6 0-	9 0
Asparagus plumosus, long trails, per doz.	8 0-	12 0
— — medium, bunch	1 0-	2 0
— Sprengeri	0 9-	1 6
Berberis, per doz. bunches	2 6-	3 0
Croton leaves, per bunch	1 0-	1 3
Cycas leaves, each	1 6-	2 0
Daffodil leaves, per doz. bunches	2 0-	3 0
Fern, English, per dozen bunches	2 0-	3 0
— French, per dz. bunches	1 0-	3 0
Galax leaves, per doz. bunches	2 0-	2 6
Grasses, per dozen bunches	1 0-	2 6
Hardy foliage (various), per dozen bunches	2 0-	6 0
Ivy-leaves, bronze	2 0-	2 6
— long trails per bundle	0 9-	1 6
— short green, per dz. bunches	1 6-	2 6
Moss, per gross	4 0-	5 0
Myrtle, per dozen bunches, (English) small-leaved	4 0-	6 0
— French	1 0-	1 6
Smilax, p. dz. trails	3 0	5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s. d.	s. d.
Ampelopsis Veitchii, per dozen	6 0-	8 0
Aralia Sieboldii, p. dozen	4 0-	6 0
— larger	9 0-	12 0
— Moseri	6 0-	12 0
Araucaria excelsa, per dozen	12 0-	30 0
Aspidistras, p. dz., green	15 0-	24 0
— variegated	30 0-	42 0
Asparagus, p. doz., plumosus nanus	9 0-	12 0
— Sprengeri	6 0-	9 0
— tenuissimus	9 0-	12 0
Azalea indica	24 0-	36 0
Boronia elatior, per dozen	15 0	24 0
— heterophylla, p. dozen	18 0-	24 0
Calceolarias, herbaceous, p. dz.	5 0-	9 0
— yellow, per dz.	6 0-	8 0
Callas, per dozen	8 0-	10 0
Cinerarias, per dz.	4 0-	6 0
Clematis, per doz.	8 0-	9 0
Cocos Weddelliana, per dozen	18 0-	30 0
Crassulas, per doz.	8 0-	12 0
Crotons, per dozen	18 0-	30 0
Cyclamen, per doz.	6 0-	10 0
Cyperus alternifolius, dozen	4 0-	5 0
— laxus, per doz.	4 0-	5 0
Dracænas, per doz.	9 0-	24 0
Erica, per dozen	9 0-	15 0
— candidissima	15 0-	18 0
— Cavendishii	18 0-	24 0
— persoluta alba	24 0-	30 0
Euonymus, per dz.	4 0-	9 0
Ferns, in thumbs, per 100	8 0-	12 0
— in small and large 60's	12 0-	20 0
— in 48's, per dz.	4 0-	10 0
— in 32's, per dz.	10 0-	18 0
Ficus elastica, dz.	8 0-	10 0
— repens, per dz.	6 0-	8 0
Fuchsias, per doz.	6 0-	9 0
Hardy flower roots, per dozen	0 9-	2 0
Heliotropiums, p. dozen	4 0-	6 0
Hydrangeas, per dozen	10 0-	18 0
— paniculata, per dozen	18 0-	36 0
Kentia Belmoreana, per dozen	18 0-	30 0
— Fosteriana, dz.	18 0-	30 0
Latania borbonica, per dozen	12 0-	18 0
Lilium longiflorum, per dz.	18 0-	24 0
— lancifolium, per dozen	18 0-	24 0
Lily of the Valley, per dozen	18 0-	30 0
Lobelia, per dozen	4 0-	6 0
Marguerites, white, per dozen	4 0-	8 0
Mignonette, per doz.	5 0-	8 0
Pelargoniums, per doz., Zonal	5 0-	8 0
— show varieties	6 0-	9 0
— Ivy-leaved	6 0-	8 0
— Oak-leaved	3 0-	5 0
Petunias, per doz., (double)	6 0-	8 0
Rhodanthe, per dozen	4 0-	6 0
Roses, Ramblers, each	5 0	30 0
— Hybrid perpetuals, per doz.	9 0-	18 0
Saxifraga pyramidalis, per doz.	15 0-	18 0
Selaginella, p. doz.	4 0-	6 0
Spiræa japonica, p. dozen	5 0-	9 0
Verbena, Miss Willmott, per dozen	4 0-	6 0

Fruit: Average Wholesale Prices.

	s. d.	s. d.
Apples (Tasmanian), per box:		
— Cox's Orange Pippin	13 0-	17 0
— Alexander	5 6-	6 0
— Wellington	6 6-	7 0
— Scarlet Nonpareil	8 0	10 0
— Australian, per case:		
— Esopus	6 6-	7 6
— New York Pippin	7 0-	9 0
— Cox's Orange Pippin	12 0-	14 0
— Wellington	8 0-	8 6
— Allriston	6 0-	6 6
— Adams Pearmain	7 0-	8 0
— French Crab	6 0-	8 0
— Sturmer Pippin	6 0-	8 0
— Nova Scotian, per barrel:		
— Fallawater	17 0	19 0
Apricots (French), per box	1 0-	1 3
Avacado Pears, dz.	6 0-	12 0
Bananas, bunch:		
— No. 2 Canary	6 0	—
— No. 1 ,,	7 6-	8 0
— Extra ,,	8 0-	9 0
— Giants ,,	10 0-	12 0
— (Claret)	7 0-	7 6
— Jamaica	5 0-	5 6
Loose, per dz.	0 9-	1 3
Cherries (English), ½ sieve	7 0-	8 0
— ¼ sieve	3 6-	4 0
— (French), ½ sieve	3 6-	7 0
— (French), p. box	0 9-	2 6
— squares	4 6	—
Cranberries, case	8 9-	9 0
Currants (French), black, ½ sieve	6 6-	7 6
— red, Hale	4 0-	4 6
Dates (Tunis), doz. boxes	4 0-	4 3
Figs (English)	2 0-	6 0
Figs (Guernsey), per dozen	2 0-	8 0
Grape Fruit, case	6 0-	8 0
Grapes (English, new) per lb.	1 0-	2 6
— Muscats (English, new), p. lb.	1 0-	3 0
Gooseberries (English), ½ sieve	2 6	3 0
Lemons:		
— Messina, case	6 0-	12 0
— Naples	8 6-	17 0
Lychees, per box	1 0-	1 5
Mangos (Jamaica), per dozen	4 0-	8 0
Melons (English)	1 0-	2 0
— (Guernsey)	1 0	2 0
— Rock	5 0-	5 6
Nuts, Almonds, per bag	45 0	—
— Brazils, new, per cwt.	50 0	57 0
— Barcelona, per bag	30 0-	32 0
— Cocoanuts 100	11 0	14 0
Nectarines, select'd	10 0-	15 0
— best	6 0-	8 0
— seconds	3 0	
Oranges (Valencia), per case	9 6-	16 0
— Denia, p. case	14 0-	25 0
— Californian Navel, p. case	14 0-	16 0
Peaches (English), p. dz., selected	10 0-	15 0
— best quality	6 0-	8 0
— second quality	2 0-	3 0
Pears (Australian), per box	3 6-	5 0
Pineapples, each	2 0-	6 0
Plums (French), per box	1 0-	1 2
Strawberries (English), per lb.	0 6-	1 0
— (French), per basket	1 3-	2 0
— Southamptons, per basket	1 3-	2 6
— Kent Pecks	3 0-	4 0

Vegetables: Average Wholesale Prices.

	s. d.	s. d.
Artichokes (French), per dozen	1 6-	1 9
Asparagus, per bundle:		
— Montauban	1 4-	1 5
— Toulouse	0 10-	1 0
— English	1 0-	1 6
— Giant	2 0-	3 0
Beans, Broad (French), p. pad	3 0-	3 6
— Guernsey, p. lb.	0 6-	0 8
— English	0 7-	0 8
Beetroot, per bushel	1 3-	1 6
Cabbages, per tally	3 0-	4 6
— Greens, p. bag	1 0-	1 6
Cauliflowers, p. dz.	1 0	2 0
— per tally	4 0-	8 0
Celery, per roll	0 8-	1 0
Celeriac (French), per dozen	2 0	—
Chicory, per lb.	0 3-	0 5
Chow Chow (Brassica oleracea), p. dozen	3 0	—
Cucumbers, per dz.	1 6-	2 6
— per flat	4 6	6 6
Endive, per dozen	1 6	—
Horseradish, foreign, per doz. bundles	9 0-	12 0
Leeks, 12 bundles	1 0-	1 6
Lettuce (French), per dozen	0 8-	1 0
— (French), Cos, per dozen	1 6-	2 0
Marrow (English)	2 0-	5 0
Mint, per dozen bunches	1 0-	2 0
Mushrooms, per lb.	0 10-	1 0
— broilers	0 6-	0 8
— buttons, per lb.	0 10-	1 0
Mustard and Cress, per dozen pun.	1 3	—
Onions (Egyptian), per bag	6 6-	7 0
— pickling, per bushel	1 6-	2 6
— Spring, dz. bun.	1 6-	2 0
Parsley, 12 bunches	1 6-	2 0
Peas (Guernsey), per lb.	0 6-	0 8
— French pad	4 0-	4 6
Potatos (Guernsey), per lb.	0 2-	0 2½
— (Jersey), barrels, cwt.	18 0	—
— Teneriffe, cwt.	11 0-	13 0
Radishes (Guernsey), dozen	0 6-	0 8
— round, p. doz.	0 4-	0 6
Rhubarb	1 6-	2 0
Salsafy, per dozen bundles	3 6	—
Tomatos (English), per lb.	0 5½-	0 6½
— second quality	0 4-	0 5
— seconds, per lb.	0 2	—
Turnips (French), per bunch	0 5-	0 6
Watercress, p. doz.	0 4-	0 6

REMARKS.—English Cherries are now in the market; the fruits are of good quality but small. Southampton Strawberries have been a glut all the week up till to-day (Wednesday); consignments this morning were not large enough to meet the demands. English Peaches and Nectarines are a good trade, but supplies of best fruits are short. Trade both in the Vegetable and the Fruit departments is good. *E.H.R., Covent Garden, Wednesday, June 24, 1908.*

Potatos.

	s. d.	s. d.
	per cwt.	
New Potatos—		
Jersey Flukes	6 0-	6 6
St. Malo Giants	5 6-	6 0
Cherbourgs (cases)	4 6-	5 0
Do. (barrels)	5 0-	5 6
Kent Snowdrops (per bushel)	5 0-	6 0
	s.	s.
	per ton	
Lincolns—		
Up-to-Date	80-	90
Maincrops	80-	90
Royal Kidney	60-	65
— (Blackland)	45-	50
Lincolns	s. per ton	s.
Evergood	60-	65
— (Blackland)	45-	50
Dunbars—		
Up-to-Date (red soil)	110	115
Maincrop (red soil)	115	120
Scotch—		
Up-to Date (grey soil)	80-	90
Maincrop (grey soil)	80-	90

REMARKS.—The demand for Jersey, St. Malo and Cherbourg Potatos continues fair; there are a few good samples from Kent, and these are selling slowly at the above prices. Lincoln and Blackland Potatos promise well and will probably be ready for digging in about a fortnight. *E. J. Newborn, June 24, 1908.*

COVENT GARDEN FLOWER MARKET.

POT PLANTS.

Ordinary flowering plants are plentiful, including good yellow Marguerites, but they do not sell so readily since the yellow summer flowering Chrysanthemums have been so extensively grown. The market nurserymen have an improved strain of this Chrysanthemum in plants of dwarfer and better habit generally. There are also improved varities of the ordinary white Marguerites. Fuchsias are plentiful, but during the whole season I have been unable to note any new or improved varieties. Verbenas have not sold well this season, except in the case of those required for special orders; they are plentiful in pink, white, purple and scarlet colours. Pelargoniums are good: Ivy-leaved varieties are not selling well, Zonals are offered at low prices, and the show or decorative varieties are not much in demand. The hybrid Crassulas are good, but the old *C. coccinea* seems to be the one most appreciated.

Mignonette is good from some growers, but from others it has rather a starved appearance. Great care needs to be exercised in purchasing flowering plants at this season as many are far advanced.

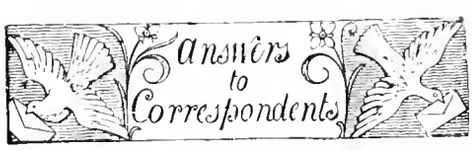
In bedding plants there are still some good samples, but the majority are either drawn or starved and stunted.

CUT FLOWERS.

Supplies of most things are abundant, but any special subject required needs to be ordered beforehand. Hardy flowers are the chief feature. The herbaceous Pæonies are of the very best varieties, but to obtain the names from the salesmen is an impossibility. It is the same with Pyrethrums. I learned from one special grower of new plants that a market grower bought the whole stock of one of the best varieties. The Cornflower (Centaurea cyanus) is seen in three distinct colours: white, pink, and a beautiful shade of blue. Iceland Poppies are also seen in improved varieties. Campanula isophylla alba is well grown, but it will not sell readily while Lilums are so plentiful. The best Lilium longiflorums have been down to the lowest price I have ever known. Lily of the Valley has been cheaper, yet in one trade paper the prices for this flower are quoted above the average. It is very difficult to furnish a correct price list. In the first place quality varies greatly, and some growers who send second quality produce to be sold on commission are under the impression that what they are sending is equal to the very best. All growers should visit the market. I have again had my attention called to the bad bunching and bad packing of some samples, and not only is this the case with Sweet Peas, but also with Roses, which are sometimes quite spoiled in transit. *A. H., Covent Garden, Wednesday, June 24, 1908.*

Obituary.

WILLIAM NEILD.—We regret to record the death of this gentleman, at the age of 57 years, on June 15. Deceased was connected with the Holmes Chapel Agricultural and Horticultural College, Cheshire. His remains were interred at St. Wilfrid's, Northenden, on the 17th inst.



ADDRESSES: *Bees, Limited.* These things are very annoying, but if owners choose to sell letters to such advertisers as those to which you refer, there can certainly be no illegality in the transaction.

APPLE SHOOTS: *G. W. S.* The fungus causing brown rot has attacked the branches. Clear away all diseased shoots and spray the bushes next spring with the Bordeaux mixture at half strength soon after the leaf-buds have expanded.

BEGONIA: *G. A. B.* There is no fungus disease present. The injury is in some way connected with culture, and strongly suggests too much moisture in the air and lack of ventilation.

BIRCH TREES: *D. B., Dumpies.* Probably there is some disease which is accountable for the failure. We think the best thing to be done will be to have the trees examined by an expert on the spot.

BOOKS: *D. J. B.* We do not know of a work dealing with fuhsia from the horticultural point of view you require.

BOUGAINVILLEA: *L. H. and Young Gardener.* This plant is most decorative when grown up a pillar in the conservatory or in a somewhat lofty greenhouse, so that the flowering sprays may depend from the roof and be seen from below, as they are more effective in this manner. They may also be trained up the rafters of any glasshouse provided with means of heating. Old plants should be cut back somewhat severely each winter, and in spring the growths should be thinned out so that each will have plenty of space and light to develop strongly. The plant may be propagated by cuttings taken from short young growths in spring, but care should be taken to detach them with a "heel," or it will be difficult to induce them to make roots.

BURMESE DENDROBIUMS: *McG., Putney.* We know of no book which deals exclusvely with Burmese Dendrobiums. Probably the most complete enumeration will be found in *The Orchids of Burma*, by B. Grant. The work is not illustrated, but good descriptions of the species, including those of the Andaman Isles, are given. The Dendrobiums, however, only form part of the work which enumerates also most of the Burmese Orchids.

CATERPILLARS ON APPLE TREES: *L. Fosbrooke.* The caterpillars are apparently those of the Winter Moth (Cheimatobia brumata). The larvæ of this species vary very much in colour, and the account you give of the habits of those you sent quite agree with those of the Winter Moth. The eggs are laid in the early winter. Grease-banding the stems to prevent the wingless females from ascending the trees is the best preventive. Spraying with arsenate of lead wash, or Paris green is very useful as soon as the fruit has set, or even now, as it poisons the leaves on which the caterpillars feed.

CORRECTION. In the note on Wynyard Park Gardens, p. 403, the number of bedding plants used there annually was, by a printer's error, made to read 7,000. The correct number is 75,000.

DIPTEROUS LARVA IN SEAKALE: *A. O. W.* Evidently a muscid of some kind, and apparently related to the genus Anthomyia. If we succeed in rearing the imago we will endeavour to identify it and communicate in a later issue. What was the extent of the injury?

FIGS: *C. B.* The spots are due to a fungus. Sponge the leaves at intervals of four days with a rose-coloured solution of Condy's fluid. Remove all diseased leaves and burn them.

INSECTS *F. R., Welbeck.* The small black chrysalis is that of a species of Tortrix; the "looper" caterpillars are possibly those of the "Mottled Umber" moth (Hybernia defoliaria), but as you have not supplied them with food they had shrivelled up so much as to render determination of the species well nigh impossible. The spider had disappeared. In future, pack your consignments of insects more carefully and place a little of the host plant with them.

NAMES OF FLOWERS, FRUITS AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. *Correspondents not answered in one issue are requested to be so good as to consult the following numbers.*

PLANTS: *L. G. M., Wilts.* 1, Neillia opulifolia lutea; 2, Pyrus Aucuparia; 3, Populus alba; 4, Laburnum alpinum; 5, Diervilla hybrida var. "Abel Carrière"; 6, Spiræa discolor; 7, Philadelphus grandiflorus; 8, Philadelphus coronarius; 9, Spiræa filipendula = *H. G. Luckhurst.* 1, Pseudotsuga Douglasii; 2, Abies Nordmanniana; 3, A. magnifica; 4, Thuya plicata; 5, Sequoia gigantea; 6, Cedrus atlantica glauca. *Caesar.* 1, Crataegus orientalis; 2, Spiræa prunifolia flore pleno.—*R. M. L.* Cytisus Scoparius sulphureus "Moonlight Broom." A well-known garden plant but rarely found growing wild. *H. W.* 1, Allium Moly; 2, Hemerocallis flava; 3, Olearia stellulata; 4, Clerodendron fœtidum; 5, Phlomis fruticosa; 6, Nepeta Mussini.—*J. H.* 1, Habenaria bifolia var. chlorantha; 2, Thalictrum aquilegifolium; 3, Campanula Portenschlagiana.—*Miss L. E.* 1, Rubus ulmifolius var. foliis variegatus; 2, Iris pallida var.; 3, Geranium Endressii.—*R. T.* 1, Miltonia Clowesii; 2, Oncidium crispum; 3, Odontoglossum Lindleyanum; 4, Brassia verrucosa; 5, Cœlia Baueriana.—*Hulfield.* Burlingtonia (Rodriguezia) fragrans.—*H. W.* Crinum Moorei, quite hardy if planted deeply, under a wall, in a sheltered situation.—*Rochuck.* Probably Dendrobium moschatum, but the flower is decayed and labellum wanting. It may be Dendrobium Dalhousieanum.—*A. K.* Buddleia globosa.—*J. H. B.*—Brassia verrucosa, a rather small form of it.—*F. H.* 1, Pteris longifolia; 2, Pteris tremula; 3, Polypodium aureum.—*Cymru.* 1, Dactylis glomerata variegata; 2, next week; 3, Eriophorum angustifolium (Cotton Grass); 4, Dictamnus Fraxinella.

ODONTOGLOSSUM CRISPUM: *J. W.* There is no fungus disease present. The leaves appear to be killed by some deleterious substance, probably the smoke complained of.

ONIONS: *F. E. A.* The Onions are attacked by eelworms—Heterodera devastatrix. The land will be infected, and should be treated with gas-lime or sulphate of potash before fresh crops are planted.

PEACH: *J. N. L. Q.* The injury cannot be attributed to insect or fungus, but is due to imperfect fertilisation, or some deficiency in nutriment.—*H. H.* The leaves are badly affected with fungus disease, and many of the shoots are quite dead. As you are situated in such a favourable locality for the cultivation of this and other choice fruits, and seeing also that the trees are trained to a wall facing to the south, we think that there must be something wrong with the constitution of the borders. The trees are so unsatisfactory that the best plan would be to clear them out, and after making suitable borders, start with a fresh stock.—*Royal George.* The stones have not formed perfectly. We should be inclined to water the border with lime water, and in the winter season it will be well to fork in a little lime into the surface soil.

PEAR LEAVES: *Islander.* The little cigar-shaped objects on the Pear leaves are the larval cases of two species of small moths belonging to the Coleophora. The young larvæ usually mine the leaves at first, and when partly developed protect their bodies with portions of the leaves of the food plant in which they pass the rest of their lives. Spray with Paris green (poison) at the rate of 2 ozs. to a gallon of water. Two applications may be necessary. Your record is of much interest, as these insects rarely attack fruit trees.

ROSE: *S. J. R.* The disease is black spot, caused by a fungus named Actinonema rosæ. Spray the plants at intervals of four days with a solution of liver of sulphur—one ounce in three gallons of water. Pick off and burn any badly diseased leaves.

ROSE BUSHES: *H. N. L.* The mixture has evidently scorched the foliage. The proportions used were correct, but probably the lime was more or less air slacked, for when this is the case it always produces scorch.

SOUVENIR DE LA MALMAISON CARNATION: *G. W. I.* The injury is caused by the punctures of aphides. Fumigate the house with tobacco or the XL-All vaporising compound.

SULPHATE OF POTASSIUM: *A. H.* The term used in a contemporary was doubtless intended for sulphate of potassium, a manurial element. The other substance is an insecticide.

WISTARIA: *Col. H. C.* All you can do with the Wistaria is to thin out the growths each season and expose them to all the sunlight possible. This plant flowers much more freely when it has attained to some considerable age, and it may be that your specimen will eventually flower satisfactorily. The piece you have enclosed is quite dead, but this may be from some local cause, and there is nothing in the specimen itself to lead us to suppose that the plant is affected with disease.

COMMUNICATIONS RECEIVED.—G. M. & Co., Cheddar—F. J. S. (thanks for contribution to R. G. O. F. Box)—E. T. P.—An Old Subscriber—W. Lowe—C. P. & Co., Ltd.—W. H. Y.—C. D. McKay—W. Botting H.—E. W. & Sons—Sander & Sons—H. E. G.—Sir A. B. H.—Miss S. M. W.—J. C. T.—F. H. J.—F. J.—J. S.—E. M. M.—A. W.—S. R. R.—G. W.—R. P. B.—P. A.—F. M.