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STRAWBERRY CULTURE FOR MARKET.

THE business of Strawberry-growing in this country has reached such dimensions of recent years that it may now be considered an important rural industry. Looking at the official returns of the Strawberry crop for the first time, it seems well-nigh incredible that such enormous quantities of fruit can be consumed by the British public, for, compared with most other European peoples, we are not considered a nation of fruit-eaters. But the progress of the Strawberry as a market commodity affords a striking illustration of the doctrine that supply creates demand; for there can be no doubt that, in the case of so seductive an article of diet as the Strawberry, when displayed to good advantage in the fruiterer's window, the public yields willingly enough to the temptation to buy it. Extensive production has also reduced the price of Strawberries to a figure that places the fruit practically within the reach of every household, and "God's best berry" can no longer be regarded as an expensive luxury.

Even the forced Strawberry is a comparatively cheap extravagance in these days, and it is to be feared that the British grower suffers a good deal in the matter of price from the importations that reach this country every spring from across the Channel. It is a natural sentiment to hold that those who want their Strawberries out of season—that is to say, at any time before the early days of June—ought to pay for them, but Strawberries must be cheap when sixpenny fruit-salads containing three or four Strawberries may be bought before the middle of May. Even in April, this year, Strawberries—

doubtless from abroad—were being hawked in the streets, and shortly afterwards the very finest fruit could be purchased retail in the shops at anything from 2s. 6d. to 4s. per lb. Time was, and not so very long ago either, when the grower of Strawberries under glass expected a piece of gold for every pound of fruit produced in April, and thought himself badly treated if he could not clear the last of his crop, which came in just before the outdoor berries, at 3s. to 4s. per pound wholesale.

Whether the foreigner finds it a very paying business at present prices to send forced Strawberries to England is open to doubt. For the last two years, at any rate, there has been a reduction in the quantity shipped. Most of the foreign fruit comes from the Brest district, and the boats that bring it to Plymouth are chartered by the growers themselves, who reconp themselves as far as possible by also carrying cargo of a general nature. In 1906 the Great Western Railway Co. handled 1,416 tons of foreign Strawberries, brought by French steamers to Plymouth, but in the following year the total had fallen to 1,125 tons, while last season it was still further reduced to about 1,000 tons.

The first of the British outdoor Strawberries come from the West of England, a fairly steady production of between 400 and 500 tons per annum being maintained. This, at least, is the quantity handled each season by the G.W.R., which has supplied these figures to the writer for some years past. Last year this company conveyed 2,520 tons of Strawberries in all, including the 1,000 tons from the Continent and the early consignments mentioned above from the West. These latter come chiefly from the Saltash and Tavistock districts.

Hampshire, however, produces the bulk of the market consignments, and usually manages to despatch the first of its outdoor crop a few days before the Kentish berries are ready. In the Southampton district, where the fruit is mainly produced, the crop was not so good last year as in 1907, which, in spite of a generally cold and backward season, supplied a record in the matter of Strawberries. In that year no fewer than 4,705 tons of fruit were carried by the London and South-Western Railway Co., which has practically a monopoly of this traffic in the district mentioned. The amount of labour involved in dealing with such a quantity may be imagined when it is stated that over two million baskets were needed to hold the crop. Previous to the 1907 season the record year was 1904, when the Hampshire crop amounted to 4,250 tons.

From the foregoing figures it may readily be judged that occupation is afforded each year for a very large number of workers in the Strawberry fields. It is estimated that in the Southampton district there are over 150 growers. Labour is required in the Strawberry fields during a great part of the year, what with planting, hoeing, cleaning and trimming, manuring and littering the plants, but the busiest periods are in June and July, when hundreds of men, women, and children are employed in picking, packing, and despatching the fruit for a period of a month to six weeks according to the length of the season. Two years ago, when there was such a prodigious crop, the season lasted for nearly

seven weeks, owing to the fact that cool and showery weather, broken only by intermittent periods of sunshine, kept the crop from maturing quickly, and enabled the berries to swell to their largest size before they began to ripen. In that year many of the pickers must have made quite a considerable sum of money, for a good worker can earn from 6s. to 12s. a day, while even higher sums than this have been made by industrious and adept gatherers working together. Children are employed largely in the business, and many of them can earn as much as 2s. 6d. to 3s. 6d. each by a hard day's work. The price paid by the growers is about 1½d. a gallon basket of between 5 lbs. and 6 lbs., and so long as the fruit fetches 1s. a gallon (wholesale) picking for dessert continues. When the price falls below that figure the fruit is picked into larger receptacles for jam, and big and small berries are put in together.

The British Strawberry grower still has a good deal to learn in the matter of grading and marketing his fruit in an attractive way. The Southampton grower always uses the handle basket, which is a great improvement upon the peck measure still so popular in Kent and elsewhere. The latter is much too large for so soft and perishable a fruit as the Strawberry, since the peck holds nearly a dozen pounds, while the handle basket contains no more than half the quantity. Perhaps the larger package is still used by some because the railway companies carry such baskets at a lower rate, since the "pecks" can be packed flat one on top of the other, while the "handle gallons" must be stood on shelves in single layers, or suspended. By an ingenious method of movable shelves, fitted one above the other in special fruit vans and sometimes even in old passenger carriages, the South-Western Railway Co. has devised a most satisfactory method of dealing with the handle basket. Naturally this description of package involves more labour and expense to the Company, for, while it occupies practically the same amount of room as a peck basket, it only weighs half as much. This means, of course, that each ton of fruit in handle baskets requires as much handling as two tons packed in "pecks."

Among the Hampshire growers the light "chip" basket has come very much into favour in recent years. Being cheaper than the old wicker pattern, it can be "non-returnable," which is an advantage that anyone who has grown produce for market will readily appreciate. The getting back of "empties" from market is one of the greatest troubles that the grower has to put up with, and it usually pays him much better to pack his fruit in a cheap, non-returnable basket than in one that he cannot afford to lose. Wickerwork Strawberry baskets are made at Winchester Prison and also abroad, whilst those of the chip pattern come chiefly from Glasgow.

As for this year's Strawberry crop, it seems likely that when the returns are made up at the end of the season the figures will be scarcely smaller than a year ago. May frosts did more damage than usual, and the plants suffered badly from want of moisture during the time that the earlier fruit was forming. Subsequent rains, however, have made amends, and, owing to the later blossoms having set well, this has compensated for the loss of the early bloom by frost. E. S.

NEW OR NOTEWORTHY PLANTS.

PÆONIA VEITCHII, n. sp.

THIS new species of *Pæonia* is a welcome addition to gardens. It is a native of the uplands around Tatién-lu, a district in the far west of China, close to the Tibetan frontier, and is frequently found by the margins of thickets at an elevation of from 8,000 to 11,000 feet. It was introduced by Messrs. James Veitch & Sons through their collector, Mr. Wilson. The plant is so charming and so unlike every other kind, that I think it worthy of bearing the name I have ventured to give it. It does not, of course, compare with the old garden doubles or even with the great singles, but it has attractive features found in no other *Pæony*. *P. Veitchii* has been referred to *P. anomala*, one of the sections

shows equally marked differences. In its habit of producing from one to four flowers to a stem, it is distinct from all other species except *P. albiflora* and *P. Emodi*, neither of which it resembles. The flowers of the genus *Pæonia* are almost always solitary, and I know of one further exception only, that of a specimen, perhaps abnormal, of either *P. peregrina* or an ally, which I saw in the Herbarium of the Jardin des Plantes, Paris, some years ago. I have not referred to flower characters because in *Pæonia* they are not strong; other characters are stronger, and in this genus there is evidence, I believe, that evolution may affect other organs of a plant and leave the flowers unmodified. Quite distinct species of *Pæonia* may have flowers that are difficult to distinguish in technical terms, and, moreover, the same species may show remarkable variation in a flower character. Two or three species, for instance, may have

give a formal and detailed description. A few words, however, are necessary with reference to the garden value of the plant. It is free-flowering, of very neat and graceful habit, and forms a dense mass of conspicuously light-green, many-pointed foliage. It might, I think, be useful in hybridising for the purpose of reducing the stiffness of the big *Pæonies*. Last year an assistant made a few crosses, but nothing happened, yet still I think crosses may be possible. The flowers are very bright in colour, and unless required for a very large arrangement, there is no species so suitable for cutting from. They last well in water. *P. Veitchii* is quite easy to grow in an ordinary border. All *Pæonies* like rich soil, and they must be well established before they do their best. I have found that they like a little shade, and even planted among the roots of trees they do well. *P. Irwin Lynch*, *Botanic Garden, Cambridge*.



FIG. 1.—PÆONIA VEITCHII, LYNCH N.SP.: COLOUR OF FLOWERS, PURPLISH-CRIMSON.

in which the leaves are narrowly divided or pinnatisect, but if compared with that of either of the allied kinds, it is found to differ remarkably in bearing several flowers to a stem, in having a light green, brightly-glistening leaf surface both above and below, very distinct elevations of the leaf between the veins, and a different proportion between certain parts of the plant. While the stem of *P. anomala*—to take this species for comparison—may be 2 feet high and bear 9 or 10 leaves, with the lowest petiole only one-eighth as long as the stem, *P. Veitchii*, with a stem 2 feet high, has only six or seven leaves, and the petiole of the lowest leaf is one-third or one-fourth, or at least one-sixth as long as the stem that bears it. Again, with regard to the leaf, while *P. anomala* may have 22 distinct leaf segments, each $\frac{1}{2}$ inch across, *P. Veitchii* has 15 segments only, and they are $\frac{1}{2}$ inch across. Comparison with every other species of the genus

either glabrous or hairy carpels—usually in other plants a difference of some moment—and yet they may not vary in any other particular. *P. Veitchii*, however, is quite distinct in the flower, though there are few strong characters for description. In bud, and even when open, the flower, having a slender stalk, is often nodding, and may expand to be quite flat. The flowers are $3\frac{3}{4}$ inches in diameter and of a slight, yet distinct, purplish-crimson. The accompanying illustration from a photograph taken by my son shows several of the features I have pointed out; it should be explained that the lower leaf belongs to the tall stem and the two lower flowers are on separate stalks, and are put in to show the fully-open and partly-open flower. In the above account I have referred, I think, to all the chief features of contrast with other *Pæonies* of the subgenus *Pæon*, which includes all the herbaceous kinds, and it is, therefore, perhaps unnecessary to

THE ROCK GARDEN.

SAXIFRAGA AIZOON ROSEA.

THIS daintily-coloured variety was warmly welcomed by lovers of choice Alpine plants, for up to the time of its appearance all the *Saxifragas* of the aizoon section produced whitish flowers. But pretty and dainty as it is, there is plenty of room for improvement, especially in the direction of colour, whilst there is also need for greater floriferousness in the plant. It bears very few blossoms on each flower-stalk, the stem being bare of flowers for some inches. This sparse-flowering character is masked when the plants are grouped and in a clump its full beauty and worth are best realised. The plant grows freely, and it is not a difficult matter to raise a stock of it. Those who delight in raising seedlings of these plants will probably produce plants of greater merit than that under notice, and, if so, it will be welcomed by all interested in hardy plants. *S. a. balcana*, with copiously-spotted flowers, is also a good plant, and, like *S. aizoon rosea*, almost as much at home in the border as in the rock-garden.

THE ROSARY.

CULTURAL NOTES FOR JULY.

ALL classes of Roses have made excellent growth during the past few weeks, and there is every promise of a good season. The rains have cleansed the shoots of aphid and other insect pests, and the plants have developed fine, strong shoots. Standard Briars are now in a suitable condition for budding. Remove all but three or four of the strongest shoots if this has not already been done. The best buds for the purpose are those at the base of the shoot, but in the case of rare varieties it is sometimes desirable to use almost all the buds on the scion. In this case extra care must be taken with the work. When budding standard Briars, insert the bud in the axil of the shoot as near to the main stem as is possible, for this will enable the plant to form a compact head the following season. Any suckers arising from the roots or from the stems should be removed as soon as the budding is completed. The next to be operated upon are the seedling dwarf Briars. Take away a few inches of the soil around the base of the stem, so that the buds can be inserted just above the roots. This has the advantage of preventing the formation of suckers, whilst the plant in due time will be practically on its own roots. In the case of the *Manetti* and *De la Grifferie* stocks, and especially those growing in heavy soils, it is advisable to defer the budding until August.

Time will be well spent in examining some good Rose nursery or attending the Rose shows with a view to inspecting and selecting the best kinds. If strong-established pot plants of the newer varieties are secured they will furnish plenty of

scions for budding this year, by which means a good stock of novelties can be easily secured at a comparatively small cost. I noticed at the recent Temple Show that Minnehaha, Hiawatha, Delight, and Dorothy Perkins were specially fine amongst Rambler Roses, whilst very beautiful were the larger-flowering Mrs. Joseph Lowe, Mrs. A. Ward, Lady Roberts, Mrs. Cornwallis West, and Margaret Molyneux. The newly-budded plants on the Briar stock should be carefully examined for the last time with a view to securing the shoots and stopping those which are making extra vigorous growth. Towards the end of the month when the Rambler varieties, including Aimée Vibert, Feilenberg, Dorothy Perkins,

should be within 1 foot of the glass. Shoots which have flowered this season should be selected for the cuttings, preferably with healthy foliage. Make the cuttings about 4 to 6 inches long. Cut off the two bottom leaves and shorten the top to a bud, making a sloping cut. Dip the shoot in some insecticide and then cleanse it with clean water. Procure some very small pots, either thimbles or thumbs, and fill them with a mixture of three parts turfy loam, and equal parts of sand and crushed charcoal, passed through a sieve having a $\frac{3}{8}$ -inch mesh. Insert one cutting in each pot, and then water the soil. Place the pots in the frame and afford no ventilation, but shade the glass until the cuttings are rooted.

plant Roses lifted from the ground, but Roses in pots can be planted at all times. An important matter to observe when planting Roses is to afford them plenty of rich, leamy soil mixed with a quantity of manure. The atmosphere of towns being charged with deleterious substances, it is necessary to keep the foliage constantly syringed with clear water. One cause of failure with town and suburban growers is over-pruning; it must be borne in mind that plenty of healthy foliage is necessary for satisfactory root development; weak liquid manure is one of the finest stimulants to produce this satisfactory growth. The following, amongst hybrid perpetual varieties, do fairly well in town gardens: General Jacqueminot, Duke of Connaught, Margaret Dickson, John Hopper, Mrs. John Laing, and Magna Charta; amongst the more vigorous climbers may be included Gloire de Dijon, Mme. Verard, Belle Lyonnaise (all of the Tea section), Aimée Vibert (Noisette), most varieties of the Crimson Rambler section, Queen of the Belgians, Dundee Rambler, and Fair Rosamond. The three varieties named last are of the hardiest type, although only second-rate in quality. Of the Rugosa type, alba and Mme. George Bruant are two of the best. It may be advisable to include some of Lord Penzance's Sweet Briars.

Remove all buds and weakly growths from planted-out Roses under glass. *J. D. Godwin.*



Fig. 2.—IRIS "REMBRANDT," REPRESENTING A STRAIN OF EARLY-FLOWERING BULBOUS IRISES.

IRIS "REMBRANDT."

On June 10 we received a consignment of Iris flowers from Mr. C. G. Van Tubergen, junr., Nurseryman, Haarlem, with the information that they represented a new strain of bulbous Irises which he proposed to designate "Dutch" Irises. These have been raised from crossings of early-flowering Xiphiums, such as filifolia, tin-gitana, lusitanica and others. Mr. Van Tubergen claims that his varieties, whilst resembling Iris hispanica, flower at the least a fortnight earlier than ordinary varieties of the Spanish Iris. The flowers opened at Haarlem on June 1 to 3, but it is said to be usually June 20 before I. hispanica blooms in Holland. The flowers sent by Mr. Van Tubergen are of large size, and have unusually thick segments. The plants are described as being of robust habit. The variety which Mr. Worthington Smith has sketched in fig. 2 is called Rembrandt. In this flower the outer segments of the perianth are rich, shiny purple with an orange-coloured blotch above; the three, inner, erect segments are also purple but of less deep a shade. This is but one of many varieties received from Mr. Van Tubergen. It is sufficient to say that whilst the flowers show differences in size, they vary in colour, from white, or nearly white, to the rich purple seen in Rembrandt. As we have said, the point claimed for them is that they bloom earlier than the present race of Spanish Irises. We do not think they have yet been cultivated in Britain.

ORCHID NOTES AND GLEANINGS.

SCHOMBURGKIA TIBICINIS (BATEM).

THIS remarkable species is now flowering at the Botanic Gardens, Liverpool. The plant is a fine, vigorous specimen, with 20 pseudo-bulbs, the largest being 15 inches in length, cylindrical in form and furrowed, tapering towards the apex from a base 2 inches in diameter. Towards the top of the growth are four alternate, coriaceous leaves, the largest 7 inches in length by 4 inches in breadth. The flower-spike, which is developed from the apex of the pseudo-bulb, is 5 feet 6 inches in length, and carries 17 large flowers. The oblong sepals and petals are of a rosy-red colour, shading to brown towards the tips on the inner surface; they are very fleshy and undulated on the margins. The broad, spreading lip

and others that produce their flowers in clusters, have finished their blooming, cut out the old flowering wood close down to the new growths. Tie these latter loosely to the arches or trellis-work and sprinkle the ground with some fertilizer, afterwards affording a copious supply of water. At the end of July, if side shoots are taken off with a portion of the old wood attached they will root freely in sandy soil under hand-lights. Keep them close and carefully shaded.

The following is a simple plan for increasing Roses by means of cuttings: Make up a hot-bed, and when the heat is about 70° to 75° place a box frame on the top. The bed should not be less than 3 feet deep at the back, and 2 feet 6 inches in the front. The surface of the manure

which will be in about a fortnight. After the first week the foliage should be sprayed lightly with clear water two or three times daily according to the weather. In southern districts the rooted cuttings can be afterwards planted out and hardened off during August and September, but in colder parts it is advisable to pot them into 4 or 5-inch pots and winter them in a cold frame. All Roses of a robust and vigorous habit do well on their own roots, but weaker-growing kinds are best grafted on a stronger stock. This system of propagation is quite distinct from that previously described for cuttings rooted in the spring, a system largely adopted by the traders.

ROSES FOR TOWN PLANTING.—It is too late to

is the most beautiful part of the flower; it is marked with numerous lines of rosy-red on a yellow ground, shading to deep red at the edge of the side lobes; the small front lobe is marked by a distinct bar of yellow. The flowers are scentless, and each remains fresh for about ten days. This fine species rarely flowers in this country. It has a very annoying habit of developing a spike which grows to about 1 inch in length, and then remains stationary, forming into a hard, horny point. The plant now flowering was placed under stove conditions while making its growth last summer. When fully matured it was removed to a rather cool intermediate house, where it was gradually dried and rested, until in March the flower-spike began to show signs of active elongation; it was then removed to the Cattleya house, where the inflorescence quickly developed. The rooting medium is a mixture of peat and Sphagnum-moss in equal parts. It is a native of Honduras, and is figured in *Gardeners' Chronicle*, May 23, 1891, fig. 126, and in the *Botanical Magazine*, tab. 4476. W. Hackett,

BEUCARNEA RECURVATA.

THIS Liliaceous species (see fig. 3) has flowered recently in the gardens of E. H. Cutberson, Esq., Bushey House. The plant and flower-spike measured 13 feet, the flowering spike itself being 6 feet in height. The base is very swollen and resembles a huge piece of cork, measuring at the top of the tub 4 feet 7 inches in circumference. The plant stood for many years in the centre of a span-roof show house. As the flower-spike developed it had to be removed to the winter garden to give it the necessary height. The plant is believed to be from 50 to 60 years old and it grows very slowly. The individual flowers are small and of a dull whitish colour. The swelling seed-pods are three-lobed. In the succulent house, Royal Gardens, Kew, there is another large plant which has not yet flowered, although it is a good age. As far as I can trace, there are no records of *Beucarnea recurvata* having previously flowered in this country. Seed of this species is sometimes imported from Mexico, from which country it was introduced about 60 years ago. C. G. Blake, *The Gardens, Bushey House*.

FOREIGN CORRESPONDENCE.

THE ALPINE GARDEN AT PONT DE NANT.

THE following notes on the Alpine garden at Pont de Nant, sur Les Plans, in Canton de Vaud, Switzerland, are based upon the details of a visit made to the garden at the end of May by my friend Mr. George Flenwell, and sent by him to me in the hope that they might be of interest to readers of the *Gardeners' Chronicle*, and perhaps lead some who may be going to the Alps this year to turn their steps towards this interesting and picturesque spot.

This Alpine garden is called Thomasia, after an early botanist of Bex, belonging to a family which made and sold collections of dried plants and minerals throughout the Swiss Alps and in different parts of Italy. Some of the Thomas family were among the earliest visitors to Zermatt, about the middle of the eighteenth century, in search of rare plants. Thomas made various discoveries, and several plants were named after him.

The garden is on limestone formation, at an elevation of about 3,800 feet above the sea, at the foot of the precipitous sides of the Grand Muveran. Started originally by a society in Bex, it was afterwards taken over by the Canton de Vaud, and affiliated to the University of Lausanne. There is a resident gardener throughout the summer months. It is strictly scientific, thus differing slightly from the gardens at Bourg

St. Pierre, on the Great St. Bernard road, and the Rochers de Naye.

Looking west, one has the Dent de Morcles and Glacier des Martinets; north, the Gorge of the Avançon and distant Alps of Savoy; east, the Col des Essets leading to the Diablerets; and south, the giant cliffs of the Grand Muveran.

The rockeries are simply and naturally laid out, and new ones are being constructed. There is a flat, grassy portion, in which the more robust-growing plants are grouped. A stream flows through it, and there is a pond for water plants.

Naturally at this early date the rockeries are not flower-full. Moreover, the garden gets no sun until 10 o'clock each morning; and the heaped-up remains of big avalanches lie on either side of it.

The following are among the chief plants at present in flower and doing remarkably well:—Primulas: *P. rosea*, the most brilliant of them all, perhaps, with the exception of the rich magenta of *P. spectabilis*; *P. Facchini* (minima ×

allied to *pulsatilla*, sulphur yellow and velvety, whose name was not legible. Among the Saxifragas are *apiculata* (sancta × *Eurseriana*), *Pseudo-sancta*, *Albertii*, *Elizabethæ*, all yellow; *Ferdinando Coburgi*; a bright yellow Saxifrage, probably named after the new Czar of Bulgaria, who is an enthusiastic botanist, especially devoted to Alpines; he has recently founded an Alpine garden in the mountains of Bulgaria.

Outside the Thomasia garden, on the plateau of short, lawn-like grass, *Gentiana verna* is brilliant, *Soldanella* plentiful, and *Erica carnea* in full beauty among the boulders. Marsh Marigolds and the true Oxlip (*Primula elatior*) adorn the sides of the streamlets, and in the shade are masses of both the white and purple *Dentaria*. H. Stuart Thompson, June.

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Figs.—Should the earliest planted-out trees be clean and otherwise healthy, they may be allowed to produce a second crop of fruits. But the Figs will need to be severely thinned, or the prospects of a good, early supply of fruits next year will be greatly prejudiced. At least two-thirds of the fruits should be removed, for the second crop is usually very numerous, and, as a rule, very few of the fruits drop. Examine the trees and cut away any weak shoots, whilst any that are growing too freely must be pinched at the second or third leaf. If red spider is present on the foliage, syringe the trees two or three times with a mixture of soft-soap and sulphur. If the old top-dressing is exhausted of its manurial properties, replace it, using either well-rotted cow or horse manure. In addition, the roots should be given stimulants, such as liquid manure, or a dusting of some fertiliser. Syringe the trees vigorously in the morning, and again in the afternoon when closing the house; in addition, damp all the bare surfaces in the house three or four times each day. Later trees, which are maturing their fruits, must be afforded a dry atmosphere, but do not let the roots suffer from want of water. If the fruits are to be forwarded by rail, they should be gathered before they are too ripe, as they are easily damaged. Young Fig trees intended for fruiting in pots should be placed into larger receptacles before they become pot-bound, using pots about two sizes larger than those in which they are growing. A suitable rooting medium is good fibrous loam, with a fair sprinkling of old brick rubble, using an 8-inch pot full of crushed bones and a little soot to each barrow load of soil. Ram the soil fairly firmly, and keep the trees actively growing till the roots permeate the new soil. Stop the shoots at the third or fourth leaf. Later on they should be gradually hardened, and eventually placed out-of-doors, so that the wood becomes thoroughly ripened before the end of autumn.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pecoarrow, Cornwall.

Clerodendron fallax.—The foliage of this species being so attractive, the plants must not be allowed to suffer from any check likely to cause injury to the leaves. Therefore, until the plants are in their flowering pots they should not be allowed to become root-bound in the least degree. At the same time care must be taken not to get drawn and soft foliage, but, by keeping the plants near the glass, encourage them to make sturdy, short-jointed growths. Plenty of atmospheric moisture is necessary during the season of growth, but as the plants commence to flower they should be placed in a drier and cooler house, or the partially-opened flowers will damp off. Seeds may be sown now to produce plants for flowering next spring.

Campanula pyramidalis.—These plants require liberal applications of liquid and chemical manures. The Chimney Campanula continues to flower over a considerable period, therefore feeding should not be discontinued when the flowering commences. Seeds of both the tall and dwarf



FIG. 3.—BEUCARNEA RECURVATA FLOWERING IN BUSHEY HOUSE GARDENS.

spectabilis), with large, pure flowers, paler than *spectabilis*; *P. denticulata*, in profusion, *P. cashmeriana*; *P. calycina*, from Lombardy; *P. viscosa* was not noticed, and is probably over, but the following all resemble it remarkably in flower: *pedemontana*, *marginata* (Maritime Alps), *spectabilis Wulfeniana* (Eastern Alps), *serratifolia*, the last two resembling each other very closely.

Gregoria vitaliana, with its hundreds of clear, canary-yellow blossoms, is possibly the showiest thing at present in bloom, but the deeper yellow *Erysimum Kotschyannum* rivals it. There were also *Draba olympica* and its variety *diversifolia* from Armenia, and the variety *brunifolia* from Persia; *Daphne Blagayana*, a most lovely, creamy-white plant from Bosnia; *Soldanella Wettsteini*, having a paler, longer flower and more bell-like than the common *Soldanella*; but the gem of the *Soldanellas* is *S. austriaca*, with its delicate, shell-pink flowers.

The Anemones are all over except one species

varieties should be sown now. If the seed-pans or boxes are placed in heat they should be transferred to a cool house or frame as soon as the seeds have germinated.

Lilium speciosum (*lanceifolium*), *L. auratum*, &c.—Plants for later flowering should be given a top-dressing of broken loam, dried cow-dung, and leaf-mould. As the stem-roots which will feed chiefly upon this have not the penetrating power of the basal roots, the top-dressing should not be pressed very firm.

Bouvardia.—Many growers plant their *Bouvardias* out-of-doors during the present month. Where this method of culture is practised, a warm border has been already prepared by deeply digging the ground and incorporating with the first spit such materials as manure from a spent hot-bed and leaf-soil. This ensures that the plants will lift in autumn with a good ball of soil attached to the roots. If possible, the plants should be put out during dull weather. If, however, the sun is very hot, the plants had better be shaded for a few days by placing branches of some broad-leaved tree amongst them. Towards the close of dry days the plants should be syringed to encourage growth and prevent red spider from infesting the foliage. If it is intended to grow the plants in pots, they will soon be fit for their flowering pots. The potting should be firmly done, and, after the plants have been potted a few days, the frames should be freely ventilated whenever possible. Except in the case of *B. Humboldtii corymbiflora*, the pinching of the shoots, to induce a bushy habit, should be continued for fully another month.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Cherries.—The fruits of early varieties, including Belle d'Orleans, Bigarreau de Schrecken, Knight's Early Black and Black Tartarian, having been gathered, the nets should be removed, so that any necessary stopping or training of the shoots may be done. If the trees are infested with red spider, black fly, or other insect pests, spray them with an insecticide, and then give the foliage a good washing with clear water. Later varieties of Cherries should be well cleansed before the fruits commence to ripen, and then the nets should be placed in position.

Thinning Apples.—I learn that in some parts the fruits have dropped freely, and that caterpillars have damaged the foliage. Young, healthy trees here are bearing an abundant crop, and many fruits will need to be removed, and this needs to be done without delay. It is wiser to be satisfied with a moderate crop of good fruits rather than to allow the trees to be overlaid. Not only does overcropping result in small fruits, but the trees are exhausted, and feel the effect for two or three years after. Especially is this the case with young trees of such varieties as Lord Grosvenor, Stirling Castle, and Lane's Prince Albert, for these trees usually crop very freely. Special attention should be given to varieties required for exhibition purposes: these should be still more severely thinned. Amongst the best of the culinary varieties for the exhibition table are Emperor Alexander, Peasgood's Nonesuch, Bismarck, Gascoyne's Scarlet Seedling, Gloria Mundi, Mère de Ménage, Bramley's Seedling, Hambling's Seedling, Warner's King, Golden Noble, Lane's Prince Albert, Newton Wonder, Norfolk Beauty, and The Queen. If extra fine fruits are required, water the roots whenever the ground is dry and afford manurial stimulants. Dessert varieties need not be thinned so freely as culinary sorts, but it is well to go over the trees and remove a number of fruits where they are numerous, for the same danger of overcropping applies to dessert as to the culinary varieties. Large size in dessert Apples is not commended in many quarters; nevertheless see that no tree carries more fruits than will allow it to plump up its fruit-buds for the following season. A good selection for dessert Apples for exhibition purposes may be had from among the following:—James Grieve, Worcester Pearmain, American Mother, Christmas Pearmain, King of the Pippins, Cox's Orange Pippin, King of Tompkins County, Wealthy, Ribston Pippin, Lord Hindlip, Charles Ross, Rival, Egremont Russet, King Harry and Washington.

THE ORCHID HOUSES.

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

Leptotes bicolor.—A few well-flowered plants of this pretty species form delightful objects when suspended over the other occupants of the Cattleya house. At the present time the plants are making fresh roots, and repotting may be done if necessary. *Leptotes bicolor* is sometimes severely checked by root disturbance, but if the work is carefully done no harm will accrue. Shallow pans are the most suitable receptacles, and these should be three parts full of drainage. Pot the plants quite firmly in the same kind of compost as advised in a former issue for Cattleyas, affording copious waterings each time the compost becomes dry. When the terete or sub-cylindrical leaves are completely developed the amount should be gradually lessened.

Lælia purpurata.—Plants of *Lælia purpurata* that have recently passed their flowering stage should be placed, until growth recommences, in the coolest part of the house, where they can obtain plenty of fresh air. Sufficient water only should be given them to keep the roots alive and the pseudo-bulbs from shrivelling, for plants which commence to grow at this season fail to produce flower-sheaths. They should be kept dormant for as long a period as possible. If any plants of this species have started to grow they should be repotted, since the young shoots, as soon as they are a few inches long, send out a number of large roots that will readily enter and appreciate new rooting material and quickly become re-established. If repotting is delayed, some of these roots are sure to be injured during the operation. The same remarks are also applicable to plants of *L. grandis* and its variety *tenebrosa* after they have finished flowering. Many *Lælio-Cattleyas*, including *L.-C. Canhamiana*, *L.-C. eximia*, *L.-C. Martinetti*, *L.-C. Arnoldiana*, *L.-C. hippolyta*, and *L.-C. Phoebe*, also several *Brasso-Cattleya*, and *Brasso-Lælia* hybrids, whose flowering has recently finished, should be placed in a similar position to enjoy as long a period of rest as possible. Repotting may be done as advised for *Lælia purpurata*.

Lælia monophylla.—This is interesting as the only species of *Lælia* known in Jamaica. Its flowers, which are large for the size of the plant, are of a bright orange-scarlet. Owing to the beautiful colouring of its blooms the plant should form a good subject for hybridising purposes. The collectors state that this *Lælia* is found on mountains at elevations varying from 3,500 to 5,000 feet; consequently it is comparatively a cool-growing species. At Burford it thrives well in a cool intermediate temperature, planted in small, well-drained pots, filled with the new Cattleya compost. The plant needs to be kept well up to the roof glass, where it may obtain plenty of light, although it needs shading from direct sunshine; the roots should be kept fairly moist at all times. *Lælia monophylla* flowers in the late summer or autumn. The plants are sending up their slender flower-spikes.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

The recent rains.—Although June has appeared to be a very wet month, our rainfall for the past half-year has been not more than 8 inches. The vegetable crops generally are very late, but they are looking remarkably well. Early Peas are especially backward, being fully three weeks late. Still I have never seen more promising crops of this vegetable.

Carrots.—Make frequent small sowings during the next three months, both on an early border in the open and in frames or pits, selecting the short or stump-rooted varieties. As in the case of most vegetables this year, the main crops of Carrots are badly infested with aphids. They should therefore be syringed with a suitable insecticide, such as quassia extract or a strong mixture of soft-soap and water.

Broad Beans.—Late sowings of the Broad Windsor type will require attention, for encouragement must be given them in order to obtain a good crop of Beans. Syringe the shoots frequently with soap and water to keep down black aphid. Apply a good mulching of manure

and see that the roots are well supplied with water at all times. Pinch out the points of the growths immediately a fair set is assured, and keep the growths upright by stretching a row of stout cord on either side of the plants.

Savoys.—As a rule these are planted much too early, with the result that the heads become perfected at a time when other vegetables are plentiful, and thus they are of little value. These early plants are unable to withstand severe weather. Savoys should be grown more strictly for winter use, as they are unquestionably one of the most hardy and delicious vegetables at that season. Plant Savoys at intervals, on any vacant plots and in any position which can be spared, during the present month, and even up to the middle of August. The varieties of a medium size are much to be preferred to the larger ones.

Cardoons should be kept well supplied with moisture at the roots; it will be necessary in exposed positions to secure each plant to a stake. Apply a good mulching of half-decayed horse-droppings about the roots.

Celeriac.—This crop will need abundance of water, and manure should be liberally afforded. Keep the foliage well dusted with soot, and the surface soil stirred frequently. All side shoots should be removed.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Seedlings.—Wallflowers are ready for transplanting into rows made 12 inches apart, allowing not less than 9 inches between the plants in the rows. The recent showery weather has been very suitable for transplanting seedlings. If the sun is very powerful after they have been transplanted, afford a moderate amount of shade during the daytime, but the covering material must be removed before night-time so that the plant may receive the full benefit of the dews. *Campanula media* (Canterbury Bell) should be treated similarly; also Pansies, *Myosotis* and *Delphiniums*.

Florets.—Stir the soil freely between these plants, and manure should be liberally afforded. Keep the foliage well dusted with soot, and the surface soil stirred frequently. All side shoots should be removed.

Carnations.—Have ready for layering purposes some soil with which is incorporated a considerable quantity of road-grit, and turn it over several times before it is used. Late varieties should have their first flower-buds removed, so that they will give the best result in their proper season. See to the staking of those that require it, as the blooms are disfigured when splashed with soil. Two of the best garden varieties for general purposes are Raby Castle and Much the Miller.

Sweet Peas.—If late plants are required there is still time to sow the seed, but it should be seen to at once. In a genial autumn, plants from these late sowings will furnish a good crop of flowers, which are very useful at that time for decorative purposes in dwelling-rooms. Plants that are flowering should have their blossoms gathered directly they are ready; it is best to cut them in the evening before they are fully expanded and to place them in a cool room.

Climbing plants grow rapidly at this time of the year, and unless they are attended to in good time they soon become entangled, and it is then difficult to train them properly. Species and varieties of *Vitis* will need attention, also *Clematis*, for high winds soon snap off their young shoots.

Aquatic plants.—See that the more rampant growers do not crowd out the smaller ones. If the plants are divided up at this time the portions detached can be used for planting in other parts, as aquatics do very well if planted in July.

Plants for terrace walls.—In favoured spots the following plants will succeed well on walls: *Freemontia*, *Crinodendron*, *Abutilon*, *Carpenteria*, *Cassia* and *Berberidopsis*. These are much more hardy than many persons imagine. Roses are especially suited for dwarf walls, but it must be remembered that in summer-time the bricks get very hot, and it is necessary to regularly syringe the foliage. Plants with their roots at the foot of walls often suffer from drought, and this is often seen in the case of *Magnolia grandiflora*, the leaves becoming brown instead of presenting a healthy green appearance.

EDITORIAL NOTICE.

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

APPOINTMENTS FOR JULY.

SATURDAY, JULY 3—
Sutton Rose Sh. Soc. Franç. d'Hort. de Londres meet.

TUESDAY, JULY 6—
Roy. Hort. Soc. Summer Exh. at Holland Park, Kensington (2 days). Southend-on-Sea Fl. Sh. (2 days).

WEDNESDAY, JULY 7—
Bath Rose Sh. (2 days). Hanley Hort. Sh. and Fête (2 days). Croydon Fl. Sh. Hereford Rose Sh. Hemel Hempstead Rose and Sweet Pea Show. Jubilee Dinner of K.H.S. Fruit and Floral Committees.

SATURDAY, JULY 10—Purley Rose and Hort. Sh.

MONDAY, JULY 12—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, JULY 13—
Saitaire Rose and Hort. Soc. Sh. in conjunction with Nat. Sweet Pea Soc. Wolverhampton Floral Fête (3 days).

WEDNESDAY, JULY 14—
Beckenham Hort. Soc. Sh. Luton Rose Sh. in conjunction with Nat. Rose Soc. Hort. Ex. in conjunction with Agr. Sh. at Louth (3 days). Elstree and Boreham Wood Fl. Sh.

THURSDAY, JULY 15—
Woodbridge Fl. Sh. Great Yarmouth Fl. Sh.

TUESDAY, JULY 20—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. F. H. Biffen, on "Mendelism and Barley"). Roy. Scottish Arboricultural Soc. Annual Exh. at Stirling (4 days). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, JULY 21—
Nat. Carnation and Picotee Soc. Sh. at Hort. Hall, Westminster. Truro Fl. Sh. Liverpool Hort. Assoc. Sh.

THURSDAY, JULY 22—
Roy. Ulster Agric. Soc. Sh. and Hort. Exh. (2 days).

FRIDAY, JULY 23—
Nat. Sweet Pea Soc. Exh. at Hort. Hall, Westminster. Southampton Roy. Hort. Soc. Carnation Exh.

WEDNESDAY, JULY 28—
Midland Carnation and Picotee Soc. Exh. at Birmingham Bot. Gardeas (2 days). Newcastle Fl. Sh. (3 days). Haywards Heath Fl. Sh.

SALES FOR THE ENSUING WEEK.

TUESDAY—
Unreserved sale of a portion of the "Chillingham" collection of Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 1 o'clock.

WEDNESDAY—
450 Lots of Choice Selected Orchids, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 1 o'clock.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.4°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, June 30 (6 P.M.): Max. 61°; Min. 51°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, July 1 (10 A.M.): Bar. 30.2; Temp. 58°; Weather—Cloudy.
PROVINCES.—Wednesday, June 30 (6 P.M.): Max. 60° Bury St. Edmunds; Min 51° Scotland N.E.

Garden Cities and Town-Planning.

From small beginnings a few years ago, the movements to institute garden cities and to control town development have developed greatly and extended far. The awakening from the curious lethargy which led to the acceptance of overcrowding and of mean and sordid houses as the necessary accompaniments of urban life, began in the closing years of last century, and it may be predicted with confidence that these evils will be mitigated, if not banished, during the next two or three generations. If this prove the case, if more space can be provided for the town dweller, and if new towns and suburbs can be set in pleasant gardens or amid leafy avenues, none will have more reason to rejoice than the horticulturist. For to him these changes will appeal with double force. As a good citizen he will welcome these ameliorations of city life; as a craftsman he will profit by them.

To people—if any there be who yet require to be convinced of the great importance and of the great necessity of this movement toward a wiser planning of our towns, we

commend the perusal of *Garden Cities and Town Planning*, the organ of the Garden City Association. From the pages of this periodical it will be learned that this problem of town planning is not of importance only from the aesthetic point of view. It is not only a question of providing prettier surroundings, but one of environment for the adequate physical development for the poorer citizens of this Empire. That congested towns of the 19th century type do not provide a proper environment, comparative statistics prove. Thus, at Bourneville, near Birmingham, the death-rate, per 1,000, averages 7.5, and the infant mortality, per 1,000 births, amounts to 78.8. At Birmingham the death-rate is 17.9 and the infant mortality 170. Letchworth, a garden city more recently established than Bourneville, has a death-rate between three and four times less than that of Birmingham, and an infant mortality of 38.5 per 1,000 as compared with Birmingham's 170. Making every allowance for difference of size, there can be no doubt that the wastage of life is less in the new type of city than in the old. Nor is this the whole of the matter. The children of the new cities are superior to those of the old cities in physical development. A Birmingham slum boy, 11 years of age, has an average height of 4 feet 2 inches; the Liverpool boy, 11 years of age, from the poorest schools, 4 feet 3 $\frac{3}{4}$ inches; the 11-year-old, Port Sunlight boy is 4 feet 9 inches, and so also is the Bourneville boy of like age. The garden city boys are, moreover, far sturdier than those from the poor quarters of towns: thus the weight of the boy of Bourneville is 4 stone 13 lbs.; of Port Sunlight, 5 stone; of Liverpool (poorest schools), 4 stone 3 lbs.; and of Birmingham slums, 3 stone 11 lbs.

It is on such facts as these that the appeal for wiser counsels in town planning must rest. When the facts are known, town planning will come to be—as for many years it has been already in other countries—among the most important duties of municipalities. Already Parliament has begun to legislate in this direction; already the most progressive of our new universities has founded a Professorship of Town Planning; already garden cities in this country, in France, and in America are springing into existence. We have every confidence that horticulturists will exert their influence to forward the desirable end of healthier and worthier homes for the people of this fair country.

The Benevolent Institution.

The aims and work of this Charity could not be better presented to the public than in the excellent speech of Mr. Harry James Veitch, made at the recent Festival dinner, of which a brief report was given in our last issue. The knowledge that 239 pensioners, either gardeners or the widows of gardeners, are permanently assisted at a period of their lives when they have not the physical powers to help themselves, and, further, that others are afforded temporary measures of relief from the Victorian Era and Good Samaritan Funds, is sufficient to commend the Institution to all who have charity. But this is only half the story. There remain many who, though in urgent need of help, must wait because the amount of support which the Institution receives is not proportionate to the suffering

which it would alleviate. After the election last year there remained between 50 and 60 candidates, whose claims, though recognised by the committee, failed for lack of funds to gain for them the full pension. As Mr. Veitch pointed out, the remuneration which gardeners obtain for their skilled services is not high; in many cases, indeed, it is miserably inadequate. Nevertheless, the gardener is subjected to the same trials as beset those in other walks of life. Illness may overtake him or his family; his tenure of office is anything but secure, and thus it is that but few are enabled to make sufficient provision for times of trouble or old age. The Institution does not insist that a person shall reach old age before he or she is eligible for benefit. The youngest pensioner on the fund is not past the prime of life—41 years—but he is totally incapacitated from work by paralysis. Others are blind, but the majority of those who receive assistance are those who, having given their days and strength to horticulture, are now too aged and infirm to work. Thus, as was stated in our report last week, six of the beneficiaries are more than 90 years of age, whilst 55 are between 80 and 90 years, and 127 have passed three score years and ten. Mr. Veitch appealed earnestly for help, and the response was the sum of £2,099. It is a matter for congratulation that the Charity has such noble-minded patrons as the members of the Rothschild family, six of whom have presided at these annual festivals. There are others whose large-heartedness is equally commendable, but we fear there are still many who love their gardens but are not sufficiently mindful of the interests of those who have made them beautiful. Col. Lockwood's claim that British horticulture is unrivalled goes to prove that those for whom we plead are worthy of assistance. Inasmuch as it is not possible for all gardeners to make adequate provision for old age, it behoves them to remember that by becoming annual subscribers to the Benevolent Institution they can practically ensure for themselves the relief which that Institution affords. If this were borne constantly in mind, the increased subscriptions which would ensue would enlarge greatly the powers of the Institution to succour the distressed.

OUR SUPPLEMENTARY ILLUSTRATION gives a view of a group of Orchids staged by Messrs. ARMSTRONG & BROWN, Orchidhurst, Tunbridge Wells, at the Royal Horticultural Society's meeting on April 6 last, when the Society's Gold Medal was awarded to the exhibitors. *Dendrobium nobile virginale* was especially well represented in 200 good specimens. It is a noteworthy fact that all the plants of this variety were raised from one seed-capsule borne on a plant of the white *Dendrobium nobile*, fertilised with pollen of the same variety. Every plant raised reproduced the true, albino form of the parent. Messrs. ARMSTRONG & BROWN were extremely fortunate to secure such a large stock of this desirable variety. It is easy to grow, has a free-flowering habit, and is one of the most useful plants for decorative purposes, the flowers being valuable in a cut state. *Dendrobiums* can be raised easily from seeds by anyone possessing an ordinary warm plant house, and although a very large number of beautiful hybrids have been raised already, there are still many promising combinations not yet effected which would give interesting results. *Dendrobium nobile*

virginale is the first instance in which an albino has been produced in sufficient quantity to render it available for gardens generally, and, seeing that there are a number of albinos of other species which have appeared, and in some cases disappeared, it would be desirable to adopt the seeding mode of propagation in all cases until a sufficient stock is obtained. *Dendrobium luteiflorum candidum*, *D. Phalenopsis hololeuca*, *D. Bensoniæ album*, *D. crystallinum album*, and the white forms of *D. superbum* would be good subjects, and probably seedlings would be more satisfactory in gardens than the original importations.

HOLLAND HOUSE SHOW.—The summer show of the Royal Horticultural Society will be held in the grounds of Holland Park, Kensington, on Tuesday and Wednesday, July 6 and 7. It is to be hoped the weather will improve so that visitors may enjoy to the full the pleasure to be derived from an inspection of the show and the charming gardens attached to the picturesque mansion.

R.H.S. ORCHID COMMITTEE.—On Friday, the 25th ult., the members were invited by Messrs. CHARLESWORTH & Co. to visit their new establishment at Haywards Heath. The party was conveyed by motorcars from the Horticultural Hall, Vincent Square, Westminster. Mr. J. GURNEY FOWLER (chairman of the Committee), Mr. R. BROOMAN WHITE, and Mr. R. G. THWAITES brought their own cars. The nurseries were reached soon after one o'clock, and after partaking of luncheon the visitors were conducted through the glasshouses, all of which are connected by a spacious corridor. Many interesting plants were in flower, including a number of the so-called botanical Orchids. We have recently published a description of this nursery.

FLOWERS IN SEASON.—Mr. ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey, sends flowering shoots of *Cladrastis tinctoria*, syn. *Virgilea lutea*. Mr. WATERER states that they were cut from a tree growing in his nursery, about 35 to 40 feet high and having about the same spread of branches.

SIR JOSEPH HOOKER AT THE DARWIN COMMEMORATION.—Horticulturists all the world over will be glad to hear that Sir JOSEPH HOOKER, despite his 92 years, was able to attend the DARWIN celebrations. To see him, hale and hearty, receiving the congratulations of all the men of distinction, and to witness the vivacity with which he conversed with them, was one of the most gratifying sights of the celebration.

FLOWER SHOW FIXTURES.—A useful list of dates of exhibitions, principally in Scotland, is sent us by Messrs. AUSTIN & McASLAN, 89, Mitchell Street, Glasgow. From the numerous engagements in the list it would appear that flower shows in the North are as popular as ever.

BRITISH GARDENERS' ASSOCIATION (LONDON BRANCH).—By permission of the Hon. VICARY GIBBS, members of this branch will visit the Aldenham House gardens on Saturday afternoon, July 10.

SWANLEY HORTICULTURAL COLLEGE.—The annual prize-giving will take place on Thursday, July 15. The Hon. Sir JOHN COCKBURN, K.C.M.G., will occupy the chair, and the prizes will be distributed by the Viscountess FALMOUTH.

MR. A. J. HARTLESS has been appointed assistant lecturer in horticulture at the Reading University College, under Mr. F. G. DREW. Mr. HARTLESS will have the care of the recently established fruit station at Shinfield, situated about three miles from Reading.

NATIONAL SWEET PEA SOCIETY.—We are requested to remind readers that the annual exhibition will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on Friday, July 23. There will also be an exhibition at Saltaire, under the Society's auspices, on Tuesday, July 13. Mr. CHAS. H. CURTIS, Adelaide Road, Brentford, is the hon. secretary of the Society, and Mr. E. WRIGHT, The Glen, Saltaire, hon. secretary of the Saltaire branch. We are requested to announce that the outing arranged for July 9, for the purpose of inspecting several stocks of Sweet Peas in Essex, has been postponed to a later date, probably July 17. The recent heavy rains, with sunless days, have caused the plants to be very backward.

THE NATIONAL VEGETABLE SOCIETY.—At a recent meeting of the Committee, the announcement was made that his Grace the Duke of PORTLAND had consented to become president. That is a fact which cannot fail to have great weight in the country. The list of vice-presidents includes some 30 gentlemen, members of the horticultural trade, market-gardeners, and others, all of whom hold honorary office. The Committee consists of some 24 members, including eminent gardeners, market-gardeners, amateurs, and representatives of the horticultural Press; but includes no one engaged in the seed trade. Mr. G. WYTHES, V.M.H., of Hopefield House, Windmill Road, Brentford, W., is treasurer, whilst Mr. E. G. FINCH, of 20, Tavistock Street, Covent Garden, London, is the hon. secretary. No exhibitions are at present in contemplation, but should the society receive wide support, it is hoped that some competitions may be instituted next year. The Committee have arranged to conduct two separate trials, one at Twickenham on light soil and one at Romford on stiff soil. In each case the products tested will be early spring Cabbages and autumn-sown Onions, and the object is not to interfere in the least with seedsmen's lists of names, but rather to test varieties and methods of culture for commercial, ordinary garden and allotment purposes. Each trial will be conducted with absolute secrecy, the names of the varieties being known only to the superintendents of the trials, Mr. OWEN THOMAS and Mr. G. WYTHES.

THE BRUSSELS EXHIBITION, 1910.—As a consequence of the departmental enquiry conducted by the Board of Trade, a Royal Commission has been established, having for its object the adequate representation of Great Britain at international exhibitions. The following gentlemen have been appointed by the Commission to further the interests of agriculture and horticulture at the forthcoming international exhibition, which is to be held in Brussels from May until October, 1910:—Mr. CHARLES ADEANE, Mr. E. A. BOWLES, Mr. EDWARD BROWN, Mr. W. A. BILNEY, Mr. T. BEVAN (National Chrysanthemum Society), Mr. RICHARDSON CARR, Sir GILBERT GREENALL, Bart., Mr. A. J. GILES, Dr. OTTO HEHNER, Mr. A. W. LAST, Mr. R. LEONARD, Mr. T. H. MIDDLETON, Sir DANIEL MORRIS, K.C.M.G., Mr. H. B. MAY, Mr. H. A. NEWTON, Mr. A. B. J. NORRIS, Lieut.-Colonel PRAIN (Royal Gardens, Kew), Mr. C. HARMAN PAYNE (National Chrysanthemum Society), Mr. A. G. L. ROGERS, Mr. ARTHUR SUTTON, Mr. HARRY VEITCH, and Mr. J. W. WHEELER-BENNETT.

PRESENTATION TO A GARDENER.—At Culham Court, Henley-on-Thames, on June 4, Mr. W. TURNHAM was presented with a silver teapot by the employés in the gardens on the occasion of his relinquishing the position of head gardener, which he had held for the past nine years.

PRESENTATION TO MR. GEORGE BUNYARD, V.M.H.—That their esteemed chairman, Mr. G. BUNYARD, may possess some tangible memento of his office during the jubilee year, the members of the Fruit and Vegetable Committee of the Royal Horticultural Society have unanimously invited him to accept from them a large, handsomely-framed photographic portrait. This portrait shows Mr. BUNYARD wearing the robes of the Master of the Fruiterers' Company, a position he filled a few years since. The ceremony of presentation will take place at the Royal Horticultural Hall, on Wednesday evening next, the 7th inst., at 8 p.m.

HONORARY DEGREES FOR BOTANISTS.—Not the least brilliant of the ceremonies in connection with the recent DARWIN celebrations at Cambridge was the conferment, on Thursday, June 24, of the degree of Doctor of Science on 21 of the most distinguished delegates. Among those so honoured were the following botanists:—Professors GOEBEL (Munich), CHODAT (Geneva), VÖCHTING (Tubingen), DE VRIES (Amsterdam), ZEILLER (Paris) and FRANCIS DARWIN (Cambridge). To Mr. DARWIN fell the unique honour of being the only Englishman who received this mark of distinction.

THE ASSOCIATION OF ECONOMIC BIOLOGISTS.—The Association of Economic Biologists, which was founded in 1904, will meet this year on July 13-15, at Oxford. Among the long list of communications which will be made, mention may be made of the following, which have a particular interest for horticulturists:—"Injurious Fungi," by Professor W. SOMERVILLE; "Predaceous Insects and their Prey," by Professor POULTON; and "The Application of Recent Discoveries in Heredity to Economic Problems," by Mr. A. D. DARBISHIRE. Particulars of the meeting may be obtained from Mr. W. E. COLLINGE, Uffington, Berkhamsted.

NURSERY EMPLOYEES AT DINNER.—On Tuesday evening last the members of the staff of Messrs. STUART LOW & Co., Bush Hill Nursery, near Enfield, were entertained at dinner in the Assembly Rooms of the village, Mr. STUART LOW presiding. After the usual loyal toast, speeches were made by Mr. W. WATSON, of Kew, an employé of Messrs. HUGH LOW & Co. when a boy, and by Mr. HARRY A. BARNARD, the travelling representative of the firm, both being reminiscent in character and entertaining. The different speeches were interspersed with vocal music and recitations by several members of the staff and others. Mr. G. MAYES, who had been with the firm of Messrs. HUGH LOW & Co. for 50 years, was the recipient of a presentation on this occasion.

PUBLICATIONS RECEIVED.—*Beautiful Flowers and How to Grow Them*, edited by Horace J. and Walter P. Wright. Part XVI. (London: T. O. & E. C. Jack.) Price 1s. net.—*Darlington's South Devon and South Cornwall*. (N. Wales: Darlington & Co., publishers, Llangollen.) Price 2s. 6d.—*The Foundations of the Origin of Species*. Two essays written in 1842 and 1844 by Charles Darwin. Edited by his son, Francis Darwin. (Cambridge: University Press.)—*French Market-Gardening*, by John Weathers. (London: John Murray, Albemarle Street, W.) Price 3s. 6d. net.—*The Botanical Magazine*. (April.) (Published at Tokyo, also by Wm. Wesley & Son, 28, Essex Street, Strand, London.)—*New York Agricultural Experiment Station*. Technical Bulletin No. 9: A Mycosphaerella Wilt of Melons, by J. G. Grossenbacher; Bulletin No. 314: A Comparison of Tillage and Sod Mulch in an Apple Orchard, by U. P. Hedrick; Bulletin No. 315: The Group Districts of New York and Table of Varieties, by M. J. Dorsey. (Geneva, New York: published by the Station.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ANTHUSA ITALICA VAR. OPAL (see p. 417).—The varieties Opal and Dropmore should be planted at some distance from each other. My first plant of Opal was planted not far from the Dropmore variety, with the result that the latter with its richer colour quite destroyed the value of Opal. *E. H. Jenkins.*

A PLEA FOR BIRDS CAUGHT IN THE FRUIT NETS.—Will you allow me to suggest to the "bird-lovers" among your readers that during the summer season they should make a point of periodically visiting their fruit-nets and so insure against such of our little songsters as may have been caught there, dying a slow death by hunger and thirst? The dead body of a bird entangled amongst the meshes of a Strawberry net is no

convenience or necessity, and where little artificial watering was possible. In these circumstances the growth of flower was meagre. On the rockery the rhizomes, closely pressing the surface of a stone, appeared by their growth and flowering to be perfectly happy. I have never favoured peat for this free-growing plant. Rich soils of loam and leaf-mould, with abundant supplies of moisture in spring and summer, appear most satisfactory. *E. H. Jenkins.*

LARGE MELONS.—These fruits are not grown so large as was the custom a few years ago; therefore, unusual weights in these fruits are not often recorded. It may interest Mr. Bloxham to know that, some years ago, when under the late Mr. Pettigrew, at Cardiff Castle, we grew a variety of Melon under the name of Great Blake Hall, and the fruits of this variety weighed over 14 lbs. Mr. Pettigrew was a noted grower of Melons; but I have no recollection of any other variety reaching the weight given. *T. H. Slade.*

leaved Bramble. It is now finding its chief competitor in the American Loganberry, and not in any forms of British origin. *D.*

MUTISIA CLEMATIS.—It would be interesting to know if this handsome climber succeeds in the South of England, or in Ireland; I only know one garden on the Sussex coast where it exists, and it can hardly be a common plant, as four years ago, on applying to several of our leading nurserymen, I was unable to obtain a specimen. Mr. Robinson, in his *English Flower Garden*, speaks of it as of easy growth. Perhaps some readers will give us their experiences with it. *Wm. Kemp, Lyminster House Gardens, Arundel.*

BESCHORNERIA YUCCOIDES.

I SEND herewith a photograph (see fig. 4) of this interesting Mexican plant, flowering out-of-doors in the Cambridge Botanic Garden. It was planted permanently in a sheltered position between two plant houses about seven years ago, and it has been carefully protected during the winter months. During the early part of last summer it developed a flower-spike to a height of nearly 6 feet, the bright green pendent flowers, with the rosy-red bracts and reddish scape, being much admired. The flowers were followed by a quantity of the Fig-shaped fruits, which ripened late in the autumn. The seeds appeared to be fertile, but they have failed to germinate. The plant has produced several young shoots from its base. *E. J. Allard, Botanic Garden, Cambridge.*

SOCIETIES.

ROYAL HORTICULTURAL
Scientific Committee.

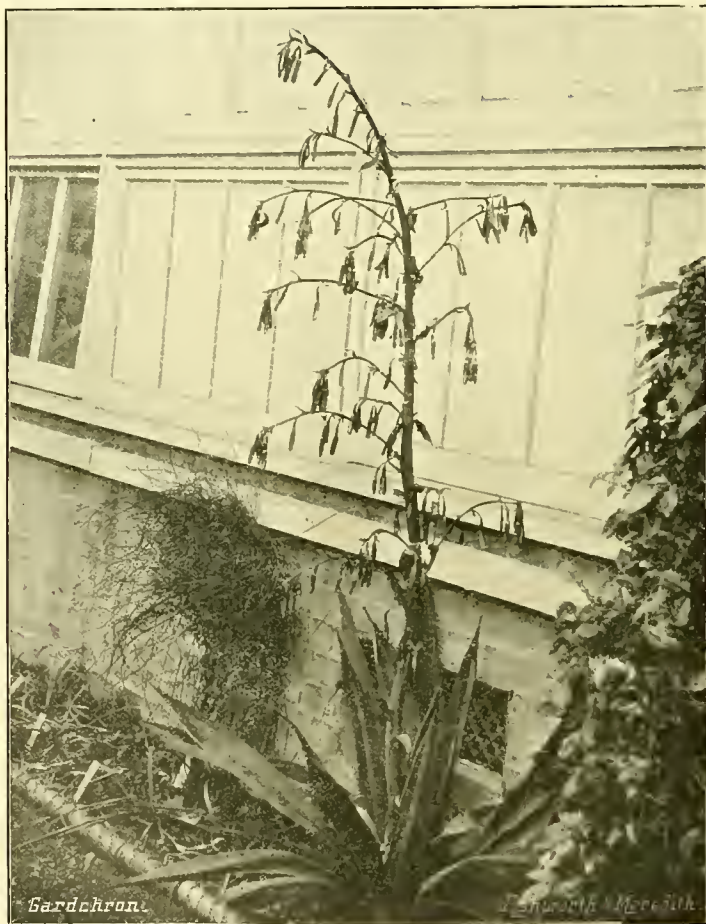
JUNE 22.—*Present:* Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair); Sir J. T. D. Llewelyn, Prof. A. H. Church, Messrs. S. Pickering, W. Fawcett, W. Cuthbertson, J. Fraser, J. W. Odell, W. Hales, R. Hooper Pearson, J. T. Bennett-Poë, J. Douglas, A. W. Sutton, C. T. Drury, G. S. Saunders, H. J. Veitch, E. M. Holmes, F. J. Chittenden (hon. sec.), and Prof. Hugo de Vries (visitor).

Jessamine shoot with adventitious roots.—Mr. G. S. SAUNDERS showed shoots of white Jessamine from a wall, having large numbers of adventitious roots springing from all round the nodes on the stem, and occasionally from internodes. It was suggested that possibly the roots had become dry, and this had induced the plant to attempt to make roots at other parts of the stem. Mr. PICKERING mentioned that the peculiarity of producing abundant adventitious roots appeared to be innate in certain varieties of Apples, especially in Northern Spy, the variety so largely used for stocks in New Zealand and other places. Mr. CHITTENDEN remarked that the same character was to be seen in the variety "Oslin," a variety long ago known as the "Burrknot," on account of the frequent formation of burrs upon the branches.

Exotic Solanum.—Mr. A. W. SUTTON exhibited a flowering plant of a Solanum, the seed of which had been sent him by a correspondent at Monte Video, collected in Uruguay, and called by him "a wild Tomato." The plant was referred to the secretary for further examination.

Malformations in Trifolium.—Mr. J. FRASER showed examples of *Trifolium hybridum* var. *elegans* (Lavi) with typical forms for comparison, collected at Coulsdon, Surrey, in which the pedicels were elongated and the pistil elongated and stipitate. He also showed *T. fragiferum*, collected at Mitcham, with axial proliferation of the inflorescence, and *T. dubium*, in which the pedicels of the original inflorescence were many times branched and bore many capitula, the sepals showed partial phyllody, the stamens pistiloid, the pistils, which were stipitate, showed phyllody; in many flowers axial proliferation was to be seen, and in some cases the capitulum became an elongated raceme.

Flowers of Streptocarpus malformed.—Mr. J. W. ODELL showed flowers of *Streptocarpus* malformed in a manner similar to those exhibited by him last year (see *Journal R.H.S.*, Vol. XXXIV., p. cxii.). This is now the third year



[Photograph by E. J. Allard.

FIG. 4—BESCHORNERIA YUCCOIDES FLOWERING IN CAMBRIDGE BOTANIC GARDEN.

uncommon sight, and though we have to protect our fruit from their ravages, we surely ought not to leave the little culprits to expiate their crimes by such a lingering and painful death. *Missel Thrush.*

OURISIA COCCINEA (see p. 417).—It is insufficiently recognised that it is necessary for this plant to make a fair proportion of new growth each spring. This growth is really a superficial extension of the rhizomes, and these rhizomes produce the best flowers when they have made free growth early in the season. That this is so may be seen in small nursery-grown plants in pots, for the chief flowering is obtained from the new rhizomes that overhang the side of the pot. To what extent this *Ourisia* will succeed in full sunshine will depend very much on the amount of root-moisture available. I have grown the plants by hundreds in fully exposed sun-baked beds, where they were planted as a matter either of

THE PARSLEY-LEAVED BRAMBLE.—In his lecture on Dr. Masters's *Teratology* Mr. de Vries, as I gathered, referred to the Parsley-leaved Bramble as but a deviation in form from the common British Bramble. It would be interesting if that be so to learn something as to its origin, as it has been so widely held that it is of American origin. The plant has, however, always shown itself to be a hardier variety than any other American varieties, and a far better grower and fruiter. Indeed, it seems to thrive well almost anywhere. But if it be a sport from the British Bramble, it seems inexplicable that it should ripen its fruits earlier, that they should be much finer, and generally more freely produced than is the case with wild forms. No doubt, being subjected to garden cultivation has done something to conduce to these improvements, but even true British Brambles, selected and cultivated, do not seem to have attained to that popularity which has characterised this cut-

in which the plants have borne similarly modified flowers.

Large flower in Apple.—Mr. S. PICKERING, F.R.S., enquired whether anyone had noticed flowers of Apples with very numerous petals. He had seen this season in the case of Bramley's Seedling a single flower (the only one on the shoot) which exhibited no sign of synanthly, which bore 25 petals, the stamens and other organs being well developed.

Helianthemum sporting.—Messrs. BARR & SONS sent an interesting sport of *Helianthemum Golden Ball*, a yellow variety, bearing branches producing double scarlet flowers in the upper part of the plant.

Nomenclature of multigeneric hybrids.—The SECRETARY read the report of the sub-committee upon the nomenclature of multigeneric hybrids, the committee approving the recommendations contained therein. After being read to the Orchard Committee, it will be presented to the Council for its approval.

Certificate of Appreciation.—A Certificate of Appreciation was recommended to be awarded to Mrs. SCOTT-ELLIOTT, of Teviot Lodge, Hawick, N.B., for work in connection with the hybridising of *Aquilegias*.

ROYAL AGRICULTURAL.

We append the official list of the awards made by the Royal Horticultural Society at the horticultural show held at Gloucester under the auspices of the Royal Agricultural Society:—

LAWRENCE GOLD MEDAL to Col. Holford, C.I.E., C.V.O.

GOLD MEDAL to Col. Holford, James Cypher & Sons (2), and Blackmore & Langdon.

SILVER-GILT FLORA MEDAL to Mr. Holmes, Chesterfield; Stuart Low & Co.

SILVER-GILT BANKSIAN MEDAL to C. W. Breadmore, Winchester; Dobbie & Co.; King's Acre Nurseries Co., Hereford; J. S. Sharp, Almond-bury; W. Yarse, Leamington; W. Cutbush & Son, Highgate.

SILVER CUP to Sir John Dorrington (gr. Mr. Savegar); J. G. Blacker, Esq. (gr. Mr. Curtis); the Hon. Viary Gibbs (gr. Mr. Beckett); Sir R. Baker, Bart. (gr. Mr. Usher); Messrs. Heath, Cheltenham.

SILVER FLORA MEDAL to C. F. Waters, Ealcombe; John Jeffries & Sons, Cirencester; Bakers, Wolverhampton; Hugh Andrews, Esq. (gr. Mr. Tooley); Maurice Prichard; E. J. Hicks, Twyford; Dicksons, Chester; R. H. Bath, Wisbech.

SILVER KNIGHTIAN MEDAL to Laxton Bros., Sutton & Sons.

SILVER BANKSIAN MEDAL to Alex. Dickson & Sons; Gunn & Sons; W. J. Godfrey, Exmouth; W. & J. Brown, Peterborough; J. H. White & Co., Worcester; Miss H. Henus; Mr. H. N. Ellison, West Bromwich; A. A. Walters & Sons, Bath; Toogood & Sons, Southampton; Bell & Sheldon, Guernsey; A. F. Dutton, Iver; Harkness & Sons, Bedale; Geo. Mount & Sons, Canterbury; T. W. Darlington, Carnforth.

IRISH SEED AND NURSERY TRADES ASSOCIATION.

JUNE 21.—The following resolution, we are informed, was adopted at a meeting of the Irish Seed and Nursery Trades Association held in Dublin on the 21st ult.:—"That this Association views with the utmost apprehension and alarm the possibility of nurseries being included in the taxation of undeveloped land. Lying, as so many nurseries do, in suburban districts, it is feared that the proposed tax on undeveloped land will have a most disastrous effect upon an industry already weakened by keen competition, both home and foreign. It is most earnestly hoped that the Chancellor of the Exchequer will make a concession in this instance and allow nurseries to be classed as an 'industry.' The capital invested in greenhouses, sheds and other buildings, and the large amount of labour employed in this differentiation, and as the area occupied by nurseries is small compared with that of the cultivated land as a whole, this concession would preserve a deserving industry, without seriously interfering with the yield of the tax."

HORTICULTURAL CLUB.

VEGETABLE CULTURE AND COOKING.

JUNE 23.—The usual monthly dinner of this club took place on the above date at the Hotel Windsor, under the chairmanship of Sir John D. Llewellyn, Bart. Mr. Alexander Dean, V.M.H., delivered an interesting address on the culture and cooking of vegetables. He regretted that vegetables were in these days so greatly subordinated to flowers at all the great shows, despite their greater practical importance as food for mankind. He found some sort of parallel between this habit and the predominance which sport and games have assumed of late years as compared with more practical employment of spare time, the prosaic but essential being largely ignored in favour of the aesthetic and ornamental or that which contributed to excitement and in some degree to ostentation. The cooking of vegetables was not to be ignored in the practical aspect of life, since the proper preparation of vegetables for consumption was a matter of considerable importance. He mentioned several examples where the ordinary treatment of vegetables, such as Parsnips and Potatoes, tended far more to spoil them than to bring out their full flavour. Mr. Dean considered it to be an important step in the right direction that the National Vegetable Society was now being formed to endeavour to place the culture of vegetables as it were on an official level with that of flowers. It was a matter of great congratulation that the Duke of Portland had accepted the presidency of the new Society, whilst, as a result of his present address, Sir John Llewellyn had consented to be one of the vice-presidents. Mr. Dean mentioned the valuable results which had, here and there, been obtained by intelligent working men from their small allotments.

WINDSOR AND ETON ROSE.

JUNE 25.—The 18th annual show was held, by permission of his Majesty the King, in the beautiful "Slopes" on the north side of Windsor Castle. Although the weather was not summer-like, it was fine during the greater part of the day, and the attendance was satisfactory.

The King's Challenge Cup, offered for 48 distinct blooms, was keenly contested by eight competitors. Messrs. FRANK CANT & CO., Colchester, secured the trophy with a stand of beautiful blooms, the varieties including Marquis Litta, Bessie Brown, Mrs. Theodore Roosevelt, Lohengrin, Maréchal Niel, Mildred Grant, Mme. Jules Gravereaux, Rosamaine Gravereaux, and Helene Guillot. Messrs. BEN. R. CANT & SONS, Colchester, were placed 2nd; Messrs. ALEX. DICKSON & SON, 3rd; and Messrs. D. PRIOR & SON, 4th.

In a class for 18 Tea or Noisette Roses, Mr. GEORGE PRINCE, Longworth, showed much finer flowers than his rivals, and was worthily awarded the 1st prize. A selection of his best flowers include Cleopatra, The Bride, Maréchal Niel, Maman Cochet, Mme. Jules Gravereaux, Catherine Mermet, Mrs. E. Mawley, Golden Gate, and E. V. Hermanos. 2nd, Mr. HENRY DREW, Longworth. 3rd, Messrs. BEN. R. CANT & SONS.

In the class for 12 distinct varieties of Roses, three blooms of each kind, Messrs. BEN. R. CANT & SONS won the 1st prize, having excellent examples of Mildred Grant, Richmond, Dean Hole, Bessie Brown, and J. B. Clark. Mr. CHARLES TURNER, Slough, followed closely; whilst Messrs. D. PRIOR & SON were placed 3rd. This last-named firm showed the best 12 blooms of a Hybrid Perpetual or Hybrid Tea Rose, having superb blooms of Dean Hole variety. 2nd, Messrs. A. BIDE & SONS, Farnham, with Queen of Spain. 3rd, Mr. CHARLES TURNER, with Mrs. J. Laing.

In the class for 12 blooms of any Tea or Noisette variety, Mr. GEORGE PRINCE showed best, having beautiful flowers of Souvenir de S. A. Prince. 2nd, Mr. HENRY DREW, with Mme. Jules Gravereaux.

In the class for 12 blooms of a crimson and 12 blooms of a white variety, Messrs. S. BIDE & SONS won the premier prize easily with J. B. Clarke and Kaiserin A. Victoria. 2nd, Mr. HENRY DREW.

For six vases of distinct varieties, five blooms of each kind, Messrs. ALEX. DICKSON & SONS

were placed 1st, their best examples being Nita Weldon, Mildred Grant, and Lady Helen Vincent. 2nd, Mr. CHARLES TURNER.

AMATEUR CLASSES.

A trophy known as the "Windsor Cup" was offered for 24 blooms, distinct. It was won by E. J. HOLLAND, Esq., with a splendid exhibit, including Mildred Grant, Florence Pemberton, William Shean, Mrs. David McKee, Mrs. W. J. Grant, Bessie Brown, and Mme. Melanie Souper. 2nd, CONWAY JONES, Esq. 3rd, Rev. T. G. HENSLOW, whose exhibit contained the best Rose in the show in a superb bloom of Maréchal Niel.

In the class for 12 distinct Tea or Noisette Roses, J. B. FORTESCUE, Esq., won the 1st prize with splendid examples of Mrs. E. Mawley, Medea, Mme. Jules Gravereaux, and Comtesse de Nadaillac. 2nd, CONWAY JONES, Esq. 3rd, Rev. T. G. HENSLOW.

In the smaller class for six distinct varieties, the 1st prize was awarded to E. J. HOLLAND, Esq., who showed excellent blooms of William Shean, Mrs. W. J. Grant, Mildred Grant, and Bessie Brown. 2nd, G. A. HAMMOND, Esq.

G. A. HAMMOND, Esq., won the 1st prize for three distinct varieties, five blooms of each kind, to be shown in three vases. 2nd, CONWAY JONES, Esq.

Mr. JONES showed the best 12 bunches of decorative Roses, having the varieties Claire Jacquier, Papillon, Aglaia, W. A. Richardson, Isabella Sprunt, and Gustave Regis in good form. 2nd, J. CURNOCK SAWDAY, Esq. 3rd, MARCUS DIMSDALE, Esq.

The best 18 blooms were shown by J. B. FORTESCUE, Esq.; and the best 12 blooms by Dr. LAMPLOUGH in the respective classes.

A special class for 12 blooms, distinct, was provided for growers of fewer than 1,000 plants. LEWIS J. PAWLE, Esq., Harrow, was well to the fore with Mildred Grant, Bessie Brown, Mme. Jules Gravereaux, Mrs. W. J. Grant, and William Shean. 2nd, A. C. TWINCEN, Esq. 3rd, Dr. LAMPLOUGH.

The "Islet Challenge Cup," offered for 24 blooms, was won by J. B. FORTESCUE, Esq. Mrs. Theodore Roosevelt, J. B. Clark, Mrs. Harold Brocklebank, William Shean, and Bessie Brown were some of the best varieties in this stand. 2nd, COLIN ROMAINE, Esq.

Other prominent winners in the amateur classes were Rev. J. B. SHACKLE, ERNETT J. MOCATA, Esq., E. F. BROWN, Esq., and Miss LANGWORTHY.

There was keen competition in the class for a decorated dinner table, no fewer than 16 exhibitors competing. Mrs. MALTBY obtained the premier award.

NON-COMPETITIVE EXHIBITS.

Exhibits from nursery firms were not so numerous as usual. Messrs. THOMAS WARE, LTD., Feltham, showed herbaceous flowers in variety. Mr. H. W. CAISTER, Slough, exhibited Sweet Peas and Nectarines. Messrs. G. & A. CLARK, LTD., Dover, showed herbaceous flowers and Sweet Peas. Messrs. TITT & SONS, Windsor, displayed floral devices and herbaceous flowers. Mr. CHARLES TURNER, Slough, staged herbaceous flowers and Carnations. Messrs. GEORGE JACKMAN & SON, Woking, had a beautiful stand of Roses and herbaceous flowers. Messrs. JAMES VEITCH & SONS had an extensive arrangement of herbaceous flowers, Roses, Ixias, and Paeonies.

RICHMOND HORTICULTURAL.

JUNE 30.—The 35th annual flower show was held on this date in the Old Deer Park. The weather in the morning was cold and dull, but in the afternoon the sun shone at intervals. The exhibits were much fewer than usual, and especially was this noticed in the classes for Roses and Sweet Peas. The show generally was inferior to many that have preceded it.

GROUPS OF PLANTS.

There were two competitors in the class for a group of plants occupying a space of 100 square feet. The better of the two was shown by Lady WANCHER, The Terrace House, Richmond (gr. Mr. H. Burfoot). It was a remarkably bright display, the chief features being Campanulas, and

Begonia 'Gloire de Lorraine', Hippeastrums, Odontoglossums, Hydrangeas, Gloxinias, with tall plants of Humea elegans, Codiaums, and Palms. The groundwork was composed of Ferns and Gypsophila. 2nd, Mr. WM. VAUSE, Leamington Spa, for a rather heavier arrangement in which Orchids were a feature.

There was a similar class in which the space was restricted to 60 square feet. There were three exhibits, the 1st prize being awarded to C. M. BARTLETT, Esq., Uplands, East Sheen (gr. Mr. H. Hicks). Caladiums, Dracaenas, Codiaums, with Schizanthus, Clerodendron fallax, Gloxinias and Gypsophila were the principal subjects comprising the group. 2nd, Mr. W. VAUSE, Leamington Spa. 3rd, Mrs. FITZWYGRAM, Hampton Hill (gr. Mr. W. Redwood).

Prizes were offered by J. H. Masters, Esq., Petersham, for a basket of plants arranged for effect. Five baskets were shown, the 1st prize being awarded to L. WARDE, Esq., Petersham (gr. Mr. A. Allum), for an effective exhibit of Caladiums, Gloxinias, Fuchsias, Clerodendron

LETT, Esq., Uplands, East Sheen, who had fine specimens of the variety R. Box and the red-coloured Cardinal. 2nd, Mrs. VAUGHAN ARBUCKLE. There were three competitors.

There was rather better competition in the class for Fuchsias, the 1st prize being won by Mrs. FITZWYGRAM, who had the largest plants. Her best specimen was the variety named after Mrs. Marshall; General Gordon and Mrs. Rundle were also fine. 2nd, Mrs. COWPER COLES, Heddingham House, Twickenham (gr. Mr. W. H. Keary).

Highly-coloured Coleus, shown by L. WARDE, Esq., Petersham House (gr. Mr. Allum), were awarded the 1st prize in the class for these plants. Considering the sunless season, the foliage was remarkably bright.

J. H. BRIERLEY, Esq., Kew Road, Richmond, excelled in the class for Ferns, having crested varieties of hardy kinds.

Some good plants of Gloxinias were staged. In the class for six of these plants, C. M. BARTLETT, Esq., Uplands, East Sheen (gr. Mr. H.

arrangement of Pink Carnations, Gypsophila, Ferns, Asparagus and Grasses.

ROSES.

The only exhibitors in the class for 48 blooms, shown in triplets, were Messrs. FRANK CANT & Co., Colchester. There were four competitors last year, so that the single entry was disappointing. Messrs. CANT's blooms showed evidences of the sunless summer and repeated rains. Their best examples were Caroline Testout, Liberty, Antoine Rivoire, Dean Hole, Mrs. John Laing, Gustave Piganeau, Oscar Cordell, Frau Karl Druschki, and Mme. Melaine Soupert.

Poor blooms were also shown in the class for 12 blooms, the best of four collections being staged by A. CHANCELLOR, Esq., J.P., Richmond.

The best 12 blooms of a Hybrid Perpetual or Hybrid Tea variety were shown by Messrs. W. & J. BROWN, Peterborough and Stamford, who staged a dozen good blooms of the variety Mildred Grant; the 2nd prize was awarded for poor examples of Liberty. There were four exhibitors in this class.

In the class for 12 Tea Roses, the well-known Maréchal Niel variety, shown by Messrs. W. & J. BROWN, secured the 1st prize with no competition.

In the amateurs' class for 24 blooms, W. C. ROMAINE, Esq., Windsor (gr. Mr. J. Guttridge), was awarded the 1st prize. Several of the blooms were choice specimens, notably Mildred Grant and Bessie Brown.

Mr. ROMAINE was also placed 1st for 12 blooms in competition with three other exhibitors, Mr. W. J. TURNER, Teddington, winning the 2nd prize.

In the class for 12 Roses, the competition being restricted to persons residing in the district and to those not employing a permanent gardener, some excellent blooms were shown by W. J. PALMER, Esq., 12, Netherton Road, St. Margarets, who secured the 1st prize. Caroline Testout in this exhibit was one of the best blooms exhibited in the show. Dean Hole and Mrs. W. J. Grant were also noteworthy. 2nd, G. J. FAVEL, Esq., High Street, Hampton Hill.

Messrs. W. & J. BROWN, Peterborough, showed the best bunches of garden Roses, and they also excelled in the class for 12 H.T. Roses, the prizes being given by Lady Rugge-Price.

Mr. WM. HAYWARD, Fife Road, Kingston, showed the best basket of Roses; Miss COLE, Feltham, the best basket of cut flowers and foliage; and Mrs. MARTIN, 13, North Road, Richmond, won the 1st prize for a bouquet of Roses.

FRUIT AND VEGETABLES.

The most important class for fruits was one for a collection of six dishes of distinct kinds. There was only one exhibit, this being shown by the Earl of DYSART, Ham House, Petersham (gr. Mr. T. F. Conway). His examples were Peregrine Peach, Early Rivers Nectarine, fine fruits of Leader Strawberry, Black Hamburg and Foster's Seedling Grapes, and a Melon. The collection was awarded the 1st prize.

The best white Grapes were shown by W. G. RAPHAEL, Esq., Castle Hill, Enfield Green (gr. Mr. H. H. Brown), the variety being Buckland Sweetwater. The berries were large but rather green; the best black Grapes were exhibited by Sir W. GREENWELL, Bart., Morden Park, Caterham (gr. Mr. W. Lintott), the variety being Black Hamburg.

Highly-coloured fruits of Early Rivers Nectarine, shown by W. G. RAPHAEL, Esq., and very small fruits of Crimson Galande Peaches, shown by Messrs. W. & E. WELLS, Hattonhurst, Hounslow (gr. Mr. G. Thompson), won the 1st prizes respectively in the classes for these fruits.

The best Melon was shown by F. H. COOK, Esq., Barnett Hill, Guildford (gr. Mr. A. Kitchelson), who exhibited a seedling with yellow skin.

VEGETABLES were shown well, especially by cottagers. The Earl of DYSART won the 1st prizes in the classes for collections in which the prizes were given by Messrs. Jas. Veitch & Sons, Ltd., and Messrs. Webb & Sons, Stourbridge, having no competitor in either case. The same exhibitor beat Mr. R. KEENE, 8, Manor Grove, Richmond, in Messrs. Carter & Co.'s class for nine distinct varieties of vegetables.

The Society offered prizes for a collection of 12 kinds of vegetables, and this was closely contested by the Earl of DYSART and the Earl of



FIG. 5.—CARNATION HER MAJESTY: COLOUR YELLOW WITH DEEP-PURPLE EDGE.

This variety received an Award of Merit at the last meeting of the R.H.S. (See ante, p. 419.)

fallax, Statice and other flowering plants, with a Cocos Palm in the centre. 2nd, HENRY LITTLE, Esq., Twickenham (gr. Mr. G. Watts), for a bright group containing many flowering plants of common subjects.

Orchids were shown by three exhibitors in a class for six plants. A collection of showy Cattleyas and Lælio-Cattleyas displayed by H. LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. A. Howard), received the 1st prize. The 2nd prize group was exhibited by Mr. W. VAUSE, Leamington.

In the class for six tuberous-rooted Begonias there were three competitors. The 1st prize was awarded to S. EDWARDSON, Esq., Sidecup (gr. Mr. T. Rabbitt), for large examples. 2nd, G. ATKINS, Esq., East Sheen (gr. Mr. W. J. Hill). This exhibitor showed best in Messrs. Sutton & Sons' class for Begonias, and he also excelled in the class for Streptocarpuses.

Caladiums were best shown by C. M. BART-

Hicks), won the 1st prize with freely-flowered specimens. 2nd, C. R. W. BENNETT, Esq., Sunbury (gr. Mr. W. Chant).

The best Palms were shown by Mr. W. VAUSE, who also showed the best collection of six fine foliage plants, but was only awarded the 2nd prize. The best single specimen plant was a finely-coloured Codiaum shown by Mrs. VAUGHAN ARBUCKLE, Stawell House, Richmond (gr. Mr. H. Lawrence).

Exhibits of hardy flowers provided a pleasing display. In the class for 24 bunches, the premier position was taken by L. WARDE, Esq., Petersham (gr. Mr. A. Allum), and he was followed by the Earl of DYSART with a good collection.

Floral decorations formed an attractive portion of the show. Mrs. ALEX. ROBINSON, Carshalton, arranged the best exhibit of three vases or stands of flowers and foliage suitable for a dinner-table decoration. It was a light

DEVON, Powderham Castle, near Exeter (gr. Mr. T. H. Bolton). There was not much to choose between the two exhibits, but the 1st prize went to the local exhibitor, the Earl of DEVON receiving the 2nd award.

A dish of Duke of York Tomatoes shown by Mrs. COWPER COLES, Twickenham (gr. Mr. W. H. Keary), was adjudged the best of nine exhibits, and Messrs. W. & E. WELLS had the finest Cucumbers, the variety being Telegraph. A Cucumber weighing 9 lbs. 8 ozs., and measuring 37 1/2 inches in length and 1 1/2 inches in girth, was shown by G. R. KENDLE, Esq., Wilton, near Salisbury (gr. Mr. J. C. Scammell). The variety was Duke of Edinburgh.

NON-COMPETITIVE EXHIBITS.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, staged a pleasing exhibit of Roses in pots, with Lilium auratum and L. lancifolium album effectively interspersed. The group had an undulating border composed of Eurya latifolia variegata. The Roses were a representative collection, and included several fine plants of the variety Dorothy Perkins. (Gold Medal.)

Mr. WILLIAM THOMPSON, Sheen Nurseries, Richmond, staged a group of foliage and flowering plants, amongst which Hydrangeas, Roses and Pelargoniums were a feature, with Arc Negundo variegata, Palms, Eurya latifolia, and other ornamental-leaved plants. (Gold Medal.)

Mr. L. R. RUSSELL, Richmond, staged a magnificent group of miscellaneous plants, the exhibit extending in the whole length of one of the largest tents. The display was formed of a number of semi-circular groups, each bay being separated by Roses, Nertera depressa, Saxifraga sarmentosa, &c.

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed hardy flowers in variety, also Carnations, tuberous-rooted Begonias, Gloxinias, and Roses.

Mr. W. H. PAGE, Tangle Nurseries, Hampton, showed a magnificent group of Carnations and Lilliums, interspersed with Ferns. The same exhibitor showed climbing Roses, Ivy-leaved Pelargonium Countess Grey, and pink-flowered Astilbes. (Gold Medal.)

Messrs. T. S. WARE, LTD., Feltham, filled the greater part of one large tent with a showy display of flowers, including garden plants, Carnations, tuberous-rooted Begonias, Roses, &c., the whole presented in excellent condition. (Gold Medal.)

Mr. J. BRUCKHAUS, Orleans, and St. Mark's Nurseries, Twickenham, showed a semi-circular group of Aspidistras and Ferns, interspersed with Metrosideros floribunda, the Bottle-brush tree. (Silver-gilt Medal.)

Mr. H. E. FORDHAM, Twickenham, showed Gloxinias set in a groundwork of Adiantum Ferns. (Silver Medal.)

Messrs. W. & J. BROWN, Stamford and Peterborough, showed bunches of Roses, also Sweet Peas in variety. (Silver Medal.)

Messrs. J. PIPER & SON, Bishop's Road, Bayswater, exhibited Box trees clipped in the form of birds, &c. (Silver Medal.)

Mr. WILLIAM POUPART, Fernleigh Orchards, Twickenham, showed bottled fruits in variety.

NEW INVENTIONS.

A PORCELAIN PLANT LABEL.

A PLANT label that has a more or less permanent character is a great boon to the gardener. The wooden labels that are so largely used are unsatisfactory, because after a short time the writing on them becomes illegible. Paper labels are convenient, but they are soon destroyed by the weather. Perhaps the most simple, and yet the most durable, are those made of lead, with the names stamped in them, but these have to be very closely approached in order to read them. A very neat form of label has just been sent us by Messrs. Kirkland & Co., Albion Pottery, Etruria, Stoke-on-Trent. It is made of vitreous earthenware and the name is stamped on a white ground before being covered by the glazing. The labels are totally unaffected by the weather, and unless broken they will last indefinitely. One end is pierced for the purpose of attaching the tally by a piece of string or wire.

MARKETS.

COVENT GARDEN, June 30.

[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.

Table with multiple columns listing various cut flowers like Asters, Carnations, Paeonies, Pelargoniums, etc., with prices per dozen or bunch.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage items like Adiantum, Agrostis, Asparagus, etc., with prices per dozen or bunch.

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

Table listing various potted plants like Atriplex, Aralia Sieboldii, Aspidistra, etc., with prices per dozen or per plant.

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

Table listing various potted plants like Lobelia, Marguerites, Mignonette, etc., with prices per dozen or per plant.

Fruit: Average Wholesale Prices.

Table listing various fruits like Apples, Apricots, Bananas, Cherries, Currants, etc., with prices per bushel or per ton.

Vegetables: Average Wholesale Prices.

Table listing various vegetables like Artichokes, Asparagus, Beans, Beetroot, Cabbages, Carrots, etc., with prices per bushel or per ton.

REMARKS.—English Cherries are arriving in an unsound condition, the fruits having been spoiled by the rains. Strawberries are much cheaper, but well-coloured berries are scarce. Gooseberries are about the same trade as last week. Apples are selling slowly owing to the large quantities of Strawberries. Consignments of Oranges are smaller, but Lemons are more plentiful. English Peaches and Nectarines are inclined to be dearer. English Tomatoes are plentiful and cheap, but badly coloured. Trade generally is moderate. E. H. R., Covent Garden, Wednesday, June 30, 1909.

Potatoes.

Table listing various potato varieties like Lincoln, Up-to-Date, Maincrop, etc., with prices per ton.

REMARKS.—There is little demand for old Potatoes and the stock is nearly exhausted. The trade for new tubers is fair, and prices are a little higher. Eds. J. F. Newbery, Covent Garden and St. Pancras, June 30, 1909.

COVENT GARDEN FLOWER MARKET.

Bad weather and the abundance of Strawberries from the more-favoured districts have been detrimental to the plant and flower trade. This morning there were large quantities of cut flowers and plants unsold at closing time. In the plant trade there are many growers who hold stock over rather than reduce prices. And it is the same with cut flowers to some extent; but late in the morning there are many who try to clear at greatly reduced prices, and it is this which causes trouble on both sides. The grower hears from a local man that he has paid a certain price, but does not make an allowance for the waste or what has to be cleared at very low prices, if it is sold at all.

POT PLANTS.

Some growers have discontinued seeding consignments, but I have rarely seen bedding plants so plentiful at the end of June. Zonal Pelargoniums in all colours are good in 3-inch and 5-inch pots. Good white varieties may be few, but all other colours are over-plentiful; King of Denmark is the most prominent. The variety Mrs. Brown Potter, in 5-inch pots, is well flowered. All the ivy-leaved varieties are good, but do not sell well. Marguerites are remarkably good; the yellow variety is better than I have seen it for some years past, but unfortunately it comes in too late for the best trade. The white variety is present all the year through, and at the present time, though so late in the season, the plants are of excellent quality. Fuchsias are good, and Saxifraga pyramidalis is procurable in good plants. The Crassulas now include good examples of *C. coccinea*, and the dwarf hybrid varieties are well flowered. Lilioms are not quite so plentiful and prices may advance. *Rhodanthe* is scarce. *Spiræas* are good, and it must be disappointing to growers of the new pink varieties to have so many left unsold. *Verbenas* are still very good, and prices are hardly equal to the quality of the plants. We do not often get late *Mignonette* so good as it is at present. The supplies of foliage plants are more than equal to the demand.

CUT FLOWERS.

Roses are over-plentiful except the best red sorts on long stems, which were difficult to procure even at advanced prices. An abundance of Carnations is seen. At closing time there were heaps of Sweet Peas left on the stands. I may again refer to the fact that it is only the definite colours that are in general demand. The variety *Stirling Stent*, which gained an award of merit last week, should prove useful for market; and *Blanche Steven*, the pure white variety, should also be worth attention. *Pyrethrums* are not quite so plentiful. *Pæonies* are good in all colours, but very few of the single varieties are seen. Spanish *Iris*es from English growers are remarkably good, the weather having been particularly favourable for them. *Gladiolus Brechebleyensis* is now coming in, and the hybrids of *Colvillei* are over-plentiful. *Stauces* in white, yellow, and blue has been making good prices. Lilioms sell for prices below the average. *A. H.*, *Covent Garden*, June 30, 1909.

THE WEATHER.

THE WEATHER IN WEST HERTS.

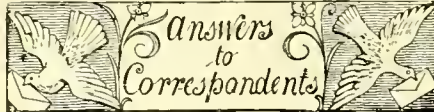
Week ending June 30.

The fourth cold week in succession.—All the days of the past week were more or less cold, and on the coldest day the temperature in the thermometer screen at no time rose higher than 54°, which is 15° below the average maximum for the time of year. The nights were also all cold, but much less unseasonably cold than the days. The ground temperatures still remain low, and are at the present time 2° colder at 2 feet deep, and 3° colder at 1 foot deep than is seasonable. Rain has fallen on each of the last nine days and to the aggregate depth of 1½ inches. Of that amount four galls have already come through the bare soil gauge, but less than half that quantity through that on which short grass is growing. The sun shone on an average for four hours a day, which is 2½ hours a day short of the average daily duration for the end of June. The winds have been as a rule light. The mean amount of moisture in the air at 8 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 14 per cent.—*E. M.*, *Berkhamsted*, June 30, 1909.

Obituary.

WILLIAM WHIBBERLEY.—The death occurred on the 18th ult., at The Hollies, Little Budworth, Cheshire, of Mr. William Whibberley, late gardener to Sir Philip Egerton, Bart., of Oulton Park, Cheshire. Mr. Whibberley commenced his gardening career with Sir Joseph Paxton at Sydenham. Later he acted as foreman at Nunnington Castle and Apley Park, his first charge being with the Earl of Wicklow, at Shelton Abbey, Co. Wicklow. He was also gardener at Mitchelstown Castle. In 1835 Mr. Whibberley returned to England to take charge of the gardens at Oulton Park, where he remained until retiring last year, an allowance being made to him in recognition of long and faithful services. Deceased leaves a widow and one son. The funeral took place at Little Budworth Parish Church.

MRS. WADDS.—Hannah, wife of Bailey Wadds, on June 24, at 181, Uttometer New Road, Derby, aged 75 years.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

CARNATIONS: *W. E. B.* You cannot expect to obtain strong, healthy stock from diseased plants. Spray the healthy ones before layering the shoots with potassium sulphide solution at a strength of 1 oz. in three gallons of water.

CATERPILLARS INFESTING TOMATOES: *Worried.* So far as we can ascertain, the caterpillars are those of the moth *Heliothis armiger*. Paris green, although effective, cannot, unfortunately, be used owing to the danger of placing poison on fruits used for food. Hydrocyanic acid gas would no doubt destroy the insects, but it is questionable whether or not it would have an injurious effect upon the plants. The safest, if not the most effective, course is to check them by hand picking, and if the plants will admit of the treatment, shake them over a sheet of paper or an inverted umbrella.

EMPLOYMENT AT KEW GARDENS: *G. O.* Particulars may be obtained from the Curator of the gardens. No examination is entailed, and no women gardeners are now employed at Kew. Your chances of obtaining an official appointment after completing your two years' course will depend upon whether any vacancies occur during the time you are about to leave, and on your fitness for filling the post.

EMPLOYMENT IN PUBLIC PARKS: *V. D.* Write for particulars to the superintendent of the park you wish to enter. A list of the principal parks is given in the *Gardening Year Book and Garden Oracle*, published by Messrs. W. H. and L. Collingridge, City Press, Aldersgate Street, London, E.C.

FIG LEAVES: *T. S.* No disease is present to account for the trouble. The cause must be looked for in some other direction.

FOXGLOVE FLOWER: *H. M.* The flower has become regular, a condition termed *peloria*. *Peloric* flowers are common in other plants of the Foxglove family.

GRUB ON APPLE: *Libertia.* There are no "grubs" on the twigs you send; but the bark is practically covered with the eggs of the *Bryobia* mite. Spray the trees during the winter with the Woburn wash.

INFESTED CABBAGES, &c.: *W. B. Bruce.* The dry weather of May is accountable, in a large measure, for the ravages of the "Turnip fly" (*Maltica nemorum*), which you refer to as being so destructive to Cabbages, &c. The recent rains will no doubt enable the plants to outgrow the attack. If, as you say, arsenate of lead has so far failed, we would recommend another application of this insecticide. It must be borne in mind, however, that such measures will not destroy the larvæ or prevent them from feeding, as they do, between the cuticle of the leaves. Every care should be taken to encourage early development of the plants. Copious waterings should be afforded during periods of drought.

INJURED ROSES: *John Sergeant.* The grubs causing the damage are the "Coch-y-bonddu" of the Welsh (*Phyllopertha horticola*), often used as a bait by fishermen. The only satisfactory method of dealing with the pest, seeing that the Roses are in full bloom, is to shake the plants over an inverted umbrella and destroy the beetles that are thus collected.

NAMES OF PLANTS: *J. S. H.* *Muscari comosum monstrosum*. In this form the flowers are all barren and their structure abnormal. It is popularly known as the Feather Hyacinth.—*J. L.* 1, *Aristolochia Siphoc*; 2, *Mackaya bella*.—*J. H.* 1, *Campanula glomerata*; 2, *Gemm coccineum*.—*Idris.* *Sisyrinchium bermudiana* (syn. *S. anceps*), blue-eyed Grass.—*T. W.* Alder, *Alnus glutinosa*.—*E. G. H.* 1, *Tsuga Brunoniana*; 2, *Cupressus Lawsoniana pendula*; 3, *C. L. Intea*.—*T. Murden.* The specimen is *Prunus Padus*, the Bird Cherry. It can be

propagated by means of seeds, which ripen freely.—*A. I.* *Ilex dipyrrena*.—*Constant Reader.* 1, *Sedum rupestre elegans*; 2, *S. spatulifolium*; 3, *Eschscholtzia californica*; 4, *Erigeron philadelphicus*; 5, *Helianthemum vulgare* var.; 6, *Polygonum Bistorta*.—*E. N.* 1, *Kalmia latifolia*; 2, *Dictamnus albus* var. *purpureus*; 3, *Clematis integrifolia*; 4, *Geranium dissectum*; 5, *Helianthemum vulgare* var.; 6, *Hieracium villosum*.—*T. T.* 1, *Acæna inermis*; 2, *Astragalus danicus*; 3, *Paronychia capitata*; 4, *Heli-chrysum orientale*; 5, *Tradescantia virginica*; 6, *Linaria reticulata*.—*Filices.* 1, *Vicia sepium*; 2, *Polygonum Bistorta*; 3, *Geranium pyrenaicum*; 4, *Lathyrus pratensis*.—*B.* 1, *Mertensia echioides*; 2 and 3, forms of *Pentstemon humilis*.—*Cornwall.* *Lychnis Flos-cœnuli*.—*Oliver Hayles.* *Achilla sibirica*.—*Libertia.* 1, *Abies ciliocica*; 2, *Cryptomeria japonica*; 3, *Aster Fremontii*; 4, *Iris vesicolar* var. *virginica*; 5, *Veronica Tencericum*; 6, *Saxifraga Wallacei*; 8, *Pyrus Aria*; 9, *Pyrus floribunda*.—*G. H. Greenham.* 1, *Amalanchier canadensis*; 2, *Nandina domestica*; 3, *Serophularia aquatica variegata*; 4, probably *Æsculus indica*; 5, *Kniphofia Tuckii*; 6, *Polypodium aureum*; 7, *Phœopsis stylosa*.—*R. H.* 1, *Adiantum hispidulum*; 2, *Adiantum formosum*; 3, *Asplenium trichomanes*; 4, *Selaginella umbrosa*; 5, *Nephrolepis exaltata*; 6, *Pteris aquilina*, common *Bracken* which often comes up in the peat in which *Oreohids* are potted.—*O. T.* Both *Cattleya Mossie*.—*F. W. J.* 1, *Davallia dissecta*; 2, *Stenotaphrum americanum variegatum*; 3, *Scelaginella uncinata (caesia)*; 4, *Pellionia pulchra*; 5, *Helxine Soleirolii*.—*E. B.* *Periploca græca*.—*M. A. M.* *Muscari comosum* variety *monstrosum*.—*F. B.* *Vanda Bensonii* variety. *Jack.* (*Elothra fruticosa*; 2, *Dielytra eximia*; 3, *Centranthus ruber*; 4, *Sedum spectabile*; 5, *Hemerocallis Middendorffii*; 6, *Stachys lanata*.—*C. B.*, *Hants.* The slender yellow flowers are *Oncidium flexuosum*; the others *Oncidium Wentworthianum* and *Centranthus ruber*.—*Hortus.* *Cattleya Gaskelliana*.—*A. H.* *Ophrys apifera*, *Corydalis lutea*. Send when in flower.

PEACH LEAVES: *W. Y. N.*, *C. H.*, and *Gardener.* The foliage is affected with the "shot-hole" fungus—*Cercospora circumscissa*. Put 8 lbs. of good quicklime into a barrel, add one gallon of water, and when the lime begins to slake add 8 lbs. powdered sulphur. Stir well until the lime is thoroughly slaked, then add water to make 50 gallons of the mixture. This should be kept stirred during its application to the trees. The specific is most efficacious just when the leaves have first expanded, but its use should be continued at intervals.

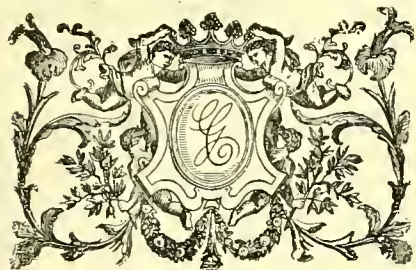
PEACH TREES UNHEALTHY: *E. H. & Co.* The shoots are affected with "blister," caused by a fungus—*Exoascus deformans*. Cut off and burn the badly-affected parts and spray the trees with a dilute ammoniacal solution of copper carbonate at intervals. See also reply to *Wales* in the issue for June 5, p. 372.

SCHEDULE: Enquirer. Rule 5 states that all specimens exhibited must be the bona-fide property of the exhibitor, or of his employer, and have been in his possession at least three months. If the committee desired certain classes to be exempted from the operation of this rule, it may be assumed they would have declared this in the schedule. They do not appear to have done so, and, therefore, the rule should be enforced.

VINE LEAVES WITH WARTS: *H. C. R.* The irregularities on the leaves are not due to disease due to fungus or insects, but are the result of outgrowths of cellular tissue. The presence of too much moisture in the atmosphere is generally the cause of the trouble. Keep theinery drier and admit plenty of fresh air.

WILLOW: *H. R. W.*, *Stuttgart.* We cannot find anything to account for the remarkable growth. It is one of those teratological variations the cause of which remains unknown.

Communications Received.—*A. J. M.*, U.S.A.—*F. M.*—*L. B. B.*—*G. I. L.*—*B.*, *Java*—*J. D. G.*—*C. P. R.*—*W.*—*J. D. G.*—*W. R. D.*—*K. & S.*—*E. M.*—*W. G. S.*—*G. B.*—*J. C. T.*—*D. H. C.*—*L. A.*—*Neal-Anxious*—*E. T.*—*E. P. & Co.*—*B. T. A.*—*F. G.*—*J. V. & Sons*—*F. S.*—*A. M. D.*—*Sons*—*H. P. R.*—*A. G.*—*M. P. L.*—*W. R. H.*—*F. C.*—*E. W. L.*—*Constant Reader*—*C. H. H.*—*J. J. F.*—*G. H. B.*—*Ioa S. E.*—*W. T. P.*—*H. J.*—*J. A. B.*—*Beginner*—*B. T. A.*—*H. H.*—*A. J. M.*—*T. F.*—*E. P. D.* & *Sons.*



THE

Gardeners' Chronicle

No. 1,176.—SATURDAY, July 10, 1909.

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THE DISTRIBUTION OF PLANTS.

THE systematic study of the branch of botany now generally known under the name of ecology, is of quite recent growth. Prof. Warming's Danish work, called *Plantesamfund* ("Plant Societies"), published in 1895, and well known to most English botanists in the German translation which appeared the following year under the title of *Oecologische Pflanzengeographie* (Ecological plant-geography), was the first general text-book dealing with this attractive subject. Ecological plant-geography differs from plant-geography as it used to be understood (now often called *Floristic* plant-geography), in that the former deals, not with the distribution of plants on the earth by species, genera and families, but with the distribution and composition of those natural units of vegetation, or plant-communities—forests, prairies, marshes and the like—into which plants naturally group themselves, and with the causes which lead to this composition and distribution. The study of the detailed facts of distribution is a branch of plant-

geography, while the study of the actual effect of external conditions on the plants, which leads to the success of one type of vegetation in one place and another in another, belongs to one of the most recondite regions of plant-physiology.

Professor Warming's new work* follows the lines of his earlier book already alluded to, though it is considerably increased in size owing to the great additions to our store of information which have accrued during the last 14 years. The introduction deals with the scope of the subject; with the "growth-forms" which are the characteristic features of different kinds of vegetation (such, for example, as the coniferous tree, the deciduous tree, the bush form, the grass-types, rosette-plants, different forms of submerged plants, &c.), and the adaptations which they show to the different conditions under which they live; and, finally, with the conception of a plant-community.

The first section considers the "ecological factors" (light, heat, atmospheric humidity, nature and water-content of soil, &c.) and their effect upon plants and plant-communities. The next section deals with the "communal life of organisms," and shows how, owing to the interdependence of plants living together in one habitat, whether by way of competition or because one set of plants furnishes something that another set needs, e.g., by enrichment of the soil, by shelter, and the like, plants come to exist in more or less definite communities. The third section deals concisely with the numerous adaptations of structure found among plants living under different conditions of life. Then follow 13 sections devoted to a systematic review of the various plant-communities of the world grouped into 13 classes, and, finally, there is a section on the "struggle between plant-communities."

Every part of the book contains much valuable information. Prof. Warming is not only one of the pioneers of the subject and a most assiduous worker at its detailed development, but he is also a master of skilful and penetrating discussion of the problems in which the subject abounds. In fact, as the author plainly tells us, in the preface and elsewhere, the whole subject is still in its infancy, and this, indeed, is not to be wondered at when we consider that it involves parts of plant-physiology as yet unexplored. A perusal of the section dealing with ecological factors and their action is sufficient to show how little we know that is fundamental about the effect of external influences on plants. The author concludes, as indeed is inevitable, that water is by far the most important factor in determining the actual distribution and character of plant-communities. He also concludes that the physical characters of the soil are more important than the chemical in determining vegetation. This is an old quarrel between two rival schools of plant-geographers, reaching far back into the last century, and the only way to assign the correct relative importance to the two classes of factors is by direct experiment. It may be sus-

pected that Prof. Warming's view is influenced by his knowledge of the vegetation of his native land, where the soil is mostly glacial débris, in which there are no marked chemical distinctions as between one region and another.

The classification of all known plant-communities into 13 classes is necessarily provisional, as the author contends all ecological classification must needs be at present. It is doubtful if some of the classes, such, for instance, as *Chersophytes*, or plants of waste places, have any value at all.

The final section, on the struggle between plant-communities, is able and concise, though we cannot agree with the author's views on the origin of species. He assumes that "plants possess a peculiar, inherent force or faculty by the exercise of which they *directly adapt themselves* to new conditions, that is to say, they change in such a manner as to become fitted for *existence in accordance* with their new surroundings" (author's italics). To assume so much appears to be to renounce the attempt at real scientific explanation altogether.

We confess to some curiosity as to whether the present book was written in English by Prof. Warming and revised by Professors Groom and Balfour, or whether it was actually translated from a Danish text. The preface is obscure on the point. The English is very good, but we can scarcely congratulate those who prepared the book for publication in English on all the new technical terms. "Fell-field" and "fell-heath" may be good etymological equivalents of the Danish originals, but we do not think it either likely that they will, or desirable that they should, find a permanent place in English terminology. "High moor" and "low moor" are also likely to be misleading. There seems no adequate reason for writing "oecology" rather than "ecology."

The book is not quite free from small mistakes, most of which are due to defective proof-reading, and there are a few doubtful statements. But there can be no doubt of its general usefulness. T.

ORCHID NOTES AND GLEANINGS.

MOORE, LIMITED.

THIS establishment has taken a prominent place in Orchid horticulture during the past three years. It is under the management of the well-known experts in Orchids, Mr. W. H. Hatcher and Mr. W. Mansell. The nursery is situated on high ground at Rawdon, some seven miles from Leeds, near to Apperley Bridge Station on the Midland Railway. The Orchid houses are built on the hill-side, and, consequently, are arranged in terrace form, and longitudinally the different sections of each range exhibit the same arrangement. The older houses have been thoroughly renovated, and new ranges added, including a large span-roofed range connecting the ends of the other houses. The houses, on the occasion of a recent visit, presented a very attractive appearance, with many showy Orchids in bloom, including a fine strain of *Lælio-Cattleya Aphrodite*, with some exceptionally good white-petalled forms; L.-C. *Bletchleyensis*, one of them a very large and finely-coloured flower; L.-C. *Fascinator*, *Cattleya Dusseldorfæi Undine*, one of the best white *Cattleyas*; the true C. *Harrisonia violacea*, of which there are several finely-coloured examples; good C.

* *Oecology of Plants*, an introduction to the Study of Plant-communities. By Eng. Warming, Professor of Botany in the University of Copenhagen, assisted by Martin Vahl, prepared for publication in English by Percy Groom and Isaac Bayley Balfour. (Oxford, at the Clarendon Press, 1909.) Pp. xi. and 422. Price 8s. 6d.

Mossæ and *C. Mendelii*; some hybrid *Odontoglossums*, including *O. Rolfeæ* and good forms of *O. crispum*-*Harryanum*; *O. maculatum*; several hybrid *Phaius*; *Oncidium varicosum* *Rogersii*, *O. sarcodes*, and other Brazilian *Oncidiums*, with the handsome and fragrant *O. Lanceanum*, a large importation of which has recently arrived.

In the internal arrangement of the greater part of the houses the usual plan of having close, moisture-holding stages fitted with an open wooden stage has been adopted. In some of the new houses the whole of the staging is of open woodwork, it having been found that *Dendrobiums* and some other genera, if plentifully supplied with water, make finer pseudo-bulbs under this system of culture. For, when the resting time approaches, and water is withheld, the air passing freely between the staging facilitates the ripening of the growths. Mr. Hatcher holds that open staging for many Orchids is as good as any system during the growing season, and pre-

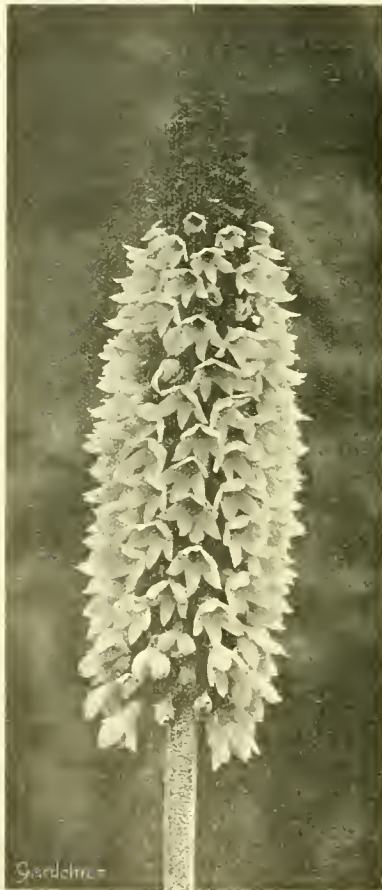


FIG. 6.—INFLORESCENCE OF *PRIMULA LITTONIANA*, AS SHOWN AT THE HOLLAND PARK EXHIBITION.

(See pp. 15 and 26.)

ferable where large batches of *Dendrobiums*, such as the firm import, have to be rested.

Provision is made for storing rain-water in the tanks, and liberal use is made of this in summer. At that season the artificial heat from the boilers is reduced to the lowest possible limit, and quite cut off from the cool and cool-intermediate houses—the result being that the plants throughout are in very vigorous condition. For potting material *Osmunda* fibre is said to be far better and more economical than the Orchid peat now procurable.

The new lean-to range on the highest level has on the one side a fine lot of *Phalenopsis*, the largest batch consisting of *P. Rimsteadiana*, of which some were in bloom. On the other side of the same house was a batch of *Oncidium Lanceanum*, and small lots of *O. luridum guttatum* and others of the section, together

with *O. Papilio* and *O. Kramerii* with their butterfly-like flowers, which have the advantage of being produced for years from the same flower-spikes. Other batches noted in the range were *Cypripedium bellatulum*, *C. niveum* and fine varieties of *C. Charlesworthii*. The rare *Dendrobium Lyonii*, which produces from stout, quadrangular pseudo-bulbs upright spikes of rose-pink flowers, resembles a better form of the Bornean *D. Treacherianum*.

Another house was filled with seedling *Lælio-Cattleyas*, crosses between *Sophronitis grandiflora* and other genera, and hybrid *Cypripedium*, the records of which show that *C. insigne* Harefield Hall has been used largely. They are approaching flowering size, some being noticed already in bud.

The next house, like some of the other houses, contained subjects which appeal strongly to the botanist and lover of species of Orchids, there being in it an interesting selection of *Bulbophyllums*, *Cirrhopetalums* and *Megacaliniums*. One probably new and rather large growing species from Southern Nigeria had a bracteate head to the inflorescence from which appeared in succession curious flowers with blackish, brush-like labellums. A batch of Burmese species of the deciduous section, including *Bulbophyllum hirtum*, and *B. comosum*, though

D. Dearei, the importation bringing with it a few of another species, probably *D. revolutum*. *D. Wardianum*, and other Burmese *Dendrobiums*; a small lot of the highland Indian form of *D. Jamesianum*, known as *D. Donnesiæ*, which is very dwarf in growth and bears larger flowers than the type; a lot of the true *D. infundibulum*, some of them in flower; and *D. cœlogyne* were also noticed.

In the next house was a collection of *Cymbidiums*, also two fine specimens of the rare and handsome *Cœlogyne asperata* (*Lowii*), the one with five, and the other with two flower-spikes; *C. pandurata*, *Zygopetalum Burkii*, *Z. rostratum* and other warm-house species.

The *Odontoglossum* houses contained a very fine lot of plants, principally *O. crispum*. These are grown as cool as possible, and with more ventilation than is the custom with some growers.

In one house hybrid Orchids are being raised, and some promising crosses are in course of development, but it is interesting to observe that the importation of Orchids is considered of equal importance to the growing of hybrids.

The grounds are some three and a half acres in extent. The fine trees on the hill-side have beneath them some pretty paths and rocky nooks, with heavy masses of the natural rock of the district.



FIG. 7.—*PRIMULA LITTONIANA* AS IT GROWS IN THE LICHANG VALLEY, YUNNAN, CHINA.

(See pp. 15 and 26.)

not in flower, gave off that hay-like fragrance peculiar to the section, and noticeable in the flowers, pseudo-bulbs, leaves and roots, especially when dry. A batch of *Catasetums* with large pseudo-bulbs, and another of *Mormodes* and *Cynoches* were also interesting.

The next house contained hybrids, but only *Cattleya Dusseldorfei* *Undine* was in flower; a good batch of *Brasso-Cattleyas*, however, was in sheath.

A large span-roofed house contained a collection of *Vandas*, *Aërides*, *Saccolabiums* and *Angræcums*, a few being in bloom. *Vanda cœrulea* of the best type was present in considerable numbers. In the next intermediate house, among many rare species, were noted *Sarcocylus unguiculatus*, several *Gongoras*, including the rare *G. odoratissima* with a fine spike of claret-red flowers; *Bulbophyllum lemniscatoides*, whose curious, fringed flowers are borne on a drooping head; *Physosiphon Loddigesii*, with pretty racemes of orange-coloured flowers; *Epidendrum umbellatum*, and several other *Epidendrums*, *Stelis*, *Octomerias*, and a great number of pretty *Masdevallias*.

The *Dendrobium* houses had one side nearly filled with hybrid and white *D. nobile*, and on the other stages was a large batch of the fine white

THE ROCK GARDEN.

EUPHORBIA MYRSINITES.

THIS prostrate-growing plant, with markedly glaucous foliage, is one of the most distinct species of the genus. By reason of its habit of growth it is better suited to the rock-garden or rudely-constructed rock-wall than to the border. The species appears more or less indifferent as to soil and succeeds in strong loam or quite sandy material. In text-books the usual references to "seeds, division, and cuttings" are given, without qualification, as the methods of propagation. As a matter of fact, it is not easy to increase this species by division. Seeds are useful enough when available, but they are often a long time before they germinate. The only really serviceable type of cutting is that which may be torn from the base of the plant in spring or early summer with a heel attached, and when about 3 inches in length. Such cuttings as these may be inserted without more ado, and they usually form roots in a month or less. Cuttings which are made of the stem portions and cut to a joint, may remain for months without rooting; indeed, I have kept them for nearly a year before discarding them. *E. H. J.*

NEW OR NOTEWORTHY PLANTS.

*PRIMULA LITTONIANA (G. FORREST).

THIS new species of *Primula* was found by Mr. George Forrest in "open mountain meadows on the range forming the eastern boundary of the Lichiang Valley" in the Yunnan, at an altitude of 10-11,000 feet, and was named by him to commemorate the late Consul Litton, who did so much to extend our knowledge of the outlying parts of the Chinese Empire. From seed collected by Mr. Forrest the plant has now been introduced to cultivation by Bees Ltd.

scribed as blood-red; the corolla is purple, the tube darker than the limb, passing into pale lilac. Before opening, the somewhat conical spike, red through the conspicuous bracts and calyces, tops the scape. As the purple flowers, each slightly drooping, begin to open from the base of the spike, the scape lengthens, and at mid anthesis there is produced a wonderful contrast between the lilac-purple corollas of the opened flowers and the bright-red cap of unopened ones. At the same time, as the expanded flowers do not overlap completely, streaks of red from the calyces and bracts are seen between them. The plant is thoroughly hardy. It has gone through two seasons in the open in the Royal Botanic

George Forrest in "moist, open situations on mountain meadows on the eastern flank of the Lichiang range, Yunnan, at an altitude of 10-11,000 feet." A First-class Certificate was awarded to it recently by the Royal Horticultural Society, and a number of specimens were exhibited at the Temple Show. The species belongs to the *Cankrienia* section of the genus *Primula*, which includes the familiar garden plants, *P. japonica*, *P. Cockburniana*, *P. Poissonii*, and others. Like them, this new plant has a series of whorled flowers in tiers upon a scape which may ascend to as much as 2½ feet. The flowers are orange-coloured, not the deep orange of *P. Cockburniana*, although in bud they rival in intensity the colour of the opened flowers of that species. The foliage is large, and each leaf is marked by a red midrib, especially towards the base. The nearest allies of *P. Bulleyana* appear to be *P. prolifera*, Wall., and *P. imperialis*, Jungh.; indeed, as Mr. Watson, of Kew, said to me at the Temple Show, *P. Bulleyana* may be looked upon as the Chinese form of the type which appears in the Himalayas as *P. prolifera* and in Java as *P. imperialis*. The plant is perennial, hardy, and it produces abundant seeds. Alike on its own account as a decorative plant, and as the prospective parent of garden races this *Primula* is a valuable addition to garden plants. The illustration in fig. 10 shows the plant as it is growing in the rock-garden in the Royal Botanic Garden, Edinburgh, where this year (as also last year) plants raised from seed, presented by Mr. Bulley through Mr. Forrest, have flowered freely. The plants shown are still in process of elongating their flower-scapes. Fig. 11 is from a photograph taken by Mr. Forrest of the plant as it grows on the Lichiang range. I. B. B.

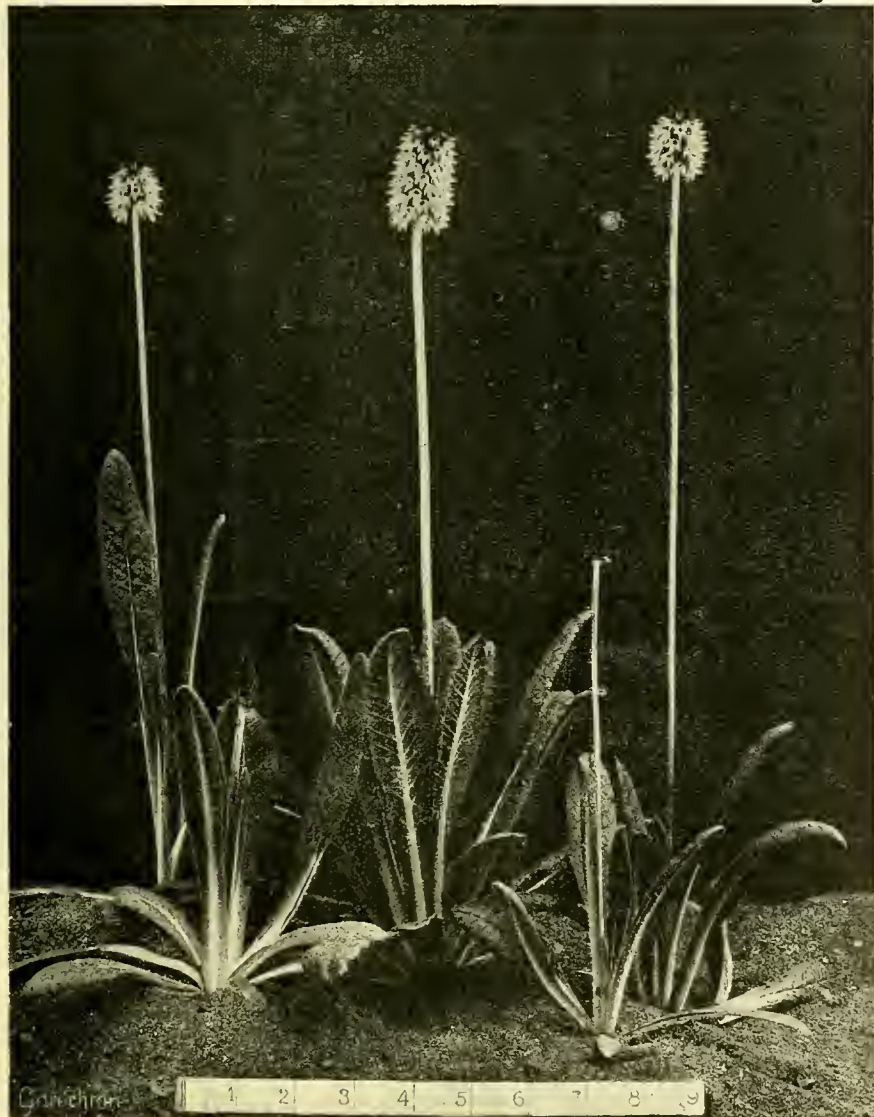


FIG. 8.—PRIMULA LITTONIANA FLOWERING IN THE ROYAL BOTANIC GARDEN, EDINBURGH.
(See also Figs. 6 and 7.)

The illustrations (Figs. 6, 7 and 8) will show sufficiently that *Primula Littoniana* is a striking plant; what they cannot show is the feature of colour which makes this the most extraordinary of all known *Primulas*, and one of the most interesting of recent additions to hardy garden plants. From a tuft of greyish-green hairy leaves rises a scape, 1 to 2 feet long, coated with white meal and ending in a dense spike, like that of a *Kniphofia*, which may be at best as much as 5 inches long. The bracts and calyces have a bright-red colour, almost scarlet in some lights, but perhaps better de-

Garden, Edinburgh, where the plants figured were raised from seed presented by Mr. Bulley through Mr. Forrest. *P. Littoniana* belongs to the *capitata* section of the genus of which the type is *P. capitata*, and in which is also included the Chinese *P. muscarioides*, another new species raised by Bees Ltd., from seed collected by Mr. Forrest. I. B. B.

*PRIMULA BULLEYANA (G. FORREST).

THIS handsome new *Primula*, introduced to cultivation by Bees Ltd., was found by Mr.

* Described in *Notes from the Royal Botanic Garden, Edinburgh*, for April, 1908; named in honour of A. K. Bulley, Esq., Ness, Cheshire.

NOTES ON IRISES.

IRIS CLARKEI.

AN interesting point with regard to this *Iris* has lately been cleared up. As described by Baker in his *Handbook of the Iridaceae*, this species possessed both beard and crest, and it was therefore classed in the group of *pseudevansia*. Owing to this fact, I thought I was justified in giving in the *Gardeners' Chronicle* for January 2 and 16, 1909, a description of what appeared to be a new *Iris* under the name of *I. himalaica*. However, after seeing the material in the Herbarium at Kew, and suspecting that the only evidence for the crest and beard was Sir Joseph Hooker's sketch at Kew, I recently sent more flowers, with the suggestion that they should be compared with the sketch. The keeper of the Herbarium, Dr. Stapf, now tells me that he has no doubt that the flowers are identical with the subject of the sketch. As it happened, Sir Joseph Hooker himself was at Kew, and, on seeing a flower, remembered collecting the plant for the first time on Tenglo 60 years ago!

The name of *I. himalaica* cannot therefore stand, and *I. Clarkei* must be removed from the *pseudevansia* group and placed among the *Apogon* section near *I. sibirica* and *I. Delavayi*.

The plant is interesting from the fact that it appears to be in a state of mutation similar to that of the famous plants of *Oenothera* found by Prof. de Vries. I have already noticed wide differences in the standards and in the foliage. In imported plants the leaves have a curiously polished upper surface, but in seedling plants there is sometimes apparently bud variation, and plants occur with leaves that are distinctly glaucous on both sides, while some of the shoots on the same plants have leaves with the characteristic polished upper surface. In colour, too, there is considerable variation—to a much greater degree than I have found in growing seedlings of other species of *Iris*. W. R. Dykes, *Charterhouse, Godalming*.

* Described in *Notes from the Royal Botanic Garden, Edinburgh*, April, 1908.

LILACS.

OF flowering shrubs and trees in gardens, perhaps none is more appreciated than the Lilac (*Syringa vulgaris*). In recent years many improved varieties have been introduced to cultivation. Most of these have larger inflorescences, and the individual flowers are of greater size and better form. There has been considerable development in colour, and in point of freedom of flowering there appears nothing further to attain. Indeed, varieties are now so numerous that one is led to hope that the Lilac will not suffer by the multiplication of names and by the cataloguing of so many varieties that some will lack distinctness. The variety Charles X. is a form of *Syringa vulgaris*, in which the panicles are thicker, more freely produced, and the blooms richer in the shade of purple. It was formerly considered a very fine variety. Charles X., however, is now surpassed by such varieties as *Souvenir de Louis Spath*, in which the colour is again intensified, the panicles are larger, and almost as freely produced as in the older varieties. For garden decoration it is difficult to imagine a more beautiful Lilac. A shapely bush, furnished with, say, 300 densely-coloured blossoms, is a most effective object, and the flowers last in good condition for a considerable time. I have for a long time entertained a great admiration for Lilacs, and have now in the garden upwards of 60 varieties. All these possess good qualities, but some naturally are more desirable than others.

Although the cultivation of Lilacs is a simple matter, the shrubs are seen but seldom in a satisfactory condition. Often they are cramped in between evergreen shrubs, where they are forced to grow tall and ungainly, or they are planted under forest trees, which eventually overhang them, and not only are the Lilacs robbed of the necessary amount of light, but the roots are unable to get the moisture and plant food necessary for them. Lilacs should be given a situation where they will be fully exposed to air and sunshine. Abundance of space is necessary for them in order that the growths may become properly ripened each season, which is necessary to their flowering perfectly. Lilacs are best when largest, but it must be remembered that weakly shoots can only produce weakly inflorescences. In regard to soil, Lilacs are not over fastidious. It should be of a heavy, rather than light, nature, as in such soil the flowers develop a richer tint. Deep trenching should be practised before planting, and an abundance of farmyard manure may be added at the same time. Established plants should be given a liberal top-dressing of bonemeal, and this should be lightly forked in for the benefit of the surface roots. This top-dressing may be followed with a mulch of half-decayed stable manure, which will hinder evaporation of moisture from the soil in April and May at a time when the flowers are developing. Copious supplies of liquid manure early in May are distinctly beneficial. Too often the suckers which spring from the various stocks upon which the choicer varieties are grafted, are allowed to rob the plants of much of their energy. All such suckers should be removed directly they are detected. When first planted Lilacs should have the previous year's shoots pruned to within an eye or so of the base, with the view of getting a dwarf specimen of good shape. In the future the cutting of the panicles of bloom will be nearly all the pruning the bushes require. If any weakly shoots are detected the least promising may be removed, as this will allow more space for the stronger shoots.

DOUBLE-FLOWERED VARIETIES.—Amongst those with white flowers the best double variety is *Miss Ellen Willmott*. The pure white flowers are large and the panicles exceedingly fine. *Mme. Lemoine* produces longer panicles, but they lack the size observable in *Miss Ellen Willmott*



FIG. 9.—PRIMULA BULLEYANA: FLOWER SPIKE SLIGHTLY LARGER THAN NATURAL SIZE.

(See p. 15.)

and the flowers are less pure white. Mme. Abel Chatenay is later in flowering than any other white variety. It is a magnificent flower, and should be planted with a view to extending the season of bloom. Mme. Casimir Perrier has thick panicles of rather dull white flowers. They are not so attractive as those of the varieties already mentioned. Jeanne d'Are, Taglioni, Banquise, and Mme. de Miller are new varieties. Mme. de Miller is a dwarf-growing sort, but all are worth cultivation in a large collection.

Of coloured varieties the following are desirable: Maurice de Vilmorin has a thick panicle. The buds are attractive by their rich red colour, but when expanded they are blue with a white centre. Dr. Troyanowsky has enormous panicles of rosy-pink buds, which open into azure-blue flowers. Comte de Kerchove has rich red buds and rosy-pink flowers. It is very free in blooming and a remarkably showy variety. Mme. Bassompierre has close, thick panicles of coloured flowers. President Loubet is a very fine variety,

lilac-coloured flowers with pink margins. President Grevy has flowers of Cobalt blue with rosy edgings.

SINGLE-FLOWERED VARIETIES.—Marie Le-graye has creamy-white, fragrant flowers and is very free in blooming. Alba grandiflora has small flowers, but Alba magna is distinctly the best of the single-flowered white varieties.

Of coloured varieties, Negro is attractive. It has extra large blooms, deeper and clearer coloured than Louis Spathe, and it retains its purple-blue shade for a longer time. It is a variety of great excellence. Othello has deep claret-coloured flowers with red border, but when opening they are a pale red. Each bloom is distinct, but they are so placed as not to overlap each other. Uncle Tom has flowers of deep violet-purple. Dr. Mirabel has tall, erect panicles of claret-coloured buds, opening into

TOWN PLANTING.

THE LONDON PLANE.—This is generally regarded as the variety acerifolia of *Platanus orientalis*, the Oriental Plane. It stands first in the category of select town trees, as it grows vigorously, and is well adapted for withstanding smoke and other impurities in the atmosphere. Repeated experiments have clearly proved that in London this tree flourishes better than any other, and a visit to the parks, public squares or the Thames Embankment will substantiate the statement. There is a fine old tree at Cheapside, and an equally beautiful specimen, which has hardly room for perfect development, in the Court of Stationers' Hall, Ludgate Hill. Other notable specimens exist in Staple Court, High Holborn, and in Dean's Court, St. Paul's. There being a diversity of opinion as to which



FIG. 10.—PRIMULA BULLEYANA FLOWERING IN THE EDINBURGH ROYAL BOTANIC GARDENS. (See p. 15.)



FIG. 11.—PRIMULA BULLEYANA GROWING ON THE LICHANG RANGE, YUNNAN. (See p. 15.)

with carmine buds and deep purple-red flowers. Waldeck Rousseau has extra large flowers of rosy-lilac colour, becoming white towards the centre. It is a very charming flower. Countess Horace de Choiseul has creamy-white flowers shaded with rose. Marc Micheli has pink buds opening into blue flowers. Belle de Nancy has rose-pink buds and lilac-coloured flowers changing to blue. Souvenir de L. Tibaut has rose-coloured buds, but the flowers are a purplish shade of blue. Condorcet has the largest panicles of any variety. The flowers are a lovely shade of blue. Alphonse Lavallée has blue flowers shaded with violet. Emile Lemoine has large flowers of lilac colour. La Tour d'Auvergne has double flowers of large size and a shade of violet-purple. Mme. Jules Finger has satiny-rose flowers and is very fragrant. Leon Simon has coral-coloured buds changing to blue. Michael Buchner has pale

purple-lilac coloured flowers. Duchesse d'Orleans has pale blue and pink flowers, produced on very long panicles constituting a variety of a very elegant sort. Philemon has a broad, rather short panicle of dark red flowers. Ville de Troyes has claret-red flowers producing upright panicles. Mme. P. Morel has huge panicles with extra large blossoms of purple colour. Mme. Briot is bright red. Gloire de la Rene has red buds changing to violet. Professeur Stockhart has flowers of a lilac shade of blue. Gloire de la Rochelle has rosy-lilac flowers changing to a light shade of blue. Mme. Kreutzeri has large spikes of red flowers of rather small size. Hyacinthiflora is a very pretty variety with pale blue flowers produced in long, rather thin, panicles. Pasteur has erect trusses of large flowers of winy-red colour changing to Mulberry-red. *E. Molyneux*,

variety of Plane it is, it may be stated that, on a careful examination of a large number of specimens, the variety *P. o. acerifolia* was found not only more commonly distributed, but likewise better suited for town planting than the typical *P. orientalis*. This valuable variety is readily distinguished from the American Plane (*P. occidentalis*), with which it is not infrequently confounded, by the many fruit "balls" which are attached to each peduncle, the fruits of *P. occidentalis* being for the greater part produced singly. But not only because it succeeds so well as a town tree is the Oriental Plane much sought after; the large size to which it grows, coupled with the handsome, finely-cut leaves and easy habit of growth, render it one of the most ornamental of trees. Another good quality is that it succeeds extremely well in soils of the very opposite qualities. In mid-

winter the beautifully-marbled stem of grey and yellow caused by the shedding of the bark in great irregular patches, renders the Plane one of the most picturesque of our woodland trees. In Portman and Manchester Squares specimens have attained to a size rarely exceeded by the tree when growing under more favourable atmospheric conditions. Other examples of equally rapid growth and development are the beautiful trees in Bedford, Russell and Gordon Squares, also in Lincoln's Inn Fields, many being fully 70 feet in height, with a branch spread of 80 feet and a stem girth of from 5 to 7 feet at 3 feet from the ground level. No doubt in all these cases the healthy condition and giant proportions to which they have attained are mainly due to the care with which the trees were planted and to good management in timely pruning and providing ample room for the development of root and branch. But in many other of the London squares, where the atmosphere is by no means pure, the Plane tree may be seen in all its glory of leaf and branch. It is, however, not only in the squares and gardens of the great metropolis that the Plane thrives in a satisfactory manner, but even where the tree is hemmed in by buildings. There are many examples at Cheapside, in the Tower of London, at Ludgate Hill, and in not a few of the old and disused churchyards, where the heated, dusty, and otherwise impure atmosphere is almost stifling. The main points to be attended to in producing healthy, well-developed specimens of the Plane are providing a suitable medium in which to plant the tree, careful pruning in the matter of ungainly branches and leading shoots, and allowing a clear space for the spread of the branches. Amongst Plane trees growing in very confined positions, the following may be mentioned:—

THE WOOD STREET PLANE TREE.—This famous tree, which stands at the left-hand entrance to Wood Street from Cheapside, marks the site of St. Peter in Chepe, a church which was destroyed by the Great Fire (1666). The terms of the leases of the houses at the west-end corner are said to forbid the erection of another storey or the removal of the tree. This tree is in a healthy condition, as is evidenced by the growths which have been made since it was pollarded about three years ago. It is gratifying to know that this pruning was, unlike much of such work in London, carried out in a practical and sensible fashion, and has interfered but little with the original appearance of the tree. The smooth, well-rounded stem rises for 30 feet without a branch, the diameter being about a yard through at breast high. As late as 1845 rooks built their nests in this tree.

THE PLANE IN STATIONER'S COURT.—This is a magnificent specimen, though growing in a very cramped and confined position, the branches on all sides nearly touching the surrounding buildings. The tree is in excellent health. It has a large, well-formed stem, but unfortunately, owing to "snag-pruning," the outline has been rendered somewhat unsightly. This Plane tree, which grows in the Court of Stationers' Hall, Ludgate Hill, is much prized by the residents around.

THE DEAN'S COURT PLANE TREES.—Though growing in a very confined and dusty position, these two Plane trees have attained to a height of fully 60 feet, and are healthy and well-developed.

IN STAR YARD, by the Law Courts, there is a large and well-developed Plane tree, which is growing in so cramped a position that it has hardly room for perfect development of either root or branch. In Amen Court there is also a large Plane tree growing contiguous to lofty buildings. Taking everything into consideration, I doubt whether any other forest tree is of equal value with the Plane for town planting.
A. D. Webster.

MUSHROOM CULTURE.

FEW vegetables are more esteemed than Mushrooms, and provided there are reasonable means for cultivating them and a good supply of material, they may be had in perfection throughout the year. It is not necessary to expend large sums of money on so-called up-to-date Mushroom houses. Excellent results are obtainable from beds cultivated in the most rudely constructed buildings, and even in the open air. The ideal place for growing Mushrooms is either in caves or cellars where the temperature throughout the year is more or less uniform. In such places the atmospheric conditions, too, are just what the fungus delights in, and, where such places are available, very little difficulty will be experienced in keeping up a regular supply. The following remarks refer more especially to Mushroom production in ordinary sheds. My best results have been obtained in a large, lean-to, open shed built on the north side of a high wall, with the front of the building boarded up in the ordinary way and the inside thatched. The beds are made 5 feet wide on either side, with a pathway 3 feet wide down the centre of the shed. No artificial flooring is used,

temperature falls to about 75°. The spawn should be broken into pieces about the size of a chicken's egg. These should be dipped in warm water, and placed 3 inches deep in the manure in rows made 9 inches apart. In about a week's time the beds should be soiled, using, if obtainable, the top spit from an old pasture. Rub the loam through a coarse-meshed sieve, place it on the bed to a depth of about 2 inches, then moisten and beat it well with the back of a spade. Mushrooms may be expected in about six or seven weeks. During the summer months the whole of the interior of the shed should be thoroughly syringed two or three times a day, and at no time must the house be allowed to become dry. Always use tepid water, and occasionally give the beds a soaking with warm water. When the crop shows signs of exhaustion farmyard liquid manure must be given. In gathering the Mushrooms take great care to twist the stems out cleanly; do not cut them. Although we have an excellent Mushroom house at Elstree, we get far better results from this open shed. In fig. 12 is shown a portion of the crop of one of the beds in this structure.
Edwin Beckett.

THE ALPINE GARDEN.

SAXIFRAGA AIZOON LUTEA.

THERE are two yellow or yellowish-flowered varieties of Saxifraga Aizoon, viz., *S. A. lutea* and *S. A. flavescens*. Both are very desirable plants for the rock-garden. In their growth and flowering the two plants might well be referred to as "major" and "minor," respectively, and the terms might not inaptly be extended to the blossoms. In both instances the yellow colour is somewhat transient, for after a few days the blossoms develop a creamy tone. In the early stages of flowering the pale canary or primrose-coloured flowers are very pleasing, and one cannot but long for a greater fixity of tone in these charming varieties. There is not the least difficulty attending their cultivation, for in quite light and ordinary soils, as well as in those of a more loamy character, the plants grow freely. *S. A. lutea* has the longer leaves, and the rosettes are of a more open character than those of the other variety. All the varieties of *S. Aizoon* flower in June. Their freedom of growth soon enables them to form a fine colony or group. Not only on level ground, but also in chink and crevice—provided a good bank of soil is at hand—both these Saxifragas grow well.

PRIMULA SIKKIMENSIS.

THE Sikkim Cowslip is one of the most desirable of the hardy species of this extensive genus of flowering plants. It is, however, not a commonplace subject, even at the leading exhibitions. Many years before *Primula rosea* was known to cultivation this lovely yellow-flowered species was well known, and while the former is grown in thousands, *P. sikkimensis* is rarely seen in cultivation. How much the sparse habit of growth, and tall, somewhat thin and lank stem has been the cause of its unpopularity is difficult to say. It might have been otherwise had some hardy plant nurserymen made a speciality of it and displayed it not in isolation, but in groups of a hundred plants or more, so that the soft and beautiful colour and general effect could be realised. There is a great charm about the plant, and much beauty in its drooping flowers. The very erect carriage of leaf and inflorescence would almost suggest the necessity of grouping to show this fine plant to perfection, for just as it is desirable to group freely such plants as the Michaelmas Daisy, so is it needful with this *Primula*. The plant seeds freely and, although it is a perennial, much the best results are obtained from young plants raised from seeds.
E. H. Jenkins.



FIG. 12.—MUSHROOMS CROPPING IN AN OPEN SHED

but ordinary deal boards, to the depth of 18 inches, are used to keep the manure in position. No artificial heat is employed, but during severe weather a good depth of fresh manure is placed on the path, and this is turned over every morning. One of the most important items in the culture of Mushrooms is the collecting and preparation of the manure. This should be used, as far as possible, when fresh, for it is a mistake to allow it to remain too long in a manure pit. It is not advisable to take away the whole of the litter. If the shortest of the straw is retained, it will be found that the spawn will grow more freely and the beds will continue to bear for a longer period. The manure should be placed about 3 feet deep, and turned regularly every morning for ten days or so, taking care to put that which has heated most on the outside. After this it will only require turning about every third morning. In about 18 or 20 days the material should be ready for forming the beds. In carrying out this work, the manure must be made very firm by means of long-handled rammers. After this operation, it frequently happens that the heat increases, in which case the spawn should not be inserted until the

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

SALLOW AND ITS USES.—The Sallow (*Salix caprea*) is such a useful tree that one might expect to see it more frequently planted in those marshy, and usually good-for-nothing, situations that it loves so well. No plant is more easily established, for it is simply necessary to cut branches of medium size into short lengths and stick them in anywhere. Nine out of ten so planted will usually grow, and in course of time make good trees. The growth of all Willows is rapid, and the timber they produce may be utilised for various purposes in from 12 to 15 years after planting. If good-sized trees are desired, it will be necessary, when the cuttings have well established themselves, to remove all except the lowest four or five shoots in order that the whole strength of the tree may be thrown into those remaining. Sallow thrives best where its roots can come in constant contact with water, but it will grow in comparatively dry situations. It is useful for forming a sort of ready-made hedge, as it can be planted in 6-foot or 7-foot lengths, and if these are put in a few inches apart the gaps caused by those that die will not be noticed. The shorter the lengths planted, however, the more bushy will be the hedge. The wood of Sallow in stout lengths is much used for piles when these are required to shore up newly-moved ground or for being built upon. In the latter case, if driven in some time beforehand, the lengths will begin to grow and strike roots into the soil, holding all firmly together in a compact mass and forming a stable basis for light buildings on shaky ground. The tree also roots readily in newly-moved soil, and can be allowed to do so as long as required, when growth may be stopped by cutting down the posts or piles to the ground level. For ordinary fencing Sallow is very suitable, as it is light and tough and splits easily. But perhaps the best use to which this tree is put is the making of truck-baskets (or "trugs"), of the pattern so extensively manufactured in Sussex and so useful in the garden. The wood is easily bent to shape and lasts for a number of years. The smaller growths are employed for Hay-rake handles and also for the rakes themselves, while the twigs make a very passable substitute for osier, and can be utilised for many of the rougher kinds of basket work. Next to the cricket-bat Willow, the Sallow is probably the most useful member of this extensive family. *East Sussex.*

EREMURUS ROBUSTUS FAILING.—My attention has been drawn, in several gardens I have visited, to the complete failure of plants of *Eremurus robustus*, and as I have been unable to ascertain the cause I shall be glad if any reader can help to solve the problem. It is an important matter, as these noble plants are increasing in general favour and their probable loss in gardens is not to be viewed with equanimity. I do not suggest that *E. robustus* is liable to fail in every garden—my observations lead me to think the contrary, but although now much cheaper than before, and the pecuniary loss may not be great, the disappointment to many gardeners is considerable. So far as I have seen, there has been nothing to account for the death of the plants. I have, for example, in my study the photograph of a fine plant which lived for several years in a garden not far from my own. This flowered well and continuously, always producing a fine inflorescence. The plant, however, failed to reappear after a winter of no more than ordinary severity, and certainly not in itself sufficient to account for its death. A more recent instance has come under my notice. In a garden where I have in former years seen some of the finest spikes of *Eremurus robustus* I was informed of the loss of several plants, and one or two were pointed out which appeared to be dwindling away without flowering this season. The group in flower was composed of plants which had been a shorter time in the garden, and it is earnestly to be hoped that they will be more fortunate than their predecessors. In neither of these gardens could it be said that climatic conditions were unfavourable; in fact, they are much

more suitable than in many places where the species still succeeds. They are well protected from cold winds, whilst the soil is a good loam. I am inclined to attribute the trouble to fungal disease. So far as I can learn, the other species of *Eremurus* do not show the same losses as *E. robustus*. *S. Arnott.*

APPLE CULTURE AT SWANMORE PARK, BISHOP'S WALTHAM.—The market cultivation of Apples has for some years past been practised under the management of Mr. E. Molyneux at Swanmore Park, Bishop's Waltham. Some twenty years since six acres of land were planted with about 2,000 Apple trees. The site is an exposed one, and the trees frequently suffer damage from west and south-west winds. As a protection, tall hedges of *Thuja gigantea* (syn. *T. Lobbii*) form an effectual as well as a pleasing and novel screen. These Conifers have been allowed to grow about 20 feet high. They are kept closely clipped at the top and sides, their width not exceeding 20 inches. On the north side is a dense Quick hedge also 20 feet in height. For a few years the Apple trees did remarkably well, but suddenly it was found that the growths were unsatisfactory, and the fruit far from what it should be. Fortunately, Mr. Molyneux was able to determine the cause, and now practically every tree is heavily laden with fruit and healthy foliage. The trees, indeed, are so heavily cropped that it will be necessary in the great majority of cases to thin the fruits liberally. Mr. Molyneux attributes his success mainly to two causes. Each winter the ground is forked over and a fair quantity of good farmyard manure is worked into the soil, and, secondly, winter spraying is practised. Not a particle of Lichen or American blight could I discover on the trees. In addition, many of them have been lifted, and the roots brought to the surface. Worthless varieties have been headed down and regrafted. Nearly every known variety has been tested, but those which do best are, in their order, as follow:—Dessert varieties: Worcester Pearmain, Lady Sudeley, Cox's Orange Pippin, Ben's Red, and Beauty of Bath; Kitchen varieties: Lord Grosvenor, Warner's King, Blenheim Pippin, Bramley's Seedling and Norfolk Beauty. The last-named variety is cultivated extensively. The great majority of these trees are grown in bush form, the remainder being standards. *E. Beckett.*

AUBERGINE.—The culture of this vegetable is simple. The seeds require to be sown in March and the plants potted on as required, using good loamy soil as a rooting medium. Fruits of a good size should be ready for use in August. Important points to observe in the culture of Aubergines are to keep the plants in a moist, warm house, not to shade them, and to train them to a single stem. The number of fruits on each plant must be determined by the size of the pots in which they are grown. I have cut fruits weighing 1 lb. from plants grown in 10-inch pots, allowing four fruits per plant. Inferior fruits were on sale last season at 3d. and 4d. each, but good fruits of the New York Purple variety realised 6d. each. *Sidney Laurance.*

THE RAINFALL, 1909.—Mr. E. Beckett states in his weekly "Calendar" for July 3 that the rainfall at Aldenham in the first six months of the present year was not more than 8 inches. The rainfall in these gardens for the same period was 14.03 inches. *J. S. Higgins, Rûg Gardens, Corwen, North Wales.*

CARNATIONS AT PORTER'S PARK.—For some years these famous gardens have been noted for Carnation culture, and especially the culture of *Souvenir de la Malmaison* varieties to flower in winter. The owner, C. F. Raphael, Esq., has devoted many glasshouses to Carnations, and the management is effectively carried out by the gardener, Mr. A. G. Grubb. On many occasions excellent groups have been exhibited from Porter's Park very early in the season. A large contribution was to have been made to the Holland Park Show on July 6, and on the 3rd inst. I visited Porter's Park specially to see those plants. But I found Mr. Grubb almost in tears, for, owing to the dull weather,

the blooms had not fully developed, therefore the idea of exhibiting them at Holland Park was abandoned, and, instead, they will be shown at the Vincent Square Hall a fortnight later. The plants are remarkable for their vigour and fine flowers. I noticed 200 plants of Princess of Wales in 8-inch pots, with eight and nine flowers to a plant. "The Colonel," a fine new red variety, with flowers nearly 6 inches in diameter, was at its best. King Arthur, Lady Rose and King Oscar were also especially fine. The collection included 700 plants in 8-inch pots, and 1,000 plants in 6-inch pots. Tree Carnations for winter-flowering are grown in equal numbers. *E. Beckett.*

"DUTCH" IRISES.—The hybrid xiphium Irises raised by Mr. C. G. Van Tubergen, jun., a good example of which was shown in the illustration of *Iris Rembrandt* on p. 3, are indeed a great acquisition. Six varieties have been growing here for the last two seasons and have proved remarkably vigorous. There can be no doubt as to their superiority in point of size and colouring, and it is equally true that they flower at least a fortnight earlier than the ordinary Spanish Irises. Last year the first flower opened on June 1, this year they were even earlier, and I had some in flower on May 28. I find, too, that they multiply very rapidly, and the 18 bulbs that Mr. Van Tubergen very kindly gave me in 1907 have now increased to considerably over one hundred. *W. R. Dykes, Charterhouse, Godalming.*

NOTES FROM A "FRENCH" GARDEN.

THE wet weather during the past fortnight has checked the growth of Melons; therefore, it has been necessary to use the greatest caution in ventilating the frames and in watering the plants. The slightest excess of water at such a period causes great injury. The earliest batch has now the fruits of full size. The young shoots require to be thinned out, and the leaves round the fruits must be removed to admit light to the fruits. The fruits must be turned to allow the parts lying on the ground to ripen properly.

The Cauliflowers planted behind the first batch of Cos Lettuces under the cloches are now ready. The dry weather in May and subsequent change have forced them into flower too early to form nice heads. Those grown early in the open have done much better.

All the old manure beds have now been dug over, and two beds have been made into one large one. The ground was levelled, trodden, and then raked. We have planted Celery plants at 18 inches apart each way on the flat. Some beds have also been planted with Endive "La Rouennaise," at 10 inches apart each way. In three weeks' time we shall plant Cauliflowers, one row between every three rows of Endive. Endive does not do well at this time of the year when grown alone, as the soil is too rich in manure; but by planting Cauliflowers among the plants, this difficulty is overcome. At the same time, the Cauliflowers must not be planted too soon, or they would overtake the Endive.

The varieties "La Ruffec" and "La Meaux" are unsuitable for planting on old manure beds, the crown of the young leaves decaying when the plants are three parts grown.

We are now planting in the open ground a batch of Endive "La Ruffec," at 12 inches apart each way; the crop will be ready for the market early in September.

We shall sow next week a batch of Lettuce "Palatine." This variety does well in heavy soils during the summer months. The seeds will be sown broadcast, and the seedlings will be pricked off four weeks after the sowing.

The prices of vegetables grown under the French system have been well maintained during the spring, but they show a tendency to fall, which goes to prove that this method of cultivation has spread over the country. *P. Aquatias.*

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Late vines.—The final thinning of late Grapes must now be carried out, if it has not already been done. This is an operation which requires careful and experienced hands. Any damage caused by dirty scissors or by rubbing of the berries will be evident when the Grapes are ripe. It is necessary to thin the berries in the interior of the bunches severely, but the shoulders require different treatment, it being desirable to have them well furnished with berries. If there is at present a good spread of foliage over all the trellis, the lateral growths should be kept pinched out. In cases where the foliage is meagre, growth must be encouraged, it being essential that late Grapes should have a good covering of foliage, as they are required to keep in good condition for a long period after they are ripe. If the borders have not already been mulched, this work should be done at once, following the operation by applying a liberal watering. Should mealy bug be present on the vines, the pest must be constantly sought after, for if allowed to enter the bunches it causes infinite damage. The month of June was notable for low temperatures and lack of sunshine, so that it was necessary to use more artificial heat than usual to maintain the temperatures required in the fruit houses. Extra care will be needed to prevent scorching of the foliage, because owing to the absence of sunshine, the leaves are unusually soft and tender. Air must be admitted early in the morning on fine days, increasing the amount as the sun gains power. During changeable weather the ventilators will need constant attention in order that the temperatures may be maintained as equable as possible.

Ripe Grapes.—Ripe Grapes now hanging on the vines should be shaded a little from the sun's rays. Black Grapes quickly lose their colour when exposed to sunshine. A double thickness of fish netting, or a little limewash syringed over the glass will answer the purpose. Keep a little warmth in the water pipes to dispel damp during dull or wet weather.

Tomatos.—Seeds should now be sown for raising plants to fruit in winter. These plants must be grown sturdily from the commencement. Sow the seeds thinly in pans and place them in a gentle heat. When the seeds have germinated let the pans be removed to a position near to the glass in a light, well-ventilated structure. As soon as the seedlings have made the second leaf pot them into 3-inch pots, using a fairly light compost, and again place them on a shelf near to the glass. Keep the front ventilators closed for a day or two till the roots are again active, after which a free circulation of air will be necessary. When they have become well rooted into these pots they will need another shift into pots 6 inches in diameter, using a compost slightly rougher than before. Turfy loam, a little manure from a spent Mushroom bed and a sprinkling of finely-crushed mortar rubble will be suitable. The soil must be rammed firmly in the pots, or the plants will make long-jointed growths. Plants fruiting in pots need copious supplies of water and, if the pots afford room for another surface dressing, this should be applied.

Melons.—The plants are growing rapidly, and it is necessary to pay timely attention to the stopping and regulating of the shoots, but do not remove too much leafage at one time, as this is often the cause of the main stem splitting and thus allowing canker to enter. Plants on which the fruits are swelling must not be allowed to become dry at the roots. They will need plenty of feeding, and for this purpose liquid manure made from cow dung is best. This may be alternated with some chemical fertiliser. Gradually withhold water from the roots, and keep the atmosphere dry as the fruits approach maturity. Plants in frames will need close attention when they are in flower to ensure the fruits setting. Each flower must be pollinated in the middle of the day. During the flowering stage the atmosphere of the frame must be kept dry, and the air allowed to circulate, but cold draughts must be avoided. The middle of the present month will be late enough for sowing seeds for the last batch of plants, unless fruits are required later than October.

THE ORCHID HOUSES.

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

Cattleya.—The strongest plants of *C. Gaskelliana* and the autumn-flowering varieties of *C. labiata* have made considerable progress with their new growths; in some cases the pseudo-bulbs and flower-sheaths are already formed. At this stage the plants should be elevated well up to the roof glass, for if kept low down upon the stage they keep wet for too long a time after watering, and this has a tendency to cause decay in the new pseudo-bulbs. Each time the compost becomes properly dry afford the plants a good watering until it is seen the growths are mature and the flowers are commencing to push up through the sheaths, when the supply should be gradually diminished. Among the plants of *C. gigas* which have finished blooming, and those that failed to flower this season, there may be some which require re-potting. The best time for this operation is about a week or a fortnight after the flowers have faded. Directions as to the kind of compost to be used were given in the Calendar printed in the issue for May 8. After the plants have been repotted it is an advantage to place them in a house which is somewhat drier and more freely ventilated than the *Cattleya* house. Plants of *C. gigas* should not be too copiously watered after flowering, or they will start away into growth instead of resting. All that is needed is to afford sufficient water to encourage the new roots to obtain a firm hold of the compost; even after they have become re-established they will need very little water until growth recommences. Plants of *C. Dowiana* and *C. D. aurea* may also be repotted as they pass out of flower. The same kind of treatment as advised for *C. gigas* will suit them, but they should be suspended in the lightest part of the *Cattleya* house during the ripening process.

Lalia anceps.—In the *Cattleya* or Mexican division, plants of *L. anceps* and its numerous varieties, also several of its hybrids, as *L. Leliuxii*, *L. Crawshayi*, *L. Edissa*, *L. Nemesis*, *Lælio-Cattleya Liptonii*, and *L.-C. Wrigleyi* are now growing and rooting freely, whilst some of the *L. anceps* are developing flower-spikes with the growths. Now is the time to afford these plants copious root waterings. Remove the roof shadings early in the afternoon, damping well between the pots and under the stages, and spraying the plants overhead with clear water. Maintain a warm (with sun-heat if possible), moist atmosphere throughout the evening, and last thing at night open the bottom ventilators; if the weather permits, the top ventilators may also be partly opened. Early in the morning close the top ventilators and give the house a good damping down.

Lalia pumila.—Such cool-growing plants as *L. pumila*, *L. præstans*, and *L. Dayana* are developing new growths. If a light position can be found for them in the cool house they may remain there until the flowers show, but at that stage they should be removed to the intermediate house. These plants may be afforded fresh rooting material when they begin to make roots. They are best cultivated in shallow pans that can be suspended close to the roof glass. From the present time afford the plants plenty of water at the root until the new growths are made up. The thin bulbous *L. harpophylla* should be kept in a light position in the cool house till the growths are nearly completed, when it should be removed to a warmer house, such as the *Cattleya* house, there to remain until the flowers are past.

Dendrobium requiring cool treatment.—In the *Odontoglossum* house the blue-flowered *Dendrobium Victoria Regina* thrives admirably when fastened on moss-covered rafts, allowing the pseudo-bulbs to hang in a semi-pendulous position. The plant should be suspended to within a foot of the roof glass at the warmer end of the house; it should be taken down several times each week, so that the moss can be sprayed with water sufficient only to keep the plant alive. When grown in this manner the plant is very floriferous. *D. infundibulum* and its variety *Jamesianum* also thrive best when suspended in a cool house. The former has flowers with a golden-yellow throat; in the other the throat is coloured cinnabar-red. Small plants may be grown in shallow pans suspended to the roof rafters, while larger ones may be grown in pots elevated well up to the roof-glass. Both varieties

root and grow well in equal parts of *Osmunda* fibre and *Sphagnum*-moss chopped up moderately small and well mixed together. Pot each plant quite firmly, and during the operation add plenty of small crocks to the compost so that water will pass away freely. Being an evergreen, the plant should never be allowed to become quite dry, even whilst growth is dormant.

Small Zygopetalums.—*Zygopetalum* (*Pro-mœna*) *citrinum*, syn. *xanthinum*, is developing its pretty flowers of citron-yellow colour. It is a dwarf-growing species, and, if suspended alongside the well-known *Odontoglossum Rossii* and others that require cool conditions when making their new growths, it will thrive admirably. A little extra warmth should be allowed when the flowers commence to open. Similar treatment should be afforded the allied species, *Z. stapelioides*, *Z. Rollisonii*, and *Z. micropterum*.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Campanula persicifolia.—This species and its white variety *alba* is very useful for conservatory decoration from early spring until summer. Cuttings should be made of the side growths obtainable from pot plants, which have been forced, or from plants growing in the hardy flower borders. They should be inserted singly in small pots, and placed in a cool frame shaded from bright sunshine. The atmosphere should be kept close until the cuttings have formed roots, when they should be grown in as cool conditions as possible. When the small pots have become filled with roots transfer the plants to 5-inch or 6-inch pots, using a soil consisting of loam, leaf-mould, and a little decomposed manure. The plants will winter well in a cold frame, and at the turn of the year batches may be forced easily if placed in gentle heat.

Streptosolen Jamesonii.—As the roof-plants cease to flower they should be pruned hard back, for this species flowers best upon the growth made during the previous summer provided it has become thoroughly ripened. In order to ensure this ripening, the shoots should not be allowed to grow too thickly together, and they must be exposed to the sunshine. If large specimen pot plants are required they should be treated in a similar manner at the commencement, but after they have made a little fresh growth they should have some of the old soil removed and be re-potted. A batch of cuttings should be rooted each year so as to keep a succession of young and strong plants to take the place of the older ones.

Climbing plants.—These plants, whether growing in the stove or greenhouse, will require frequent attention. Their growths must be kept well thinned out, and the early-flowering kinds will require either a severe pruning or a shortening of the shoots. The old light-flowered *Heliotrope* makes a good cool-house pillar plant, and it may be safely pruned at any time of the year. This severe treatment is necessary, as otherwise the growths become long and straggling. *Habrothamnus* or *Cestrum* species should be pruned hard as they pass out of flower. The flowers of *Cestrum aurantiacum* are useful for evening decorations, at which time the flowers, which smell somewhat unpleasantly by day, emit a strong perfume, as of Tangerine Oranges. The growths of *Lapageria rosea* should be trained to hang downwards, that they may the better display the flowers.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Trimming evergreen hedges.—The present is the proper time to clip hedges of Box, Yew, and similar evergreens. In the case of dwarf plants of Box used as edgings to garden paths, it is a good plan to stretch a garden line down the centre of the row. This will be a guide in cutting, but the work should be done by a careful man who has a "straight eye." Box edgings, unless they are regularly attended to, soon become untidy. The plants are often injured by weed killers sprinkled along the paths. Whenever these corrosive substances are used, planks should be placed so as to protect the foliage. Hedges of Yew are best trimmed with a small

fang-hook, with which the work can be done much quicker than when shears are employed, although the final trimming may have to be done with hand-shears. In the case of small evergreen hedges around flower-beds and Rose gardens, it is generally sufficient to trim the sides only unless the shoots at the top are growing very irregularly. The common Laurel (*Cerasus Laurocerasus*) needs to be cut with great care. Shears should not be used, as these cut many of the leaves in halves. The pruning can be done with a sharp pair of sécateurs, but a knife is best. Hedges of *Rhododendrons* should also be pruned back wherever necessary.

Montbretia.—These are valuable for furnishing a display of flowers in late summer. In order to obtain the best results the bulbs should be planted fairly widely apart and be given a mulching of manure with an occasional dusting of soot. If they are afforded moisture whenever the ground is dry, sometimes using soot-water, the plants will develop to a height of 4 or 5 feet, and produce correspondingly strong flower-spikes.

Dahlia.—Attend to the staking and tying of the shoots, which are soon broken by the wind. If the weather turns dry and hot, afford a mulching of manure from either a spent hot-bed or Mushroom house. If blooms are required for exhibition purposes the shoots should be thinned and the flowers disbudded.

Roses.—The climbing and rambling varieties are developing strong shoots. These must be carefully secured or they will be liable to injury from high winds. All classes of *Roses* are looking extremely well. After the first crop of blooms is past the plants should be given another top-dressing of manure, and this should be lightly forked into the soil. The variety *Mme. Alfred Carriere* is a charming variety for training to a pole or pergola. The colour is a light salmon, suffused with white. The plant has a good constitution, flowering freely and early. A good companion variety is *Reine Olga de Wurtemberg*. Of the newer varieties of climbing *Roses*, *Hiawatha* is doing splendidly now that the plants are established. For a west or east wall nothing is more suitable than the elegant variety named *William Allen Richardson*.

Bedding plants.—The flower garden will now be planted with its summer occupants, and no pains should be spared to keep it attractive. All dead flowers must be removed at the earliest opportunity, any staking neatly done, weeds kept down, and the edges and borders made tidy. Where carpet bedding is employed the plants must be kept distinct by frequent pinching of the shoots. See that the lawns, paths and drives are maintained in a state of tidiness.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Strawberries.—The present Strawberry season, which promised so well early in the season, has so far proved very disappointing. Fine weather is needed to ripen the fruits. As I write the fruits have not been dry for many days, slugs have increased to an alarming extent, and are ruining the fruits even before they colour. The fruits generally are deficient in flavour. Some people favour the cultivation of only one or two varieties, such as *Royal Sovereign*, but in a season like the present those who cultivate a number of varieties for succession may at the least hope that later varieties will have better weather in which to mature their fruit. The late varieties look exceedingly well, and, as the weather is cool as well as damp, they are backward, many being only in bloom. *Laxton's Latest*, *Givon's Late Prolific*, *Latest of All*, and *Elton Pine* are four reliable varieties for late fruiting, and if the weather takes a favourable turn, may redeem the season from failure.

Strawberry runners.—The plants reserved for the production of Strawberry runners for forcing or for planting on south borders will now be showing runners in abundance. These should be layered into small pots in good time, and before they root into the ground. The question of soil for these pots is not very important, but if preference can be given, a good loam mixed with some manure from a spent Mushroom bed is the best procurable. If

dry weather sets in it will be necessary to water the layers every afternoon. Do not allow many runners from each plant, but cut off those which are not laid into pots.

Grafts.—Examine any fresh grafts, and if the scions are growing freely loosen the ties in cases where more space is necessary. Keep the long shoots tied to stakes or wires to prevent them getting damaged by storms. Clear off all shoots and suckers below the union as soon as they are noticed. If a dry period sets in, apply a mulch and give frequent waterings.

General work.—Continue to stop and thin the shoots on all fruit trees, as recommended in previous Calendars; especially all side and lateral growths not required for extending the tree. Burn the prunings. When the stopping and tying is completed, give the trees a thorough washing with water applied by the garden engine. See that nets are placed over all fruit about to enter on the ripening stage. Complete the thinning of Apples and Pears, as these fruits are swelling very rapidly.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Celery.—The earliest plants should now be sufficiently advanced for blanching. The most economical and simple method of effecting this is to use strips of brown paper. First of all carefully remove all secondary shoots which spring from the base of the plant, also any leaves that are damaged or split. Examine the foliage with scrupulous care for the Celery maggot, and, if any be found, destroy them whilst still young by pressing them with the thumb and finger. Give the plants a thorough drenching of water at the roots, and in the middle of the day, when the leaves are driest, proceed to place the paper round each plant. The hands should be cut about 5 inches in width, and they should be fastened securely, but not too tightly, round the bottom of the plant. A very small quantity of fine soil should be placed round the base, adding a little fresh soot. In eight or ten days a further hand should be added to the plant, the process being continued until a sufficient depth of blanching is secured. Although this method is not new, it is surprising that it is not universally adopted. In the case of early Celery, especially, it has many advantages over that of banking the plants up with soil. The blanching is more perfectly done, the stems are not liable to be injured with worms or slugs, the method is economic, and the plants can be fed and watered much in the same way as if blanching was not in operation. Successional plants should be kept perfectly clean, well watered, and the surface soil should be moved frequently with the Dutch hoe. Lose no time in completing the planting of the latest sowings. Though single rows are to be preferred, two or even three rows may be grown in each trench, but in such cases a little extra space should be allowed between the plants.

Spring-sown Onions.—It is now necessary to feed the plants liberally, either with liquid manure or some patent manure specially suitable for vegetable crops. In the event of dry weather liberal waterings will be indispensable.

Chicory.—This should receive careful attention at this season of the year. Early sowings need thinning out that the plants may be left at 8 to 12 inches apart. The surface soil should be frequently stirred between the plants. If from any means the crop has failed, another sowing should be made at once on deeply-tilled, rich soil having a south aspect.

Parsley.—Apply a dusting of fresh soot to the Parsley once each week, and thoroughly hoe the soil between the plants.

Spinach.—This vegetable is highly esteemed throughout the whole year, but at no time is it more difficult to procure in good condition than the period from the commencement of August to the middle of September. The seed should be sown thinly on rich ground situated in a fairly shady part of the garden.

Radishes.—Sow small quantities of seed every 10 days in a shady part of the garden, and afford the plants frequent waterings.

Dwarf or French Beans.—These being sometimes preferred to Scarlet Runners, the new form

of Runner French Bean is valuable in keeping up a supply of pods for the table. Where this type is not cultivated it will be necessary to make frequent small sowings, but after this date the seeds must be placed in a warm, sheltered part of the garden, or where protection can be given them in the event of early frosts. These Beans require from 10 to 12 weeks from the date of sowing before their pods are ready for use. Plants raised early in cold frames are now yielding good crops. They require to be kept well supplied with moisture, both at the roots and overhead; diluted manure water should also be afforded liberally. The plants are benefited if the pods are harvested directly they are of a suitable size.

THE APIARY.

By CHLORIS.

Importance of a prolific queen.—Many colonies do not produce a satisfactory amount of honey, and the beekeeper is often at a loss to understand the cause. The hive should be examined, and if it be found there is little brood compared with other stocks, it is a sign that the queen needs to be replaced. To secure the greatest possible success, it is needful to have at hand some spare queens, those in their second season being best. Each colony should contain a second-year queen, and then two or three surplus queens will be all that are required in case of accidents. Queens are very expensive to purchase; therefore it will be wise to rear some.

Raising of queens.—To produce the best queens, two hives are required, and these should contain bees that produce a large quantity of honey. Each hive should be headed by a two-summer-old queen. Both the stocks selected should be fed to stimulate breeding; one should be provided with worker comb only and the other with drone comb placed in the centre of the brood chamber. Whilst the drones are hatching, place in the other hive a frame containing a sheet of comb foundation, the bottom cells being of a size to produce worker bees. The bees will soon form cells and the queen will lay eggs in these. In two or three days after this, the old queen may be removed and used elsewhere, or destroyed if not required. The best queens are always raised from eggs laid at the edge of the comb; therefore cut back the comb close to the cells containing eggs and enlarge the cavity with a conical piece of wood. In eight to ten days there will be a number of queen cells ready to be utilised by the beekeeper in forming nuclei. Two combs containing honey and pollen, with the adhering bees, and another containing brood, should be placed in a nucleus hive. Cut out a hole in the centre of the brood comb about 2 inches in diameter, and in it fix one of the queen cells. (The fixing may be done with pins, but care must be taken not to shake the cell or the queen may be injured.) Proceed in this manner with as many of the queen cells as are required. Place the nuclei hives not less than 6 feet apart. The queen cell will be sealed over on the ninth day after the egg is laid, and in another six days the queen will be hatched; in five days more she will leave the hive to be fertilised. Two days after the queen has hatched it will be best to supply a frame containing eggs, so that the nuclei have young brood in the hive, or they may desert the hive when the queen leaves to meet the drones.

Introducing queens.—This is not an easy operation. If honey is plentiful, the following plan may be successful:—During the afternoon remove the old queen and also the queen to be introduced, and keep the latter in a warm place. Just before dark take out the young queen and place her at the entrance of the hive where she will reign, and, being hungry, she will be at once fed by the bees and proceed with her egg-laying. A pipe-cover cage is needed generally. Place the queen on a stiff piece of paper or cardboard, and over it place the cage, then put the cage and cardboard on the comb, slipping the cardboard away gently. Press the cage firmly into the comb, where there is brood and honey. Feed the bees with syrup and release the queen in 24 hours. After releasing her, carefully note the behaviour of the bees, and if they attack her she must be recaged for another 24 hours. If the bees take no notice of her, then the comb may be replaced in the hive, for she is probably accepted.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, JULY 12—

United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, JULY 13—

Saltaire Rose and Hort. Soc. Sh. in conjunction with Nat. Sweet Pea Soc. Wolverhampton Floral Fête (3 days).

WEDNESDAY, JULY 14—

Beckeham Hort. Soc. Sh. Luton Rose Sh. in conjunction with Nat. Rose Soc. Hort. Ex. in conjunction with Agr. Sh. at Louth (3 days). Elstree and Boreham Wood Fl. Sh.

THURSDAY, JULY 15—

Woodbridge Fl. Sh. Great Yarmouth Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—63°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 7 (6 P.M.): Max. 66°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 8 (10 A.M.): Bar. 29.8; Temp. 65°; Weather—Cloudy.

PROVINCES.—Wednesday, July 7 (6 P.M.): Max. 61° Bury St. Edmunds; Min. 54° Yorkshire.

SALES FOR THE ENSUING WEEK.

TUESDAY—

The Freehold Nursery, Carterhatch Road, Enfield Highway, with 8 Greenhouses, Piping, Boilers, Pits, &c., area 2½ acres; at the Mart, Tokenhouse Yard, E.C., by Protheroe & Morris, at 2.

The famous exhortation, **International Exhibitions.** "Wake up, England!" addressed on a memorable occasion by H.R.H. the Prince of Wales to the people of this country is producing its desired effect in various directions. Among these we would mention particularly the efforts which the Board of Trade is making to encourage British manufacturers, traders, and others to take a larger share in important international exhibitions.

In a circular recently issued in connection with the international exhibition to be held next year at Brussels, the welcome announcement is made that exhibitors are no longer to be dependent on a voluntary committee. They are not to be left, as heretofore, to install their goods as best they can whilst engaged in an operation the cost of which they cannot ascertain.

The systematic assistance which the French and Germans have long enjoyed from their respective Governments is to be extended to British exhibitors. To this end the British section has been put under the charge of a special department of the Board of Trade.

We learn that a prominent position in the exhibition has been allotted already to the exhibitors from this country, and that owing to the arrangements made by the British Commissioner-General, Mr. U. F. Wintour, intending exhibitors will be able to know beforehand the total cost of their enterprise. The British section, moreover, is to be treated, with respect to decoration, in a uniform manner; show-cases are to be provided in various sizes and at low rates; so

that those who choose to use them will not be put to any considerable expense on this hand.

A special catalogue will be published in English and French, and a certain amount of space in it will be allotted free for the description of each exhibit.

Transport charges are to be reduced; both railway and shipping companies having agreed to a reduction of 50 per cent. on returned, unsold exhibits, whilst the Belgian State railways will return exhibits to their termini free of charge.

It is to be hoped that this new departure from the old *laissez-aller* methods will meet with a considerable response from the great firms of this country. That in consequence the imperfect representation of their interests at recent important exhibitions will not continue to characterise those held under the new conditions.

It is evident that the international exhibition is a form of advertisement from which no country can afford to stand aloof. It is true also that inadequate representation is but little better than no representation. In the past British exhibitors have suffered a disadvantage; now that this is removed, it would be well for this country to demonstrate to the world that she is still in the forefront of the nations. We published in our last issue a list of the members of the committee appointed to further the interests of agriculture and horticulture at Brussels. At their invitation a number of horticulturists met at the Royal Horticultural Hall on Wednesday evening last to hear an address on the subject by the Earl of Lytton, Chairman of the Royal Commission.

Fixation of Atmospheric Nitrogen.

It is ten years since Sir Wm. Crookes, in his presidential address to the British Association at Bristol, said "the fixation of atmospheric nitrogen is one of the greatest discoveries awaiting the ingenuity of chemists." Short as the intervening time has been, it has sufficed for the invention and working on a commercial scale of no fewer than three processes to fulfil this object. One of these—the Birkeland-Eyde process—has recently been described in these columns (see *Gardeners' Chronicle*, June 12, p. 380, vol. xlv.). It will be appropriate to refer briefly to the other methods.

The possibility of bringing about the combination of nitrogen and oxygen by the use of electricity was originally demonstrated by Cavendish in 1785, and since his day many workers have studied the question in its scientific and also in its commercial aspects. One class of investigators assumes that, in order to use the electrical energy to the best advantage, it should be distributed over a large number of small sparks or arcs. Birkeland and Eyde, who obtained the first practical success in this direction, cause the electric discharge to burn in a strong magnetic field, and thus spread it out in the shape of a flat, more or less, circular disc. The Badische Aniline and Soda Company, so well known in this country on account of the wonderful enterprise shown by them in successfully introducing the manufacture of synthetic indigo, have adopted, after some years of patient investigation, a somewhat different process. In this, an arc,

several yards long, is produced inside an iron tube of comparatively small diameter, into which air is introduced with a tangential or rotatory motion. A column of arc flame (which is quite stable) is obtained, burning quietly in the axis of the tube. The air passing through the tube in contact with the arc becomes partially converted into nitric oxide, and is then cooled rapidly so as to prevent this being decomposed again. It contains about 2 per cent. of nitric oxide, or nearly twice as much as is given by the Birkeland-Eyde process.

The hot gases are caused to give up a portion of their heat to the air which is entering the furnace, whilst, of the heat given by the arc, only 17 per cent. is lost by radiation, the rest being employed in producing hot water, heating the boilers, and evaporating the calcium nitrate solutions which are produced at a later stage of the process.

The next step is to bring the nitrogen-containing gases into a marketable state. They are passed through an absorption tower, down which water is trickling, and a solution of nitric acid is obtained. This can be run down the tower several times to make a stronger acid. The acid is neutralised with ordinary limestone and calcium nitrate is produced. It is placed on the market under the name of Norwegian saltpetre or air saltpetre, and is quite as valuable a nitrogenous manure as nitrate of soda.

It will be seen that the apparatus is both simple and durable, and the manufacture runs smoothly without interruptions; but cheap water-power is required before the process can be carried out profitably. This is at present being furnished by the waterfalls of Norway where several factories are in course of construction. It is to be regretted that suitable water-power is hard to find in this country. The Badische and the Birkeland-Eyde companies have combined forces and propose to work their processes side by side at Notodden and on the Rjukan and elsewhere.

The third process, with which the names of Frank and Caro are associated, is based on the reaction of nitrogen with calcium carbide, which latter can be so easily obtained by heating lime and charcoal in an electric furnace. The preliminary production of carbide is, however, unnecessary, and satisfactory results are obtained by passing nitrogen over a mixture of lime and carbon heated in the electric furnace. The product is sold as nitrolime or kalkstickstoff; chemically it consists of calcium cyanamide mixed with lime and carbon as impurities. The chief point is, however, that it contains 20 per cent. of fixed nitrogen. In the soil, nitrolime gives rise to ammonia, and should be applied some days before the seed is sown. It is not so easy to use and control as saltpetre, and some authorities advocate its conversion into ammonium sulphate before application to the soil.

Air saltpetre has the additional advantage that it also supplies lime to the plant; moreover, the nitrogen contained in it, being in the form of nitrates and nitrites, has a higher value than that in ammonium sulphate or nitrolime.

Whatever be the merits of the respective processes, the world's demand for combined nitrogen is growing so enormously that there is room and to spare for them and others to develop.

OUR SUPPLEMENTARY ILLUSTRATION.—In this country, where *Hymenocallis littoralis* needs to be cultivated in a glasshouse, there are no such magnificent specimens as that depicted in our Supplementary Illustration. Such plants as this can only be obtained in climates that permit of the species succeeding in the open garden, as is the case in New South Wales. Mr. H. W. BRADLEY, of Sydney, who kindly sent us the photograph, supplies the following information:—"I enclose a photograph of a group of *Hymenocallis littoralis* growing in my garden at North Sydney. This was originally one bulb planted 10 or 12 years ago, and practically nothing has been done to it since. The group now measures about 8 feet across each way. At the time the photograph was taken there were from 350 to 400 spikes of bloom all open together, though unfortunately there had been heavy rain the night before, which had broken some of the flowers. The plants are left to take care of themselves from April until Christmas time. At Christmas watering recommences, and the plants are afterwards thoroughly soaked once a fortnight. By the middle of February they commence to open their flowers, and the last blooms fade at about the middle of March. *Crinum Powellii* album, growing close to the *Hymenocallis*, was planted a few years ago as a single bulb, but it is now represented by not fewer than 25 bulbs, most of which bear two flower-spikes in the spring, and flower again in autumn. This species is grown in much the same manner as the *Hymenocallis*, except that the watering commences earlier. In this climate, where these and similar bulbs grow admirably out-of-doors, I cannot think of any better plan than growing them by themselves in small beds set out in the lawn, having nothing else near them to interfere with their general appearance." We may add that *Hymenocallis littoralis* is sometimes known in gardens as *H. adnata* and *Pancratium littorale*. It has pure white flowers. This species and *Crinum Powellii* both belong to the Amaryllidaceæ.

VISIT OF THE R.H.S. COMMITTEE TO EAST BURNHAM PARK.—The number of visitors who accepted Mr. and Mrs. HARRY VEITCH's invitation to visit East Burnham Park on the 1st inst. was fewer than on previous occasions, owing no doubt to the threatening weather on the morning of that day. The weather became finer as the day wore on, and by noon there was bright sunshine. Most of the visitors journeyed by train to Slough Station, and proceeded to East Burnham Park by brake. The gardens looked extremely beautiful, notwithstanding the exceedingly wet season. After luncheon a game of cricket was played, the respective captains being Mr. ICETON and Mr. GEORGE WOODWARD. Mr. WOODWARD's side batted first, but wickets fell rapidly, four of the batsmen being dismissed quickly without scoring, and all were out for 19 runs. The bowlers responsible for this were Messrs. J. G. VEITCH and A. A. McBEAN. The opposing side rapidly secured runs, and soon compiled the total of 78 for six wickets. Mr. F. SANDERS, junr., made the highest score. Whilst the cricket was proceeding others of the party played bowls. Tea was provided, and later the party returned home.

POSTPONEMENT OF SHOW.—Owing to the late season, the annual exhibition of Carnations arranged to take place under the auspices of the Midland Carnation and Picotee Society on July 23 and 29 has been postponed until Thursday and Friday, August 5 and 6.

THE RICHMOND SHOW.—Owing to a printer's error, the award of a Gold Medal to Mr. L. R. RUSSELL at the Richmond Show last week was not mentioned in our report published on p. 11.

JUBILEE OF THE R.H.S. FRUIT AND FLORAL COMMITTEES.—The jubilee of the establishment of the Royal Horticultural Society's Fruit and Floral Committees was celebrated on Wednesday evening last by a dinner at the Hotel Windsor, Westminster. Sir TREVOR LAWRENCE, Bart., President of the Society, presided, and he was supported on his right by Mr. GEORGE BUNYARD, V.M.H., Chairman of the senior Committee, namely, the Fruit and Vegetable Committee, and on the left by Mr. WILLIAM MARSHALL, V.M.H., Chairman of the Floral Committee. There were nearly 70 members present. The President, upon proposing the toast of "The Committees," related a few reminiscences of 1858, the year in which the Fruit Committee was established. At that time, Sir TREVOR LAWRENCE was serving the country in India, and, notwithstanding the unsettled condition of India at that time, he contrived to put his gardening knowledge to a good purpose, introducing English vegetables and Strawberries. He not only succeeded in cultivating many of them successfully, but distributed seeds to other cultivators in various districts. The Floral Committee, said Sir TREVOR, was established in 1859, and Mr. MARSHALL not only remembered that event, but in 1868 he became a member of that body, and has remained a member ever since, having been chairman for the past 24 years. Proceeding to speak of the work the Committees were called upon to do, the President paid a very high tribute to the services they rendered the Society. He spoke of the wonderful development that had taken place in horticulture, and made special reference to the magnificent Strawberries exhibited this week at the Holland Park Show by Lord LLANGATTOCK, stating they were the finest exhibit of the kind he had ever seen. Mr. BUNYARD, responding to the toast, said that he had been a member of the Fruit Committee since 1880. He spoke of the progress that had been made in the past 50 years in improving the varieties of Strawberries, Peaches, and other fruits. He also referred to the presentation that had been made him by the members of his Committee earlier in the evening. Mr. WILLIAM MARSHALL commenced his speech by declaring that the present year was the most remarkable he had experienced. Two months ago he had celebrated his golden wedding, and now all present were celebrating the jubilee of the Committee over which he had presided for nearly a quarter of a century. He interested the company with various reminiscences connected with the Committee, and stated that in the past 24 years he had never had any serious unpleasantness with a single member. On the contrary, he had made many friends and acquaintances, whom he would never have met but for the love of horticulture which actuated them all. The President, with his usual modesty, in replying to a vote of thanks, moved by Mr. WILLIAM POUPART, declared that it was not due in any degree to himself that the Royal Horticultural had prospered, but it was rather due to the attraction horticulture itself possessed for most people. Happily, those who know anything worth knowing of the recent history of the Society know that the influence of Sir TREVOR LAWRENCE has been one of the greatest factors in determining the policy of the Society, and it is the pursuance of that very policy that has placed the Society in the satisfactory position it now enjoys.

MR. GEORGE BUNYARD'S PORTRAIT.—Some 30 members of the R.H.S. Fruit and Vegetable Committee met at 6 p.m. on Wednesday evening last in the lecture room at the R.H.S. Hall in Vincent Square, for the purpose of presenting the Chairman, Mr. GEORGE BUNYARD, with a portrait of himself, to mark the jubilee of the Committee. Mr. A. DEAN, who suggested the presentation and, with the aid of Messrs. W. BATES and W. POUPART, carried out the arrangements, spoke of the unanimity amongst the members in so readily assisting in the movement. He invited Mr. A. H. PEARSON to make the presenta-

tion. Mr. BUNYARD, in accepting the portrait, expressed his deep pleasure on receiving such an acceptable token of a very interesting event. The portrait, which is three-quarter length, depicts Mr. BUNYARD in the robes of the office of Master of the Fruiterers' Company, and is reproduced on p. 23. On the base of the frame was the inscription: "Presented to GEORGE BUNYARD, Esq., V.M.H., Chairman of the Royal Horticultural Society's Fruit and Vegetable Committee, by his fellow members, as a memento of its jubilee, and as a mark of their high esteem."

FLOWERS IN SEASON.—Mrs. SCOTT-ELLIOT sends from her garden, Teviot Lodge, Hawick, Roxburghshire, a box of choice *Aquilegias* belonging to a strain raised by herself. The strain is remarkable for its brightly-coloured, well-formed flowers, in which the spur shows considerable development. It will be remembered that the Scientific Committee of the Royal Horticultural Society recently granted a Certificate of Appreciation to Mrs. SCOTT-ELLIOT for her work in connection with the hybridisation of *Aquilegias*. —Messrs. JAMES VEITCH & SONS send from their Coombe Wood Nursery some sprays of flowering shrubs. The numerous varieties of *Philadelphus* are all handsome, and especially one labelled *P. rosace*, the blooms being like small Roses. *Styrax japonica* is well known as a floriferous species. The double-flowered variety of *Pyrus coronaria* bears handsome pink blooms like large Apple blossoms. *Ceanothus thyrsiflorus* is a suitable subject for planting against brick walls. *Rhododendron Govenianum* is one of the latest to flower. *Viburnum nudum* is a plant seldom seen in gardens. Its foliage is extremely pleasing, while the inflorescences are fragrant. —Mr. C. H. HERBERT, Hazlewood Road, Acocks Green, Birmingham, sends blooms of a perpetual-flowering Pink named Progress. The flower-stems are long and bear moderately-sized, deep mauve-coloured blooms of good shape. —Lady JULIA WOMBWELL sends us an inflorescence of Sweet Pea bearing as many as 10 flowers and buds. The first few flowers on the stem are normal, but afterwards there is proliferation and slight branching, accompanied by small leaves. Had the inflorescence remained upon the plant, it would have been interesting to watch its future development.

THE WOLVERHAMPTON FLORAL FETE.—The Wolverhampton Flower Show this year marks the coming-of-age of this important institution. The prizes have been largely augmented for this event, and the secretary informs us that there is every prospect of the exhibition being even better than usual. It will be held on the 13th, 14th and 15th inst., in the beautiful West Park.

VISIT OF GERMAN GARDENERS TO BRITAIN.—At the present time a company of 100 Members of the German Society of Garden Art are touring in Britain. Visits have been made to the Royal Gardens, Frogmore, Gunnersbury House gardens and other places. On Wednesday last the party was entertained at luncheon at the Holland Park Exhibition by the Council of the Royal Horticultural Society, Sir ALBERT K. ROLLIT in the chair. The visitors expressed the highest appreciation of the general good quality observed at the exhibition.

EXHIBITION AT ZEIST, HOLLAND.—A great horticultural exhibition will be opened at Zeist, near Utrecht, on August 25 next, and will continue until September 16. The permanent exhibition will include coniferous and other trees, shrubs, fruit trees, Roses, and perennial flowering plants; garden architecture, decorative plants, bedding plants, hothouse plants, and garden implements. There will be special shows of hothouse plants and Orchids on August 25 to 28; cut Roses, September 1, 2, 3; florists' arrangements, September 7, 8, 9; cut flowers, September 10, 11; vegetables and fruit, September 14, 15, 16. Full particulars may be obtained from Mr. W. H. J. BLANKENHAGEN, Zeist.

ROYAL HORTICULTURAL SOCIETY.

Summer Exhibition at Holland Park.

JULY 6, 7.—The show which opened on Tuesday last in the grounds attached to Holland House, Kensington, will rank as the finest summer exhibition held by the Society. Nothing was needed but fine weather to make it a conspicuous success, but, unfortunately, heavy rains fell on the afternoon of the opening day, and Wednesday was anything but summer-like. To a great extent, therefore, the show—so far as the attendance of visitors was concerned—was robbed of much of its success, although the receipts on Wednesday exceeded those on the same day last year. In all departments of horticulture a magnificent display was provided, rivalling, in the opinion of many, the famous exhibitions held in the Temple Gardens. The Society is to be congratulated on its achievement, and the thanks of all concerned are due to those responsible for the arrangements, and especially to the superintendent, Mr. S. T. Wright, the secretaries, the Rev. W. Wilks and Mr. A. J. Gaskell, and the members of the office staff, including Mr. Frank Reader and Mr. W. H. Plowman, to whose courtesy and assistance we, in common with others, are greatly indebted.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Henry B. May, C. T. Drury, T. W. Turner, Herbert J. Cutbush, W. J. James, W. P. Thomson, N. F. Barnes, F. Page Roberts, C. R. Fielder, W. Bain, Jas. Hudson, R. Hooper Pearson, Jno. Green, H. J. Jones, Chas. Dixon, W. Cuthbertson, W. J. Bean, W. G. Baker, Jas. Walker, G. Renthe, R. C. Notcutt, J. F. McLeod, and Charles Blick.

GROUPS OF PLANTS.

It would be difficult to point to any exhibit more imposing or elegant than the magnificent display of exotic plants shown by Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, in the largest marquee. It had as companion groups on either side Messrs. W. PAUL & SONS' group of Roses and Messrs. H. B. MAY & SONS' Ferns, a worthy trio, diverse in composition as could well be, but each serving to throw its companions into greater prominence. The space occupied by Messrs. Veitch's group was 500 square feet. It was arranged with skill, each plant being disposed so as to show its full beauty, there being no crowding. We noticed *Anthurium crystallinum*, *Medinilla magnifica*, *Davallia fijiensis elegans*, *Alocasia macrorhiza variegata*, *Begonia Bowringiana*, *Anthurium Andreanum*, *Platycerium alaicorne* (at the back), *Aralia elegantissima*, *Cannas* in groups, a choice specimen of *Nepenthes Hookeriana*, N. Sir W. Thistelton-Dyer, *Cyanophyllum magnificum*, *Heliconia illustris*, and, as a corner plant, *Dracena Doucettii* var. de Grootii.

Mr. L. R. RUSSELL, Richmond, was also the exhibitor of a fine collection of stately-leaved plants, such as are used for the embellishment of plant stoves. Such elegant species as *Maranta insignis*, *M. regalis*, *Cyanophyllum magnificum*, the pretty *Alpinia Sanderiana*, with silvery striations; *Anthurium crystallinum*, *Cissus discolor*, an elegant twiner, and its companion *Dioscorea bulbiferum*; *Nidularium Meyendorffii*, *Alocasias* in assortment, many elegant *Codiaeums*, *Phyllanthus roosei pictus*, and others of equal beauty contributed to a group of much excellence. In another tent Mr. RUSSELL showed varieties of *Bertolonias*, especially fine being those labelled *Mme. A. Bleu* (green and silver) and *Souvenir de Gand* (the veining and spotting of cerise colour).

Messrs. WM. BULL & SONS, King's Road, Chelsea, showed ornamental foliage plants, including *Dracena Victoriae*, D. Prince Manouk Bey, with handsome red leaves, *Macarum firmum*, with pinnate leaves like an *Acacia* but tinged with red; *Anthurium crystallinum*, also numerous *Caladiums*, *Crotons*, *Eugenia myriophylla*, and many others of like nature.

FERNS.

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, showed a magnificent group of

exotic Ferns. The exhibit covered an area of 400 square feet. There were 150 species and varieties. On stands were presented *Gymnogramme schizophylla superba*, a most elegant Fern; *Goniophlebium sub-auriculatum*, *Davallia fijiensis robusta* and *Asplenium Nidus*, with exceptionally large fronds. *Polypodium Knightiae* and *Davallia solida superba* were shown as large specimen plants, both representing fine culture. Of the more popular *Nephrolepis*, N. *Whitmannii* and N. *Ameripollii* were shown in elegant specimens. Messrs. MAY also showed a representative collection of hardy Ferns, in all 200 species and varieties. Many were crested forms of *Nephrolepis*, *Athyrium*, *Polystichum*, *Scolopendrium* and *Lastræa*, representing the choicer kinds in commerce. Beneath a large glass shade was an elegant plant of *Todea superba*, one of the most handsome of the filmy Ferns. *Polystichum angulare cruciatum* has much-reduced leaves, with wedge-shaped pinnæ. *Polypodium ornatum* is an elegant species, and equally beautiful are *Polystichum angulare stipitatum*, *Athyrium filix-femina plumosum superbum*, A. *Goringianum tricolor*, and *Scolopendrium vulgare ramo-marginata gracile*.

Mr. H. HEMSLEY, Crawley, staged varieties of hardy Ferns such as are suited for planting in the rock-garden.

Mr. AMOS PERRY, Enfield Chase, also contributed a display of Ferns of this type.

Mr. H. N. ELLISON, West Bromwich, had many pot plants of Ferns such as are suitable for dwelling-rooms and the conservatory.

ROSES.

Messrs. WM. PAUL & SON, Waltham Cross, Herts., put up an exhibit of Roses as a bank of flowers, with tall plants arising therefrom. The choicer blooms were arranged along the front, such sterling varieties as *Betty*, *Lady Faire*, *Lyon Rose*, *Juliet*, and *Mme. Abel Chateau* being shown in magnificent specimens. There were baskets of Roses in great assortment, and then Pillar Roses, with several standard plants, none being more elegant than *Helene*, with dense clusters of semi-double blooms, and *Fairy*, with single white blooms. *Rubin* is a fine red Pillar Rose. The group was one of the most attractive features in the largest tent.

Messrs. PAUL & SON, Old Nurseries, Chess-hunt, exhibited a group of Roses as a ground exhibit. The base was formed with vases of large blooms with pillar varieties at intervals. Specially fine were *Ulrich Brunner* (red), *Lady Ashtown* (pink), *La Tosca* (blush), *Richmond* (red), *Marquise Litta* (rose-red), *Killarney*, Mrs. T. Roosevelt (excellent), *Souvenir de Maria Zayas*, and *Countess of Caledon*. The pillar varieties included large, freely-flowered plants of the soft yellow *Goldfinch* and *Ariel*, a large, delicate pink, single-flowered variety.

THE KING'S ACRE NURSERY CO., Hereford, contributed a fine exhibit of Roses of all types, some being large-bloomed varieties, such as *Liberty*, Mrs. W. J. Grant, *Lady Ashtown*, *Caroline Testout*, *Lady Roberts*, *Richmond*, and others of equal worth, with the elegant *Rambler* kinds of which we may instance *Aglaia*, its soft yellow blooms being produced in large bunches and showing prominently against the handsome foliage.

Of all the numerous exhibits of Roses, none was finer in quality than that shown by Messrs. ALEX. DICKSON & SONS, LTD., Royal Irish Nurseries, Newtownards, co. Down. Each bloom was of perfect development, and shown not singly, but in large epergnes of one variety. Exquisite were Mrs. Arthur Munt (deep cream), *Nita Weldon* (faint pink on a cream ground), *Mary Countess of Ilchester*, *Walter Speed* (faint yellow), *John Cuff* (carmine), *Lady Helen Vincent* (shell-pink), *Geo. C. Waud* (reddish and orange), &c.

Messrs. FRANK CANT & CO., Colchester, showed 100 varieties of Roses, all the blooms being of high quality.

Another choice group of Roses was shown by Messrs. B. R. CANT & SONS, Colchester, and, as

in the last-named display, of exceedingly fine quality.

Mr. GEO. PRINCE, Oxford, showed a choice exhibit of Roses, having vases and epergnes filled with a selection of well-known kinds. Especially beautiful was *Lyon Rose*, with its sheen of orange suffused on rose.

Mr. CHAS. TURNER, Slough, showed banks of some varieties, with others singly in boxes, and smaller bunches in vases. Very handsome were the varieties *Viscountess Folkestone*, *Caroline Testout*, and *Ulrich Brunner*. Adjoining the Roses the same exhibitor staged pot plants of *Carnations* in variety, including the *Souvenir de la Malmaison* and perpetual-flowering varieties.

Messrs. GEO. JACKMAN & SON, Woking Nurseries, Surrey, had excellent blooms of well-known varieties attractively staged.

Mr. CHAS. TURNER, Slough, and Messrs. R. H. BATH, LTD., Wisbech, showed a fine group of Roses and many excellent *Carnations*.

Other exhibitors of Roses were Messrs. S. BIDE & SONS, Farnham, Surrey; Mr. W. R. CHAPLIN, Joynings Nursery, Waltham Cross; Lt.-Col. C. HESSELTINE, Walthampton, Lynton, Hants.; and Messrs. R. HARKNESS & Co., Hitchin.

CARNATIONS.

In one corner of the largest tent Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged a most effective exhibit of Roses and *Carnations* with banks of coloured *Astilbes* (*Spiræas*), and batches of the large red-leaved *Coleus Cordelia*, with *Dracenas* furnishing foils at intervals. The *Carnations* were shown in banks, with tall vases arising from them and displaying sheaves of long-stemmed varieties in scarlet, pink, blush, white, and other tones. In the corner, a bank of *Rose Mrs. F. W. Flight*, an elegant single-flowered variety, served as an effective background with other clumps of Roses, including *Crimson Rambler* and *Dorothy Perkins*. The *Carnations* included the variety *Lady Coventry*; there were also many well-grown examples of *Prince of Wales*, the best all-round variety of the *Souvenir de la Malmaison* type. As a floral display, nothing could be finer than this charming exhibit.

Mr. W. H. PAGE, Langley Nursery, Hampton, presented a wealth of beautiful *Carnations* and *Liliums*, arranged in big masses, every bloom a choice specimen of some meritorious variety. There were great bouquets of *Enchantress*, *Britannia*, Mrs. T. W. Lawson, *White Lawson*, &c., intermixed with pink-flowered *Astilbes* and *Rambler* Roses, with here and there a large stand of *Lilium longiflorum*, L. *speciosum*, and L. s. *album*. The whole display presented a bank of flowers in many hues.

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, showed a superb group of *Carnations* as a portion of their exhibit in the largest tent. No pains had been spared to make it a telling exhibit, and in this the exhibitors were highly successful. Almost all the best kinds in commerce were seen in magnificent specimens, there being many of the *Souvenir de la Malmaison* type, in addition to the pick of the perpetual-flowering kinds. The other subjects in the exhibit were *Roses*, blue-flowered *Hydrangeas*, *Gerbera Jamesonii*, *Ericas*, *Ampelopsis Lowii*, and a golden-leaved *Bougainvillea*.

Messrs. BELL & SHELDON, Guernsey, showed a bright group of perpetual-flowering *Carnations*, having large blooms, well coloured, of all the chief varieties.

E. J. JOHNSTONE, Esq., Burr's Wood, Groombridge (gr. Mr. A. T. Pashett), put up a very large exhibit of *Carnations* and *Sweet Peas*.

Groups of *Carnations* were also exhibited by Mr. C. LANGE, Hampton, and THE AMERICAN CARNATION NURSERY, Sawbridgeworth.

BEGONIAS.

Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath, showed tuberous-rooted *Begonias*, one portion of the exhibit being composed of varieties having frilled petals, of which type this

exhibitor has some exquisite kinds, at present all unnamed. One, of a salmon tint, was especially pleasing. Amongst the ordinary kinds the varieties Mrs. P. Clowes (salmon), Mrs. Lockwood (cream, with faintest suffusion of pink), Duchess of Cornwall (the finest of the crimson kinds), Millicent (a fine tall-habited salmon variety), Rt. Hon. J. Chamberlain (deep crimson), Mrs. T. D. Harris (rose), and Mrs. W. L. Ainslie (one of the best yellow varieties), may be instanced as especially choice.

Another excellent group of tuberous-rooted Begonias was shown by Messrs. T. S. WARE, LTD., Feltham, Middlesex. The numerous flowers were of many tints, making a bright bank of colouring. In the centre of the group were many plants of the pale-blush coloured Mrs. A. P. Brandt, an exceptionally free-blooming variety with large flowers. Excellent also were Duchess of Connaught (salmon), Themas Rooney (white), Lord Hopetoun (crimson), Patrick Ainslie (bright red), Countess of Dart-

were exceedingly handsome, with flowers in shades of red, coral, and scarlet. Fürst O. von Wernigerode (coral pink), Trudchen Bonstedt (pale salmon-pink), Mary (bright red), Gartenmeister Bonstedt (a big-flowered variety, a shade of orange-scarlet), and Clie (reddish-pink, one of the best habited varieties) are a selection. Amongst the Cannas we noticed Frau Constant Sompert (a very large cherry-crimson flower), Elizabeth Tutenberg (striped red on orange), Carl Hausmann (orange on a yellow ground), Rosea gigantea (carmine), Fürst Wiäd (crimson), Frau Daisy Hultzsch (rose-pink), Frau Dr. Bloch (new, reddish and golden), and Garten Inspector Junge (fawn and orange). In all there were 165 Cannas.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, exhibited an assortment of choice flowering plants. A large batch of Carnations of Souvenir de la Malmaison and tree varieties, with an assortment of greenhouse-flowering plants formed the chief features. We noticed

Although disposed in an out-of-the-way corner, no exhibit was more interesting than the group of three varieties of Primulas staged by Messrs. BEES LTD., Liverpool. They were P. Malacoides, P. Bulleyana, and P. Littoniana. It was interesting to notice the wide divergence in the habit of inflorescence and colour of the flowers in the different species. P. Malacoides has a lax panicle of blush flowers; P. Bulleyana a spike bearing its orange flowers in whorls; whilst P. Littoniana (see fig. 7) has a dense spike, resembling that of some of our British Orchids.

Rarely are Fuchsias shown better than those displayed on this occasion by J. FRIEDLAND, Esq., Reading (gr. Mr. F. Bright). So exceedingly well were they shown, the Floral Committee conferred a Cultural Commendation. The specimens were about 10 feet in height, and covered from base to summit with innumerable flowers, the basal shoots sweeping the ground with their burden of blossoms. The varieties were Elegance, White Knight's Gem, Amy Lycé, Mrs. Bright, and Mrs. Julius Friedlander.

Messrs. JAS. CARTER & Co., High Holborn, London, showed Sweet Peas, Begonias, and Gloxinias, arranging a semi-circular group of each subject on a table. The plants of Begonias and Gloxinias were good specimens, the flowers being large and of many colours. The Sweet Peas were all noted varieties.

Mr. LILLEY, Guernsey, showed varieties of Gladioli, mostly hybrida raised in his nursery. Very beautiful were Ardens (scarlet), Insignis (salmon-pink), Red Admiral (the lower petals blotched with white), and Queen Alexandra (rose).

Messrs. STORRIE & STORRIE, Glencarse, Perthshire, showed hybrid Streptocarpus, Primula obconica, Iceland Poppies of a choice strain, and Hydrangea hortensis with excellent inflorescences. The Streptocarpaceus were a great advance on the older kinds, in size of blossom and colours.

Mr. W. ICETON, nurseryman, Putney, showed three columnar groups of Lily of the Valley arranged in a setting of Adiantum Ferns. The spikes of flowers were of the largest size, with correspondingly broad foliage.

Messrs. JOHN PEED & SON, West Norwood, London, showed a circular exhibit of Caladiums. The plants were large and with finely-coloured foliage, but the heavy canvas of the tent did not permit of their full beauty being seen. Sir William Broadbent (with maculated foliage and reddish veining), Mme. J. R. Box (reddish and green), Mrs. Cresswell (brilliant red, margined with green), W. E. Gladstone (almost wholly red), John Peed (one of the largest-leaved), C. E. Dahle (green, silver, and red), and Rio de Janeiro (reddish, with green markings) are all handsome in their several colours.

SWEET PEAS.

Messrs. SUTTON & SONS, Reading, staged large masses of the best varieties in a pergola, the sides being prettily decorated with the flowers. The exhibit was delightfully arranged and most effective.

Messrs. E. W. KING & Co., Coggeshall, decorated numerous arches with Sweet Peas of such beautiful kinds as Helen Lewis, Elsie Herbert, Evelyn Hemus, Mrs. Wm. King, Anglican Blue, and Anglican Pink.

Messrs. J. & F. KING & SONS, Coggeshall, Essex, exhibited fine blooms of Apple Blossom Spencer, Olive Bolton, Primrose Spencer, Harold, Clara Curtis, and other choice kinds.

Messrs. WEBB & SONS, Stourbridge, displayed a brilliant lot of Sweet Peas in a collection of Melona and other fruits.

Messrs. G. & A. CLARK, LTD., Dover, staged an excellent lot of these flowers, the extensive exhibit containing most of the leading sorts.

Messrs. CARTER, PACE & Co., London Wall, staged a group of Sweet Peas containing about 60 varieties.

Messrs. KELWAY & SONS, Langport, and Mr. T. CROSS, Bury St. Edmunds, each brought good displays of these flowers.

Miss HEMUS, Upton-on-Severn, showed Sweet Peas. A few of the best were in great assortment and of fine quality.

Mr. H. J. JONES, Lewisham, also showed Sweet Peas very finely. The new white variety Beatrice Stevens was conspicuous.

Sir RANDOLF BAKER, Bart., Blandford (gr Mr. A. E. Usher), had a charming display of these flowers in tall vases and Bamboo stands.



WILLIAM MARSHALL, ESQ., V.M.H.

(Chairman for 24 years past of the R.H.S. Floral Committee, which has just celebrated its jubilee.)

mouth (lemon suffused with rose), Mrs. J. F. Brown (orange-red), Wm. Marshall (crimson), and Mary Pope (white).

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, exhibited tuberous-rooted Begonias in variety. Very choice were the varieties Sultan (orange-red), Mrs. J. C. Gwillim (deep salmon), Dragon (deep red), Marguerite Gwillim (yellow), Eltham Grenadier (a tall scarlet-flowered variety), Sea-Shell (an exquisite flower with crimped petals edged with soft pink), Avalanche (white), Rhoda Pope (Camellia shaped, soft rose suffusion with pink edges), Mrs. H. Harris (light salmon shade), and a magenta-coloured seedling.

MISCELLANEOUS GREENHOUSE PLANTS

Messrs. H. CANNELL & SONS, Swanley, displayed a collection of Cannas and varieties of Fuchsias of the splendens type. The Fuchsias

as especially good *Lobelia tenuior*, a charming subject for greenhouse decoration and for hanging baskets; *Kalanchoe flammea*, with bright red corymbs; a dwarf small-flowered Begonia, the colour being a fine shade of red; *Pelargonium Snow Queen*, with pure white bunches of flowers and silver variegated leaves; and an assortment of *Gloxinias* in tones of crimson, white, lavender, purple, red, and other shades, all exhibiting the highest skill in culture. The Fuchsias were shown as standard plants, all prolific in flowering.

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed varieties of Zonal *Pelargoniums* and *Abutilons*.

Messrs. W. & J. BROWN, Stamford and Peterborough, staged greenhouse plants: *Heliotropes*, Zonal *Pelargoniums*, *Trachelium cœruleum*, and *Salvias* being prominent. *Rosea* were also shown by this firm, and exceedingly fine were two large banks of *Lilium Szovitsinnu*.

Mr. C. W. BREADMORE, Winchester, showed a superb and extensive exhibit of all the choicer varieties.

Other exhibitors of these flowers included Messrs. S. BIDE & SONS, Farnham; Messrs. C. STARK & SONS, Great Ryburgh, Norfolk; Mr. W. R. CHAPLIN, Waltham Cross; Mr. ROBERT SYDENHAM, Tenby Street, Birmingham; Mr. S. MORTIMER, Farnham; and Mr. W. J. UNWIN, Histon, Cambridge.

HARDY PLANTS.

Never before have there been finer displays of herbaceous plants at the Holland Park shows than on the present occasion. An entirely new feature was introduced in the group staged by Messrs. WALLACE & CO., Colchester. The arrangement was novel, quite apart from the merit of the exhibit as a whole. It was an ideal representation of a formally-arranged herbaceous border with a terrace and a paved stone path. In front was a low wall of stonework planted with rock plants, together with a border of Ferns. A water-garden was included on the extreme left. The arrangement was so realistic in its execution as to appear like some border from an established garden transferred to the exhibition tent. The border itself was filled with Lilies, Eremurus (chiefly *E. Bungii* and *E. Shelford*), masses of *Lychnis* and Peonies, together with *Cyclobothras*, Larkspurs, and other showy flowering subjects. The stone-paved way in front of the border contained a few Alpine plants between the joints of the stones, while on the rock wall in front numerous Sedums, *Semprevivums*, *Dianthi*, *Pentstemons*, and a great variety of suitable species were planted.

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, furnished the entire side of one of the tents with showy border flowers and a water-garden arrangement. At either end of the group were seen large semi-circular groups of Larkspurs in variety, the central portion being occupied by an exceedingly well-arranged water and rock-garden. This portion of the exhibit was arranged with Ferns, *Iris Kämpferi*, *Rushes*, *Bamboos*, and other suitable subjects.

Messrs. WM. ARTINDALE & SONS, Sheffield, also displayed an extensive water-garden exhibit, well furnished with suitable plants, together with an extensive collection of *Violas* and *Pansies*.

Messrs. R. H. BATH, LTD., Wisbech, had a capital display of Peonies and Larkspurs, the former in many superb varieties.

Messrs. WM. BULL & SONS, Chelsea, displayed a comprehensive assortment of English Irises.

Herbaceous and bulbous plants were extensively displayed by Messrs. GEO. BONYARD & CO., Maidstone. There were numerous Poppies, Peonies, Larkspurs, Lilies and *Lychnises* in this group.

Herbaceous plants, together with a well-planned rock-garden, was formed by Messrs. J. CHEAL & SONS, Crawley.

Messrs. G. & A. CLARK, LTD., Dover, made an extensive exhibit of hardy flowers, including *Gillia coronopifolia*. They also showed *Marguerite Perfection*, an assortment of Sweet Peas, Aquatics, and other plants.

Mr. HOWARD H. CRANE, Highgate, exhibited a choice collection of *Violas* and *Violettas*, the whole forming a fresh and pleasing group.

Messrs. WM. CUTBUSH & SONS, Highgate, arranged an extensive group of herbaceous plants, the more showy flowers, such as Peonies, Poppies in variety, Larkspurs, and *Iris Kämpferi*, creating an excellent display.

Messrs. GUNN & SONS, Olton, near Birmingham, showed perennial Phloxes, the flowers, in bright and varied colours, being admirably arrayed.

The Misses HOPKINS, Shepperton-on-Thames, arranged a well-executed rock-garden tastefully planted with a variety of low-growing plants.

Messrs. GEO. JACKMAN & SONS, Woking, exhibited fine Peonies, *Iris levigata* in variety, Water Lilies and other seasonable hardy cut flowers.

Messrs. KELWAY & SONS, Langport, showed Peonies, Delphiniums, Gaillardias and other showy flowers, the whole making a rich display.

Messrs. LADHAM & SONS, Shirley, near Southampton, showed herbaceous flowers in assortment, Gaillardias being especially fine. They also exhibited many good varieties of perpetual-flowering Pinks.

Messrs. GEORGE MALLET & CO., Cheddar, had

a comprehensive group, in which Alpine, bulbous and herbaceous plants were prominent.

Excellent hardy flowers were shown by Mr. R. C. NOTCUTT, Woodbridge, Suffolk; this group also contained many showy flowering shrubs.

Mr. MAURICE PRITCHARD, Christchurch, Hants., arranged a water-garden, and tastefully planted the surroundings with Bamboos, *Rushes*, *Iris levigata* and other moisture-loving subjects. He also showed *Campanulas*, Larkspurs, Gaillardias, Achilleas and other seasonable flowers.

Mr. H. C. PULHAM, Elsenham, formed a small rockery exhibit.

The exhibit from Mr. G. REUTHE, Keston, Kent, was of more than ordinary interest, and his collection contained many plants of the choicest description.

Messrs. W. SEAGRAVE & CO., Sheffield, had an excellent lot of tufted Pansies.

Messrs. T. S. WARE, LTD., Feltham, displayed a pretty group of hardy plants, with many boxes of dwarf Alpines in variety. *Dianthus alpinus* was especially fine.

Other exhibitors of hardy plants were Messrs. WHITELEGG & PAGE, Chislehurst; Messrs. GIBSON & CO., Bedale; Messrs. H. & W. EVANS, Cardiff; Mr. A. J. HARWOOD, Colchester; and THE GULDFORD HARDY PLANT NURSERY.

AWARDS.

FIRST-CLASS CERTIFICATE.

Primula Littoniana.—A new species discovered in China by Mr. George Forrest and introduced to Britain by Messrs. Bees Ltd. The species is illustrated in figs. 6, 7, and 8. It will be seen from Professor Isaac Bayley Balfour's description on p. 15 that *Primula Littoniana* is likely to rank amongst the most interesting species in cultivation.

AWARDS OF MERIT.

Carnation Lieut. Shackleton.—A very pretty border Carnation, yellow ground, with salmon-pink colouring. From Mr. CHAS. BLICK.

Delphinium White Queen.—This is a very dainty variety, with well-formed, double flowers. The blooms are a shade of pale lemon but little removed from white. Shown by Messrs. WALLACE & CO.

Nephrolepis magnifica.—Another new variety of *N. exaltata*, somewhat like the form known as *Amerpohlii* but more elegant, exhibiting finer-cut fronds. Shown by Messrs. STUART LOW & CO.

Rose Ariel.—As shown, this appears to be a good pillar Rose, or it may perhaps have the habit of a Rambler. The flowers are single, 4 inches across, rose-crimson in colour, with yellow centre. Shown by Messrs. PAUL & SON, Cheshunt.

Rose Duchess of Wellington.—This new Hybrid Tea variety is quite distinct in tint, being of rich apricot shade. The buds possess unusual length and are very pretty. One of the most remarkable amongst new Roses. Shown by Messrs. ALEX. DICKSON & SONS.

Rose Grace Molyneux.—A Hybrid Tea variety with shell-white petals, excepting those in centre of the flower, these being salmon-pink. The blooms are large and the petals very fine. A delightful Rose. Shown by Messrs. ALEX. DICKSON & SONS.

Rose Walter Speed.—A Hybrid Tea Rose with large, full flowers with good centre. The petals are white, with lemon shade, and in the centre a suspicion of salmon tint. Shown by Messrs. ALEX. DICKSON & SONS.

Sweet Pea Doris Usher.—A pink variety with very large flowers, three, and often four, on a spike. The standard, although waved, is partially erect. Shown by A. E. USHER, Esq.

S. P. Colleen.—A very attractive flower with standard of bright rose colour, the other portions being white, or nearly white. Shown by Mr. W. DEAL, Kelvedon.

S. P. Mrs. Henry Bell Improved.—A magnificent variety with three or four flowers on a spike. Colour pink, with cream tint. Shown by Messrs. DOBBIE & CO.

S. P. Masterpiece.—A beautiful mauve-coloured flower, which was illustrated in these pages last week. Shown by Messrs. DOBBIE & CO.

S. P. Mrs. Townsend.—A very delicately-tinted flower, white, with heliotrope towards the margins. It is an improvement on the variety Phenomenal. Shown by Messrs. JARMAN & CO.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. secretary), de B. Crawshaw, Sir Jeremiah Colman, H. J. Chapman, H. G. Alexander, R. G. Thwaites, H. A. Tracy, A. Dye, W. Boxall, H. Little, Walter Cobb, F. Sander, Gurney Wilson, J. Cypher, W. H. Hatcher, G. F. Moore, W. P. Bound, W. H. White, F. M. Ogilvie, H. Ballantine, and A. A. McBean.

In extent and in quality the show of Orchids was finer than any previously staged, the proportion of good and rare things being great, although the really remarkable novelties were few. Out of the 17 entered to go before the Committee, only three secured awards.

Messrs. CHARLESWORTH & CO., Haywards Heath, staged an extensive group of uniformly good things. These were well arranged on the central staging, commencing at the entrance of the tent. Their new bigeneric hybrid *Miltonioda Harwoodii* attracted much attention, and although still not well developed, secured the new Certificate of Appreciation (see Awards). The body of the group was made up of selections of fine *Lælio-Cattleyas*, *Odontoglossums*, *Cattleyas*, &c., all being so arranged that they grouped the classes together. In the centre was a very fine selection of white *Cattleyas*, most of the known varieties of the season being represented. Some of the best things noted were the charming *Cattleya Warszewiczii* var. *Mrs. E. Ashworth*, of a uniform blush-white tint with pure rose freckling on the lip; *Lælio-Cattleya Fantasia* (L.-C. *Dominiana* × C. *Mendelii*), with purple-feathered petals and finely-coloured lip; a selection of scarlet *Odontodas*, *O. Charlesworthii* being the finest in colour; a grand plant of a remarkable new snow-white *Lælia purpurata* with a slight rose line on each side of the lip; a selection of *Disas* and *Satyrums*, including several of the showier hybrids and the singular orange-coloured *Disa polygonoides*; the pretty and profuse-flowering *D. sagittalis*, some of the plants having six or eight spikes; several of the yellow *Satyrum ochroleucum*; and another curious greenish *Satyrum*; a batch of showy varieties of *Lælio-Cattleya Canhamiana*; L.-C. *Aphrodite*, with the true *Odontoglossum Williamsianum*, and some handsome hybrid *Odontoglossums*; *Oncidium Harrisonia* and other pretty species; two very fine specimens of the rare *Cymbidium tigrinum*; *Celogyne pandurata*; a fine example of *Aerides Houletianum* with three spikes; a batch of very fine blue *Vanda cœrulea*, and *Cattleya Eldorado* alba.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. Collier), continued the display with a very pretty and interesting group, a feature in which were two arrangements of rare and curious species and hybrids. In the first were *Celogyne Schilleriana*, *Promenæa stapelioides*, *Masdevallia troglodytes*, and other pretty *Masdevallias*; *Bulbophyllum biflorum*, B. *Godseffianum*, *Brassia maculata*, B. *Keliana*, the rare and showy *Dendrobium McCarthyi*, and *Nephelaphyllum* species with very pretty leaves and whitish flowers. In the other lot were *Cirrhopetalum pulchrum*, with an umbel of very pretty blooms; *Eulophia maculata*, *Masdevallia macrura*, *Barkeria spectabilis*, *Dendrobium nudum*, *Physoiphon Loddigesii*, various pretty *Epidendrums*, and a specimen of the pretty *Brasso-Cattleya Mary* with three white flowers uniformly spotted with purple. In the body of the group were good *Lælio-Cattleya Canhamiana*, L.-C. *Aphrodite*, a selection of *Cypripediums*, including *C. callosum Sandera*, *Dendrobiums*, and *Odontoglossums* arranged with scarlet *Masdevallias*. A section of the group having good *Odontoglossum crispum* (the showy *O. crispum* *Princess Margherita* with prettily-spotted flowers), arranged with *Oncidium macranthum*, the bright purplish-rose *Dendrobium Statterianum* and hybrid *Cattleyas* and *Lælio-Cattleyas*, was a pretty feature.

Messrs. SANDER & SONS, St. Albans and Bruges, staged a very fine and beautifully-arranged group of good things, the elevated parts being capped by a fine lot of *Phalenopsis Rimestadiana*, including one plant of the new variety *alba*, which has not the blush tint seen on most of the type. One of these lobes had good varieties of *Miltonia vexillaria*, a plant of *M. v. chelsiensis* being specially handsome; also white *Cattleyas*, the new pure white *C. Mossia*

Wagneri Sanderæ being the perfection of white Cattleyas (see Awards). In a depression in the group were scarlet Masdevallias with Anguloa Clowesii, A. Ruckeri and patches of Cypripedium Godefroyæ leucochilum. Among the Lælio-Cattleyas the grand L.-C. Martinetii "The Prince," which secured a First-class Certificate, was pronounced to be the best Lælio-Cattleya in the show. Cattleya Mendelii Princess Mary and C. M. cœlestis were two pretty new varieties, and C. Mendelii Mrs. F. Sander, a superb white variety. C. Mossie Empress of India was a richly-coloured flower, with the greater part of the lip of a bright orange tint. Among the many pretty hybrid Odontoglossums raised at Bruges were O. Landolphus decorum (Andersonianum × Rolfeæ), a very distinct, cream-coloured flower with the bright reddish-brown markings arranged as in O. Andersonianum, the lip being unspotted; O. alnum, O. delectabile, O. Vulcan, O. Lambeauanum brugense, a nice lot of O. ardentissimum, O. nigrum and others, including good O. Rolfeæ and O. crispo-Harryanum. In one section of the group the finely-coloured and showy forms of Cattleya Warszewiczii Sanderiana, with white Cattleyas, including a fine specimen of C. Mossie Reineckiana excelsa, were effective. Another section had a fine selection of Lælio-Cattleya Martinetii, with flowers of various tints, with Phalenopsis, including four of the pretty pink-tinted P. Sanderiana, and in front showy plants of Odontonia Laiessee, Cypripedium Frau Ida Brandt, a curious orange and red Mormodes from Pern, a selection of Cypripedium bellatulum and other dwarf Cypripediums, Oncidium candidum, and Zygopetalum rostratum.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), who always stages his plants in the pink of perfection, showed a very pretty representative group, one of the most remarkable plants in which was Odontoglossum Pescatorei luteum, a yellow O. Pescatorei which seems to be removed from the reproach of being a pale form of O. excellens. The flowers were pale yellow, of true O. Pescatorei form, with a purplish tinge at the backs of the sepals. Mr. OGILVIE'S group also had a very beautiful selection of varieties of Miltonia vexillaria, some very dark Lælia tenebrosa; Odontioda Bradshawæ, a pale variety, but the best-flowered plant which has yet appeared; Miltonia Bleuana grandiflora, a very large and handsome flower; Cypripedium Maudie, C. callosum Sanderæ and C. Lawrenceanum, all arranged in a batch. Odontoglossum Harryanum of very fine quality was also shown in this group.

Messrs. MOORE, LTD., Rawdon, Leeds (Hatcher and Mansell), staged a very pretty group, in which the artistic arrangements of the plants accentuated the excellent quality of the varieties shown. At the back was a grand plant of Cœlogyne asperata, a species which Messrs. MOORE seem to have been the first to grow successfully, for they have other plants of it in bloom. Messrs. MOORE are noted for their interesting collection of Bulbophyllums, Cirrhopetalums and other curious Orchids, and their group contained several of these, the most noteworthy being Bulbophyllum leopardinum, a gem of a plant with pretty crimson-spotted flowers. The carmine-crimson Broughtonia sanguinea which Messrs. MOORE have so far unsuccessfully attempted to hybridise; the feather-lipped Bulbophyllum barbigerum, B. Godseffianum, B. saurocephalum and other Bulbophyllums; Galeandra lacustre; Angræcum modestum; the singular Oncidium abortivum, which produces pretty yellow flowers on the inflorescence, but a larger number of filamentose abortive blooms; the rare Catasetum trifidum; a selection of good hybrid Odontoglossums; the rare Costa Rica Epidendrum Brassovolæ; a bright scarlet batch of Cochloda Noezliana and a good selection of hybrid Orchids were also in the group.

Mr. Ed. V. Low, Orchid Nursery, Vale Bridge, Haywards Heath, staged an interesting group, in which among the best plants were a good form of the pure white Cattleya Mossie Wagneri; the rare and beautiful Lælia tenebrosa Walton Grange variety, with sepals and petals greenish yellow, the lip being claret-purple with white tip, and offering a good example of a distinct variety, holding its own after the type has been repeatedly imported; Cypripedium Mary Beatrice; Odontioda Goodsonia, light variety; Cattleya Mossie alba

Vale Bridge variety, and other showy Orchids were also in the group.

J. RUTHERFORD, Esq., Beardwood, Blackburn (gr. Mr. Lupton), staged an interesting group of Odontoglossums, Lælias, including L. tenebrosa Walton Grange variety, and other Orchids.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, had a very effective and interesting group, the showy part of which was composed of varieties of Lælio-Cattleya Canhamiana and other showy Cattleyas and Lælio-Cattleyas. The varieties of Odontoglossums and Miltonias in this group were specially good and well grown. Cattleya Mossie alba, C. Mendelii varieties, including one with snow-white petals; Lælio-Cattleya Canhamiana alba; good forms of Lælio-Cattleya Canhamiana and L.-C. Aphrodite, a grand form of Cypripedium macrochilum, Cœlogyne Dayana, with a fine show of drooping spikes, and some showy Masdevallias. Mr. STUART LOW being specially interested in rare and pretty Orchids, he included a selection of rare species and varieties, including the neat little Sigmatostalix Eliae, Pleurothallis pulchella, with upright spikes of pretty silver-white flowers with purple lines. The true yellow and dark purple Dendrobium clavatum, the rare Bulbophyllum Reinwardtii, with ruby-crimson motile labellum, the dark purple Masdevallia calura, Cochloda sanguinea, with pretty white and rose flowers, exhibiting the usual peculiarity of flowering from the apex backwards; Bulbophyllum umbellatum; the pretty rose and white Chysis Sedenii; and the true Oncidium amictum.

Colonel G. L. HOLFORD, C.I.E., C.V.O., West-birt (gr. Mr. H. G. Alexander), showed Odontoglossum crispum Sappho, a grand variety, which Mr. Alexander has grown up to its best. The flowers were large, pure white, with some purple-brown blotches on the sepals and petals.

Miss M. WATERS ANSON, Dovedale, Lewin Road, Streatham, showed a very fine collection of paintings of Orchids, most faithfully and artistically rendered and comprising over 40 subjects.

Mr. G. BORNEMANN, Blankenburg, Harz, Germany, showed a very interesting set of hybrid Disas, varying in tint from scarlet to purple. The flowers were damaged in transit, and as Mr. BORNEMANN gave no particulars of his hybridisation, the results cannot be estimated beyond the broad statement that good progress seems to have been made in this pretty genus of Cape terrestrial Orchids, which Messrs. Jas. Veitch & Sons have already so successfully worked.

AWARDS.

FIRST-CLASS CERTIFICATE.

Lælio-Cattleya Martinetii "The Prince" (*L. tenebrosa* × *C. Mossie aurantiaca*), from Messrs. SANDER & SONS. One of the most beautiful Lælio-Cattleyas, with large flowers, the sepals and petals bronzy-orange, the large lip vinous-purple, darkest on the veining.

AWARD OF MERIT.

Cattleya Mossie Wagneri Sanderæ, from Messrs. SANDER & SONS, St. Albans. A very chaste, pure white flower, which differs from the type in the broader crimped petals, and finely-developed lip.

CERTIFICATE OF APPRECIATION.

Miltoniodes Harwoodii (*Miltonia vexillaria* × *Cochlioda Noezliana*).—A very remarkable and, when developed, a showy new bigeneric hybrid, raised by Messrs. CHARLESWORTH & Co. The tiny plant bore a single flower about 2 inches in length, the sepals and broader petals being bright cerise-rose; the Miltonia-like lip cream-white, freckled with rose, in shape nearest to that of *M. cuneata*.

CULTURAL COMMENDATION.

To Mr. G. E. Day (gr. to H. S. GOODSON, Esq., Putney) for a grand specimen of the white *Cattleya Mossie Wagneri* with 17 flowers.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. P. C. M. Veitch, G. Kelf, A. R. Allan, Fred. G. Treseder, J. Willard, O. Thomas, G. Woodward, W. Bates, W. Poupard, W. Pope, W. Fyfe, C. O. Walter, H. Parr, J. Davis, J. Cheal, A. H. Pearson, H. Hooper, T. Coomber, W. H. Davis, J. Gibson, A. Dean, and G. Wythes.

Messrs. STUART LOW & Co., Bush Hill Park, sent a basket of fruits of Blackberry Phenomenal, and Mrs. SELIGMAN, Etchingam, showed three handsome fruits of Melon Eminence, which is of excellent flavour. The exhibitors were asked to send seeds to Wisley for trial.

Mr. W. PALMER, Andover, sent a dish of Peach King Edward. The fruits were of medium size.

Mr. F. PAUL, Botley, Hants., showed Tomato Miss Paul. It was considered by the Committee to resemble the Hipper's 1st and Sunrise.

A fine collection of some 50 Cherry trees in pots, from four years to six years old, and heavily fruited, was sent by Messrs. G. BUNYARD & Co., Maidstone. It was the most representative collection of such trees yet seen at any show. All carried fine crops, the fruits being large and richly coloured. The trees also were in a fine condition of health. Of black varieties were Black Tartarian, Black Eagle, Bohemian Black, Guigne d'Annonay, Géante d'Hedelfingen, Windsor, Knight's Early Black and Waterloo. White varieties included Governor Wood, Ludwig's Bigarreau, Elton Heart, Florengé, Frogmore Bigarreau and Monstrueuse de Mezel. In front of these trees was a collection of Strawberries, including fine fruits of Royal Sovereign, Monarch, The Bedford, Laxton's Progress, Fillbasket, Waterloo, Bedford Champion, Reward, Reliance and Givon's Late Prolific.

S. HEILBUT, Esq., Maidenhead (gr. Mr. G. Camp), showed eight very large Cherry trees in pots ranging from 8 to 9 feet in height, and all heavily fruited. Specially good were Bohemian Black, Early Rivers, Noir de Guben, Emperor Francis, Alton, and Monstrueuse de Mezel. All were remarkably good. The group included two well-fruited trees of Brown Turkey Figs. In baskets were gathered Cherries of Bigarreau de Schrecken, Noir de Guben, Emperor Francis, Bohemian Black, Early Rivers, and Monstrueuse de Mezel.

Lord LLANGATOCK, The Hendre, Monmouth (gr. Mr. T. Coomber), staged 20 very handsome Queen Pines and a collection of exceptionally fine, bright Strawberries. These were shown in flat boxes, and included The Laxton (a superb sample), Royal Sovereign, Fillbasket, Reward, Bedford Champion, Leader, Cropper, The Alake, Gunton Park, Sir C. Napier, Sir J. Paxton and Trafalgar.

THE HORTICULTURAL COLLEGE, Swanley, Kent, had a striking collection of fruit, including 30 very fine fruits of their College Melon. The exhibit also contained Early Favourite Melon, 12 medium-sized bunches of Black Ham-burgh Grapes, good Dymond Noblesse and Alexander Peaches, Royal Sovereign Strawberries; Comet, Carter's Sunrise and Duke of Clarence Tomatoes; and Laing's Prolific Cucumber.

Messrs. LAXTON BROS., Bedford, had one of the largest collections of picked Strawberries we have yet seen. There were 40 large flat baskets, each containing in one layer 100 fruits, and some others in punnets. Of named varieties there were The Laxton, Bedford Champion, Sir J. Paxton, Laxton's Profit, Reward, Mentmore, Leader, Fillbasket, The Cropper, Connoisseur, Pineapple and Progress. The baskets of fruits were interspersed with small Palms, Ferns and Asparagus Sprengeri.

Messrs. WEBB & SONS, Wordsley, showed fine fruits of Melons Masterpiece, Centennial, Pride of Stourbridge and Favourite. They also showed choice vegetables, including Webb's Peerless, Early Frame, Kinner Monarch and Early Mammoth Cauliflowers; New Colonist Potatoes; Emperor, Jubilee and Yellow Sovereign Tomatoes; a new Marrowfat Pea named Paragon, also Stourbridge Glory Pea; with excellent Carrots, Turnips, Crimson Globe Beet and new "Everbearing" Cucumbers.

Mr. W. POUPART, Fernleigh Orchards, Twickenham, showed a collection of bottled fruits presented in perfect form, and with all the latest-known appliances. The fruits included various white and coloured Plums, Cherries, Gooseberries, Currants and Raspberries.

Mrs. MILLER, Moxley, Bucks., exhibited bottles of Chutney and orange jelly.

VEGETABLES.

The only amateur's collection of vegetables stages was one of superb quality and excellence, as well as of a thoroughly representative nature. It was set up by

the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Ed. Beckett). The collection included some 90 dishes, and had a background 4 feet in height, on which was secured, by means of small projecting shelves, many remarkably fine samples. The table space was 3 feet wide and 36 feet long. On the background were staged White Queen, Magnum Bonum and First Crop Cauliflowers; Lettuces Giant, Paris White, Sutton's Ideal, Heartwell, Marvel and others; very fine Earliest and Flower of Spring Cabbages; white and red Celeries, Seakale, Beet, Early Milan Turnips, Moore's Cream Marrows, Carrots and Crimson Globe Beet. On the table were arranged Potatos Duke of York, May Queen, Eightyfold, King Edward VII. Guardian, Crimson Beauty and Midlothian Early; Winter Beauty, Perfection, Golden Perfection and Golden Nugget Tomatos; several Cucumbers, including Matchless, Peerless, Satisfaction and A1. Peas were excellent, the varieties being Duke of Albany, Superlative, Centenary and Early Giant. Beans included Green Leviathan, Long

petitor in the class for three dishes of Cherries and three dishes of Strawberries. The Cherries were excellent, and included Emperor Francis, Governor Wood and Early Prolific; whilst the Strawberries were Kentish Favourite, Leader, Bedford Champion, and Waterloo.

Lord ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham), showed very fine Dymond Peaches in the class for these fruits. In all cases the 1st prizes were awarded.

GROUPS OF PLANTS IN THE OPEN.

Messrs. J. CHEAL & SONS, Crawley, Sussex, arranged a parallelogram of turf, enclosed on three of the sides with a chain fixed to posts 3 yards apart, and trailing plants fixed to the chain and the posts. Next a line of miniature Roses and a flower-border, 4 feet wide at each end, filled with flowering plants—the soil being covered with flakes of Woodmoss. Behind the enclosed space was a pergola planted with Roses and Ampelopsis, backed by tall Roses with various trees, coniferous and other. At the two

green-leaved; all in a fine, healthy condition. An edging of *Hedera arborea* "Sheen Silver" was placed along the front and ends of the group. A feature of the group was an oblong tank about 20 feet in length and 3 yards wide containing *Nymphaeas*.

Messrs. JAMES VEITCH & SONS, LTD., showed an extensive collection of Sweet Peas growing in 9-inch pots and flowering abundantly. The plants were supported by Birch spray, and surmounted the pots by an average height of 4 feet. We noted the varieties St. George, Lady Grizel Hamilton, A. J. Cook, King Edward VII. (of a rich crimson colour), Mrs. Collier, White Spencer, Prince of Wales, and Miss Willmott Improved. Interspersed with the Peas were plants in bloom of *Fremurua Warei* and others. Messrs. VEITCH also showed an extensive group of hardy shrubs, climbing and creeping plants, *Hydrangeas* in blue and white-flowered varieties and species, *Bambusas*, *Rambler Roses*, &c.

Messrs. W. FROMOW & SONS, Sutton Court Nursery, Chiswick, W., arranged a large group of mixed species of trees and shrubs, and among them the Japanese Maples were the most conspicuous.

Mr. CLARENCE ELLIOTT, Six Hills Nursery, Stevenage, showed a neat rockery laid out on a bench and planted with suitable species.

Messrs. J. PIPER & SON, Bishops Road, Bayswater, showed neat examples of clipped *Buxus* and one tall Yew.

Mr. G. REUTHE, the Fox Hill Hardy Plant Nursery, Keston, Kent, showed rare and interesting Alpine plants in pots and pans. He likewise showed a quantity of early-flowering *Gladiolus*, *Iris Kämpferi* in variety, *Paenias*, &c.

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, showed a small collection of hardy species and varieties of Ferns.

Messrs. BARR & SONS, 11, 12, 13, King Street, Covent Garden, exhibited Japanese pigmy trees.

Messrs. JOHN FORBES, LTD., Hawick, Roxburghshire, showed a large number of varieties of shrubby *Phloxes*, capitally-bloomed *Pansies* and *Violas*, and a few spikes of *Antirrhinums*.

Messrs. W. CUTBUSH & SON, Nurseries, Highgate and Barnet, exhibited an extensive and varied collection of objects of the topiary art, a few being formed of Yew, but chiefly of Box.

Messrs. WHITELEGG & PAGE, Chislehurst, arranged a small rockery at the end of one of the big tents.

Awards made by the Council.

GOLD MEDALS.

The Rt. Hon. Lord Llangattock (gr. Mr. Coomber), the Hon. Vicary Gibbs (gr. Mr. E. Beckett), F. Menteth Ogilvie, Esq., G. Bunyard & Co., J. Carter & Co., Charlesworth & Co., Cutbush & Son, H. B. May & Sons, W. Paul & Son, Amos Perry, M. Pritchard, Sander & Soos, Sutton & Sons, J. Veitch & Sons, and R. Wallace & Co.

SILVER CUPS.

Sir Jeremiah Colman (gr. Mr. J. Collier), Sir Randolph Baker (gr. Mr. A. E. Usher), J. Friedlander, Esq. (gr. Mr. F. Bright), S. Heilbut, Esq., W. Artindale & Son, Barr & Sons, Blackmore & Langdon, G. & A. Clark, W. Fromow & Sons, Hobbies, Ltd., E. W. King & Co., H. B. May & Sons, G. Paul & Son, G. Reuthe, L. R. Russell, R. C. Notcutt, S. Low & Co., J. Veitch & Sons, T. S. Ware, E. Webb & Sons, Lt.-Col. C. Heselstine, E. J. Johnstone (gr. Mr. A. J. Pasbett), and W. H. Page Hampton.

SILVER-GILT FLORA MEDALS.

G. Jackman & Son, W. Bull & Son, C. Turner, J. Cheal & Sons, Bell & Sheldon, W. J. Unwin, C. W. Breamore, H. Cannell & Sons, J. Carter & Co., F. Lilley, F. Cant & Co., G. Lange, J. W. Moore, Ltd., B. Latham & Sons, Alex. Dickson & Son, Ltd., A. F. Dutton, C. F. Waters, G. Bunyard & Co., Ltd., A. Gwillim, W. J. Godfrey, R. Harkness & Co., W. Seagrave & Co., W. Icton, H. H. Crane, J. Piper & Son, Whitelegg & Page, Misses K. & E. Hopkins, Miss A. W. Anson, G. W. Riley, and Wm. Wood & Son, Ltd.

SILVER-GILT BANKSIAN MEDAL.

Lamp Pump Syndicate.

SILVER FLORA MEDALS.

C. & W. Buswell, Castle's, Thos. Green & Son, Ltd., Liberty & Co., Potter's Art Guild, and Ransomes, Sims & Jefferies.

SILVER BANKSIAN MEDALS.

Four Oaks Syringing Co., S. Pradal, A. Shanks & Son, and W. Voss & Co.

BRONZE FLORA MEDALS.

Doulton & Co., Lloyd, Lawrence & Co., and H. Scott & Sons.

BRONZE BANKSIAN MEDALS.

W. Duncud Tucker & Sons, Ltd., and Headley & Edwards.

SCHEDULE RECEIVED.

Liverpool Horticultural Association's first show of Sweet Peas, herbaceous flowers, Carnations and Picoetes, to be held in the Corn Market, Brunswick Street, Liverpool, on Wednesday, July 21. Secretary, Mr. Harold Sadler, Chartered Accountant, 31, North John Street, Liverpool.



GEORGE BUNYARD, ESQ., V.M.H.

(Chairman of the R.H.S. Fruit and Vegetable Committee which has just celebrated its jubilee.)
(see p. 23.)

Pod, Canadian Wonder (dwarf), Golden Wax-pod and Princess of Wales (climbing). In addition, there were Marrows, Globe Artichokes, Mushrooms, Kohl Rabi, Asparagus, Spinach, Radishes and Mustard and Cress.

Messrs. SUTTON & SONS, Reading, exhibited a fine collection of edible Peas, chiefly of fairly early varieties. There were 120 dishes in about 50 varieties. Of these, capital pods were staged of Early Giant, Superlative, Centenary, Duke of Albany, Dwarf Defiance, Pioneer, Duchess of York, World's Record, Improved William the 1st, several fine seedlings, also Green Marrow, and of smaller-podded forms Reading Wonder, The Pilot, Ideal, Bountiful and May Queen.

COMPETITIVE CLASSES.

The competition in the classes for fruit was very poor. Lord HOWARD DE WALDEN, Saffron Walden (gr. Mr. J. Vert), was the only com-

ends of the plot were Roses on tall stems, *Andromeda speciosa*, *Philadelphus*, *Clematis*, Tree Ivies, Japanese Maples, &c. Inside the square there were square beds planted with *Violas*.

Messrs. JOHN WATERER & SONS, LTD., American Nurseries, Bagshot, showed a group of about two dozen plants of *Kalmia latifolia* 2 to 4 feet high and proportionately broad. Interspersed amongst them were standards of Japanese Maples.

Messrs. JAS. CARTER & Co., High Holborn, London, showed a group of an irregular shape, and raised above the level of the field in the central parts, these last being planted with *Conifers*, *Golden Privet* and *Box*. The whole was a representation of a Japanese garden, and very pretty.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed an immense group consisting of tree and other Ivies, variegated and

NATIONAL ROSE.

JULY 2.—Of the societies which have been formed to advance the interests of some special flower, none is more popular than the National Rose. Its shows are important and popular functions, and especially the great summer exhibitions held in the Metropolis. That which took place on Friday of last week, although it will not rank high for the quality of the flowers, was, nevertheless, a magnificent show, and the numerous visitors were loud in their praises. Experts had correctly anticipated the blooms would exhibit indifferent quality, for they had seen their best flowers ruined by the repeated rains. Judged in the mass, however, the exhibits were attractive. It was only when the individual blooms were critically examined that the damaged petals and general lack of refinement were discovered. But if recent weather was unfavourable, the conditions on the exhibition day were ideal! No wonder then that the gardens were thronged with an appreciative audience, which in numbers constituted a record for these shows! It is known that particular Roses succeed best in certain seasons. Last year, it will be remembered, none was more beautiful or better developed than the varieties Maman Cochet and White Maman Cochet. In 1907 Frau Karl Druschki was magnificent. On the present occasion the charming Hybrid-Tea variety Mme. Melanie Soupert surpassed all other varieties. Its delicate petals suffused with carmine on a pale yellow ground were generally admired. All the red Roses, too, appeared extra fine, and of these we may instance Richmond, Liberty and Alfred K. Williams. There having been but little sunshine, these intensely coloured Roses, that in some seasons suffer from burning, were seen at their best. But we must not omit that queen of pink Roses, Mrs. Edward Mawley, which was shown in its full beauty by many exhibitors. The honours of the show largely rested with Irish growers, and no doubt climatic conditions contributed to their success, although we would not wish to detract from the skill of the exhibitors. New Roses were plentiful, and two of these received the Gold Medal of the Society, whilst six others were commended. The show was visited by her Majesty Queen Alexandra, who was accompanied by H.R.H. Princess Victoria.

CUT BLOOMS.

NURSERYMEN'S CLASSES.

In the championship class for 72 blooms of distinct varieties—the largest number required in an exhibit—it was seen what difficulty growers had experienced in securing the requisite number of good flowers. Even the winning blooms, shown by MESSRS. ALEX. DICKSON & SONS, LTD., Royal Irish Nurseries, Newtownards, co. Down, might easily have been better, but they won readily against their competitors. We append the list of varieties:—Helen Keller, Gustave Grunewald, George Hammond, a fine, new red Rose; Marchioness of Dufferin, Senateur Vaisse (scarlet-crimson), Mrs. Theodore Roosevelt, Gustave Piganeau, a fine, red H.P. variety; Florence Pemberton, Mme. Gabriel Luizet, Mrs. W. J. Grant, Lady Helen Vincent, Chas. J. Grahame, Kaiserin Augusta Victoria, Lady Ashtown (an excellent bloom); Mrs. G. W. Kershaw, Geo. C. Waud, a magnificent specimen, the tone being a reddish suffusion on orange; Duchess of Albany, Etienne Levet, Ellen Drew, Mrs. Ed. Mawley (very choice), Killarney, Mrs. John Laing, Marquis Jeanne de la Chataigneraye, a beautiful pale rose finely shown; Prosper Langier (scarlet); Her Majesty, Col. R. S. Williamson, Tom Wood, White Lady, Caroline Testout (a good flower), Alice Lindsell, Geo. Dickson, Mildred Grant (a well-developed bloom), Robert Scott, Thos. Miles, Mme. Melanie Soupert, Chas. Lefebvre, Countess of Annesley, Mrs. Bateman, Walter Speed, Lyon Rose, Dr. J. Campbell Hall, Gen. McArthur, Mrs. H. Brocklebank, Dr. Andry, Lady Ursula, Eric (a fine, new red variety), Lohengrin, Dean Hole (excellent), Mrs. R. G. Sharman Crawford, H. J. Watson, Bessie Brown, Hugh Watson, Ulrich Brunner, Mrs. R. G. Sharman Crawford (a noteworthy bloom), Richmond, William Shean, David McKee, Frau Karl Druschki, Duchess de Morny (a good specimen), The Bride,

Horace Vernet, Rhea Reid, A. K. Williams, Lady Barham, Mme. Jules Gravereaux, Nita Weldon, Le Detroit, Bertha Giernu, Gladys Harkness, Marchioness of Londonderry, Robert Baessler and John Cuff; 2nd, Messrs. B. R. CANT & SONS, Colchester. A selection of their varieties includes Mme. Jules Gravereaux, Dr. William Gordon, Capt. Hayward, Robt. Scott, Laurent Carle, Bessie Brown, Mildred Grant, Mme. Eugene Verdier, Mrs. Theodore Roosevelt, Cleopatra, Nadia, Horace Vernet, Mrs. Dudley Cross, J. B. Clark, John Ruskin, Hugh Watson (shown well), and Mme. Melanie Soupert. 3rd, Messrs. F. CANT & Co. Outstanding examples shown by this Colchester firm included Capt. Hayward, Crown Prince, Exposition de Brie, Caroline Testout, and Mildred Grant.

Forty distinct varieties, shown in triplets.—In this important class there were five competitors. Messrs. A. DICKSON & SONS were again placed 1st, and the same remarks apply as in the preceding class. Their best examples were Dean Hole, Gen. McArthur (magnificent in its colouring), Mrs. R. G. Sharman Crawford, Horace Vernet, Etienne Levet, Bessie Brown, Chas. Reid (three magnificent flowers), Mme. Melanie Soupert, John Cuff, Geo. C. Waud, Mrs. Brocklebank, Lady Ashtown, Joseph Hill, Ulrich Brunner (very large blooms), Mrs. W. J. Grant, and Chas. J. Grahame. 2nd, Messrs. F. CANT & Co., Colchester, who showed smaller but finely-coloured blooms. Prominent varieties were Chas. J. Grahame, Helene Guillot, Mildred Grant, Capt. Hayward, Lady Ashtown, Lohengrin, Liberty, Mrs. John Bateman, Harry Kirk, and Horace Vernet. 3rd, Messrs. B. R. CANT & SONS, Colchester. Chas. J. Grahame, Mildred Grant, Mrs. John Laing, Richmond, and Lady Ursula were the better blooms in their exhibit.

Forty-eight blooms of distinct varieties.—This class was fairly well contested. The 1st prize was awarded to Mr. GEO. PRINCE, Oxford, who had many blooms of fine quality and others only mediocre. Amongst his finer examples were Mrs. Edward Mawley, Maman Cochet, Mme. Melanie Soupert, Souvenir de Mme. Metral, Richmond, Auguste Comte, Chas. J. Grahame, Caroline Testout, J. B. Clark, and Betty. 2nd, Messrs. GEO. MOUNT & SONS, LTD., Canterbury, who showed as their best blooms Dean Hole, Joseph Lowe, Mildred Grant, Hugh Dickson, Yvonne Vacherot, Betty, Maman Cochet, Mme. Abel Chateau, and Souvenir de Maria de Zayas. The 3rd prize group, shown by Mr. W. LEGGETT, Rose Gardens, West Bergholt, Colchester, contained many large blooms, but generally the flowers lacked finish. Mrs. Edward Mawley, Lady Ashtown, Medea, and Papa Lambert were noteworthy specimens.

Twenty-four blooms of distinct varieties.—This proved a well-contested class, there being no fewer than 11 exhibitors. The 1st prize was awarded to Mr. HENRY DREW, Longworth, Faringdon, Berks. He showed Caroline Testout, Florence Pemberton, Chas. Lefebvre, Bessie Brown, Helen Keller, Betty, J. B. Clark (of splendid colour), Mildred Grant, Gladys Harkness, Robt. Scott, A. K. Williams, Oberhofgartner A. Terks (a large bloom), Ulrich Brunner, White Lady, Gustave Piganeau, Lady Ashtown, Countess of Annesley, Marchioness of Dufferin, Marchioness of Downshire, F. Michelon, Kaiserin A. Victoria, Victor Hugo, William Shean, and C. J. Grahame. 2nd, Mr. ELISHA J. HICKS, Twyford, Berks. This exhibitor showed a very even set of beautifully coloured blooms, but they were rather small. Very choice were Laurent Carle, Mme. Melanie Soupert, Betty, Richmond, Gustave Grunewald, Mme. Sigond Weber, Mildred Grant, Lady Ashtown, Lyon Rose, and Yvonne Vacherot. 3rd, Messrs. PERKINS & SONS, Coventry. This also was a good exhibit, Liberty, Capt. Hayward, J. B. Clark, and other red Roses being beautifully coloured.

Sixteen varieties, shown in triplets.—This also was a well-contested class, seven growers competing. Messrs. GEO. MOUNT & SONS won splendidly, showing Mildred Grant, Mrs. John Laing, Ulrich Brunner, Frau Karl Druschki, Richmond (finely shown), Prince de Bulgarie, Lady Ursula,

Joseph Lowe, Lady Ashtown, Caroline Testout, Mme. Melanie Soupert, Chas. J. Grahame, Mrs. David McKee, Mrs. Theodore Roosevelt, Maman Cochet, and Mrs. W. J. Grant. 2nd, Mr. G. PRINCE, with Lady Ashtown, Mrs. W. J. Grant, Mrs. R. G. Sharman Crawford, Mrs. Mawley, Caroline Testout, Mme. Jules Gravereaux, Maman Cochet, J. B. Clark, &c. 3rd, Mr. H. DREW.

TEA AND NOISSETTE ROSES.

In this section the D'Ombrian Cup and the championship for Tea and Noisette Roses is awarded to the 1st prize winner in the class for 24 blooms, distinct. There was not such marked inferiority in these Roses as in the Hybrid Teas. Mr. G. PRINCE, Oxford, secured the premier place with a creditable exhibit. He showed Mme. Constant Soupert (a choice yellow variety), Innocente Pirola, White Maman Cochet, Souvenir de Pierre Notting (a beautiful bloom), Mme. Jules Gravereaux, Molly, Mrs. Sharman Crawford, Maréchal Niel, The Bride, Souvenir de S. A. Prince (excellent in every respect), Medea, Golden Gate, and Muriel Grahame (cream, flushed with rose, a choice bloom). 2nd, Mr. DREW, who had some big flowers in good condition and others of inferior size and quality. A specimen of Mrs. Ed. Mawley was pre-eminent in size and beauty, and was awarded a medal as the best Tea Rose in the open classes. Other noteworthy flowers were White Maman Cochet, Cleopatra, Medea, Maman Cochet, Niphetos, Mme. Jules Gravereaux, Golden Gate, and Mme. Vermorel. 3rd, Mr. MATTOCK, with small flowers.

In the class for 12 blooms, distinct, Messrs. J. BURRELL & Co., Cambridge, led with small but refined blooms, including Mme. Constant Soupert, Niphetos, Molly, Mrs. Sharman Crawford, Boadicea, Mrs. Ed. Mawley, and Medea. 2nd, Messrs. GEO. MOUNT & SONS. The competition in this class was poor.

Some large flowers were staged in the class for 14 varieties, shown in triplets, but the basal petals were much damaged by weather, so that the blooms appeared ragged. There were three exhibits, much the best being shown by Mr. PRINCE. Mr. DREW followed, and Mr. MATTOCK was 3rd. Mrs. Ed. Mawley was shown well in all the exhibits, and specially by Mr. MATTOCK. Other varieties that deserve mention are Maman Cochet, Medea, Mme. Constant Soupert, Mme. Jules Gravereaux, Souvenir d'un Ami, and Cleopatra.

ROSES SHOWN IN VASES.

Bright groups were formed by nurserymen with high-class blooms shown in bouquets of seven of each variety. Each set of blooms was judged as a unit. The larger class was for 12 distinct varieties, so that 84 blooms were required. Messrs. D. PRIOR & SONS, Colchester, excelled with a group containing Ulrich Brunner, Bessie Brown, Killarney, Caroline Testout, Dean Hole, Maman Cochet, Liberty, John Ruskin, &c. 2nd, Messrs. ALEX. DICKSON & SONS. They showed well the big variety Bessie Brown, also Mrs. W. J. Grant, Ulrich Brunner, Mrs. Harold Brocklebank, and Lady Helen Vincent. 3rd, THE DEVON ROSARY AND FRUIT FARM, Torquay.

In the similar class for nine varieties, Mr. JOHN MATTOCK beat two other competitors, with moderate blooms of Mrs. Ed. Mawley, Souvenir de Pierre Notting (yellow), White Maman Cochet (pale lemon), Medea (yellow), Souvenir de S. A. Prince, Boadicea, &c. 2nd, Mr. DREW, with Medea, Muriel Grahame, and Mme. Jules Gravereaux as his best varieties.

SPECIAL BLOOMS: OPEN CLASSES.

The best 18 blooms of a crimson Rose were shown by Mr. E. J. HICKS, Twyford, who staged excellent specimens of Richmond. 2nd, KING'S ACRE NURSERIES, Hereford, with the same variety.

The best white or yellow Rose, shown as 18 blooms in a Bamboo stand, was the lovely Mme. Melanie Soupert, Frau Karl Druschki taking the 2nd place. They were shown by Messrs. MCGREY & SON and THE DEVON ROSARY AND FRUIT FARM respectively.

A variety of soft pink tone named Lady Faire, somewhat similar to Mme. Abel Chateau, was adjudged the best in the class for a Rose of any other colour. The exhibitor was Mr. WALTER BENTLEY, Belgrave, Leicester. 2nd, Lady Ashtown, showed by MESSRS. ALEX. DICKSON & SONS.

The finest dozen blooms of the White Maman Cochet variety were shown by Messrs. F. CANT & Co., who beat Messrs. D. PRIOR & SON. These latter exhibitors showed best in the class for 12 blooms of Frau Karl Druschki and the same number of J. B. Clark. The white and red flowers made a charming combination.

Messrs. ALEX. DICKSON & SONS showed the winning blooms in a class for a new Rose, having the big, blush-tinted flower named Lady Helen Vincent. A yellow variety labelled W. R. Smith, shown by Mr. HUGH DICKSON, Belfast, was placed 2nd.

GROUPS OF ROSES

were shown by two exhibitors only, Messrs. HOBBS, LTD., Dereham, Norfolk, and Messrs. PAUL & SON, Old Nurseries, Chesnut. The former firm was placed 1st for a showy group, mainly composed of pillar varieties. This was an excellent and effective exhibit, so far as the quality and beauty of the Rambler kinds was concerned, but it was not so representative as Messrs. PAUL'S display, which secured the 1st prize. Messrs. HOBBS, LTD., utilised hanging baskets along the outskirts of the pillar plants, and filled these with select blooms of Hybrid Tea and other large varieties.

The same two exhibitors contested in the class for an arch decorated with Roses, with the same result. The winners utilised Dorothy Perkins and Tausendschon; Messrs. PAUL & SONS had the varieties Wallflower and Goldfinch.

The big groups of cut blooms shown by nurserymen, each occupying an area of 100 square feet, filled a large portion of one tent, five growers staging collections. The 1st prize was awarded to Messrs. GEO. MOUNT & SONS for one of their usual fine displays, in which large blooms staged in tripods and epergnes are a feature. There were large sheaves of Richmond, Joseph Lowe, Mme. Melanie Soupert, Mrs. John Laing, Frau Karl Druschki, Mme. Ravary, and other elegant varieties, with innumerable small vases containing blooms of select kinds, and at the back pillar varieties. 2nd, Messrs. W. & J. BROWN, Stamford and Peterborough, with a representative collection, tastefully arranged. 3rd, Mr. J. MATTOCK.

DECORATIVE ROSES.

These were shown, generally, as pyramidal groups, arising from a tall table or stand, exhibited as far as possible to show the foliage and habit of flowering. The largest class was for 36 distinct varieties. Amongst three exhibits the best was put up by Messrs. F. CANT & Co. It was surmounted by a stand of the salmon-rose tinted Lady Waterlow, with Gustave Regis, Earlate, Marquis of Salisbury, Mme. Pernet Ducher, Gruss an Teplitz (red), Mme. Chedame Guinoisean (yellow), &c. 2nd, Mr. J. MATTOCK, with Richmond, Belle Fleur, Lady Battersea, Clara Watson, Aglaia, Bardou Job, &c.

Mr. CHAS. TURNER, Slough, excelled in the smaller class for 18 distinct varieties, and again in the class for 18 distinct varieties of summer-flowering Roses, in which H.P., H.T., Teas, and China varieties were not admissible.

Messrs. GEO. MOUNT & SONS easily led in the class for 11 varieties, occupying an area of 9 feet by 3 feet, with a charming group. Richmond was superbly shown; Mme. Abel Chatenay and Liberty were likewise fine. In the centre were Ramblers, including Dorothy Perkins, Blush Rambler, and Hiawatha. 2nd, Mr. J. MATTOCK, with long sprays of Gardenia, Leuchtstern, Goldfinch, and Tea Rambler.

AMATEURS' CLASSES.

The championship class for amateurs was for 36 blooms of distinct varieties. The most successful exhibitor was CONWAY JONES, Esq., Hucclecote, Gloucester. His flowers were moderate as regards size, fresh-looking, but showing some traces of injury from rain. The predominant tints were light ones, from out of which the dark-tinted flowers showed up with great distinctness. Very beautiful blooms were those of the varieties Mildred Grant, Maréchal Niel, Caroline Testout, Countess of Caledon, Duchess of Portland, Bessie Brown, and Wm. Shean. Among the dark-coloured varieties we singled out Capt. Hayward (especially fine in most exhibits), Earl of Dufferin, J. B. Clark, Gustave Piganeau, Charles Lefebvre, A. K. Williams, and Ulrich Brunner. These crimson-coloured Roses were far superior to those of light colour in regard to condition. This exhibitor

took the Champion Trophy and a Gold Medal. 2nd, E. G. HOLLAND, Esq., Sutton, Surrey, with a fine collection of blooms; 3rd, E. B. LINDSELL, Hitchen.

Twenty-four blooms distinct varieties.—The premier prize was won by ALFRED TATE, Esq., Downside, Leatherhead, for an exhibit of superior blooms, of chiefly old, favourite varieties, but including such modern ones as Richmond, Mrs. W. J. Grant, Kaiserin Augusta Victoria. Particularly fine examples were noted of Mildred Grant, Horace Vernet, Dr. Andry, Etienne Levet, Helen Keller, and Gustave Piganeau. 2nd, Rev. T. G. HENSLOW.

Nine blooms of any Rose, except Tea and Noisette varieties.—Rev. J. H. PEMBERTON, Havering-atte-Bower, won the 1st prize with fine examples, and especially of the variety Bessie Brown. 2nd, E. J. HOLLAND, Esq., Sutton, with several rose-pink-coloured flowers, well developed and fresh-looking. 3rd, G. A. HAMMOND, Esq., Cambrian House, Burgess Hill, with Mrs. John Laing.

Special classes were provided for growers of fewer than 3,000 plants.

For twenty-four blooms, distinct varieties. E. M. EVERSFIELD, Esq., Denne Park, Horsbarnham, was placed 1st for an exhibit containing fine blooms of A. K. Williams, J. B. Clark, Gladys Harkness, Captain Hayward, Dean Hole, Ulrich Brunner, and Mme. Melanie Soupert. The Veitch Memorial Medal accompanied this Award. 2nd, C. C. WILLIAMSON, Welstead, Canterbury, who showed excellent blooms of J. B. Clark, Caroline Testout, Kaiserin A. Victoria, and Mildred Grant, the others being of small size. Mr. EVERSFIELD was also placed 1st for 12 varieties, distinct, shown in triplets.

For twenty-four blooms, distinct, open to growers of fewer than 2,000 plants. W. H. HAMMOND, Esq., was awarded the 1st prize for fine blooms, quite uninjured by the weather. Very superior were Duke of Edinburgh, Mrs. W. J. Grant, Lady Ashtown, J. B. Clark, Mme. Melanie Soupert, Mamie, Hugh Dickson, Mrs. J. Laing, Mme. Jules Gravereaux, &c. The Christy Cup was included in the 1st prize. 2nd, Rev. J. A. L. FELLOWES, Bunwell Rectory, Attleborough, the flowers being mostly in fine condition.

In the class for 18 blooms of distinct varieties, Mrs. E. CROFT MURRAY, Perivale, Ryde, won the 1st prize with a capital lot of flowers, there being scarcely a weak one among them. Very fine were Comte Raimbaud, Maman Cochet, Mrs. J. Laing, Frau K. Druschki (an extremely fine example), J. B. Clark and Mrs. Sharman Crawford. 2nd, G. R. BONNER, Esq.

Prizes were offered to growers of fewer than 1,000 varieties. Many competed in the class for twelve blooms of distinct kinds, and it is obvious that the more extensive growers do not show the better flowers. The 1st prize was awarded to Dr. LAMPLOUGH, Kirkstall, Alverstoke, for a fine collection, in which only one bloom was injured by rain. The best were Bessie Brown, Ulrich Brunner, Frau K. Druschki, and Mme. Melanie Soupert. 2nd, Rev. J. B. SHACKLE, Dropmore Vicarage.

For 12 blooms, distinct, open only to growers of 750 varieties, the 1st prize was won by HARRY RICHARDS, Esq., West Ridge, Ryde. Isle of Wight Roses this season have been extremely fine. We noted Kaiserin A. Victoria, Her Majesty, Hugh Dickson, Marquise Litta, Mme. J. Gravereaux, Caroline Testout, &c. This exhibitor was awarded the Graham Memorial Prize. 2nd, E. B. LEHMANN, Esq., Ifield Lodge, Crawley.

Competition was very keen in a class open only to growers of fewer than 500 plants. For nine blooms, distinct, Mr. E. A. MOULDEN, Bandon, Stevenage, showed best, having excellent blooms of White Maman Cochet, Marquise Litta, Ed. Mawley, and Capt. Hayward.

In an extra class for amateurs for 12 blooms of distinct varieties Dr. C. LAMPLOUGH excelled, with beautiful examples of White Maman Cochet, J. B. Clark, Helen Keller, Bessie Brown, and other equally fine blooms; 2nd, C. F. H. LESLIE, Esq., Epscombe, Hertford.

In a class for nine blooms of distinct varieties, E. F. BROWN, Esq., Lynton, Slough, was placed 1st. He showed superior blooms of Ulrich Brunner, Killarney, Mildred Grant and Dean Hole.

ALFRED TATE, Esq., won the 1st prize for 18 distinct varieties of decorative Roses, having

Gracilis, Allister Stella Gray, Ruby Queen, Gloire de Rosameus, Gloire Lyonnaise, Marquise Balbiana, Green Mantle and Celine Forestier; 2nd, the Rev. J. H. PEMBERTON.

For 12 varieties Lady SUTTON was placed 1st. There were also several minor competitions, in which Lady SUTTON, the Rev. J. H. PEMBERTON, EDWARD MAWLEY, Esq., ALFRED EVANS, Esq., H. R. DARLINGTON, Esq., Miss B. H. LANGTON, and C. T. GORDON CLARK, Esq., won the chief prizes.

Dinner-table decorations were many, and single-flowered varieties were those mostly employed. One of the best was arranged by Miss WEST, of Firth Dene, Reigate, who won the 1st prize.

TEA AND NOISETTE ROSES.

In the class for 18 blooms of distinct varieties, the 1st prize and trophy were awarded to CONWAY JONES, Esq., and for 12 blooms of distinct varieties, the 1st prize and the Prince Memorial Trophy were awarded to the Rev. J. A. L. FELLOWS, of Attleborough, the blooms being fairly good ones.

In a class for four varieties, three blooms of each, F. SLAUGHTER, Esq., Steyning, showed a bloom of Maman Cochet which was so perfect and well-shaped that he was awarded the Silver Medal of the Society. Miss D. FISHER, Potterne, Devizes, took a 1st prize for six blooms, distinct. These were very fresh-looking; the best were Maman Cochet, Ed. Mawley, Mme. Cusin, Jules Gravereaux, and Medea.

DECORATIVE CLASSES.

The numerous competitions in this section brought an abundance of very charming arrangements; for instance, a bowlful of Wichuraiana Roses and Wichuraiana foliage. The winner of the 1st prize was Miss H. C. DUCKWORTH, Elmstead, Twickenham, who showed Jersey Beauty. Baskets of Roses formed a pretty feature; 1st, Miss O. C. ORPEN, West Bergholt, Colchester. It was simple and tasteful in conception, and the varieties of which it was composed were Irish Elegance and Irish beauty.

Mrs. H. WILLIAMS won the 1st prize for a bowl of Roses, and a Silver Bowl presented by C. E. Shea, Esq., vice-president of the Society.

MEDAL ROSES.

Premier blooms. (Nurserymen's Classes).—Silver Medals were awarded to Messrs. ALEX. DICKSON & SONS for the best bloom of a Hybrid Perpetual variety in their specimen of A. K. Williams; to Messrs. MCGREY & SON for the best Hybrid Tea variety in Mme. Melanie Soupert; and to Mr. H. DREW for a magnificent specimen of Mrs. Edward Mawley, a Tea variety. (Amateurs' Classes).—To Mrs. E. CROFT MURRAY for the premier bloom of a Hybrid Perpetual variety in Mrs. John Laing; to Mr. E. B. LINDSELL for the best example of a Hybrid Tea variety in Mildred Grant, and to Mr. F. SLAUGHTER for the premier bloom of a Tea Rose in his specimen of Maman Cochet.

GOLD MEDALS

were awarded to two new Roses shown by Messrs. HUGH DICKSON & SONS, viz.:—

Countess of Shaftesbury.—A Hybrid Tea variety of good form, the petals being suffused with rose colour.

Lady Pirrie.—H.T., a refined flower, the colouring being reddish apricot, with a golden sheen.

CARDS OF COMMENDATION.

Climbing Lady Ashtown. Shown by Mr. F. M. BRADLEY, Peterborough.

Theresa.—A somewhat small flower, shaded rose and apricot. Fine in the bud stage. Shown by Messrs. A. DICKSON & SONS.

Thelma.—A single Rose with bright rose-pink petals, paler at the bases. Shown by Messrs. W. SPOONER & SON, Woking.

Maribel Jamison.—A single Rose of apricot tone. Shown by Messrs. HUGH DICKSON & SONS.

Sheila Wilson.—A large, showy, single variety. Colour red. Shown by Dr. J. CAMPBELL HALL.

Mrs. Herbert Stevens.—H.T., a finely-formed flower, with creamy-white petals. Shown by Messrs. S. MCGREY & SON, Portadown.

MARKETS.

COVENT GARDEN, July 7.

[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.—Ens.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Carnations, Pinks, American (var.), Peonies, Pelargoniums, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Agrostis, Asparagus plumosus, and others.

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

Table listing various plants in pots and their prices, including Atriplex, Aralia, Aspidistra, and others.

Plants in Pots, &c.: Average Wholesale Prices (Cont'd.).

Table listing various plants in pots and their prices, including Lobelia, Marguerites, Mignonette, and others.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Apricots, Bananas, Cherries, Currants, and others.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Asparagus, Beans, Beetroot, and others.

REMARKS.—Cherries generally are arriving in a much better condition, although there is still a considerable quantity of unsound fruit. Best varieties, such as Elton Heart and Early Rivers, sell freely. Gooseberries have been exceptionally cheap, except the yellow varieties. Strawberries are very plentiful, and are being sold at exceptionally low prices. English Peaches and Nectarines are selling freely. Good medium-sized Peaches are in demand. Supplies of green Figs are short. English Tomatoes are a little firmer in price. Trade generally is quiet. E. H. R., Covent Garden, Wednesday, July 7, 1909.

Potatoes.

Table listing various potato varieties and their prices, including Bedfords, Early Puritan, and others.

REMARKS.—Supplies of old Potatoes are almost finished, Edward J. Newborn, Covent Garden and St. Pancras, July 8, 1909.

COVENT GARDEN FLOWER MARKET.

Another week of bad trade must be recorded. Supplies all round are excessive. Many growers of bedding plants have large supplies on hand, and ordinary flowering plants for decorative purposes are well supplied. Hydrangeas are plentiful, but they have not been so good in quality as usual this season; many of the flowers have been spoiled in the cultivator's endeavour to obtain a blue colour in them. Good blue-flowered plants sell readily, but those of an intermediate shade are of little value. The variety Thos. Hogg is nearly finished for the season, but H. pauciflora grandiflora is good. Rambler Roses are plentiful, and it is difficult to estimate correct prices, for many are sold cheaply to effect a clearance. The pink-flowered Spiraeas have not sold so well as was expected. White Marguerites are good and plentiful. Ericas are nearly finished for the season. Some plants of Borocia are still seen, but their flowers are beginning to fade. Fuchsia, Zonal, Show and Ivy-leaved Pelargoniums are prominent. There are shorter supplies of Liliums. The yellow annual Chrysanthemums are good, also yellow Marguerites. Ferns included beautiful plants of the plumose varieties of Nephrolepis; Asplenium Nidus is also good, A. bifurcatum continuing popular. The broad-fronded Pterises sell well, but the slender crested varieties are not so much in demand.

CUT FLOWERS.

Trade is very uncertain. At the end of last week Liliums were scarce, and their value advanced. To-day, Wednesday, they are still dear, yet, before these notes are read, they may be cheaper again. Best quality Roses are not plentiful, but there are large quantities of ordinary blooms. Carnations in all colours are excessive. Salesmen do not reduce prices for good fresh blooms, but many that have been kept over for a day or two are sold cheaply to hawkers. Casual senders expect to receive top prices, but it more often happens that when irregular supplies are received there is also a surplus from regular senders. Hardy flowers are now a prominent feature. Pyrethrum are not quite so plentiful, but Peonies are abundant. Gaillardias, Coreopsis, Poppies, and Campanulas are present in large quantities. A. H., Covent Garden, July 7, 1909.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending July 7.

The fifth cold week in succession.—Although this was a cold week, there occurred in it the first two unseasonably warm days for over a month, but even then the temperature in the thermometer screen in the warmest part of the day only rose 3° above the average for the time of year. On the coldest night the exposed thermometer fell to within 2° of the freezing-point. The ground is now 2° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Rain fell on 3 days, but to the total depth of little more than a quarter of an inch. There has been each day some slight percolation through the bare soil gauge, but for the last 3 days the gauge on which short grass is growing has been quite dry. The sun shone on an average for 6 hours a day, or for about half an hour a day short of the average duration at this period in July. Light airs and calms have alone prevailed during the week. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 6 per cent.

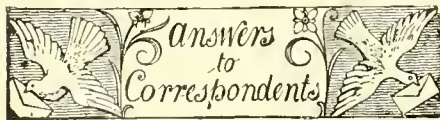
JUNE.

Very exceptionally cold, wet and gloomy.—This was the coldest June of which I have any record—24 years. The days were, as a rule, very much more unseasonably cold than the nights. In fact, there did not occur a single warm day, for the time of year, during the month. On the warmest day the temperature in the thermometer screen only rose to 68°, which is the lowest maximum in June during the past 24 years. On the coldest night the exposed thermometer registered 29° of frost, which, however, is in no way remarkable. Rain fell on as many as 19 days, to the aggregate depth of 4½ inches, or more than twice the average fall for the month. In the last 90 years there has been here only one other June with as heavy a rainfall. The sun shone on an average for only 3½ hours a day, which is 2½ hours a day short of the average duration—making this the most sunless June for 21 years. The winds were, as a rule, light, and in the windiest hour the mean velocity only amounted to 12 miles—direction S.S.W. The atmosphere was remarkably humid for a summer month; indeed, in none of the previous 23 years has the amount of moisture in the air at 3 o'clock in the afternoon been as great. E. M., Berkhamstead, July 7, 1909.

DEBATING SOCIETIES.

REDHILL AND REIGATE GARDENERS.—On Tuesday, May 18, the members paid a visit to Gattou Park, the residence of the president, Sir Jeremiah Colman. The occasion was the first meeting of the summer session. Sir Jeremiah Colman, in welcoming the Association to Gattou Park once again, expressed the hope that the members would visit there many more times. At the invitation of Mr. H. P. Brandt, the members and their friends paid a visit to "Capenor," Nutfield, on Tuesday, June 15. The company numbered about one hundred and fifty. Mr. T. Heron, the gardener, conducted the party on a tour of inspection through the gardens.

BRISTOL AND DISTRICT GARDENERS.—The second meeting of the new session was held on June 21. The president, Col. Carey Batten, gave an interesting half-hour's talk upon "Orchids." As an object lesson some seedling Cypripediums were shown, each potted in a different compost. Some were growing in loam, others in peat and loam, and others in peat and moss; there was little variation in the growth of any of the plants. The lecturer said he failed in growing Cypripedium bellatulum until he planted it in the joint of a wall.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

Editors 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 *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ADDRESSES: *G. & W. Cholsey*. The following are the addresses of some important foreign gardening papers: *The American Florist*, 322, Dearborn Street, Chicago, U.S.A.; *Horticulture*, 11, Hamilton Place, Boston, Mass., U.S.A.; *Florists' Review*, Caxton Building, Chicago, U.S.A.; *Canadian Horticulturist*, Grimsby, Ontario, Canada; *Die Gartenwelt*, Hevemannstr., 10, Berlin, S.W. 11; *Revue Horticole*, Rue Jacob, 26, Paris; *The Journal of Horticulture*, Block Place, Little Collins Street, Melbourne, Australia; *The Garden Magazine*, 133, East 16th Street, New York, U.S.A.; *Möller's Deutsche Gärtner-Zeitung*, Erfurt, Prussia; *Journal d'Agriculture Tropicale*, 10, Rue Dleambre, Paris; *The Tropical Agriculturist*, Colombo, Ceylon; *The National Nurseryman*, Rochester, N.Y., U.S.A.

BEECH: *H. R. G.* It is difficult from such poor specimens to accurately determine the cause of the trouble, but we suspect it is due to the Beech coccus. If you find the main trunk and branches are infested with a white, fluffy insect in patches you may be certain this is so. The best remedy is to scrub the bark with a caustic wash. The foliage had also evidences of green fly, the leaves being sticky with the exudations known popularly as honey dew.

BOOKS: *H. E. Vegetables for Home Consumption and Exhibition*, by Edwin Beckett. This work is obtainable from our publishing department. Price 5s. 5d., post free.

CUCUMBER SPOT: *Croughton-under-Brackley*. The spotting is due to a fungus commonly known as the Cucumber disease. It has been claimed that carbolic acid placed about the house will prevent the disease spreading. In any case you should thoroughly cleanse the house when the crop is finished and bury the old soil in some out-of-the-way part of the garden. Do not plant Cucumbers in the same house for a season or two. In the meantime the disease may be prevented from spreading by syringing with sulphide of potassium, using half an ounce to two gallons of water.

DWARF TREES: *J. T. H.* (1) For the destruction of the thread worms in the pots apply lime-water to the soil once a week, and if this has not the desired effect, then make a solution of half-ounce sulphate of iron to one gallon of rain-water. Apply a watering with this once a week until the pests cease. (2) You do not say if it is the same plants which are affected by the leaf disease as are injured by the thread worms. Our opinion is that it is a fungus growth, and as sulphate of iron acts equally well as a fungicide as an insecticide, we recommend a watering of the iron solution as for No. 1. Then once a month give either a pinch or two of slacked lime to the soil, or a watering with lime-water, to which a little soot has been added. (3) We do not know exactly what literature you require. Apply to the publishing department of this journal for a list of horticultural books.

GARDEN TUITION: *E. Thunder*. You cannot hope to be successful with such training as you propose to acquire. You should endeavour to enter some nursery firm where you can obtain an insight into business matters as well as in plant culture. Both the Royal

Horticultural and the Royal Botanic Societies take pupils in practical gardening; we do not know of any similar institutions near London.

GLOXINIA: *E. P. & Co.* The abnormality is interesting, but we have seen similar instances.

GRAPE ROT: *Beginner*. The berries are affected with *Gleosporium fructigenum*. The best specific is the ammoniacal solution of copper carbonate. Mix 5 ounces of carbonate of ammonia with 1 ounce of carbonate of copper and dissolve in about one quart of hot water. When thoroughly dissolved add 16 gallons of cold water.—*H. H. and F. G.* Cut out all the damaged berries and burn them. Spray the healthy bunches with sulphide of potassium or liver of sulphur, but be careful of the paint, as this chemical acts upon the lead, turning it black.

HOUSEHOLD SODA: *J. C.* Common household soda is of but little value as a plant food, partly because nearly all fertile soils contain a sufficient amount of this ingredient and, therefore do not require any artificial supply. Pear trees being large consumers of soda, may be given exceptional treatment. When the Pear tree has set its fruit, a good watering once a fortnight with household washing-suds containing soda has been found to give excellent results as to development of fruit. The suds must be applied cold. If it is desired to use household soda direct, dissolve half-an-ounce of soda in one gallon of rain-water and apply the liquid once a fortnight from the time the fruits set until they ripen.

HYDRANGEAS WITH BLUE FLOWERS: *G. B.* You will find considerable correspondence on this subject in the *Gardeners' Chronicle* for February 2, 9, 16, 23, and March 2, 1907.

LIQUID MANURES: *Anxious*. Undiluted cow's urine contains in each one ton weight 11 lb. of nitrogen, 31 lb. of potash, 3 lb. of lime, but no phosphoric acid. Therefore, when using this liquid manure, some phosphatic manure should be added. One ounce of superphosphate or 1½ ounce of basic slag should be added to each gallon of the liquid from the cow shed. The phosphate will assist both the ripening and colouring processes of the fruit.

MANURE FOR CARNATIONS: *Carnation*. The whole history of the Carnation shows that it is fond of lime, and may also be benefited by a slow but regular-acting manure. Both nitrate of soda and guano are too stimulating. First give to the beds a dressing of slacked lime or wood ashes, 4 ounces per square yard. Then break up and sift through a ¼-inch mesh sieve some dried cow dung, if it can be obtained, to which add some good fresh loam. Apply 8 ounces of the mixture per square yard of surface. Horse-droppings may be used instead of the cow dung if the latter cannot be obtained. Soot is an excellent manure for Carnations, because it not only feeds the plants, but checks wireworm, which is one of the worst enemies of the Carnation.

NAMES OF FRUITS: *H. B.* We cannot undertake to name Peaches unless a shoot with foliage is sent with the fruits. Correspondents should also furnish us with information respecting the flowers, whether they are large or small.

NAMES OF PLANTS:—*W. P. L.* We cannot undertake to name varieties of Boses.—*J. A. B.* 1, *Sedum amplexicaule*; 2, *S. Anacampseros*; 3, *Saxifraga crustata*; 4, *S. valdensis*; 5, *S. hypnoides*; 6, *S. moschata* var.; 7, *Sedum Aizoon*; 8, *S. acre*; 9, *S. spathulifolium*; 10, *S. asiaticum*; 11, *Polygonum vacciniifolium*; 12, *Cotula dioica*; 13, *Dianthus petraeus* var.; 14, *D. Requiinii*; 15, *D. deltoides*; 16, *Potentilla* sp. (no flowers); 17, *Alyssum montanum*; 18, *Phlox amena*; 19, *Pernettya mucronata*; 20, *Rhododendron ferrugineum*. (You send considerably more than the proper number—six—for naming at one time. A small donation to the R.G.O.F. would be appropriate.)—*Constant Reader*. 1, *Elaeagnus umbellatus*; 2, *Mimulus glutinosus*.—*R. H. S. Langham*. *Philadelphus Lemoinei*.—*A. G.* 1, *Cordylone australis*; 2, *Hesperis matronalis*; 3, *Galega* sp. (no flowers); 4, *Anchusa sempervirens*; 5, *Veronica longifolia*; 6, *Funkia ovata*.—*G. H. B.* 1, *Lilium pyrenaicum*; 2, *L. Martagon*; 3, *Rosa rugosa*;

4, *Hieracium aurantiacum*; 5, *Erigeron philadelphicus*; 6, *Lychnis viscaria*.—*F. Clarke*. *Erinus alpinus*.—*C. C.* 1, *Hemerocallis fulva*; 2, *Begonia metallica*; 3, *Mesembryanthemum edule*.—*A. M. Libertia formosa*.—*J. J. Foster*. *Elymus arenarius*.—*H. J. Abutilon vitifolium*.—*G. A. P.* *Cotyledon umbilicus*.—*F. W. B.* 1, *Dracaena Godseffiana*; 2, *Cissus discolor*; 3, *Codiaeum (Croton) Johannis*; 4, *Clerodendron Balfourii*; 5, *Bougainvillea glabra*; 6, *Dipladenia boliviensis*; 7, *Bambusa Fortunei*; 8, *Pandanophyllum humile*; 9, *Anthurium species*, spike not developed; 10, *Strobilanthes Dyerianus*; 11, *Begonia Ingramii*; 12, *Panicum variegatum*.—*Jackson*. 1, *Geranium sanguineum*; 2, *Veronica incana*; 3, *Funkia ovata*; 4, *Spiraea Ulmaria fl. pl.*; 5, *Hieracium aurantiacum*; 6, *Campanula glomerata*.—*E. M.* 1, *Dendrobium Piarardii*; 2, *Selenipedium (Cypripedium) longifolium*; 3, *Epidendrum virens*; 4, *Maxillaria mealegris*; 5, *Casuarina species*; 6, *Cyperus laxus*; 7, send in flower.—*R. V.* *Scilla peruviana*.—*H. H.* 1, *Miltonia cuneata*; 2, *Oncidium cornigerum*; 3, *Maxillaria picta*; 4, *Brassia verrucosa*.—*J. C.* 1, *Geranium pratense*; 2, *Mertensia (Pulmonaria) virginica*.

PEARS FALLING: *E. P. D. & Sons*. The fruits suggest injury from the Pear midge, but they were almost decayed when received. As the maggots of this insect bury themselves in the soil after the fruits have fallen and remain in the pupal stage until the following spring, you must see that all such are collected and burned. Dress the soil about the roots with kainit.

POPPIES: *C. M. P.* The stalk of the flower has become cracked from some injury. From the wounded surface an exudation has resulted, and this has caused the dark patches. We do not think there is any disease to account for the trouble.

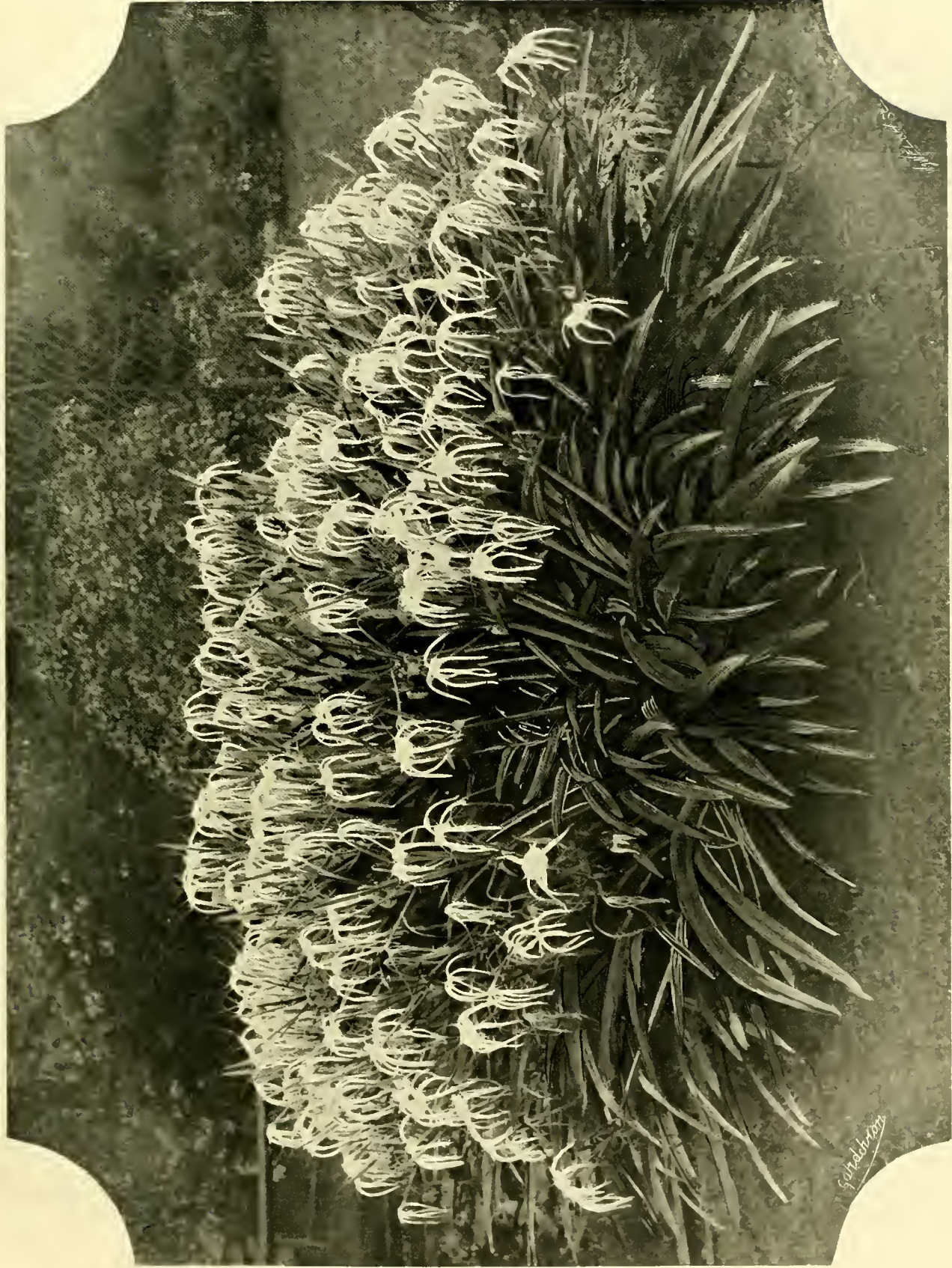
ROSE SHOOTS DAMAGED: *A. J. M.* The damage has been caused by one of the sawflies. You should examine the bushes early in the season and destroy by handpicking any of the grubs you can detect. Dusting the foliage with Hellebore powder and syringing the plants with some poisonous liquid, such as Paris green, are useful as remedies.

STRAWBERRY CULTURE FOR MARKET: *B. H.* As you have no experience, the remarks to *E. Thunder* will apply in your case. You should first enter the service of some grower who cultivates Strawberries for market. We fear that a knowledge of Citrus culture in Australia will be of very little use to you in cultivating Strawberries for the English market.

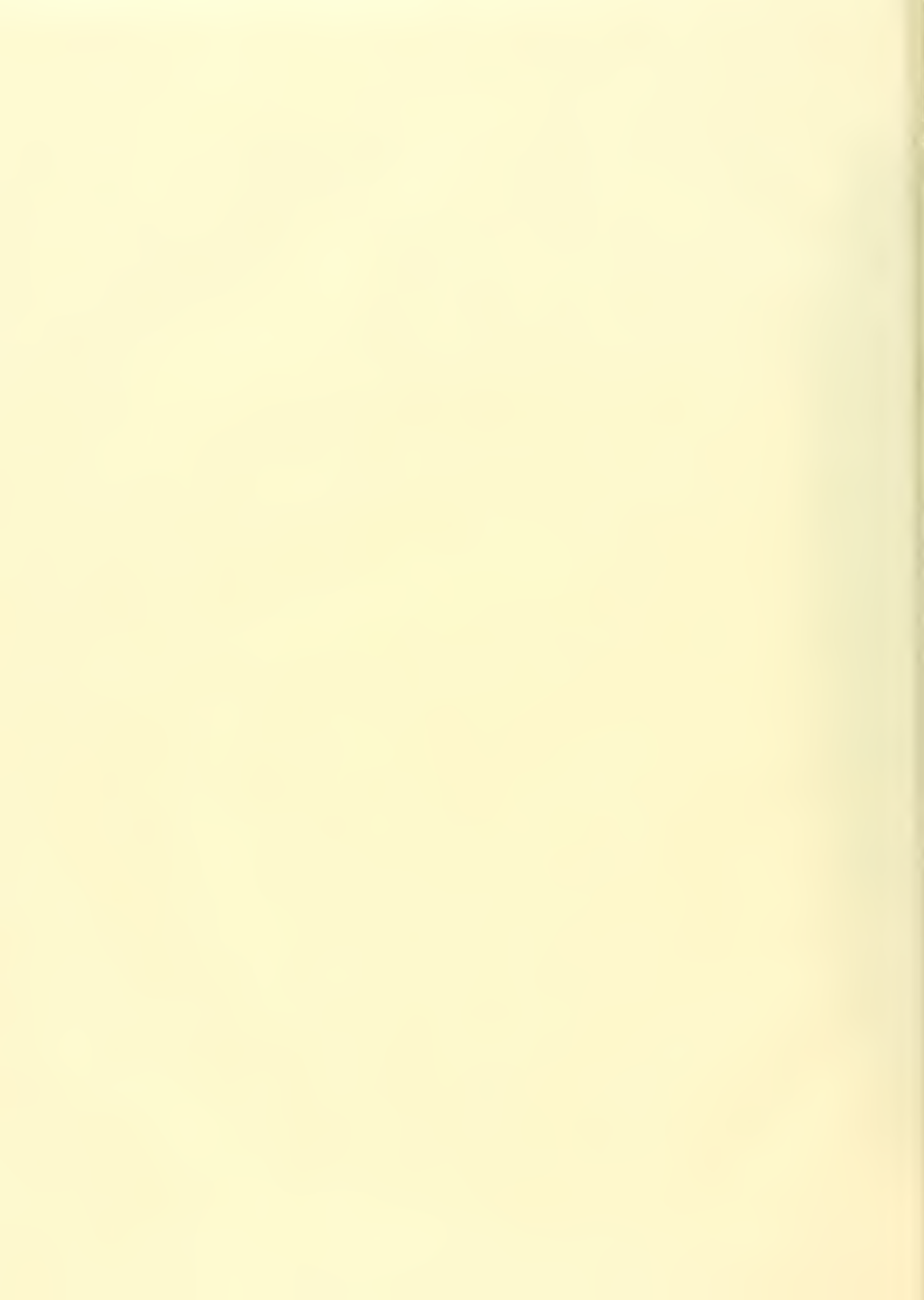
TOMATO PLANTS: *B. T. A.* The plants arrived in a wretched condition, but it appeared as though the trouble is due to the damping-off fungus (*Pythium*). This attacks seedlings, and especially those which have been kept too damp and in a stagnant atmosphere. Another year sow the seeds thinly.—*F. F. S.* The plants are attacked by a fungus (*Macrosporium solani*). The disease gains an entrance into the fruits when they are very young, and once they are attacked, spraying is of little or no use. For this reason your applications of liver of sulphur have been of no avail to save the affected fruits, although, as you state, it has checked the spread of the disease. It will be better to prepare some Bordeaux mixture and spray the plants at intervals, including the flowers and young fruits.

WORMS AND LAWNS: *W. B.* There are preparations on the market for destroying worms on lawns. They are used in the manner you describe. Besides these proprietary articles, you will find directions for making others with corrosive sublimate and quicklime respectively in the *Book of Garden Pests*, by R. Hooper Pearson, p. 31.

Communications Received.—*W. H. J.*—*Sir II. M.*—*Rev. W.*—*C. G. van T.*—*M. T. M.*—*R. L.*—*E. T.*—*W. I.*—*B. W.*—*T. S.*—*H. F. E.*—*W. R. H.*—*W. T. P.*—*H. S.*—*D. & Son*—*J. B.*—*E. F. & Sons*—*A. F. M.*—*E. W. D.*—*K. S.*—*W. G. H.*—*E. M. W.*—*A. B.*—*N.*—*H. C. B.*—*S. F. & Sons*—*W. W. W. C.*—*J. M. C.*—*W. B.*—*R. V. & L.*—*K. & Son*—*F. E. A.*—*Dr. P.*—*H. B.*—*M. W.*—*H. W.*—*W. J. N.*—*D. P.*—*C. S. & Co.*—*F. T.*—*G. B. I.*—*P. & Sons*—*F. C.*—*Thanker*—*Dr. A. R.*—*Castello*—*E. S. W.*—*J. M.*—*A. B.*—*P. S. F.*—*J. W.*—*C. D. L.*—*J. C.*—*S. & Sons*—*C. H.*—*C. P. R.*—*R. I. L.*—*C. G. B.*—*W. W. C.*—*H. C. H. P.*—*M. B.*—*Java*—*T. M.*—*J. B. R.*—*Rio*—*W. H. G.*—*H. W. G.*—*W. E. B.*—*A. B. H. & Son*—*A. L.*—*Manilla*—*M. H. S.*—*F. W.*—*S. F. W.*



HYMENOCALLIS LITTORALIS,
BEARING UPWARDS OF 350 INFLORESCENCES. PHOTOGRAPHED IN A SYDNEY GARDEN, NEW SOUTH WALES.





THE
Gardeners' Chronicle

No. 1,177.—SATURDAY, July 17, 1909.

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A MARKET FRUIT-GROWER'S YEAR.

A COLDER or less sunny June has rarely been known. In some parts of the country the rainfall was very heavy, while in others, including my own, it was below the average. Although rain was measured here on 15 days in June, the total fall for the month was only 1.63 in. Double that quantity would have been welcome, for Gooseberries, Currants, and other fruit. It is curious to notice that the Eastern Counties, usually the driest districts of England, had a much heavier rainfall than most, if not all, other counties, from 4 in. to nearly 6 in. having been measured at some stations in Essex and Suffolk. The rain and the cold weather were very injurious to the Strawberry crop, which would have been very heavy under favourable circumstances. Frost occurred on the ground level on several nights.

An extra heavy crop of any kind of fruit causes a glut in the markets, and the Gooseberry crop is subjected to this disadvantage in the present season. The bulk of the green fruit has been sold at 1s. to 2s. per half-sieve of 28 lb., with all expenses of picking, rail carriage, and marketing to be deducted. In many cases the berries were small, and therefore the prices were un-

remunerative, as the berries cost more to pick than larger berries, whilst the rail and marketing expenses were the same. London, as usual, has proved about the worst market in the country, and at the same time the most expensive in charges for delivery, portorage, and tolls. On two or three lots which I sent to Covent Garden, only 1d. to 2d. per half-sieve remained after deducting the expenses of picking, carriage, and marketing. Such a return, it is hardly necessary to say, is inadequate to cover the expenses incurred in cultivating the crop.

A MYSTERIOUS GOOSEBERRY DISEASE.

Hundreds of Gooseberry bushes in one of my plantations on a clay soil had to be left with the berries unpicked on account of a disease described by one authority as Botrytis, and by another as collar disease. The foliage is extremely small and discoloured, this being the appearance which is taken as a symptom of Botrytis; whilst the stems close to the ground are half dead, this condition giving rise to the verdict as to collar disease. My plantation was heavily manured with basic slag and sulphate of ammonia in 1908, and with kainit and nitrate of soda in 1909, and these manures did some good, but failed to restore the unhealthy bushes to a satisfactory condition. The planting was done in one of the wettest of winters, after the bushes had been heeled in for a couple of months, on the chance of improved weather occurring. They have borne very good crops ever since, and this is partly the cause of their unhealthy condition. Hundreds have died, and many more are dying. These will be replaced with Black Currants, which may succeed well in the cold clay.

AN APHIS SEASON.

Never before have I known aphides so numerous and persistent as they have been this year. Repeated sprayings of Apple trees have effected no lasting good, as fresh colonies of aphides appeared two or three days after millions of exposed ones had been killed. The damage done to an otherwise flourishing plantation of young Apple trees is incalculable. The attack on Plums subsided after a time, and has not been repeated. By the way, it is worth while to mention that the good old wash composed of soft soap and quassia has proved much more effective in destroying aphides in my experience than the more expensive nicotine. It appears, further, that the former mixture is not commonly made strong enough. In cases where it has been used in the ordinary strength, it has done comparatively little good; but where 12 lb. of soft soap and 12 lb. of quassia chips have been boiled together to make 100 gallons of wash, and this wash applied as a drenching spray, it almost entirely cleared a plantation of slight attacks of Apple sucker, and, for the time, of aphides. But for some weeks past winged aphides have been flying about the plantation of young Apples, infesting fresh foliage with colonies of their progeny.

With respect to the attempt to suppress the black aphid on Black Currant bushes referred to in my notes last month, the nipping-off of the terminals containing the pest, when they were few in number, was of but little use, as fresh attacks appeared all over the plantation. Spraying having very little effect, owing to the protection the aphides get under

leaves curved over the tips of the shoots, I am now trying the plan of dipping the ends of the infested shoots in a strong wash, the result of which is not known at the time of writing. It would be a tedious operation in a large plantation; but a gang of fruit-pickers would get over a considerable area in a day, and if the dipping proves effectual the result will be well worth the expense of the operation. It is strange that this Black Currant pest is not noticed by entomological authorities, as reports lately received prove it to be quite common.

The bad attack of caterpillars of various kinds referred to last month nearly defoliated Apple trees in orchards where spraying was neglected; but where arsenate of lead was used at the proper time the pests were poisoned most successfully. The chief injury to the foliage where spraying was practised was suffered whilst the caterpillars were feeding inside folded bunches of leaves. As soon as these expanded, and the pests fed on the poisoned foliage, their fate was sealed. If anyone would and could take aphides from me in exchange for all the caterpillars which trouble him, I would gladly effect the exchange, as I can defeat the latter, while the former beat me.

THE APPLE FAILURE.

At the beginning of May it was stated that Apple blossom was setting well. So all growers who wrote on the subject supposed at the time; but they were sadly disappointed later, as the trusses of embryo fruit dropped from the trees in numbers, leaving a light crop in most districts, if not in all. What was the cause? It is commonly said to have been frost; but it certainly was not so in my plantations, where the temperature never fell once below freezing point, at 4 ft. from the ground level, after Apples began to blossom. I attribute the failure to the persistence of very cold and sometimes strong wind during the blossoming period, and this impression is supported by the fact that the fruit is nearly all on the lower branches of the trees, the tops of most varieties being almost fruitless. Further, it is noticed that trees on the north and east sides of an orchard are nearly bare of fruit, while those protected from wind inside bear a much less scanty crop. My oldest plantation, composed of bush-shape trees, well sheltered, has a good bottom crop, but very little fruit on the upper branches, except in the cases of some of the most hardy varieties.

THE PLUM CROP.

Plums have fallen badly in many districts, and the crop appears to be a light one in the country as a whole, though with me it is a fair one generally, and a good one on some varieties, as no damage was done by frost here. For some unaccountable reason the profuse blossoming of Old Greengage, Coe's Golden Drop, and a few other choice Plums has been followed by scarcely any fruit.

THE BLACK CURRANT CROP.

This is another fruit crop concerning which reports are nearly all unfavourable. My crop on the variety Boskoop Giant on bushes three and four years from the planting is a fine one, whilst old bushes of Lee's Prolific bear miserably small bunches. Red Currants appear to be generally abundant. *A Southern Grower.*

CŒLOGYNE ASPERATA.

Our illustration in fig. 15 represents a fine specimen of this rare species which was shown in the group staged by Messrs. Moore, Ltd., Rawdon, Leeds, at the Holland Park Show of the Royal Horticultural Society on July 6 and 7 this year.

Cœlogyne asperata (Lowii), which is widely distributed in the Malay Peninsula, was introduced by Messrs. Low & Co., from Sarawak, North Borneo, in 1849. Since that time it has been repeatedly imported, but although when the species has bloomed it has always been considered one of the largest and most beautiful of *Cœlogyne*s, the occasions on which it has flowered have been so widely separated that there are still many orchidists who have never seen it in bloom. That it should be so comparatively rare may be accounted for by the fact that its habits in its native home, where it is usually found in shady situations, on trees overhanging streams in the hot, moist lowlands, do not fit the plants to withstand the risks of a long journey. The stout pseudo-bulbs, often 6 inches in length, usually look healthy on arrival here, but in most cases the growth-buds are quite destroyed and the plants useless. Messrs. Moore seem to have been fortunate in getting some good plants, and in a warm, moist house this species thrives admirably and blooms well in company with *Cœlogyne pandurata* and other warm-house Orchids.

The flowers, which are nearly 3 inches across, have the sepals and petals white, changing to cream-white when mature. The side lobes of the lip are white, streaked with red-brown on the inner side, the middle lobe having warty orange-red and yellow ridges, the margin being pale yellow streaked with red-brown. The flowers are delightfully fragrant.

When growing, the plants require abundance of rain-water, and should not be rested by drying at any season, although when the pseudo-bulbs are fully made up a restricted supply and a cooler temperature should be given for a month or so before growth recommences.

NEW OR NOTEWORTHY PLANTS.***MUSS.ENDA SANDERIANA.**

A LARGE number of species of the genus *Mussenda* have been described from Africa and tropical Asia, but only a few are in cultivation in our stoves. The attraction of these shrubs lies in the petaloid sepal which is borne by one flower out of every three. The four other sepals are small and inconspicuous. In some plants the petaloid sepal is never developed at all, and in others only one or two flowers in the head of cymes bears it. These petaloid sepals may be red as in *M. erythrophylla*, or, more usually, white or cream coloured, and serve to attract insects to the somewhat inconspicuous, yellow or orange flowers. The species about to be described was obtained in 1909 in Laos, Indo-China, by Mr. Micholitz, and is an exceptionally handsome member of the white-sepalled section. It seems strong and grows readily, forming a good-sized head carrying from

* *Mussenda Sanderiana*, n. sp.—Frntes 5-6-pedalis, saepe prostrata, ramis 10-15 pedes longis, sericeo-tomentosis (sicis rafotomentosis); foliis sub-sessilibus lanceolatis acuminatis basi cordatis, pagina utraque dense tomentosis, marginibus undulatis, 3½ poll. longis 1 poll. latis, petiolo minimo; stipulis linearibus bifurcatis. Cymae terminales plures, dense sericeo-tomentosae. Bractee lineares 1/10 poll. longae. Flores flavi sericeo sessiles. Sepala oblonga obtusa, brevia sericea ovario molto breviora, sep. petaloides ovato obtuso vel subacuto albo parvis sericeo 3½ poll. longo, 1½ poll. lato, petiolo 1 poll. longo dense sericeo. Corolla tubulosa extus sericea, aperne dilatata, 1 poll. longa, intus glabra. Stamina dimidio tubi sequantia, glabra. Stylus longior, stigmatibus 2 linearibus longis flavis. Laos, Indo-China, alt. 1,000-2,000 metris (W. Micholitz).

six to eight large, pure white leaf-like sepals. Being of a compact habit, it should form an attractive stove shrub. In the wild state it attains a height of 5 or 6 feet, but is often prostrate on the ground. The leaves are close-set, lanceolate and cordate, nearly sessile, with at most a very short petiole. They are bright green in colour and entirely covered, as are all the vegetative organs, with soft, close, silky hairs. The cymes are numerous at the ends of the branches, with small, yellow, tubular flowers, and the petaloid sepals are large, over 3 inches long and half as wide, pure white, and covered with fine, silky hairs. It seems quite distinct from any described species in the form and covering of the leaf, the short calyx lobes, and other points. *H. N. Ridley, Singapore.*

***CALANTHE HENNISII, n. sp.**

This is one of the finest *Calanthes*. Its cream-white flowers, nearly 2 inches wide, with an ele-

65° to 70° F. would be sufficient in cultivation. Like all its allies, this plant contains indigo. *A. Loher.*

At the request of Mr. Hennis, the inflorescence and description of the *Calanthe Hennisii* were submitted to Mr. R. A. Rolfe before publication, and Mr. Rolfe has written to us as follows:—
“*Calanthe Hennisii*, Loher, is the Philippine representative of *Calanthe vestita*, but differs from the latter in having the scape, pedicels, and the back of the sepals more strongly villous, and the lobes of the lip rather narrower, while the bracts are relatively broader. The flowers are slightly smaller, white, with a slight tinge of sulphur, and a yellow throat to the lip. The pedicels assume a distinct indigo-blue tint on drying, and there is a tinge of the same colour in the sepals and petals. The species was collected by Mr. Loher at Montalban, in the Province of Rizal, in January, 1906, as shown by a good dried specimen preserved at Kew. The other Philippine species



FIG. 15.—CŒLOGYNE ASPERATA (LOWII): FLOWERS WHITE, WITH ORANGE-COLOURED LABELLUM.

gant, orange spot on the lip, last from five to six weeks. Its nearest relative seems to be *Calanthe rosea*, which, however, has smaller flowers and bulbs. Another merit of the plant is that it flowers in January and February. As its habitat is in the mountains, an average temperature of

* *Calanthe Hennisii*, n. sp.—Epiphytica, pseudobulbi 5-15 cm. alti, elongati, angulosi, virides, integri, apice 2-4-foliati; folia ovato-lanceolata, 25-35 cm. longa, 5-10 cm. lata, in petiolum brevem decurrentia, tenuia, late viridia, saepe sub anthesi decidua; scapi laterales, 30-50 cm. alti, albido-lanuginosi, 10-15 flori; bractee amplae, pallide virides, pilosae; flores lactei, 4-5 cm. diametri, patentissimi; sepala aequalia, ovata, acuminata, subtus pilosula; petala obovata, obtusa, sepalis subsequantia; labelium trilobum, lobi laterales obtusi, subidenticali, patentis, lobris intermedium bilobus, lobis obovatis obtusis, discus 3-lineatus, aurantiacus, fauce calcaris angusti lineare recurvo intus pilosule; columna lata, labello adnata, et prominens; stigma basi longe ciliatum; pollinia aurantiaca, caudiculis granulosis extensis aurantiacis.
Habitat: Montes Luconiae, 800-1,000 m. altitud. Flores Jan.-Febr.

of this group is *Calanthe Elmeri* Ames (*Orchidaceae*, ii., pp. 155, 156, with fig.), based upon material collected at La Trinidad, Baguio, in the Province of Benguet (Elmer, n. 5886), which was also collected by Loher at Mariveles, in January, 1905, a dried specimen being also preserved at Kew. This has much smaller flowers than *C. Hennisii*; indeed, *C. Elmeri* is the Philippine representative of the Malayan *C. rubens*, Ridl., and possesses a similar range of colour, from rose to white. The two resemble each other so closely in the dried state that they will have to be re-examined for their distinctness when living flowers of *C. Elmeri* are available. Some of the species of the *C. vestita* group are rather difficult to define, but a revision of the group was attempted a few years ago (*Orch. Rev.*, ix., pp. 140-142), at which time nothing was known from the Philippines.”

NURSERY NOTES.

THE CRAVEN NURSERY.

THIS nursery is situated in the village of Clapham, near Lancaster. It is the property of Mr. Reginald Farrer, the author of *My Rock-Garden*, who resides at Ingleborough, a house not far distant. On a recent visit I noticed a splendid collection of Alpines in pots in a series of pits, many of the plants being rare species and varieties in the best of health. Of *Edraianthus serpyllifolius major* there were hundreds of robust specimens, whilst the genus *Saxifraga* was exceedingly well represented, among those noticed being *Saxifraga Burseriana Gloria*, a very fine form, with flowers almost as large as a florin, of which

off in a year or so in the open garden, however carefully its wants are studied. A pretty and interesting plant was *Andromeda tetragona*, collected on the Rocky Mountains, with stiff, upright stems about 7 inches in length set with drooping, white bells. There was a representative collection of *Campanulas*, including *C. alpina*, *C. Zoysii*, *C. hirsuta alba*, *C. albescens*, *C. Allionii*, *C. macrorrhiza*, *C. stenocodon*, *C. speciosa*, *C. Raineri*, *C. tridentata*, *C. pusilla pallida*, *C. barbata*, *C. Hostii alba*, *C. excisa*, and *C. garganica alba*. There was a fine assortment of *Sempervivums*. Of the *Primulas* the variety of *P. villosa* known as *P. nivalis* was bearing its snow-white blossoms, as was *P. helvetica alba*, with larger flowers than *P. nivalis*. Other *Primulas* were *P. Kelleri*, *P. Reinii*, *P.*

minata, *Iberidella rotundifolia*, *Edraianthus Kitaihelii*, *Viola pinnata*, *Petrocallis pyrenaica*, *Cytisus Ardoinii*, *Saponaria lutea*, and the new *Lithospermum Zollingeri*. On one side of the nursery were a number of Maples and Cherries that had lately arrived from Japan. *Aquilegia glandulosa*, which often proves a difficult plant to keep, does splendidly, and there was a large hatch of healthy plants, covering a space 20 yards by 6 yards, which had been raised from seed. *Ostrowskia magnifica* was also making strong growth, and seemed perfectly at home. *Ourisia coccinea* was spreading freely, and evidently enjoyed its surroundings. At a little distance from the back of the house is a large and beautiful lake, which at this point is bounded by a perpendicular cliff. In the cliff-face a path

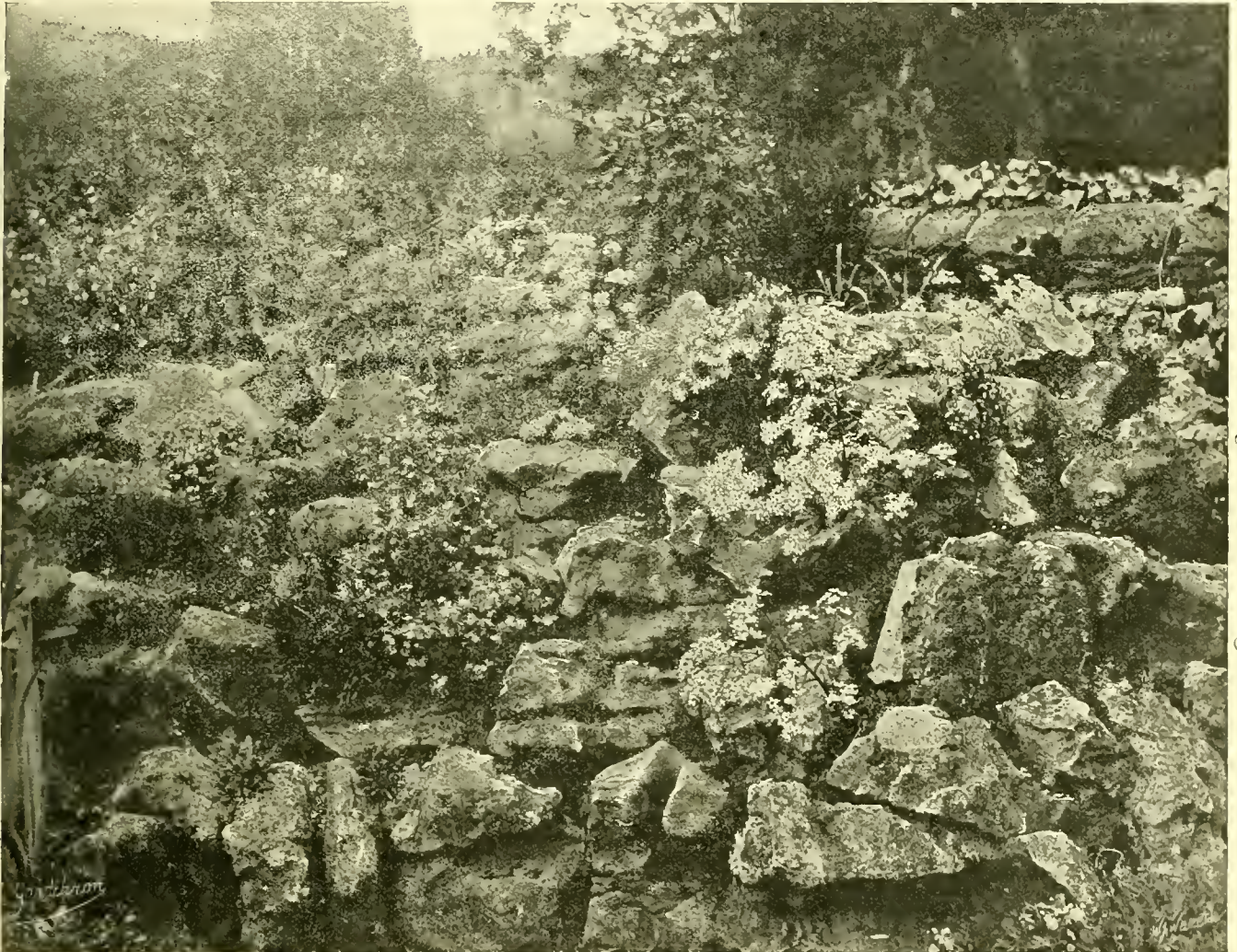


FIG. 16.—VIEW IN THE ROCKERY AT THE CRAVEN NURSERY.

there was a large stock; a hybrid between *S. Burseriana* and *S. Elizabethæ*, with yellow flowers, the new *S. Pauline* with yellow blooms, *S. Faldonside* (a hybrid from *S. Boydii*), the rare *S. porophylla*, the new Italian *S. Petrachii*, a variety of *S. Aizoon* with red stems, *S. Frederici-Augusti*, *S. lilacina*, *S. squarrosa*, *S. scardicavera*, *cervicornis*, and the rare *S. Stribnyii*. Among the *Androsaces* were *A. glacialis*, *A. Chumbyi*, *A. helvetica*, *A. lanuginosa*, *A. villosa*, *A. Lageri*, *A. sarmentosa*, the rare Italian *A. Mathildæ*, *A. primuloides*, *A. Chamæjasme*, *A. carnea*, and *A. vitaliana*. The beautiful *Eritrichium nanum* had expanded the first of its brilliant blue flowers and looked happy in the little pots of sandy soil, but, unfortunately, this lovely little Alpine is of a most capricious character, and usually dies

imperialis, *P. luteola*, *P. bellumensis*, *P. cynoglossa*, *P. glutinosa*, *P. denticulata alba*, *P. capitata*, *P. ciliata coccinea*, *P. serrata*, *P. apennina*, *P. multiceps*, and *P. marginata*, an exceedingly fine selection. Among the Pink family were noticed *Dianthus glacialis*, *D. frigidus*, *D. alpinus*, and *D. Seguieri*, while of the *Ranunculi* *R. glacialis*, *R. rutaeifolius*, the Servian *R. nyssanus*, *R. gramineus*, *R. amplexicaulis*, and *R. Kernerianus* were present. Among other plants in the pits were *Calochorti*, *Cyananthus lobatus*, *Iris minuta*, *Corydalis cheilanthifolia*, *Arabis rosea*, *Anemone baldensis*, *A. narcissiflora*, *Astragalus danicus albus*, *Iberis Bernardiana*, *Gentiana Bigelowii*, *Codonopsis ovata*, *Lychnis Lagascae*, *Phlox carolina*, *Sisyrinchium angustifolium*, *S. filifolium*, *Jamesia americana*, *Castilleja acu-*

has been cut leading from the top by a gentle descent to the water's edge and then gradually ascending again. This work was carried out eighteen months ago, and in the crannies of the rock *Saxifragas*, *Violas*, *Aubrietias*, *Arabis*, *Veronicas*, *Ranondias*, and *Haberleas* were planted, and make already a good show. Where there was sufficient soil, seeds of Alpine plants were sown, and in a few years' time this picturesque spot will doubtless present a charming appearance. The gardens contain a fine collection of plants, among which was a healthy young specimen of *Embothrium coccineum*, great trees of which are such a marvellous sight in Cornwall in the month of May. It is doubtful, however, if the shrub will succeed in this district. *Rhododendron anthropogon*, *R. campylocarpum*, and *R. chamæcistus*

cistus were noticed, *Magnolia Kobus* was in full flower, and *Nandina domestica* was the picture of health. Other plants included *Daphne Cneorum*, *Eucryphia pinnatifolia*, *Olearia nitida*, *Ribes spathiana*, *Genista sagittalis*, *Anemone pennsylvanica*, which bears loose clusters of pure white flowers on long stalks, *Thalictrum foliosum*, *Nierembergia rivularis*, *Hyacinthus azureus*, *Erodium cheilanthifolium*, *Cotoneaster congesta*, *Chamaecerasus myrtillosa*, *Polygonum Auberti*, *Erythronium*, *Iris gracilipes*, *Stuartia pentagyna*, *Shortia uniflora*, *S. galacifolia*, and *Saxifraga oppositifolia* in fine form. In a little pond fed by a streamlet, in the bed of which *Saxifraga peltata* is growing strongly, the choicer Water Lilies are cultivated, and on an island in the centre, just above the level of the water, *Primula rosea* was in full flower and marvellously strong. Close by the pond is a "moraine" composed of limestone chips mixed with about a sixth of soil. Here Alpines revel and many *Saxifragas*, *Campanulas*, *Androsaces*, and other gems find the conditions suitable. *S. W. Fitzherbert.*

FOREIGN CORRESPONDENCE.

NOTES FROM SWITZERLAND.

THE weather in June and the first week of July has been so bad that the Alpine Garden at the Rochers de Naye is now considerably more backward than was that at Pont de Nant at the end of May, as recently described in the *Gardeners' Chronicle*. The change cannot merely be accounted for by the difference in altitude. June 29 was the coldest day in June at Lucerne for about 50 years, the thermometer registering 6° C. in the morning of that day.

A visit to the Basle Botanical Gardens on June 27 was spoilt by a heavy downpour of rain, which prevented a proper examination of the gardens surrounding the Botanical Institute where Prof. Fischer resides. These gardens have occupied for 12 years the site of an old cemetery, and they are managed by Herr Urech. Among the Labiate are very fine patches of *Salvia verticillata*, *Phlomis cashmeriana*, with its pink flowers, *Phlomis Russelliana* and *Scutellaria alpina* of the ordinary mauve colour, but with a pale yellow lower lip, which is a form of this most variable plant I had never seen. The *Statice* comprise *tatarica*, *speciosa*, *latifolia* and *Limonium*. I also observed *Ruscus racemosus* from the Orient, *Amsonia latifolia*, *Geranium cinereum* from the Pyrenees, *Tenacium pyrenaicum*, *Campanula turbinata*, *Senecio abrotanifolius*, *Chrysanthemum densum* from Syria, with pale yellow ray florets, *Vesicaria nriculata*, &c. Aquatic plants are a pleasing feature at Bâle, and they comprise the beautiful cream-coloured *Nymphaea Marliacia chromatella*, *Stratiotes aloides*, not found wild in Switzerland, *Typha Laxmannii* from Asia Minor, *Cicuta virosa* and *Butomus umbellatus*.

Prof. Carl Schroeter, of Zurich, was to have formally opened a new Alpine garden on the Rigi on Sunday, July 4, but owing to bad weather this event was postponed for a week. The garden is situated at Rigi Scheidegg at about 1,650 metres. Dr. Bachmann, of the Lucerne Gymnasium, is the director. The German Swiss are following in the footsteps of Mons. Corveon and his friends in starting these interesting and useful gardens, and it is none too soon. It will be interesting to see how Alpine plants generally thrive on the Rigi, and how they adapt themselves to the conglomerate or "pudding-stone" of which that mountain is chiefly composed.

I write from Engelberg in the heart of Switzerland, a charming village with an imposing church and monastery nestling in the valley beneath the famous Titlis. It is a wonderful district for

Orchids, which the local limestone seems to suit. A lady found no fewer than 25 kinds of Orchids here, including such rarities as *Cypripedium Calceolus*, *Malaxis monophyllos*, *Gymnadenia odoratissima* × *Habenaria albida* and *Corallorrhiza Neottia* in plenty under the Fir trees.

Close to the church at Engelberg is a pretty little nursery ground and rockwork belonging to Herr A. Kuster.

Visitors to Switzerland who are interested in botany will find Schinz and Keller's *Flora der Schweiz*, translated into French this year by Profs. Wilczek and Schinz, a useful and convenient handbook. The *Flore de la Suisse*, which costs 10 francs, is a bandy book of over 700 pages of thin paper and clear type, with a few small explanatory woodcuts. One of the best features of the book is its excellent index of every species and many synonyms. It is arranged according to the new classification of Engler and Prantl, and the nomenclature conforms with the Vienna rules. It is not merely a simple translation of the *Flora der Schweiz*, but it re-

CULTURAL NOTES.

GARDEN FRAMES.

THE raising of early crops of saladings, such as Radishes, Lettuces, Endives, Cress, and Mustard, and such early vegetables as Turnips, Kohl Rabi, and the small-growing varieties of Savoys and Cabbages, might be readily carried on in roughly-made frames made of planks 1½ inches thick, unpainted and unplanned, and covered with simple glazed lights. Such frames serve the gardener's purposes of retaining warmth in the soil placed in the frames, and protection against the vicissitudes of the weather, quite as well as the more expensive and troublesome cloches; moreover, they are less liable to be broken, and if a pane of glass gets broken it may be readily replaced.

In many Continental gardens these small wooden frames serve for all kinds of vegetable forcing, and even for the rooting of Pineapple suckers, also the raising and cultivation of



FIG. 17.—CORNER OF THE ROCKERY IN THE CRAVEN NURSERY.

(See p. 35.)

presents an entirely new edition carefully brought up to date. About 2,534 good species and many varieties are described, and habitats are given for the rarest plants, though not in such a manner that any harm can result to rare plants. It forms a convenient book for the pocket, similar in size to the pocket edition of *Babington's Manual* by Messrs. Groves. *H. Stuart Thompson.*

PAROCHETUS COMMUNIS IN JAVA.

THIS plant (figured in Bennett's *Plantae javanicae variores*, pl. 34, and in Wight's *Icones*, pt. ii., pl. 483) is by no means a rare species, as I have often found it here and in the immediate neighbourhood. The most interesting point about it is that the plant will climb if the long side branches are taken off; otherwise it is a shrub and not a creeping plant, as said in Miquel's *Flora van Nederlandsch Indië*, pt. i. p. 319. It is by no means creeping, for I have it climbing on a large stick, and it has reached already a height of 2 metres. *M. Buysman, Hortus Tenggerensis, Lawang, Java.*

Melons, Tomatos, Aubergines, early crops of Potatos, and the forcing of Asparagus. The frames usually employed measure 3½ to 4 feet in width, and 4 to 5 feet in length. The sash-bars are rabbeted in some cases with a plough plane, but more often by nailing a thin strip of wood along the middle line of the sash-bars, and if a thick coating of paint be applied when the glazing is finished, there need be nothing to fear from drip.

Warmth is afforded to the rich soil placed in the frames by a mass of well-prepared stable dung, or dung and tree leaves, or wool waste, taking especial care that this last material is put together in a very moist condition and firmly trampled. The hot-beds of the other materials named may be evenly built up to a height of 2 to 2½ feet, and trampled firm during the making. The sides of the frames should not be higher than 1 foot, and the beds should be made with a slight slope to the south in order that rain will not remain on the sashes.

There is more economy of warmth in the

materials if the hot-beds are constructed in an excavation made in the ground, 3 feet wider and longer than the frames and 2½ feet deep. Linings of either stable litter, mixed litter and tree leaves, or even rough mowings of grass, and later in the season, of dry litter should be put round the frames. These linings may be used for supplying warmth to the beds of soil, or of providing merely against its escape. Care must be taken that no strong fumes enter the frames from below. Where there is a danger from this cause the lights should be raised ½ inch during the night. Guard against overhanging mats which might conduct the fumes into the frames. The beds should be brought up to within 6 inches of the lights. The warmth (top-heat) should not, as a rule, exceed 60° Fahr. by night, or 8° to 10° higher in cloudy weather by day; but with sunshine it may be allowed to rise to 75°, if plenty of fresh air is admitted. In affording ventilation, the cold air should be made to enter a frame at the side opposite to the direction of the wind. The applying of water to the soil will need great care. The avoidance of stagnant moisture in the frames is another point requiring close attention, especially in early spring, it being an easy matter to witness the ruin of an entire sowing from the damping-off fungus.

In the so-called "French garden," intercropping is the common practice; but it is combined with a good deal of wasted time, and should not be practised except by experts.

The beginner should rather keep his various crops separate, or, at the most, be contented with one or two in each frame.

Slight manurial top-dressings of rotten dung and finely sifted soil are of great use in this kind of frame culture, and of much service in forwarding the growth of the plants. Do not crowd the plants, or let them get spindly in the seed-beds before transplantation, nor apply water colder than the soil of the beds. M.

NOTICES OF BOOKS.

*** DARLINGTON'S "SOUTH DEVON AND CORNWALL."**

THIS little book of 250 pages is indispensable to tourists in the south-west. It contains a full and accurate description of the scenery and points of interest to be met with in the district, and is illustrated by over 80 photographic reproductions and five maps. It commences with a description of the chief railway routes, then gives a list of the best cycling tours, and passes on to consider the beauties of the land and objects of attraction to be seen between Exeter and Land's End, thoroughly analysing the charms of the south coasts of Devon and Cornwall. Among the towns and their environments dealt with at length are Exeter, Seaton, Sidmouth, Budleigh Salterton, Ottery St. Mary, Exmouth, Dawlish, Teignmouth, Torquay, Paignton, Brixham, Dartmouth, Salcombe, Brent, Princetown, Tavistock, Lydford, Okehampton, Plymouth, Looe, Polperro, Liskeard, Fowey, Falmouth, Truro, Penzance, Newlyn and Mousehole. In each case the most attractive tours in the neighbouring country are discussed. Forty-nine pages are devoted to Dartmoor, and its rugged tors, wild scenery and health-giving atmosphere are enlarged upon, and its prehistoric antiquities and ancient bridges described. Ample space is devoted to the Lizard, that splendid Cornish headland that attracts so many summer visitors, and to the neighbouring beauty-spots, Kynance Cove and Mullion. The book concludes with a chapter on the Isles of Scilly, the few inhabited islands of the group being considered separately. Naturally, mention is made of Mr. Dorrien-Smith's wonderful garden at Tresco Abbey, where tender plants that will not grow on the mainland flourish to perfection. The little book is to be strongly recommended to all visitors to the south-west.

* Darlington & Co., Llangollen; price 2s. 6d.

EGYPT.

FRUITS IN UPPER EGYPT.

THE fruits which are grown in Egypt are both numerous and varied in kind, including Mangos and Bananas on the one hand, and Pears and Apples on the other. Strangely enough, the Apple is cultivated much more widely in Upper Egypt southwards to Sohag than in the Delta, where the climate is more temperate.



FIG. 18.—DAPHNE RUPESTRIS IN THE CRAVEN NURSERY.

(See p. 35.)

The variety common to the country is the yellow Paradise so largely used in Europe as a stock for the better kinds of Apples. The tree is small and straggling in habit, usually throwing up numerous suckers, which serve as an easy means of propagation.

The fruit is small and hard, but it nevertheless meets with a ready sale at about 4d. per lb. retail, being ready for use in a green state to-

the advantage of being free from the scale insect, which has caused so much havoc in the Orange plantations further north. The great heat of summer is probably against the development of this insect. The Pomegranate, on the contrary, suffers greatly from the attacks of the larvæ of a butterfly, which eats out the centre of the fruit. The only preventive hitherto applied is that of enclosing the fruits in bags as soon as the flowers fade.

Other common fruit crops are the Fig and the Peach, the Apple holding a place almost equal in importance to that of the Peach. In the districts where perennial irrigation has not yet been introduced and the canals are dry in summer, the trees are watered from wells, the water being raised by means of a "sakieh" (native water wheel) or by means of a small centrifugal pump and oil engine. Apart from this, the expenses of cultivation are not great, and the returns are sufficient to leave a substantial profit to the cultivator. One point in favour of the Apple is that it does not suffer greatly by the ground being submerged in autumn. Where the old system of irrigation is still practised and the country flooded during high Nile, it is sometimes difficult to keep the water out of the gardens. Peach trees in particular are often injured by inundation. Better varieties of Apples are being introduced, but these will never assume importance as a commercial crop, nor is it probable that the country Apple will retain the place which it now holds as a fruit crop when other fruits become more common and the methods of distribution and marketing better organised.

The cultivation of Melons and Water Melons form an important industry, but apart from these and the tree fruits before mentioned, nothing is grown on a large scale, excepting, of course, the Dates, which cannot be regarded as a garden crop. Trees of Mangos, Japanese Loquats, Japanese Date Plums and Guavas which have reached the fruiting stage are only occasionally seen, although quantities are now being planted.



FIG. 19.—SAXIFRAGES IN THE CRAVEN NURSERY.

(See p. 35.)

wards the end of May. In Upper Egypt fruit-planting is extending more rapidly than in Lower Egypt, the Grape being one of the most important crops. The vines are grown on trellises supported on brick pillars. The erection of these and the planting of the vines usually costs about £100 per acre.

Citrus fruits also grow luxuriantly, and have

Fruit-growing may thus be said to be yet in its infancy. Many tropical trees, such as the Avocado Pear, the Sapodilla Plum, the Ananas, the Bread fruit, and Paw Paw, which can only be grown with partial success at Cairo, may be expected to grow well south of Assiout. The Passion fruit and Tree Tomato succeed even further north than Assiout. T. W. B. Giza.

THE ROSARY.

THE ROSE SEASON.

THE Rose season has opened most inauspiciously in Scotland, with tumultuous floods of thunder rain. This has been very unfortunate for the delicately-formed Austrian and Persian Briars, which are invariably the first to expand their flowers. Last year the flowering shoots of these Roses were destroyed by late frosts. This season, although heavy rains rendered useless many of the opening blooms, there were sufficient flower-buds left to make the present brilliant display. Here, in a greatly-sheltered garden, which hardly obtains sufficient sunlight owing to the presence of tall trees, Rosa Harrisonii and the Persian Yellow Rose, which can hardly be surpassed for artistic ornamentation, are associated with the loveliest Hybrid Briars of Lord Penzance, such, for example, as Jeannie Deans, Lucy Ashton and Meg Merrilies, with memorable effect. This is a combination of colours—soft yellow and bright crimson—which I would recommend to all cultivators, to whom the evanescence of such Roses is a secondary consideration to their supreme beauty. Another very valuable and attractive race of garden Roses are the Wichuraiana hybrids, which, for the most part, unlike the Austrian Briars, come into flower very late. Some of the finest of these are Dorothy Perkins, Lady Gay, and Hiawatha, of which the last-mentioned was especially luxuriant last year. To these I have added the lovely Kathleen and Christian Curle. White Dorothy, a graceful derivative from a well-known Wichuraiana, must also, ere long, be added to my collection. Amongst the finest new Reses are Mrs. David Jardine, which I find somewhat sparing of its splendidly formed and coloured blooms; Elaine, a beautiful Hybrid Tea, palest lemon-white in complexion, which I saw for the first time at the Temple Show last year; Molly Sharman Crawford, another variety of the most delicate beauty, with luminous foliage; Mrs. Stewart Clark, bright cerise in colour; and Beatrice, a richly-effective and free-flowering Rose, with reflexed petals and the characteristics of La France.

Rosalind, a dwarf Polyantha of great attractiveness, and Refulgence, a Hybrid Sweet Briar of brilliant scarlet colour, are also amongst the finest of recent acquisitions. We have not yet, however, acquired a climbing Medea, or a hardy Maréchal Niel! *David R. Williamson.*

The Week's Work.

THE ORCHID HOUSES.

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

Some lesser-grown Orchids.—Among Orchids that are not generally sought after are the Schomburgkias, several varieties of which are really worth cultivation. *S. tibicinus*, *S. Kimballiana*, *S. Thompsoniana*, *S. Humboldtii*, *S. Sanderiana*, *S. chionodora* (a rare, pure white species), and its variety *S. c. rosea* are distinct growing plants and have hollow, horn-like pseudo-bulbs, with extremely thick, leathery, leaves. They are very easily kept clean, and under ordinary conditions produce strong flower-stems. The flowers of this genus are distinct in form and colour from most other Orchids, and they last an unusual length of time in a fresh condition. These plants have now commenced to grow, and, if necessary, should be given fresh rooting material. They thrive equally well in pots or baskets. Formerly it was considered that teak-wood baskets were the only suitable receptacles, but after repeated trials I find pots are more convenient, especially where a suitable position can be found for growing the plants. Schomburgkias do not require any great depth of compost. Therefore, the pots should be at least three parts filled with drainage materials, and the compost may consist entirely of *Osmunda* fibre, adding sufficient small crocks to make the drainage as perfect as possible, so

that when in full growth the plants may be afforded frequent and copious waterings. Pot each plant rather firmly, and make the compost immediately under the pseudo-bulbs especially firm. The plants will succeed in any of the warmer houses, but it is essential that they receive abundance of light, air, and moisture. When growth is completed, gradually reduce the amount of water at the root, and place the plants in an intermediate house where they will get the least amount of shade, but plenty of fresh air. Schomburgkias with fusiform pseudo-bulbs, as *S. crispata*, *S. Lyonsii*, *S. undulata*, *S. gloriosa*, and *S. rosea*, will grow well under similar conditions. Plants of this section that have their growth well advanced should not be disturbed by repotting. Such plants as *Arpophyllum giganteum* and *A. spicatum* are not in general cultivation, but are pretty and attractive enough when seen with a dozen or more strong spikes of bloom. Both succeed in well-drained pots in the new Cattleya mixture. They should be grown in a light position in the cool intermediate house, affording them plenty of water during the growing period, subsequently resting them as Cattleyas, &c.

Neobenthamia gracilis.—This is a very pretty species when in bloom. Its small white and spotted flowers are produced in terminal capitate racemes, which last in perfection for several months. The plant grows freely in a warm stove-like temperature. Its tall, reed-like stems are very prolific in producing offshoots, which, unless required for propagation, should be removed immediately they appear, or the main stems will fail to produce flower-spikes. Grow the plant in well-drained peat and Sphagnum-moss, and afford copious waterings whenever the compost is dry. Frequent syringings not only encourage growth, but keep the thin leaves free from red spider, which, if there are any about, will be sure to attack this plant.

Ornithocephalus grandiflorus.—This species is rarely seen in collections. A plant is now in bloom at Burford, with several spikes of white and green flowers, which, on their first opening, appear like Lily of the Valley. The spikes of bloom will keep fresh for about two months, and are always attractive. The plants should be grown in a shady part of the intermediate house, either upon the stage, or suspended near to the roof glass. They thrive very well when subjected to the same kind of treatment as is generally afforded the cooler-growing *Cypripediums*. Use a compost of fibrous peat, chopped Sphagnum-moss, and leaf-mould.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardlee, Sussex.

Watering.—The month of July is usually hot and often very dry. This is not the case at the time of writing, but in the event of a change to characteristic summer weather, the watering of various plants in the flower garden, including many trees and shrubs, may need to be carried out. Even in showery weather plants in vases need to be watered, as most of the rain is thrown off by the spreading foliage. Strong-growing plants in such confined root areas should be given liquid manure occasionally. Certain hard-wooded plants that are often cultivated beneath the shade of large trees are also liable to get very dry in showery weather. When such fine-rooted plants as *Rhododendrons*, *Kalmias*, and *Camellias* become thoroughly dry, pains should be taken to see that the roots are thoroughly soaked with water, for in a dry condition the ball is apt to resist water. Take a little soil from around the stem of the plant and form a sort of shallow basin, and into this pour the water. It may be necessary in some cases to make holes in the ball by inserting a sharply pointed stick.

Bedding plants.—Many of these will need much attention in such matters as tying, pinching and pegging down of the shoots. Remove all faded flowers as soon as they are observed, and do not allow the plants to form seed-pods, as this would prevent them producing a succession of blooms. Dahlias must be protected from earwigs. Inverted pots partly filled with hay and secreted amongst the foliage, will serve as traps for catching this pest, but various kinds

of traps may be employed, it being important to destroy as many earwigs as possible.

Alpine plants and the rock-garden.—Prune any of the shrubs on the rock-garden that have become too large for their position, or mark them with a distinguishing label for transplantation in the autumn. Attend to the watering of small Alpine plants in the crevices of the rockwork, for in many of these positions rain seldom penetrates. Prick out seedlings of any Alpine plants as soon as they are large enough to handle. Continue propagation either by seeds or cuttings in order to maintain a stock of the species and varieties. Sow seeds of all the rarer species of *Primula* as soon as they are ripe. The seedlings from these will make strong plants by autumn if given careful attention. Remove all weeds from the rock-garden. As soon as the flowering season is past, regulate the groups of each plant in order to prevent any from overcrowding other plants or extending beyond the convenient size. Most of the species and varieties of *Dianthus* may be propagated from cuttings; by this method one can be sure that the purity of the stock is maintained. Among the *Campanulas* now blooming *C. muralis* (*Portenschlagiana*) is one of the best. It is a densely-tufted plant, with bright green leaves and pale blue flowers. *Lithospermum prostratum* is almost always in bloom, the rich blue flowers having an excellent effect in masses. *Saxifraga longifolia* ceases to live after flowering; the plant, therefore, should be removed. When this has been done, add a little fresh soil and plant another specimen. If it is found difficult to make the soil adhere in the smallest crevices of the rockery, a little cow manure may be mixed with the soil.

Spring-flowering plants.—Continue to prick out seedlings of Wallflowers, Stocks, Pansies, Violas, and other spring-flowering plants as soon as they are ready. Do not allow any seedlings to become drawn and weakly before transplantation.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Pineapples.—Preparations must be made without delay for potting the main batch of Queen Suckers. It is important that the plants should become well established before autumn. A glass-covered pit, where there is very little head room, and where the conditions can be kept moist easily will suit them well until they need repotting. After thoroughly cleansing the pit, a hotbed of Oak leaves mixed with a little stable litter should be put in ready to receive the plants as soon as they are potted. The temperature of the bed should be kept at about 90° until the suckers are rooted, when it may be allowed to decline to 85° or even 80°. In whatever kind of structure the plants are placed, it is essential that the beds should be so arranged that they may be near to the glass after the pots have been plunged. The compost should be just moist when used for potting, being neither too wet nor too dry. All that is required for potting them at this stage is good fibrous loam, pulled to pieces by hand, shaking away the fine particles. The sizes of the pots must be regulated by the size of the suckers; but pots having a diameter of 6 or 7 inches will generally be found suitable. They must be well drained, so that the water will pass away quickly. In preparing the suckers for potting, several of the bottom leaves should be removed and a small portion cut off the base of the stem. Place the suckers fairly deep in the pot, and make the soil very firm about them. Assuming that the soil is in the proper degree of moisture at the time it is used, the plants will not require to be watered until they have made roots. The atmosphere must be maintained moist at all times, and the plants must be syringed two or three times each day with tepid rainwater. Until the suckers have made roots, they should be shaded from bright sunshine. Later, more air must be admitted to the frame, and less shading employed. Fire heat should be dispensed with whenever the weather conditions will allow of this being done, but there must always be sufficient heat maintained in the water pipes to prevent the atmospheric temperature falling below 70°.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Hydrangeas.—Young plants of *Hydrangea hortensis* that produce single heads of flowers being the most useful for forcing purposes, a stock of cuttings should be inserted each year. For this purpose select short-jointed, strong shoots which have not flowered. If these are fairly matured they will root readily in an unheated frame; but if they are soft, they should be taken off with a heel of old wood attached, and the cutting pots or boxes placed over a mild bottom heat. Larger plants capable of producing two or more heads of flowers may be obtained easily by growing on these small plants after their flowers have faded, in which case the plants should be cut back to the first pair of plump buds below the flowers and encouraged to grow freely. When growth is completed, allow the plants all the air and sunshine possible so as to thoroughly mature their shoots.

Achimenes.—Plants coming into flower should be grown in as cool a structure as they will succeed in; but a certain amount of humidity in the atmosphere is still necessary, and the plants must be shaded during the hottest part of the day. Weak manure water may be given to plants about to flower. Later batches should be afforded as much light as can be safely admitted, so as to induce sturdy growth.

Violets.—Violets intended for culture in frames must be carefully attended to during hot weather, or red spider will infest the leaves. To prevent this, keep the plants uniformly moist, and syringe them every day with clear water. Occasionally they may be syringed with weak soot-water or quassia infusion. All runners must be removed as soon as they appear, and the Dutch hoe should be frequently used. The present is a good time for overhauling the Violet frames, carrying out any needed repairs, and giving the woodwork a coat of paint.

Richardias.—Plants of *R. africana* in pots should now be kept quite dry at the root, and it is a good plan to turn the pots on their sides leaving them facing to the south. *R. Pentlandii* and *R. Elliotiana* may be placed in a sunny frame and gradually dried off: in a short time they can be stood in the open and treated as the common *Calla*.

Euphorbia (Poinsettia) pulcherrima.—These plants may now be placed for the summer in cold frames. If the tops of old or tall plants are inserted as cuttings they will furnish dwarf plants with heads but little inferior in size to those of the others. The simplest plan is to cut the stems half-way through, and in about a week or ten days, when the cut portion has callused, sever the remainder and insert the cutting in the ordinary manner.

THE KITCHEN GARDEN.

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

Aphides.—I have rarely known these pests so troublesome as they have proved during the present season. Nearly all kinds of plant life are infested, particularly vegetables. Broad, Runner and Dwarf Beans are severely attacked, and it has been necessary to apply remedies frequently. Among the many suitable insecticides, quassia extract and soft soap are two of the most simple, effective and safe to use, if applied at proper strength. The plant should be syringed with the insecticide during the evening, and be given a thorough washing the following morning with soft water.

Turnips.—This season is very favourable for early Turnips, the unusually cool weather with frequent showers proving suitable for their growth. The quality, too, has been very fine. Successional sowings should be liberally thinned and the surface soil frequently stirred. Stimulants in the way of artificial or patent manures should be applied to poor land in showery weather. Small sowings of Snowball, Jersey Lily or Red Globe should be frequently made during the next month in the coolest part of the garden. The surface must be finely broken and the seed sown in shallow drills. After raking in, cover the surface thinly with freshly-cut lawn mowings.

Cucumbers.—Any plants in the houses, frames or pits which from any cause are unsatisfactory

should be rooted out, and the whole of the soil and material taken away. A fresh start may then be made with young plants. There is still plenty of time to produce good crops before the short days arrive. Plants growing satisfactorily and now in full bearing, if not overcropped, will continue to give good results for many weeks to come. Too frequently these plants become prematurely exhausted by an excess of foliage, over-cropping; or allowing the fruits to remain longer on the plants than is necessary. The fruits should be taken off as soon as they attain sufficient size, and be put in a cool place, and the stalks immersed for a quarter of an inch in fresh water. Give the borders a surface dressing with some fresh material containing a little fertiliser about once a fortnight. See that the roots are kept thoroughly supplied with water and diluted liquid manure, applying the manure water at every alternate watering. Fumigate the plants occasionally with a nicotine vaporiser.

Tomatos.—Owing to the lack of sunshine, Tomatos have made little progress out-of-doors; but, provided the plants have been given proper attention, they should produce good results if the weather is good in late summer and autumn. See that the plants are secured either by staking or nailing. Remove all side growths and decaying leaves, and if the leaves are very strong, shorten them slightly. Dust the ground between the plants with finely-slaked lime, and make frequent applications of sulphur to the foliage.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Apricots.—In this neighbourhood Apricots are a deficient crop. In this and similar cases the best must be made of the fruits the trees bear. Do not allow any of them to become shaded by foliage, but pinch off a few leaves around each if this is necessary. Woodlice and earwigs, being destructive to Apricots, traps must be set for them. Such traps may be formed of pieces of Broad Bean stalks, or small pots partly filled with moss. These and any other kind of trap employed should be frequently examined in order to destroy any insects they contain. Secure the shoots to the wires and pinch out the secondary growths at a point beyond the first leaf. Bear in mind that trees growing against walls may require watering at the roots, even when this is not the case with trees growing in the open garden. Attend to the mulchings and renew any that may be necessary.

Peaches and Nectarines.—Continue to train the shoots of Peaches and Nectarines and pinch the lateral growths so that the fruits will be the better exposed to sunshine. If any shoots are noticed to be extra strong, it will be better to cut these out, as their presence is apt to rob the weaker shoots. If any of the trees have failed to fruit this season, advantage should be taken to cut out any old wood that can be spared, retaining only sufficient to furnish the space thinly with a moderate length of new growth, which is necessary for fruiting next season. Such thinning out of Peach and Nectarine shoots is indispensable in the case of trees growing out-of-doors, for unless the wood is perfectly ripened each season, it is impossible to obtain satisfactory crops of fruits. Peaches and Nectarines having now passed through the critical stoning stage, it may be assumed that the fruit still on the trees will ripen. Therefore, the cultivator will be able to determine whether any further thinning is necessary. Such thinning should be carried out without delay. Established trees now bearing full crops of fruit should be given occasional applications of liquid manure, or chemical manure, until the fruit commences to ripen, but not after that stage is reached. Healthy trees in full bearing, with their roots in a properly drained border, require large quantities of water, and the fruits will not develop to their best unless this is given, particularly during the time the fruits are swelling.

Loganberries and Blackberries.—Thin out the young shoots to the required number and secure them to stakes that they may not be damaged by wind. Train them as far as possible away from the fruit-bearing wood, in order to avoid shading the fruits. Loganberries being later to ripen than Raspberries, they are valuable for

making tarts and other purposes. The plants are usually very prolific, and they are certainly so this season. If bright sunny weather should succeed the weather we are now experiencing, they are like to be a very heavy crop.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

The use of coal tar in the construction of footpaths.—Notwithstanding the advantages accruing from the use of asphalt or tar macadam as a surfacing material for footpaths in public places, there seems to be considerable prejudice on the part of gardeners against this material. When writing on the subject of path construction they still give details which only apply to ordinary gravel paths. Nevertheless, from the standpoint of health, comfort and economy, an asphalt walk is decidedly superior to one formed of gravel, and for these reasons we are, in this city, laying down paths of this character whenever and wherever opportunities arise.

Some two years ago I had occasion to mention in these columns a simple and efficient method of securing the benefits of an asphalt surface without incurring a very heavy outlay. This end was secured by sprinkling the walks with a coating of tar and afterwards covering them with fine gravel and rolling it into the tar—a process that, in a modified way, is now being carried out on the public highways in many towns in this country. Since that period we have adopted a slightly different and more expensive method of treating our park walks which is even more satisfactory—because more lasting—in its results. Instead of sprinkling the road surface with tar and then coating it with gravel, the tar and gravel are now mixed together before being spread on the paths. By doing this a material of nearly uniform cohesiveness is produced.

Details of the process.—The following details relative to this process may be of interest to those who desire to experiment in this direction: The gravel—a finely-broken limestone—is passed through a $\frac{1}{2}$ -inch screen, and the separated rough and fine gravel are kept in distinct heaps till required. To ensure success in mixing it with the tar, it is essential for the gravel to be thoroughly dry, and with this object in view it is, if practicable, advisable to have it stored and mixed under the cover of a shed. The tar must be applied to the gravel whilst the former material is at the boiling point, and for this reason a tar-boiler is an absolute necessity for carrying on this work. The boiling of tar, if not properly attended to, is not merely a difficult but a very dangerous process, for it may run over the sides and reach the furnace. By placing a piece of slack lime, about the size of a large hen-egg into a boiler containing about 20 gallons of tar, just as it reaches the boiling point, the ammonia gases are set free and all danger of boiling over is obviated. We find that a cube yard of fine gravel takes about 17 gallons of tar, while the rough only takes about 11 gallons. The gravel is turned over and stirred about while the boiling tar is being poured over it until it is thoroughly and evenly mixed, after which it is stored in a large heap until required for use. It is found to be an advantage to keep it stacked in this way for a few days rather than to take it out fresh and use it at once. In the latter case the tar is liable to exude from the surface and cause annoyance, whereas in the former it does not do this after being stacked for a time. The path over which this mixture is to be laid must first of all be "picked" up, remade, and slightly rolled. The rough, tarred gravel is then spread over it in a layer about $\frac{3}{4}$ inch in thickness and compressed together by means of a heavy roller. Fine gravel is thereafter laid for a depth of 2 inches over this, levelled with a steel rake and then thoroughly rolled and the surface covered with sand or fine limestone grit. By the constant application of a wet mop to the surface of the roller the tarred gravel does not adhere to it, and an even, smooth surface is given to the walk.

The cost.—Assuming the price of gravel to be 5s. 6d. the cube yard, the tar 3d. per gallon, and the rate of pay for labourers 4s. 2d. per day, the cost of making and laying tarred gravel complete is about 10d. per square yard.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 20—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. P. H. Biffen, on "Mendelism and Barley"). Roy. Scottish Arboricultural Soc. Annual Exh. at Stirling (4 days). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, JULY 21—

Nat. Carnation and Picotee Soc. Sh. at Hort. Hall, Westminster. Truro Fl. Sh. Liverpool Hort. Assoc. Sh. Manchester Rose Sh. Cardiff & County Hort. Soc. Coming-of-age Exh. (2 days).

THURSDAY, JULY 22—

Roy. Ulster Agric. Soc. Sh. and Hort. Exh. (2 days).

FRIDAY, JULY 23—

Nat. Sweet Pea Soc. Exh. at Hort. Hall, Westminster. Southampton Roy. Hort. Soc. Carnation Exh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—63.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 14 (6 P.M.): Max. 72°; Min. 59°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 15 (10 A.M.): Bar. 80.1; Temp. 69°; Weather—Sunshine.

PROVINCES.—Wednesday, July 14 (6 P.M.): Max. 65° Bury St. Edmunds; Min 60° N. Scotland.

SALES FOR THE ENSUING WEEK.

FRIDAY—

Imports of Dendrobis, Disas, Odontoglossum crispum, &c., also Established Orchids, at 12.45; Japanese dwarf Trees, also Tree Ferns, &c., at 3, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

The Life and Death of Seeds.

To all who have to do with plants, either economically or scientifically, the longevity of seeds is a question of interest and significance. In the literature of the subject is recorded a long series of more or less credible accounts of natural cases in which great longevity is attributed to seeds, even up to thousands of years. Only within the last two years, however, have we obtained unimpeachable data upon this subject. Prof. Becquerel in Paris and Prof. Ewart in Melbourne have lately published germination tests made upon the old seeds stored in museums since known dates. Of seeds older than 25 years, about 10 per cent. of the species gave positive results. The records are held by *Hovea linearis*, 105 years (Ewart), *Cassia bicapsularis* 87 years old and *Cytisus biflorus* 84 years old (Becquerel). In each case two or three seeds germinated out of ten that were tested.

Both observers notice that the species of greatest longevity belong mostly to the Leguminosæ and have "hard seeds," that is seeds in which the testa is provided with a thick, continuous cuticle. Such seeds only admit water and swell up after they have been pricked or filed or stripped of their cuticle by strong sulphuric acid. The fact that seeds thus closely sealed up show the greatest longevity suggests that protection from some external influence is a factor in the preservation of viability.

Becquerel has established the further interesting point that not only are these "hard" integuments impervious to air, but that the *dry* seed-coat (testa) of an ordinary Pea or Bean is also quite air-proof: he found that no air was sucked through the seed-coat even in two years by a vacuum; the micropyle also is naturally hermetically sealed in some way and allows no air to pass. But if the air in contact with the testa is saturated with water vapour, then the testa slowly absorbs water and presently begins to allow air to pass by diffusion. As these phenomena hold with uncuticularised seed-coats it is concluded that pure cellulose walls are impervious to air when completely dried.

These dry integuments are also quite imper-

vous to other gases, and to ether, chloroform and alcohol; the germ in the seeds is thus hermetically sealed beyond the reach of poisons, and this explains why seeds are not killed when kept for months in ammonia, sulphuretted hydrogen, alcoholic corrosive sublimate and other noxious substances. Such results in the past have been held to prove that the dormant protoplasm of the seed was in some special resistant, insensitive condition. Now we know that the protoplasm of the germ is not reached unless the testa be perforated; if this be done, then the seeds never survive contact with such poisons.

A philosophical question of great significance for our conception of the nature of life underlies these enquiries into the longevity and vitality of seeds, namely the question whether it is possible for vital changes to be absolutely arrested without death—irrevocable death—resulting.

Some observers have held that the resting seed is in a condition of retarded vital activity; others that all vital activity is completely arrested. It is clear, even on the former view, that any vital changes in the seed are very slight and slow, so that experimentally it becomes very difficult to decide between these views; between no change and a just perceptible change. If it could be established that the living seed passes, on drying, into a state of complete rest, a state of "static equilibrium" as opposed to the dynamic equilibrium of the ever-changing living cell, then this important, fundamental question would be finally answered.

The resistance of resting seeds to extreme cold and to extreme desiccation supports the view that the protoplasm is here in a state of static equilibrium quite analogous with the condition of a charge of explosive before it is started into action by spark or blow.

Prof. Becquerel's work shows that it is impossible for a seed perfectly devoid of moisture to conduct the gaseous exchange involved in the process of respiration. Some observers have stated that resting dry seeds continuously produce carbon dioxide, while others have failed to confirm this. It now turns out to be chiefly a question of whether the seed contains enough water for its integuments to be permeable to gases. In this connection it must be remembered that so-called dry seeds of commerce contain 5 to 15 per cent. of water, and that it takes months to dry off all this water from them. It seems quite clear that if the seed is completely dried no detectable amount of respiration takes place within long periods of time.

As regards cold, all observers are agreed that the vitality of ordinary dry seeds is quite unaffected by exposure to the extreme cold of liquid hydrogen—250° C. It is generally held that all chemical change is in abeyance at such a temperature, and that, therefore, the seed cannot be in any other than a state of static equilibrium. This would seem to be true of such chemical changes as are essential parts of vitality, though, of course, a few violent chemical reactions do occur at this low temperature.

According to the modern conception of the relation between temperature and chemical change, with falling temperature every reaction will go slower and slower, but however low the temperature, change will be only retarded, not absolutely stopped. The resistance to cold cannot, therefore, finally settle this question.

We are, indeed, forced to conclude that the resistance of dry seeds to temperatures as high as 100° C. or even 120° C. favours the view of static equilibrium. If the protoplasm of resting seeds is entirely at rest in static equilibrium, then the viability of the seeds should endure indefinitely, like the explosibility of a properly stored charge of powder. It is, however, notorious that in a sample of stored seeds the percentage of germination steadily decreases. To what can we attribute this loss of viability? It is suggested that just as the proper working of a charge of powder may be destroyed by accidents of storage such as dampness, so in the case of stored seeds the falling off is due to changes wrought in them by oxidation or hydration.

Seeds are very hygroscopic and absorb water in direct proportion to the humidity of the air. Jodin has recorded the varying weight of seeds in different meteorological conditions, and one of the few, changing factors in an ordinary resting seed stored in air must be this alternate taking up and giving off of water. Possibly the ceaseless, slight molecular changes involved in this process slowly disorganise the viable protoplasm and in time cause the death of the seed. From such changes a "hard" seed would be exempt. It is therefore probable that complete desiccation and preservation in a dry environment are necessary conditions for testing the maximum longevity for any plant whose seeds are among the majority in which the testa is not impermeable to water.

Another change that goes on slowly but progressively is oxidation, oxidation of a purely chemical, non-vital character. Such chemical oxidation of the substances in the cells of the resting embryo might, in time, destroy the organisation needed to maintain viability, even if the organisation were, as regards vital changes, in a state of static equilibrium all along. If there is this risk, analogous to the rusting of machinery, then critical experiments upon the longevity of seeds must be carried out in the absence of oxygen as well as of moisture.

That stored seeds should in time die seems to us a natural thing, but it must not be forgotten that the death of seeds is biologically on quite a different plane from the death of individual plants. The natural death of the bodies of plants is an advantageous condition for the race that arose in the course of evolution and has become fixed. The death of seeds is not natural in this sense, not the outcome of internal processes, but it is accidental in the strict sense, brought on from without.

In order to test the longevity of seeds under conditions which prevent either of these slow changes, Prof. Becquerel has carefully dried seeds (by keeping them, after perforating the testa, at 45 C. in contact with strong desiccating agents for months), and has then sealed them up in glass bulbs in perfect vacua. These experimental seeds have been formally deposited with the Bureau of Standards in Paris, and their vitality is to be tested every ten years. Should they show no mortality, it is suggested that in this way standard plants may be handed down to remote posterity for comparison with the forms that evolution has produced in many generations of descendants. Only by such organised experiments as these, planned to endure beyond the life of an individual investigator, can these important questions be finally solved.



[Photograph by A. J. Campbell.]

FIG. 20.—JUBILEE GROUP OF R.H.S. FLORAL COMMITTEE.

- Front row (left to right): W. CUTHBERTSON, GEORGE GORDON, Rev. F. PAGE-ROBERTS, GEORGE PAUL (Vice Chairman), H. B. MAY (Vice Chairman), W. MARSHALL (Chairman), C. E. SHEA (Vice Chairman), J. T. BENNETT-POE (Vice Chairman), J. DOUGLAS, C. T. D'UKEY, and W. T. WARE
- Second row: E. T. COOK, E. H. JENKINS, W. G. BAKER, C. BLICK, W. JAMES, G. REUTHE, W. BAIN, E. MAWLEY, R. W. WALLACE, C. R. FIELDER, C. E. PEARSON, R. C. NOTCUTT, J. GREEN, J. WALKER, W. J. BRAN, R. C. R. NEVILL, A. KINGSMILL, E. A. BOWLES (Vice Chairman), W. MILES (Secretary), and J. DICKSON.
- Back row: A. TURNER, H. J. CUTBUSH, J. F. McLEOD, W. JENNINGS, N. F. BARNES, H. J. JONES, W. HOWE, T. W. TURNER, W. P. THOMPSON, R. HOOPER PEARSON, and JAMES HUDSON.

Gardener

R.H.S. GARDENS CLUB.—The association of Past and Present Students and Members of the R.H.S. Gardens Staff assembled for their second annual meeting at Wisley Gardens on Saturday, the 10th inst. Old members and the party from Vincent Square were met at Weybridge by conveyances, and enjoyed a pleasant ride through the beautiful commons and lanes to the gardens. The day, though overcast in the morning, proved delightful in the afternoon, and the party—several of them for the first time—inspected the gardens. Wisley is looking extremely beautiful just now, and especially fine are varieties of the Japanese Iris (*I. Kämpferi*), a winding ditch being a trail of brilliant colouring for a considerable length. In the wood a batch of *Lilium giganteum* is just now at its best. On all sides *Spiræa Aruncus* was brightening the surroundings with its huge wavy plumes of white blossoms. A notable feature was the trial of Pæonies, although many of these flowers had been greatly damaged by the rains. In the plant houses Cannas were making a glorious show, but most admiration was expressed for the admirable crop of Grapes and the great vigour of the vines. A party of about 50 or 60 assembled in the laboratory for tea, under the chairmanship of the superintendent, Mr. S. T. WRICHT, following which the business part of the meeting was proceeded with. The Rev. W. WILKS was appointed president for the year, and the members of the committee and other officers were also elected. It was proposed to hold these annual gatherings in a fresh place each year, but the general opinion was that Wisley, at any rate for the present, should be the venue, but the rules were altered enabling the committee to make the selection, with the understanding that it be Wisley for 1910. The secretary is Mr. R. J. WALLIS, Cudworth, Newdigate, Surrey.

"THE BOTANICAL MAGAZINE" for July contains descriptions and illustrations of the following plants:—

CEOLOGYNE VENUSTA, tab. 8262.—This species of *Cœlogyne* was first described by Mr. ROLFE in the *Gardeners' Chronicle* in 1904, vol. xxxv., p. 259. The species was introduced from South-west China by Messrs. SANDER & SONS, St. Albans, and a plant flowered in 1904 in the Glasnevin Botanic Garden. The flowers are pale yellow, with white lip on which the lateral lobes and centre of mid-lobe are yellow. It succeeds in conditions usually afforded Himalayan *Cœlogyne*s.

ALOË RUBROLUTEA, tab. 8263.—This tropical South-west African *Aloë* flowered in November, 1907, in the late Sir T. HANBURY'S garden at La Mortala. Mr. ALWIN BERGER, who describes the species, states that this is probably the first time the plant flowered in Europe. *A. rubrolutea* is said to be plentiful in the neighbourhood of the Etasa Lake and on the mountains of the Klein Windhoek. Mr. DINTER reports the stem as reaching 8 feet high. In the wild state, therefore, the plant appears to come nearest in size to *A. dichotoma*. The species is not quite hardy, even at La Mortala, but it is a quick-growing plant, and presents no cultural difficulty apart from its sensitiveness to cold. It is a very ornamental greenhouse plant, and should, if possible, be given a place in the border with rich but gravelly soil. The flowers are brilliant red, with yellow markings. They are produced on a much-branched panicle.

RUBUS CANADENSIS, tab. 8264.—Mr. ROLFE describes this species as one of the most distinct and attractive of the many species of *Rubi* recently brought into cultivation. The Kew example was presented to the national collection by Professor SARGENT in 1902, and has since its introduction been cultivated under the name of

R. Millspaughii, proposed by Dr. BRITTON. Professor BAILEY has, however, definitely identified it with the true *R. canadensis* of Linnaeus. It is popularly known as the "Thornless Blackberry." It is believed to extend in a wild state from Eastern Canada through the highlands of New England, New York, and Michigan, to the mountains of North Carolina. In growth the plant resembles the common Raspberry, forming sturdy, erect stems 6 feet or 7 feet high. The flowers are white, and are produced in June in large racemose inflorescences.

PYRUS RINGO, tab. 8265.—The name Ringo, we are told by Dr. STAFF, first appeared in SIEBOLD'S *Catalogue raisonné* of 1856, and it was originally described by WENZIG in *Linnaea*, vol. xxxvii., p. 37. It is thought by SCHNEIDER that *Pyrus Ringo* represents a cross between *Pyrus spectabilis* and some form of the common Apple. It is a Japanese tree, and has long been in cultivation at Kew, where it is now about 14 feet high. No form of *Pyrus* in the Kew collection is better worth cultivation for the beauty of its fruits than *P. Ringo*. These usually hang from the branches in great abundance, and they develop an exceedingly bright yellow colour. There appears to be a variety which exhibits a pyramidal habit of growth, and others with more glabrous leaves than those of the type.

MAHONIA ARGUTA, tab. 8266.—This new species of *Mahonia* was first described in the *Gardeners' Chronicle* (1908, vol. xliii., p. 82) by Mr. J. HUTCHINSON, who is responsible for the present description. The figure published in the *Botanical Magazine* was prepared from a plant which has been in cultivation in a warm house at Glasnevin for over 30 years, and had developed into a tall, lanky shrub with terminal leaf tufts. In 1906 the plant was removed to a cool house and during the summer was placed out-of-doors, being again brought under glass in October. It responded to the new treatment by flowering in May, 1907, and again in 1908, as a result of a repetition of the treatment of wintering in a cool, airy house and plunging in the open air during the summer. The species is not likely to prove hardy in this country except in the milder parts of Ireland and in the south-west of England, and it is possible that even in these places it may require protection in winter. The flowers are pale yellow and the fruits dark blue.

MR. JAMES METHVEN.—This gardener retired from Blythwood recently after 45 years' service. It is satisfactory to record that, after so long a period of employment, Lord BLYTHWOOD, his late employer, has granted him a pension. Mr. METHVEN has settled at Kennoway, Fifeshire, his native home, and is still in the enjoyment of good health. We trust he may be spared long to enjoy his well-earned rest and pension.

MIDLAND AGRICULTURAL AND DAIRY COLLEGE.—The annual meeting will be held on Monday, July 26, at 3.15 p.m. The Duke of PORTLAND will address the meeting and present the diplomas and certificates gained during last session.

BIRTHDAY HONOURS.—Among the names included in the list of honours announced on the occasion of the KING'S birthday was that of Dr. SCHLICH, F.R.S., who has been appointed a Knight Commander of the Order of the Indian Empire (K.C.I.E.). All interested in forestry are aware of the distinguished services which Dr. SCHLICH has rendered to that science. Another name in the honours list was that of FRANCIS GALTON, F.R.S., who receives a knighthood. Students of heredity will rejoice that this distinction has fallen to one who has devoted his life to the investigation of the most important and most difficult problem in biological science.

PUBLIC PARK FOR WREXHAM.—The Town Council of Wrexham recently invited competitive designs for laying out a public park. We are informed that the premium for the best design has been awarded to Messrs. J. CHEAL & SONS.

GROCERS AND THE POISONS AND PHARMACY ACT.—The report of the Parliamentary Committee of the Grocers' Federation recalls that during the time the Poisons and Pharmacy Bill was before Parliament an effort was made to extend it so that the "right" of patent medicine licence-holders to sell proprietary medicines containing scheduled poisons might be restored. A statement was submitted to Parliament showing the public convenience which this permission would prove, while suggestions were made for safeguarding the public interest. "This right," says the report, "was not, however, conceded, while Parliament has now given the right to persons other than registered chemists to sell much more dangerous preparations, such as sheep-dips and weal-killers." The report goes on to say that as these articles are much in demand at the stores of country grocers the Federation has issued to all the associations a booklet containing full particulars as to how licences for the sale of these articles may be obtained. *The Pharmaceutical Journal and Pharmacist*.

THE BOTANICAL GARDEN AT RIO DE JANEIRO.—Mr. J. BARBON RODRIGUES, junr., has been appointed director of the Botanical Garden, Rio de Janeiro.

BOTANICAL EXHIBITS AT THE ROYAL SOCIETY CONVERSAZIONE.—At the conversazione, held by the Royal Society at Burlington House on June 24 a number of objects of botanical interest were exhibited. These included specimens shown by the Director of Kew and by Dr. O. STAFF, F.R.S., of the wood *Lignum nephriticum*, plants of *Raphionacme utilis*, and a sample of rubber prepared at Kew from tubers of this plant. Photographs of the transverse sections of timbers to serve as means of timber identification (exhibited by R. A. ROBINSON); alien aquatic plants from the Reddish Canal, near Manchester (shown by Professor F. E. WEISS); and preparations of fossil plants from Japan, collected and exhibited by Dr. MAVIC STOPES.

PROFESSOR DR. PAUL SORAUER.—This eminent plant pathologist and professor at the University of Berlin celebrated his 70th birthday on June 9. He is the author of the *Handbuch der Pflanzenkrankheiten*, now appearing in its third edition (PAUL PAREY, Berlin), and other works.

TRAPPING MOTHS.—The periodical havoc which is wrought by caterpillars in defoliating forests in Germany has led German foresters to seek a new method for dealing with these pests. According to *Chambers's Journal*, December, 1908, the well-known attraction of the moth to the candle has supplied the idea for the novel procedure which seems to have been eminently successful in its application. A powerful electric searchlight is set up some half a mile from the forest, and beneath the light a funnel-like vessel, furnished with exhaust fans, is placed in position and connected with a chamber for the reception of the moths. The light is turned on to the forest. The moths leave its darkness, wing their way to the light, are caught in the draught of air set up in the funnel-shaped receiver and swept into the trap prepared for them. The success of the device may be gauged by the fact that on one night alone 3 tons of moths were caught, and so prevented from producing the eggs from which the plague of caterpillars would have hatched.

THE ROYAL HORTICULTURAL SOCIETY'S FLORAL COMMITTEE.—To further mark the jubilee of this Committee, the members, at the invitation of the chairman, Mr. WILLIAM MARSHALL, V.M.H., were photographed as a group on the first day of the Holland Park Show. We now reproduce this interesting photograph in fig. 20. All the members were present excepting Mr. JAMES HUDSON and Mr. J. W. BARR. Our artist has been able to place Mr. HUDSON with his companions, but Mr. BARR having gone to Scotland immediately after his recent wedding, no photograph of this member could be obtained in time for our purpose.

NURSERY FIRM EMPLOYES OUTING.—A party of about 150 persons comprising members of the staff of Messrs. CLIBRANS, Altrincham and Manchester, held their annual picnic on Saturday, July 10, a visit being paid to Colwyn Bay. The weather was gloriously fine. Colwyn Bay was reached at 8.45 a.m., and after breakfast visits were made to places of interest in the district, including The Dingle, Nant-y-glyn Valley and the Pwllerochan Woods. At the luncheon Mr. W. R. CLIBRAN said he was delighted to be present at so enjoyable an outing. The party left Colwyn Bay at 9.20 p.m., arriving home about 12.30 p.m.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EARLY WASPS.—I have this day (July 13) destroyed six nests of wasps in the pleasure grounds here, an exceptionally early period to find so many of these pests. Has the comparatively dry, cold winter favoured the queen wasps, as we had very few nests last summer. Cyanide of potassium in a liquid form poured into the holes is the best remedy. *J. Mayne, Bicton, Devon.*

CARNATIONS LATE THIS SEASON.—No doubt many other growers of Carnations of the Souvenir de la Malmaison type have experienced the same difficulty as Mr. Grubb (see p. 19). Our main batch of these plants is quite 14 days later than usual, the variety Princess of Wales being especially slow in developing. A few blooms may be had at almost any season by introducing selected plants into a warmer temperature, but to attempt to hasten the flowering of the main batch usually results in many ragged blooms, composed chiefly of outer petals and a malformed centre. *Foreman, Ingestre Gardens, Stafford.*

PHYTEUMA COMOSUM.—A plant of this rare species has grown well at Leonardslee this season, and has borne 26 inflorescences. The blue and white spherical heads of flowers show to singular advantage in the clefts of a large rock. The plant is somewhat difficult to establish, but afterwards it succeeds very well. There are nearly 20 species and varieties of *Phyteuma*. In addition to the one mentioned, we have four others, viz., *P. orbiculare* (which is now in flower), *P. Michellii*, *P. humile* and *P. Sieberi*. *W. A. Cook, Leonardslee Gardens, Horsham.*

CHLOROSIS IN VINES.—A few days since I witnessed the result of an interesting experiment in a roomy, span-roofedinery at Byram Park, in this county. A few months ago it was decided to inarch a rod of last year's growth of Cannon Hall Muscat on to a vine of Gros Colmar growing at one end of theinery in question, the well-known "bottle" process being practised. In due time the vine broke into growth, and the union was completed, young shoots being produced into the water. After growing some 3 or 4 feet, the leading growth showed signs of chlorosis, the young leaves turning yellow, and there were also signs of the well-known rust on the point of the growth. Mr. Taylor, the gardener, decided to put a few grains of sulphate of iron into the water contained in the bottle, with a view to checking the disease. In a few days there were

signs of improvement in the colour of the young leaves, and a gradual disappearance of the rust. The rod has now reached the apex of theinery roof, and is, to all appearances, quite healthy. *Yorkshire Gardener.*

SPECIMEN FUCHSIAS.—In the opinion of many visitors to the recent Holland Park Show, one of the most interesting of all exhibits was the magnificent group of specimen Fuchsias shown by J. Friedland, Esq., Whiteknights Park, Reading. Altogether, there were half-a-dozen pyramidal-shaped specimens, some 10 feet high or thereabouts, each plant being laden with blossoms. The pots were completely hidden by the lowermost branches, with their drooping masses of flowers. Such an exhibit is rarely seen in London, but in the West of England specimen Fuchsias may be seen at some of the country shows. With this mode of culture, the

Rhododendrons, except the Alpines, are nearly over, I was struck by the fresh beauty of *Rhododendron maximum*, 12 feet high, loaded with blossoms. The trusses are of medium size, well shaped, and the flowers campanulate, white, with a yellow blotch and maroon spots on the upper lobe, the stigma and calyx very clammy. There are varieties bearing flowers of different shades of rose. The value of this species consists in its late period of bloom. Half the flowers are still unopened; thus the *Rhododendron* season, which began here with *R. × Nobleanum* in January, will have been continuous for seven months. In habit, *R. maximum* is not dissimilar from *R. ponticum*, but at this season, when in bloom, it presents a different appearance from others of the family, owing to the annual growths having shot forth among the flowers, adding to the beauty of the display by their vivid light green. *Herbert Maxwell.*

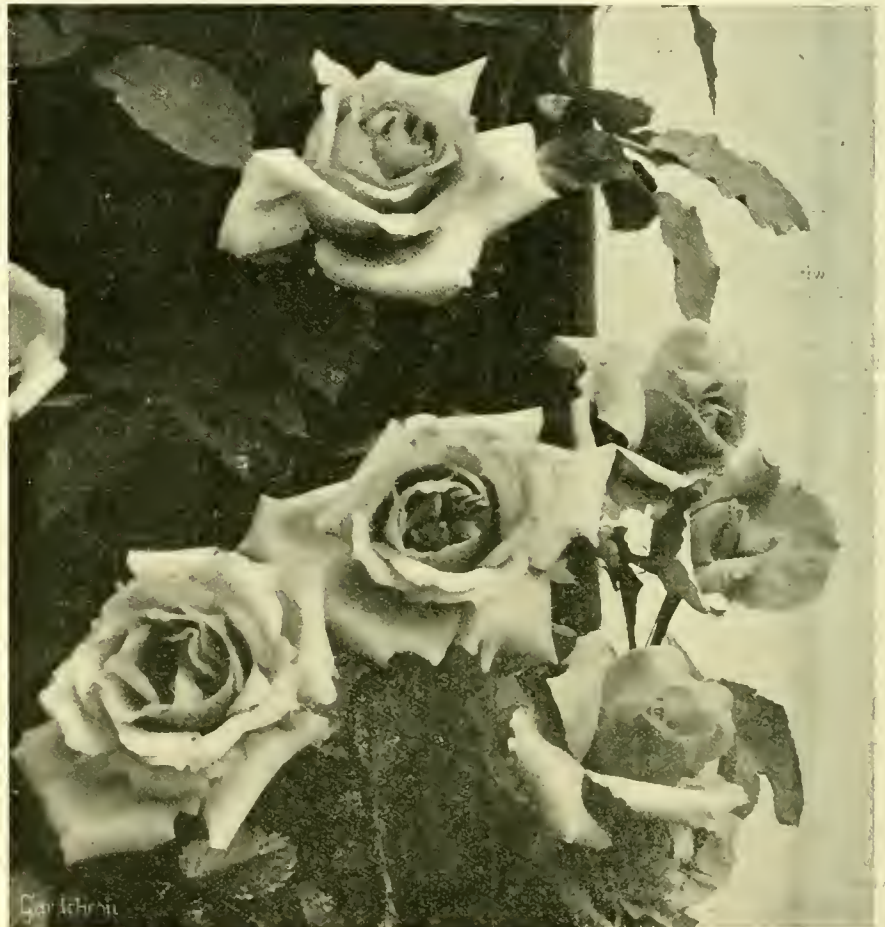


FIG. 21.—NEW H.T. ROSE "LADY PIRRIE"; COLOUR, REDDISH APRICOT WITH GOLDEN SHEEN. (Awarded National Rose Society's Gold Medal, June 2, 1909.)

name of James Lye has been for many years identified, and some at least of those shown at Holland Park were of Lye's raising. A noteworthy item is the fact that double-flowered varieties are not at all popular for cultivating as large specimens. The reason is that they do not flower so profusely as the single kinds, and, furthermore, the heavy, double blossoms are far more liable to drop when moved than the lighter ones. In the description of new varieties, a great feature is usually made of the fact that the blossoms are very large, which is, in some respects, a decided drawback, as they are more sparingly produced, and if one or more drop from a shoot their absence is very noticeable. *W.*

RHODODENDRON MAXIMUM.—This North American species, which received its specific name "greatest" before Sir Joseph Hooker introduced the loftier kinds from the Himalayas, has been eclipsed in popularity by a profusion of brilliant hybrids, and is now seldom planted. Some of us, however, prefer cultivating natural species, and to-day (July 5), when all other

STRAWBERRY GROWING IN HAMPSHIRE.—Respecting *E. S.*'s remarks upon Strawberry culture for market (p. 1), the public may realise to what extent Strawberries are grown in Hampshire when I say that on Monday, June 28, no fewer than 101,000 baskets were sent away from Swanwick, a small station on the Southampton and Netley line, and almost as many on the following Wednesday. Assuming the baskets contained 5 lbs. each, this would represent a total of 252 tons of fruit in one day. This is but one station, and there are at least 10 in the neighbourhood. Then, many growers do not use the railway, but send the fruit direct into the towns. London is the great centre for distribution, but many growers of the best fruit send direct to Glasgow, Edinburgh, Belfast, and other northern centres. Oxford and Winchester consume a great amount of Strawberries, presumably at the colleges. The cross-handle chip basket is generally in use in this district; it has a wider capacity than the wicker basket, therefore the fruit carries better than it would if it were deeper in bulk; the baskets, too, are slightly "springy."

Market men are keenly alive to any improvement to be found in new varieties. For instance, Bedford Champion, one of Laxton's newer varieties, is being tried by the more enterprising of the growers, and with good results. What is required is an early ripening variety of large size, good flavour, and firm flesh, enabling the fruit to travel well. Bedford Champion appears to combine all these points, and, being of vigorous growth, this is also in its favour. The Laxton is valued highly. The plants bear prodigious crops, and in a season like the present they continue to bear for a long time. Royal Sovereign is what is termed the sheet anchor of the growers; it combines perhaps in a greater degree than any other sort all the essential qualities. Leader is immensely popular with some growers who require extra large fruits, but in regard to flavour it does not hold a high position. The best in this respect is still Sir Joseph Paxton, commonly known as "Joe's," but unfortunately this variety does not succeed so well as formerly. Its constitution, like certain sorts of Potatoes and various flowers—Chrysanthemums, for instance—has deteriorated beyond recovery. It is an exception now to find a good breadth of this Strawberry, but where it does succeed it is the best. Noble is so indifferent in its flavour that but few plants are grown, and these on account of their earliness. *E. Molyneux.*

SOCIETIES.

ROYAL HORTICULTURAL.

HORTICULTURAL SUNDRIES AT THE HOLLAND PARK EXHIBITION.

Mr. JOHNSTON, New Park, Cranleigh, showed heavy, light, and medium loams; also peats for potting hard-wooded plants.

Specimens of garden tubs, with and without holes in the bottom, unpolished or unpainted, with and without handles, of brass or iron, were shown by Mr. T. J. ELVIN, who showed tubs of various shapes to fit into angles of buildings, in walks, &c.

THE MEATH HOME OF COMFORT, for epileptic women and girls, at Godalming, showed basket-ware—neatly-made, tasteful models; also trays, crates, trugs, and fruit-gathering baskets.

THE FRENCH CLOCHE CO., Caxton House, Westminster, showed samples of cloches and crates.

Mr. R. T. JACKSON, 171, Piccadilly, exhibited Rose bowls and flower vases in great variety of form. This exhibitor showed preserved fruits. He is an importer of American fancy groceries and fruits in syrup, preparations of table delicacies carried out by two ladies—Miss Martyn of Willowbrook, and Miss Levity, of Rochester, both in the State of New York.

Messrs. W. VOSS & CO., Millwall, London, E., showed Knapsack sprayers, also large and small syringes fitted with nozzles of an ingenious kind, vaporisers for distributing Nicotyl, &c.

Messrs. D. DOWELL & SON, pottery merchants, Ravenscourt Avenue, Hammersmith, were exhibitors of dark-brown, glazed ware, formed after the patterns of Roman pottery unearthed at Silchester, including bowls for growing Narcissus bulbs in water, vases, plant saucers, deep pots for bulb culture, &c.

Messrs. WAKELY BROS. & CO., Bankside, London, showed their famed manure made from spent hops. It is entirely odourless, and is now being used by some of the leading nurserymen.

Messrs. J. WEEKS & CO., 72, Victoria Street, Westminster, exhibited models of culture houses, tubular boilers, &c.

Messrs. T. J. SYER & CO., 45, Wilson Street, London, showed garden tools of all kinds. A practical sprayer at a cheap price is made by this firm, and which is much in use for spraying walls in schools with disinfectants, as well as for spraying insecticides and fungicides on fruit bushes and trees.

Messrs. DE LUZY FRÈRES, showed the National Knapsack sprayer, besides a variety of other kinds; also bellows with short and long nozzles, a simple syringe or sprayer with a long attenuated bent delivery pipe, and the piston of wood—simply a plunger.

Messrs. W. WOOD & SON, LTD., North British Wharf, Wood Green, London, showed punnets in chip, fastened together with thin wire clamps; crates for the same for market purposes, Willow trays, haupers, long, flat baskets for use in gathering cut flowers, spraying implements,

wood-wool, raffia, labels, garden thermometers, and other instruments, labels, springes, sprayers, fumigators, manures of all kinds, and insecticides. Added to these were samples of garden soils, Mushroom spawn, Orchid "fibre," Orchid baskets, &c.—a very important display. Messrs. WOOD & SON had also a great variety of Bamboo canes, garden and park seats, water barrows, watering pots, plant barrows, hose reels, wheelbarrows, &c.

Messrs. J. PITHER, LTD., Mushroom spawn makers, Uxbridge, showed samples of well-made spawn in brick form, and a quantity of excellent Mushrooms.

THE ALPHA FIRE EXTINGUISHER, LTD., ROSS, Hereford, exhibited their speciality for fire extinguishing, together with pipes, nozzles, and bamboo pipes for reaching objects at a height unreachable except by means of a ladder. This apparatus is useful in spraying fruit trees.

Messrs. J. HILL & CO., 100A, Queen Victoria Street, London, E.C., showed fine cutlery, the "Scouts" cooking set, garden tools, also preserving pans and bottles.

Messrs. CHAS. TOOPE & SON, Stepney Square, and High Street, Stepney, E., showed a quantity of heating apparatus for burning oil fuel.

Messrs. CHAS. P. KINNELL & CO. showed the Anglican boiler, which needs no setting of brickwork, and a very powerful, horizontal tubular one.

Messrs. W. COOPER & NEPHEWS, Berkhamsted, showed various liquids for fumigating soils, spraying fruit trees, killing weeds, fumigating plants under glass, &c.

Mr. W. J. ROBERTSON, Cowleigh Road, Malvern, showed the spraying specialities of M.M. Bernard, Maris, and Antoine, of Paris.

Messrs. CORRY & CO., LTD., 13, Finsbury Street, E.C., showed insecticides, dressings, manures, implements, &c.

Messrs. CASTLES, LTD., Millbank, Westminster, S.W., made a good show of their so-called "Man of War" Oak garden furniture.

Messrs. JAS. CRISPIN & SONS, horticultural builders, Bristol, exhibited span-roofed garden frames, and a small greenhouse that exhibited several new features in construction.

The well-known firm of ALEX. SHANKS, engineers, Arbroath, were the exhibitors of moving machines ranging from the biggest horse-drawn to the smallest hand machines.

Span-roofed frames were shown by Messrs. STORRIE & STORRIE, Glencarse, Perthshire.

Tents and seats were exhibited by C. & W. BUSWELL, of Victoria Works, Torquay.

Messrs. T. GREEN & SON, Leeds and London, made a display with lawn mowers both large and small, including the "New Monarch."

Messrs. HEADLEY & EDWARDS, engineers, Cambridge, showed garden seats, bathing tents, garden hose reels, &c.

Messrs. LIBERTY & CO., Regent Street, London, W., showed bordering to flower-beds and parterres in terra cotta.

Messrs. DUNCAN TUCKER & SONS, horticultural builders, Tottenham, London, N., showed greenhouses with span roof of quite simple but strong construction, garden seats, plant tubs, and garden frames. A plant case, called by the exhibitors the "Caloricult" system, was likewise one of Messrs. D. TUCKER & SONS' exhibits.

THE SOUTH LONDON HORTICULTURAL STORES, Woodside, S.E., had a small, select exhibit of garden hose, insecticides, garden appliances, samples of soils, garden seats, summer-houses, &c.

Messrs. RANSOMES, SIMS, & JEFFERIES, Ipswich, showed lawn mowers, petrol-driven, in five sizes, i.e., 2 feet and 3½ feet in width of cutter.

Mr. ALEX. HAMILTON, of 11, Conduit Street, London, showed tubs for garden shrubs, seats, chairs, &c.

Mr. RILEY, Herne Hill, S.E., showed summer-houses, both large and small, and furnished with ornamentation in rustic work.

SOUTHAMPTON HORTICULTURAL.

JUNE 29, 30.—The annual summer show was held on the County Cricket Ground.

For 48 blooms of distinct varieties of Roses there were three competitors. Messrs. B. R. CANT & SONS, Colchester, won the 1st prize easily with large, well-developed blooms, but, as was to be expected, showing damage due to the unfavourable weather. The following varieties were the most noteworthy: Bessie Brown, Mme. Jules Gravereaux (the premier

bloom in the show), Mildred Grant, Captain Hayward, Dean Hole, Mme. Melanie Soupert, Comte de Raimbaud, Liberty, Maréchal Niel, Comtesse de Ludre, and Rosomaine Gravereaux. 2nd, Mr. H. DREW, Longworth, Berks.

The class for Tea or Noisette Roses was interesting. For 12 blooms Mr. DREW won the premier place with neat flowers of Maman Cochet, Mrs. Miles Kennedy, White Mamau Cochet, Mme. Jules Gravereaux, Mrs. Ed. Mawley, and Medea as the best examples. Messrs. B. CANT & SONS were awarded the 2nd prize. 3rd, Messrs. ROGERS & SON, Red Lodge Nurseries, Southampton.

In the class for garden or decorative varieties, in six bunches of not fewer than three sprays of each kind, Messrs. JARMAN & CO., of Chard, were the only competitors, and were awarded the 1st prize for a good display.

Several classes were provided for gardeners and amateurs, the principal being the class for which the Munt Challenge Cup was offered. The schedule required 18 distinct blooms, and five exhibitors competed, the collective groups making a good display. Mr. E. PERCY SUGDEN, Uplands, Wimborne, won the trophy with good blooms of a medium size, chief of which were White Maman Cochet, Dean Hole, Avoca, Captain Hayward, Lyon Rose, and Mrs. Ed. Mawley. Dr. CHARLES LAMPLOUGH, Alverstoke, was placed 2nd.

Groups of miscellaneous plants added much to the attractiveness of the exhibition. For a group of miscellaneous plants arranged for effect, Mr. T. Hall (gr. to Lord SWAYTHLING, South Stoneham House, Southampton), won the 1st prize with a fairly good arrangement, in which Schizanthus was used freely.

Cut flowers were, as usual at this show, a prominent feature. For 12 bunches of hardy border flowers, Mr. B. LADHAMS, The Nurseries, Shirley, Southampton, won the 1st prize easily with a characteristic selection of choice subjects. 2nd, Mr. W. PALMER, The Nurseries, Andover.

Sweet Peas were well shown, and 11 classes were provided for them in the schedule. The results were remarkable for the success of one exhibitor—Sir R. BAKER, Ranston, Blandford (gr. Mr. Usher), who secured the leading award in nine of the classes with exceedingly fine blooms, well displayed. He showed Clara Curtis, Prince of Asturias, Helen Lewis, Mrs. A. Ireland, Etta Dyke, John Ingman, The King, Mrs. Hardcastle Sykes, Elsie Herbert, Constance Oliver, Lavender, G. Herbert, Mrs. C. W. Breamore, Yellow Hammer, Gordon Anketell, and other choice varieties. Mr. H. H. LEES, Warblington, Havant, secured the 2nd prize in most of the classes with good specimens of leading varieties.

Mr. ELLWOOD was placed 1st for black Grapes with good bunches of Black Hamburg. Mr. J. WESTON (gr. to L. WALKER MUNRO, Esq., Rhinefield, Brockenhurst), had the best white Grapes in rather green-berried Foster's Seedling.

Peaches were best shown by Mr. W. PALMEN, Andover Nurseries, and Nectarines (a fine dish of Cardinal) by Mr. W. Gregory (gr. to H. D. BROUGHTON, Esq.). Mr. WESTON had the best Melon—the Peer—in a keen competition with six other growers. Mr. HALL won in the class for two dishes of Strawberries with the varieties Bedford Champion and Royal Sovereign.

The Hon. VICARY GIBBS, Aldenham House, Elstree, Herts. (gr. Mr. E. Beckett), won Messrs. Sutton & Sons' special prize for six dishes of vegetables. Mr. ELLWOOD secured Messrs. Toogood's prize for six, and Messrs. Carter's chief prize for six dishes, with exceedingly fine Peas, Cauliflowers, Tomatos, Potatos and Carrots.

Trade exhibits were numerous and good. Gold medals were awarded to Messrs. TOOGOOD & SONS, Southampton, for Sweet Peas; Messrs. SUTTON & SONS, Reading, for fruit and vegetables; Messrs. B. LADHAMS, LTD., Shirley, Southampton, for herbaceous flowers, Roses, &c.; Messrs. WATERS, Balcombe, Sussex, for an exceedingly good display of Carnations; and to Messrs. OAKLEY & WATLING, florists, Southampton, for wreaths, baskets of flowers, &c. Silver-gilt Medals were awarded to Mr. C. BREADMORE, Winchester, for Sweet Peas; and Messrs. BENNETT, Guernsey, for Carnations. Silver Medals were granted to Messrs. DOBBIE & CO., Rothsay, for Irises; Mr. LUMBEY, Havant, for Sweet Peas; and Mr. FRANK LILEY, Guernsey, for Gladioli.

WOLVERHAMPTON FLORAL FETE.

Coming-of-Age Exhibition.

JULY 13, 14 and 15.—The Coming-of-Age this year of the Wolverhampton Floral Fête has been marked by an exhibition of which the town may be justly proud. It would have been still better had the season been more genial for certain flowers such as Roses and Sweet Peas, that are always special features at these shows. In another direction, however, there were contributions of greater ambition than formerly, these being attracted by the offer of a special silver vase valued at £50 (or £50 in cash) to the exhibitor of the most meritorious and effective display in the show. This Coming-of-Age memorial was awarded to Messrs. BAKERS, Wolverhampton, for a very extensive water and rock-garden, with collections of cut flowers—the largest exhibit in the show. At the luncheon the Mayor (Councillor Fred Evans) made an interesting presentation on behalf of the committee to Alderman Craddock, who has been connected with the management of the fête since its commencement, and latterly has filled the office of chairman of the general committee. The presentation took the form of a silver Rose bowl suitably inscribed. In returning thanks for this, Alderman Craddock said the expenditure on the first floral fête was £800, it was now £5,500. Their income then was £900, and now it varied from £3,000 to £4,000. The committee had handed over to the borough for the improvement of the park and other open spaces something like £6,000. He remembered when between 25,000 and 30,000 people visited the show in the three days, but last year the exhibition was visited by 50,000 people on a single day! A great debt of gratitude was due to such men as Mr. Green (who started the movement), Mr. T. J. Barnett, and Aldermen Dickinson and Saunders.

The weather on Tuesday morning was threatening, but no rain fell until after 2 p.m., when a series of violent rain-storms commenced that interrupted the speeches at luncheon and destroyed the pleasure of the afternoon.

So far as the management of the show was concerned Mr. F. T. Beck, Chairman of the Horticultural Committee, Mr. W. E. Barnett (secretary), and the committee are entitled to congratulations.

GROUPS OF PLANTS.

The first class was one for a display of miscellaneous plants, in or out of bloom, and flowers, grouped for effect on a ground space in the centre of the tent, not exceeding 30 feet by 12 feet. The prizes offered in this class amounted to £100. Messrs. J. CYPHER & SONS, Cheltenham, were awarded the 1st prize. Their arrangement showed some movement away from the method practised by the most popular exhibitors of groups in recent years. There were no rustic bridges, cork arches or other adornment of the kind. Indeed, the group on the present occasion was similar (so far as the arrangement of the plants was concerned) to those exhibited at Shrewsbury some 15 or so years ago—a group of miscellaneous plants arranged sparsely over a groundwork of Ferns and Moss, and small pyramidal groups at the corners to give effect to the whole. Cut flowers are allowed in the groups at Wolverhampton, and probably the use of these brightens the exhibits in the view of the general public, but the habitual allowance of cut flowers is likely to have a tendency to discourage high condition in the plants themselves. An exhibitor of inferior plants may do much with cut flowers to hide their lack of the highest cultural condition. Messrs. CYPHER, however, treated their groups as artists, and the choice cut flowers were very skilfully arranged, both in regard to position and colour. The 2nd prize was won by Mr. W. A. HOLMES, Chesterfield, and the 3rd by Mr. W. VAUSE, Leamington. In the companion group for ornamental foliage plants there were four exhibits, Mr. W. A. HOLMES, Chesterfield, gaining the 1st prize with a first-rate group, in which the various plants were of extra quality; 2nd, Messrs. J. CYPHER & SONS; and 3rd, Sir G. H. KENRICK, Edgbaston (gr. Mr. J. V. Macdonald).

In the class for a smaller group, a very pretty

arrangement from J. A. KENRICK, Esq., Edgbaston (gr. Mr. A. Cryer), was awarded the 1st prize, whilst the 2nd prize went to Mr. W. R. MANNING, Dudley.

Class 4 was for a group of flowering plants, one kind only, to occupy a ground space of 50 square feet. The choice of plant being left to the exhibitor, there were collections of tuberous-rooted and fibrous-rooted Begonias, Hydrangea hortensis, rambling and Polyantha Roses and Ericas. The 1st prize was well deserved by a magnificent group of tuberous-rooted Begonias shown by Messrs. BLACKMORE & LANGDON. The varieties represented in this group were of the highest quality, and the culture was beyond praise. The 2nd prize was awarded to the Roses from Messrs. HOBBS, LTD., and the 3rd to Ericas from Messrs. J. CYPHER & SONS.

J. A. KENRICK, Esq., won the 1st prize in a competition for the best collection of decorative plants and cut flowers arranged on a space not exceeding 6 feet by 4 feet, and the 1st prize for six stove and greenhouse plants.

There were two exhibits in the class for 20 plants in pots not exceeding 8 inches in diameter, at least eight to be in bloom. The 1st prize was won by Messrs. J. CYPHER & SONS, and the 2nd by Mr. W. VAUSE, Leamington, but in neither case were the plants of extraordinary character.

The best exhibit of 12 plants of Gloxinia was from B. H. MANDER, Esq., Trysull, near Wolverhampton (gr. Mr. C. Weaver). These were good specimens in 7-inch pots.

The special competitive Begonias could not be compared favourably with these shown by Messrs. BLACKMORE & LANGDON in the group class already noticed. The best collection of 12 plants was shown by Mr. MANDER.

The best exhibit of six Caladiums was shown by J. A. KENRICK, Esq., Edgbaston (gr. Mr. A. Cryer), and the best group of half-a-dozen Zonal Pelargonium plants by Lieut.-Col. C. T. MANDER, Compton.

ROSES.

We have said already that Roses are one of the great features at these shows; it is in keeping, therefore, that the most important class compares with the biggest class in the N.R.S. schedule, and requires 72 distinct Roses in each exhibit. On this occasion there were three exhibits—one from Ireland and two from England. The Irish exhibit gained the 1st prize for Mr. HUGH DICKSON, Belfast. Messrs. FRANK CANT & Co., Colchester, were awarded the 2nd, and Messrs. R. HARKNESS & Co., Hitchin, the 3rd prize. The best exhibit was well ahead, both in the quality and size of blooms, but they were not equal to the best exhibition standard. We will mention some of the better blooms. These were: Col. R. S. Williamson, Mildred Grant, Charles Grahame, Königin Carola, Mrs. W. J. Grant, W. K. Smith, Captain Hayward, Mrs. Ed. Mawley, Lady Helen Vincent and Mme. Melanie Soupert. In the 2nd prize exhibit, the variety Mrs. Ed. Mawley appeared to good advantage, and the collection contained a large but somewhat ill-formed flower of the modern variety William Shean.

In the class for 48 blooms, distinct, the 1st prize was awarded for a collection from Messrs. J. TOWNSEND & SONS, Worcester—a very commendable exhibit of medium-sized Roses. Messrs. PERKINS & SON, Coventry, were 2nd; Mr. HUGH DICKSON, Belfast, 3rd; and Messrs. F. CANT & Co., Colchester, 4th.

Messrs. J. TOWNSEND & SONS won the 1st prize for 12 trebles, and they were followed by Mr. HUGH DICKSON, Belfast, and Messrs. R. HARKNESS & Co.

In the class for 24 Rose blooms, distinct, Mr. W. J. MATTOCK, Oxford, gained the 1st prize, and Messrs. J. TOWNSEND & SONS the 2nd prize.

Class 13 was one for new Roses of 1906, 1907 or 1908. The varieties that won the 1st prize for Mr. HUGH DICKSON were as follows:—Lyon Rose, Lady Helen Vincent, Milly Crean, H. Armytage Moore, Renee Wilmart-Urban, Laurent Carle, Harry Kirk, Lady Ursula, Mme. Legendo Weber, Mrs. Aaron Ward, Baron Armgard von

Biel and Comtesse Icy Hardegg. Messrs. PERKINS & SON, Coventry, were 2nd.

The best dark Rose exhibited in 12 blooms was Hugh Dickson, shown by Mr. HUGH DICKSON. The same variety gained the 2nd and 3rd prizes, and the only other dark Rose entered in the competition was Captain Hayward. Bessie Brown, exhibited by Messrs. J. TOWNSEND & SONS, was the best light Rose, and Her Majesty, from Messrs. PERKINS & SON, was awarded the 2nd prize.

As so often happens at exhibitions, the best Tea Roses were shown from Oxfordshire. In the class for 12 blooms, distinct, the 1st prize was won by Mr. W. J. MATTOCK. He showed Muriel Grahame, Mrs. Ed. Mawley and White Maman Cochet in excellent condition. The 2nd prize was won by Messrs. F. CANT & Co.

Garden Roses were shown by some of the leading exhibitors. The 1st prize for 12 bunches was won by Mr. J. MATTOCK, and he was followed by Messrs. F. CANT & Co.

The only display of climbing Roses in pots was made by Messrs. HOBBS, LTD., who staged a number of varieties on a space 8 feet by 5 feet, and gained the 1st prize.

Mr. ELISHA HICKS, Twyford, Berks., had the best vase of cut Roses, Mr. W. J. GARNER being 2nd. Mr. W. J. GARNER, however, had the best bowl of Roses.

In the amateurs' classes, R. F. HOBBS, Esq., Worcester, won the 1st prize for 36 blooms, distinct, for 24 blooms, distinct, 35 trebles, 12 Roses, distinct, and 12 Tea Roses, distinct. W. FROGGART BRUFORD, Esq., Tettenhall (gr. Mr. F. Finch), was awarded the 1st prize for 18 blooms, distinct, and 12 blooms, distinct. R. W. WILSON, Esq., Compton (gr. Mr. Boucher), had the best bowl of Roses, and the Marquis of NORTHAMPTON the best vase of cut blooms.

SWEET PEAS.

The 1st prize for 18 varieties in an open class was won by Mr. T. JONES, Ruabon, for a collection of strongly-grown, well-coloured flowers, the varieties being The King, Mrs. A. Ireland, Othello Spencer, Aurora Spencer, Audrey Crier, John Ingman, The Marquis, Etta Dyke, Marquise Willis, Princess Victoria, Mrs. C. Foster, Clara Curtis, Minnie Christie, Evelyn Hemus, Helen Lewis, Elsie Herbert, Olive Bolton, and Constance Oliver. There were three exhibits, but there had been more entries. 2nd, Sir R. BAKER, Bart., Blandford (gr. Mr. A. E. Usher); 3rd, Messrs. HOBBS, LTD., Dereham.

The next class was limited to amateurs. It required 12 varieties, and the prizes were given by Mr. Henry Eckford. The 1st prize was gained by Sir R. BAKER, Bart. Queen Alexandra was shown with excellent effect in this collection. 2nd, Mr. J. HAYCOCK, Ruabon.

In Mr. Robt. Sydenham's classes for 12 distinct and six distinct varieties the 1st prize in the former class was won by Sir R. BAKER, Bart., and the 2nd by Mrs. CHAPPELL, Warwick (gr. Mr. T. Parry), and in the latter by Mr. J. HAYCOCK, Ruabon, and A. ASHWORTH, Esq., Grestock (gr. Mr. W. H. Shaw).

In Messrs. Baker's class for six varieties, the 1st and 2nd prizes were won by Sir R. BAKER, Bart., and Mr. T. JONES respectively.

The only other firm offering prizes for these flowers were Messrs. Webb & Sons, Stourbridge, and the 1st prize was again won by Sir R. BAKER, Bart., the 2nd prize being gained by WATSON SMITH, Esq., Stourbridge (gr. Mr. H. Davis).

OTHER CUT FLOWERS.

A class was arranged for Pansies and Violas, in which the flowers were disposed on a space not exceeding 7 feet by 3 feet. The Viola blooms were arranged in glasses, but not tied up in sprays in the usual manner, for every flower had its stem in the water, and the blooms were relieved with Viola foliage and other suitable greenery. The 1st and 2nd prize exhibits were arranged on a black velvet ground with high mirrors at the back. The effect was good, for although the schedule permitted the Pansies to be

shown in the usual way, this was not done, but the blooms were placed in glass vases like the *Violas*. The 1st prize was won by Messrs. W. PEMBERTON & SON, Bloxwich, and the 2nd by Messrs. J. BASTOCK & SON, Moseley, Birmingham.

Delphiniums were staged on the ground in groups, so that the flowers were well within view. It is a mistake to put such tall flower-spikes as these on tables, although it is done occasionally at competitive exhibitions. Messrs. BLACKMORE & LONDON were awarded the 1st prize; Messrs. J. GIBSON & Co., Bedale, the 2nd; and J. A. KENRICK, Esq., Edgbaston, the 3rd prizes.

The collections of hardy border flowers were arranged in spaces of 15 feet by 5 feet, and the banks of bloom these collections furnished appeared to be of unusual height. The 1st prize was awarded Messrs. J. GIBSON & Co. for a group in which *Poppies*, *Pæonies*, *Irises* and *Gaillardias* were the most effective patches of colour. The 2nd prize was gained by Messrs. HARKNESS & SON, and the 3rd by Messrs. GEORGE BUNYARD & Co.

The best 12 bunches of hardy garden flowers in a considerable competition in a class for gentlemen's gardeners and amateurs came from Lieut.-Col. C. T. MANDER, who had a very good group.

FRUIT.

Although this show is too early to have extensive exhibits of fruit, nevertheless this important branch of gardening was represented. There were four exhibits in a class for four bunches of *Grapes*. The 1st prize collection was shown by Lord SAVILE, K.C.V.O., Ollerton, Notts (gr. Mr. Doe). He had *Madresfield Court*, *Black Hamburgh*, *Muscot* of Alexandria and *Buckland Sweetwater*; 2nd, J. DRAKE, Esq., Market Rasen (gr. Mr. W. Parker). Lord SAVILE was awarded the 1st prize for two Bunches of *White Grapes* showing *Muscot* of Alexandria.

The best black *Grapes* were *Black Hamburgh*, shown by Lord SAVILE.

There were two classes for *Melons*. The 1st prize for a green-fleshed fruit was awarded the Earl of ORMSKIRK for a variety named *Countess of Ormskirk*. The best scarlet-fleshed variety was *Sutton's Scarlet*, a small fruit of this being shown by Lord SAVILE.

There were classes for six *Peaches* and six *Nectarines*. In the former class the 1st prize was awarded the variety *Royal George*, as shown by Lord BAGOT, Rugeley (gr. Mr. T. Bannerman); *Diamond* was 2nd, shown by Lord Savile. For *Nectarines*, the EXECUTORS of Sir P. A. Muntz, Bart., Rugby (gr. Mr. H. Blakeway), obtained the 1st prize for *Early Rivers*, and the 2nd prize was given to the Earl of LATHOM for excellent fruits of the variety *Pineapple*.

Strawberries, shown in collections of three dishes each, were remarkable for large size, whilst having plenty of colour. The varieties in the 1st prize exhibit from the Marquis of NORTHAMPTON, Northampton (gr. Mr. A. R. Searle), were *Gunton Park*, *Kentish Favourite*, and *Royal Sovereign*. The 2nd prize was won by Lord HATHERTON, Teddesley Hall, Penkridge (gr. Mr. H. Taylor). He had *Mentmore*, *Bedford Scarlet*, and *Royal Sovereign*.

The best *Tomatoes* in a class for three dishes were the variety *Princess of Wales*, being moderate size fruits of perfect form and very heavy. They were shown by Mrs. J. EVANS, Wolverhampton (gr. Mr. R. Maybury).

There were only two exhibits in a class for a collection of eight dishes of fruit. The 1st prize was gained easily by Lord SAVILE. His *Madresfield Court Grapes* were remarkably good, being long, well-formed bunches, in which the size and colour of berries were alike excellent. His *Muscot* of Alexandria was scarcely less satisfactory. In addition to the *Grapes*, there were *Peaches* *Stirling Castle* and *Dymond*, *Nectarines* *Dryden* and *Imperial Downton*, *Figs* *Brown Turkey* and a seedling *Melon*. The 2nd prize was awarded to J. DRAKE, Esq., Market Rasen (gr. Mr. W. Parker).

The most important class in the fruit section was one for displays of growing fruit trees in pots, to be arranged on spaces of 20 feet by 9 feet. Quality of exhibits, taste in arrangement, and general effectiveness were the points to be considered by the judges. There were only two exhibitors, Messrs. T. RIVERS & SON and Messrs. THE KING'S ACRE NURSERY Co., Hereford. Messrs. RIVERS' group well deserved the 1st prize awarded it, for the fruits the trees bore were

nearly all ripe or ripening, and the quality throughout the heavily-cropped trees was exceedingly high. *Lady Sudeley Apple*, *Grand Duke* and *Late Orange Plums*, *Black Alicante Grapes*, and *Yellow Shaddocks* contributed high colour to the group, and, therefore, heightened the effect. The group from THE KING'S ACRE NURSERY Co. was likewise commendable from most points of view, and certainly the vines were of the highest quality and condition. But the fruit generally was less ripe and, therefore, less effective.

VEGETABLES.

Prizes for collections of vegetables were offered by several of the seed firms. There were five exhibits in Messrs. Sutton & Sons' class for six dishes, and the 1st prize was awarded the Duke of PORTLAND, K.G., Worksop, Notts. (gr. Mr. J. Gibson). His "dishes" were *Superlative Potato*, *Perfection Tomato*, *Centenary Pea*, *New Red Intermediate Carrot*, *Magnum Bonum Cauliflower* and *White Leviathan Onion*; 2nd, the Marquis of NORTHAMPTON (gr. Mr. Searle).

An equal number of competitors entered in Messrs. Webb & Son's class for eight dishes. In this case the Marquis of NORTHAMPTON was awarded the 1st prize. He showed *Monster White Turnip*, *Early Mammoth Cauliflower*, *Reliance Globe Beet*, *Express Potato*, *Supreme Beans*, *Victory Tomato*, *Intermediate Carrots*, and *Duke of Albany Peas*; 2nd, F. E. MUNTZ, Esq., Hockley Heath (gr. Mr. H. S. Foster).

In another class of Messrs. Webb's for six dishes, the 1st prize was won by WATSON SMITH, Esq., Stourbridge (gr. Mr. H. Davis).

In the gentlemen's gardeners' and amateurs' classes, the 1st prize for six varieties of fruits was won by Lord SAVILE; 2nd, Lord BACOT, Rugeley (gr. Mr. T. Bannerman); and in that for a collection of 10 kinds of vegetables, by the Duke of PORTLAND; 2nd, the Marquis of NORTHAMPTON.

FLORISTS IN DECORATION.

The best featherweight bouquet was an arrangement of *Oncidiums* and *Odontoglossums*, with a few other *Orchids* and trailing growths of *Asparagus*, &c. It was shown by Messrs. PERKINS & SONS, Coventry. Mr. W. J. GARNER, Altrincham, was 2nd. Messrs. PERKINS & SONS were also awarded the 1st prize for a bridal bouquet and two bridesmaids' bouquets. The bride's was formed of white *Odontoglossum crispum*, *Paneratium*, *Lily of the Valley*, &c., and the bridesmaids' of pink *Carnations* and *Lily of the Valley*. Mr. W. J. GARNER was 2nd in this class, and Mr. J. E. KNIGHT, nurseryman, Wolverhampton, 3rd. Messrs. J. CYPHER & Co. also won the 1st prize for a hand bouquet.

The competition in the classes for dinner-table decorations was numerous, and the displays needed a large share of one of the tents. In the amateurs' class Miss F. JENKS, Codsall, won the 1st prize for an arrangement of *Sweet Peas*, a pale-coloured variety; *Adiantum* Ferns and *Selaginella* were used for greenery to the rejection of natural foliage.

In the open class there were eight exhibits, and the 1st prize was won by Messrs. J. TOWNSEND & SONS, Worcester, who employed very pretty *Roses*, but somewhat marred the good effect by using *Francea ramosa* with them.

HONORARY EXHIBITS.

Messrs. BAKER'S, Wolverhampton, furnished almost one-half of the tent containing the plant groups, showing as the main feature a water-garden planted with Japanese and other *Irises*, *Spiræas*, *Sarracénias*, *Gunnera manicata*, and a host of other species suitable for the purpose. This exhibit was of a most comprehensive character, arranged on a space measuring 100 feet by 20 feet, and showed much skill in design and execution. In addition to a water and adjoining rock-garden, the Messrs. BAKER'S showed a group of hardy flowers, a very large exhibit of cut *Roses*, and a big collection of *Sweet Peas* and *Gladioli* in variety. There were 40 tons of stone employed in forming the rock and water-garden. The exhibit was awarded the special 50-guinea Vase and two special Gold Medals.

The Hon. VICARY GIBBS, Aldenham House Gardens, Aldenham (gr. Mr. E. Beckett), made an extensive exhibit of vegetables, inclusive of upwards of 70 dishes. The assortment and

quality of these vegetables were alike of extraordinary merit. (Special Gold Medal.)

Messrs. J. BACKHOUSE & SON, LTD., York, exhibited a rock-garden, 8 feet or 10 feet high and 40 feet long, with a water-garden in the front. The arrangement and planting of this exhibit was carried out with skill, and excepting the placing of some of the stones in a perpendicular fashion the effect was as natural as could be possibly obtained in a temporary show. Even the stone had an appearance opposed to newness. (Gold Medal.)

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, made an excellent display in the form of a group containing such pot plants as *Codæums*, *Carnations*, *Coleus*, *rambling Roses*, and many other plants, whilst the interspersing of tall vases of cut *Carnations* helped to make a very fine effect. (Gold Medal.)

Mr. THOS. S. WARE (1902 LTD.), Feltham, Middlesex, showed a large group of hardy flowers, staged to produce a good colour effect. (Silver-gilt Medal.)

Messrs. JARMAN & Co., Chard, showed lovely *Centauras*, also *Roses*, *Sweet Peas*, and *Zonal Pelargoniums*, in all cases the exhibits being cut blooms. (Silver Medal.)

Messrs. WEBB & SON, Wordsley, Stourbridge, had an imposing exhibit, the centre of this being formed of the stand exhibited by the firm at the Holland Park Show, but a table 7 feet wide was added around the base. On this enlarged stage Messrs. WEBB exhibited *Sweet Peas*, *Gloxinias*, *Celosias*, and other flowers, also choice *Melons* and a large assortment of vegetables. (Gold Medal.)

Messrs. THOS. W. DARLINGTON, Warton, Carnforth, had an exhibit of *Sweet Peas*, arranged in tall vases and baskets, &c. (Small Silver Medal.)

Mr. VINCENT SLADE, Taunton, had a collection of bunches of *Zonal Pelargonium* flowers. (Small Silver Medal.)

A group of miscellaneous stove and greenhouse plants was exhibited by THE CORPORATION of WOLVERHAMPTON (gr. Mr. A. Webster). (Silver-gilt Medal.)

Mr. CHAS. BARNETT, Nurseryman, Albrighton, near Wolverhampton, exhibited *Tomatos*, *Irises*, and other produce. (Bronze Medal.)

An extraordinary exhibit of *Gladioli* was made by the proprietors of LILLEY'S BULB FARM, Guernsey. The *Colvillei*, *ramosus* and *nanus* types were represented in much variety. A very interesting exhibit. (Silver-gilt Medal.)

Messrs. CLIBRANS, Altrincham and Manchester, showed a group of plants of *Aralia sinensis alba marmorata*, having this effective plant in 8-inch and 10-inch pots. (Silver Medal.)

Mr. ROBERT SYDENHAM, LTD., had a very fine and dainty exhibit of *Sweet Peas*, arranged in silvered rustic ware. (Silver Medal.)

Mr. W. N. PATTISON, Nurseryman, Shrewsbury, exhibited *Violas* (Bronze Medal), and Mr. H. N. ELLISON, West Bromwich, a group of *Ferns* (Bronze Medal).

Mr. C. H. HERBERT, Hazlewood Road Nurseries, Acock's Green, Birmingham, showed a group of cut flowers of their new perpetual-flowering *Pink*, known as "Progress." It is a distinct shade of purple, and very fragrant. In a mass this seedling was very effective.

Mr. C. F. WATERS, Deanland Nursery, Balcombe, Sussex, made an extensive exhibit of cut *Carnation* flowers, having a large number of varieties. (Silver-gilt Medal.)

Miss S. S. THOMPSON, Alfred Road, Handsworth, exhibited a group of cactaceous plants. (Bronze Medal.)

Messrs. B. LADHAMS, LTD., Shirley, near Southampton, made a grand display of hardy flowers in the cut state. *Pinks*, *Gaillardias* and *Scabious* were the principal kinds. (Silver Medal.)

Messrs. GUNN & SONS, Olton, Warwickshire, staged an attractive group of *Phloxes*. Although so early in the season some of them had been brought into flower in an unheated house. (Silver-gilt Medal.)

Messrs. HEWITT & Co., Solihull and Birmingham, had a large exhibit of miscellaneous plants and cut flowers. (Silver-gilt Medal.)

Messrs. DOBBIE & Co., Rothesay, contributed a choice assortment of *Sweet Peas* arranged in tall glasses; also a number of *Violas*, shown in sprays. *Pansy* flowers displayed on boards, and *Zonal Pelargoniums*. (Gold Medal.)

Messrs. DICKSONS, Chester, exhibited a group

of Delphiniums, Carnations and general hardy flowers. (Silver-gilt Medal.)

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, Norwood, London, exhibited a fine group of Caladiums. (Gold Medal.)

Messrs. T. RIVERS & SON, Sawbridgeworth, had a number of fruit trees in pots (apparently an overflow from the competitive exhibit), and a large quantity of gathered Oranges. (Silver-gilt Medal.)

Two exhibits were staged on the grass without the tents, one from Mr. J. E. KNIGHT, Nurseryman, Wolverhampton (Silver-gilt Medal), and the other from Messrs. T. B. DOBBS & Co., Wolverhampton. (Silver Medal.) In both exhibits there were rustic arches and similar garden furniture, also bedding and other plants.

BRIGHTON ROSE AND SWEET PEA.

JUNE 29, 30.—Unfavourable weather attended the opening day of this show, and although, generally, the exhibition was a success, exhibits of Roses were disappointing. Sweet Peas, however, were well represented.

In the class for a group of Roses, including plants and cut blooms, occupying an area of 15 feet by 8 feet, Messrs. GEO. MOUNT & SONS, Canterbury, won the 1st prize easily, with a splendidly-arranged group. The varieties Frau Karl Druschki, Richmond and Joseph Lowe were finely displayed. 2nd, Mr. G. W. PIPER, Uckfield; 3rd, HARRY YOUNG, Esq., Withdean Grange, Brighton (gr. Mr. Edward Jones). The 1st prize included a silver cup, together with the Society's Silver-gilt Medal. The exhibit was also awarded the Corporation Challenge Bowl, presented for the most meritorious exhibit in the show. Messrs. GEO. MOUNT & SONS excelled in the class for 48 blooms of distinct varieties. The 2nd prize was awarded to Mr. FRANK WOOLLARD.

A Challenge Cup and the Society's Silver Medal were offered as the 1st prizes for a collection of Sweet Peas, artistically arranged, with any cut foliage or foliage plants, on a table 4 feet square. Mr. JAS. BOX, Lindfield, was the most successful exhibitor. Mr. C. F. WATERS, Balcombe, and E. J. JOHNSTONE, Esq., Burrs Wood, Groombridge (gr. Mr. A. T. Pashett), won the 2nd and 3rd prizes respectively.

Mr. A. T. PASHETT was placed 1st for a collection of Carnations, occupying a table measuring 4 square feet; 2nd, Mr. C. F. WATERS.

Miss MABEL HOWELL showed the best dinner-table decoration in strong competition.

In the class for a collection of vegetables, Col. DUDLEY SAMPSON, Buxshalls, Lindfield (gr. Mr. Geo. Porter), was placed 1st; and he was followed by F. BARCHARD, Esq., Horsted Place, Uckfield (gr. Mr. Tonrie).

A circular group of miscellaneous flowering plants, arranged in a space 10 feet in diameter, was best shown by Mr. EDWARD JONES; 2nd, S. C. WITTING, Esq., Hollingberry Copse, Brighton (gr. Mr. G. Chandler).

NATIONAL FEDERATION OF FRUIT AND POTATO TRADES' ASSOCIATION.

JULY 6.—We are informed that the following resolution was passed by the Executive Committee of the Federation at a meeting held at the Tavistock Hotel, Covent Garden, on the above date. Copies of the resolution were sent to the Chancellor of the Exchequer and others:—

"That this Federation learns with great dismay that it is proposed to impose further burdens of taxation upon land, and respectfully desires to call the attention of the Chancellor of the Exchequer to the following points affecting the market-gardening industry:—

"1. Market-gardeners send daily consignments at a very early hour to populous centres, and are therefore compelled to carry on business within the 'collection and delivery' area of a railway station.

"2. As market-gardeners cannot move further out for the above reason, the only effect of the undeveloped land tax on their industry would be to increase the heavy burdens already imposed upon them.

"3. If market-gardeners should succeed in throwing any portion of this increased burden upon their customers, the result would be to

increase the cost of two most important items in the nation's food supply, i.e., fruit and vegetables.

"4. Market-gardeners employ more hands per acre than the ordinary agriculturist, and for this reason ought to share the exemption from the undeveloped land tax conferred upon every other trade, business, or industry, except agriculture.

"5. The proposed increment duty will also bear very hardly upon the market-garden industry. As building development advances, the market-gardener has to move, and has to expend large sums on erecting new greenhouses and other buildings, and especially in heavily manuring the new soil. By selling his interest in the land for more than he gave, the market-gardener is at present able to provide a fund towards such new outlay, but on such occasions the industry will suffer severely if in future the State insists upon taking 20 per cent. of the increment, under the provisions of the Finance Bill."

SOUTHEND-ON-SEA HORTICULTURAL.

JULY 6, 7.—The annual summer exhibition was held at the Palace Hotel on these dates in unfavourable weather. The exhibits of Roses, Sweet Peas, vegetables and plants were excellent, as also were the several elegant floral decorations.

Groups of miscellaneous plants arranged for effect were much admired. The one arranged by Mr. W. G. HATCH, Southend-on-Sea, secured the Gold Medal, being much superior to all others not only in the quality, suitability and variety of the plants employed, but also in the tasteful and elegant manner in which they were disposed.

Messrs. F. CANT & Co., Braiswick Rose Gardens, Colchester, won the 1st prize in the class for 48 distinct varieties of Roses, thereby winning the Challenge Cup in addition to a money prize; Messrs. D. PRIOR & SON, Colchester, followed closely, and Mr. W. LEGGETT, also of Colchester, was placed 3rd. The 1st prize stand contained grand blooms of well-known varieties.

In the class for 18 Tea or Noisette Roses of distinct varieties, Messrs. D. PRIOR & SON, Colchester, had the best stand, showing, amongst others, fine examples of Muriel Graham and Mrs. W. J. Grant; 2nd, Messrs. F. CANT & Co.

AMATEURS' CLASSES.—The Rev. J. H. PEMBERTON, Romford, won in the class for 24 blooms, not fewer than 18 varieties, with good solid blooms of Frau Karl Druschki, Bessie Brown, Dean Hole, Mildred Grant, Caroline Testout, Horace Vernet and Helen Keller; 2nd Mrs. BARNES, Rochford.

Four medals of the National Rose Society were awarded to premier blooms as follows:—To H.T. Frau Karl Druschki, shown by Mr. F. H. FIELDGATE; to H.T. Dean Hole, shown by Mr. A. TALBOT; Tea or Noisette, Mme. Jules Graveaux, shown by Mr. C. A. L. BROWN. The medal for the best bloom staged in local classes was awarded to Mr. A. TALBOT for a bloom of the variety Dean Hole. As already stated, Mr. W. G. HATCH was awarded a Gold Medal for his excellent display of miscellaneous plants, and Dr. G. F. JONES, J.P., Westcliff-on-Sea, received a Silver-gilt Medal for an interesting collection of Cacti.

PURLEY ROSE AND HORTICULTURAL.

JULY 10.—Purley is situated in one of the most popular residential districts in Surrey. Whilst sufficiently distant from London to be almost unaffected by the smoke and fogs of the Metropolis, it is within easy access of the City, being only 15 miles from London Bridge. The scenery is charming, scarcely less so than at Caterham, which is only a few miles away. Everyone at Purley has a good garden, and to this fact is due the large measure of support accorded the horticultural society. The annual exhibition was held on Saturday, the 10th inst., in the grounds of Upper Woodcote, the residence of the president, William Webb, Esq. The feature of the exhibition were the Roses. The extra good quality of these flowers appeared to surprise all present, the standard being very high, notwithstanding the wet weather. In the trade classes the largest, that for six blooms, distinct, was won by Messrs. B. R. CANT & SONS, followed by Messrs. FRANK CANT & Co., and Messrs. D. PRIOR & SON, all of

Colchester, in this order. The 1st prize for 12 trebles was won by Messrs. D. PRIOR & SONS, Messrs. F. CANT & Co. being 2nd. Tea Roses were best shown by Mr. GEO. PRINCE, Oxford, who won the 1st prize for 12 blooms, distinct. The best garden Roses exhibited by nurserymen in the county of Surrey were from Messrs. W. SPOONER & SON, Woking; Messrs. GEO. JACKMAN & SONS, Woking, being 2nd.

In the open classes, the leading prizes for Roses were won by A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease). His collection of 18 blooms, distinct, was of quite extraordinary merit. Amongst his best blooms were Bessie Brown, Florence Pemberton, Dean Hole, and Mme. Melanie Souper. The variety last mentioned was exceedingly pretty, showing a fine development of the yellow shade characteristic of this flower. Mr. TATE's blooms gained 1st prizes in several other classes, including those for six trebles and 12 Roses, distinct. Dr. T. E. PALLET, Earls Colne, Essex, also had some good blooms in the open classes. The best of the local classes for Roses was won by A. E. PROTHORPE, Esq., Purley.

Sweet Peas were not up to proper exhibition standard. There were several classes and entries were made in each of them.

There were many exhibits of decorated dining tables, but most of these, whilst pretty in themselves, were too crowded with flowers. In the Rose class an exhibit of Mme. Abel Chatenay gained the 1st prize, and in the general class the 1st prize was given to an exhibit consisting of Shirley Poppies of unusually good quality. There were also classes for decorative plants, and for vegetables.

Numerous exhibits of a non-competitive character were displayed, the following firms, amongst others, being represented: Messrs. PAUL & SON, Cheshant, Mr. THOS. BUTCHER, Croydon, THE GUILDFORD HARDY PLANT Co., Messrs. J. CHEAL & SONS, JACKMAN & SONS, G. & A. CLARK (DOVER), JNO. LAING & SONS, Mr. H. HENNEY, Mr. JNO. R. BOX, and Mr. FRANK BRAZIER.

The secretaries are Mr. H. E. Molyneux and Mr. L. M. Thudichum.

SALTAIRE ROSE AND NATIONAL SWEET PEA.

JULY 13.—The Saltaire, Shipley and District Rose Society has only been established for a period of six years, but it has been admirably managed by an enthusiastic and hard-working committee, under the able direction of Mr. Ernest Wright (hon. sec.) and Mr. F. Jowett (chairman), with the result that it now ranks among the important provincial organisations. In its early days it welcomed the National Rose Society, and on the occasion of its present show it had associated with it the National Sweet Pea Society. It was hoped, notwithstanding the comparatively early date, there would be an excellent show, but the weather completely upset the calculations, and the result was a poor entry as well in the Rose and Sweet Pea classes as in the general section devoted to varied flowers. If, however, there was a sparsity in the number of exhibits, there was a quality which, considering the weather experienced since the commencement of the growing period, was remarkably good. Among the Sweet Peas and the Roses alike there was a preponderance of blooms that were clean and unspotted and showed little signs of the adverse conditions under which they had been produced. The arrangement of the show was excellent, and, with favourable climatic conditions, the display would no doubt have been conspicuous both for splendid quality and extent.

SWEET PEAS.

In a class for 12 varieties, distinct, limited to Yorkshire, the Lord Mayor of Bradford offered a silver Cup value five guineas, in addition to the first prize, and the winner was Mr. S. F. Brotherston (gr. to F. SAMUELSON, Esq., Brackenbrough Hall, Thirsk), who exhibited bright bunches of Evelyn Hemus, John Ingman, James Grieve, King Edward, Etta Dyke, Helen Lewis, The Marquis, Andrey Crier, Prince of Asturias, Aurora, Mrs. Mander, and Countess Spencer. Mr. W. HESLINGTON, Littlethorpe, Ripon, was 2nd.

REMARKS.—Trade is steady with very fair consignments from Kent and Bedfordshire. The Lincolnshire crops are not quite ready.—Edward J. Newborn, Covent Garden and St. Pancras, July 14, 1909.

COVENT GARDEN FLOWER MARKET.

I am frequently asked what there is among new plants worth taking up for market. It is difficult to recommend any particular subject. I have recently inspected several Palm nurseries, and find that *Areca lutescens* is fairly plentiful. Best plants of this Palm in 4½ inch pots do not sell for more than 24s. per dozen. *Cocos Weddelliana* varies from small plants sold at 6s. per dozen to those of much larger sizes. Those in 4½ inch pots realise from 21s. to 30s. per dozen, and slightly larger ones are worth from 36s. to 42s. per dozen. Specimen plants in 8½ inch pots sell for 5s. to 7s. 6d. each. *Cocos flexuosa* is not in character early in the season, and is then only serviceable as a tall plant; the lowest price for useful plants being about 15s. to 21s. each. *Keutias* vary but little. It would pay those who stock this Palm to buy small, healthy plants, and grows them on, as seeds are getting scarce every year. *Latanias* are more plentiful. I find one grower who decided to discontinue their cultivation a few years ago is growing them again. Of *Phoenix*, *P. Robellini* now takes the lead as the most elegant species. Fine plants in 4½ inch pots are procurable at 80s. per dozen, and larger plants vary from 6s. upwards. *P. rupicola* does not sell well as a market plant, although best specimens realise good prices; clean healthy plants in 4½ inch pots are worth from 30s. to 42s. per dozen. *Rhapis humilis* will never be a cheap Palm; some small plants are procurable, but the lowest price quoted by one large grower is 60s. each. Of *Scaevolias* I have seen very few small plants during the past season. *Aralias Veitchii* and *gracillima* sustain fairly good prices for perfect plants, but those with defects, however slight, are of little value; the same applies to *A. elegantissima*. Some growers have been treating these plants too liberally. I do not often recommend poor soil or the use of peat where plants will grow in loam, but I find that with all the fine-leaved *Aralias* they develop out of character if grown in rich soil. *Juniperus bermudiana* is a popular plant, and well-conditioned plants grown under glass make good prices; those in 4½ inch pots sell at from 24s. to 30s. per dozen, and larger ones at 7s. 6d. each. *Aspidistras* are not making quite such good prices as formerly, the very best plants in 4½ inch pots may be bought at 30s. to 36s. per dozen, and many are sold for less than these prices. *Crotons* do not vary much, the well-coloured broad-leaved varieties are most in demand. A few years ago it was quite the reverse. It is the same with Ferns, the broad-fronded showy sorts now sell most readily. The plumose *Nephrolepis* of which we now have so many varieties have not yet become general favourites in the market, but the florists are beginning to recognise their value. Much of their present unpopularity is caused by the methods adopted in their culture. Many growers keep them too warm and moist. I have proved that they will grow well out-of-doors during the summer, and under glass they require little, if any, shade. *Asplenium Nidus* continues a favourite Fern. The variegated *Pterises* are more appreciated than formerly, the best crested variety is *P. Alexandra*, and growers should discard all other crested forms for this one. Amongst *Adiantums*, *A. acutum* is one of the best as a pot plant. When grown well, in a position exposed to the light, *A. Farleyense* is one of the best. *A. elegans* has quite taken the place of *A. cucuatum*, except where dwarf plants are required. In flowering plants there is little that is fresh to record. Supplies are large, and many growers have large stocks.

CUT FLOWERS.

There is but little variation in cut flowers; supplies are more than equal to all demands. This applies particularly to Carrots, Lilliums, and Roses. Of the last-named those from the open air, in most instances, damaged by the bad weather. *A. H., Covent Garden, July 14, 1909.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending July 14.

The sixth cold week in succession.—During the past week the day temperatures proved variable, but were all more or less cold for the time of year. On the coldest day the temperature in the thermometer screen at no time rose higher than 57°—which is 13° below the average maximum for the middle of July. The nights, however, were, on the whole, of about seasonable warmth. The ground is at the present time 4° colder at 2 feet deep, and 5° colder at 1 foot deep, than is seasonable. Rain fell on four days of the week, to the aggregate depth of 3 of an inch. Small quantities of rainwater have each day passed through the bare soil gauge, but the gauge on which short grass is growing has remained quite dry for the last 10 days. The sun shone on an average for only 4½ hours a day, or for as much as 2 hours a day short of the usual duration for the first half of July. Light airs alone prevailed during the week, the direction being exclusively some westerly point of the compass. 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 11 per cent. *E. M., Berkhamsted, July 14, 1909.*

ENQUIRY.

PENTSTEMON MENZIESII DOUGLASSII.—May I enquire if any reader of the *Gardeners' Chronicle* has a plant of this *Pentstemon* exceeding 6 inches in width? It appears to be a rare plant, as I have never seen it catalogued. *B. Woods.*

ANSWERS TO CORRESPONDENTS.

BEECH TREES: *F. E. A.* See reply to *H. R. G.* in the last issue, p. 32.

BLACK CURRANT SHOOTS: *P. & Sons.* Wet and cold weather has injured the leaves. No disease is present.

BOWLING GREEN: *A. B. C.* The best plan is to use good turf obtained locally, as the sward will contain Grasses suited to the district. All the best lawns of this description are made with turf, obtained often at a great expense. You will find details for forming bowling greens in the issues for August 29, 1908, p. 176, and January 16, 1909, p. 43.

CHERRIES FOR NAMING: *C. B. J.* The fruits were decayed when received. They were probably the variety *May Duke*.

CHRYSANTHEMUMS: *H. F. R.* No disease is present. The leaves are injured by excess of moisture and too strong a solution of potassium sulphide. One ounce in 3 gallons of water is sufficient quantity of this fungicide for spraying plants.

CUCUMBER PLANTS INJURED: *M. Y. C.* The stem of the Cucumber plant sent for examination bears signs of injury in the central portion, which has been tunnelled in two places from the crown upwards, to a distance of nearly 2 inches. There was no trace of the deprecator; we cannot say, therefore, what has caused the trouble, though the tunnels appear to have been produced by the larva of a beetle (perhaps *Agriotes*), or a small moth. The centipede (*Polydesmus* sp.) sent with the plant is not responsible for the injury. If you will forward examples of the pest, we will advise you as to remedial measures.

EXAMINATIONS: *Enquirer.* Apply to the secretary of the Royal Horticultural Society, Royal Horticultural Hall, Vincent Square, Westminster.

GARDENER'S NOTICE: *W.* It is the custom in many places to give a week's notice in the case of journeymen in a Bothy; in other instances we have known a month's notice given and received. Head-gardeners, and journeymen also, should have a proper understanding at the time of engagement as to the notice that will be expected on either side. Such an arrangement would prevent disputes afterwards. If the wages are due to the journeyman, they should certainly be paid to him, even if he has left the gardens in the meantime.

GRAPES DISEASED: *A. F. M.* The berries are affected with the spot disease. See reply to *H. H.* in the last issue, p. 32.

GRUBS ATTACKING CARNATIONS: *K. & B.* We can only conjecture what the pests are, but we suspect weevils. Send us examples, and we will endeavour to assist you.

HEATING APPARATUS: *H. J.* There are already on the market several systems for heating greenhouses by means of gas or oil. In the issue for August 29, 1908, p. 175, we described and illustrated a serviceable boiler and circulating system known as the "Little Nipper." Obtain the opinion of some person or firm who specialise in the heating of greenhouses. You will find a list in our advertising columns.

INCARVILLEA: *H. W.* The injury is caused by the mycelium of a fungus in the soil. Sprinkle a thin layer of sulphate of potash on the ground and fork it in lightly. Afterwards apply water if the weather is dry.

MELONS: *Reader.* No disease is present. The injury is due to some cultural defect, and harmless fungi have settled on the injured spots.—*W. R. H.* The soil is too saturated with water. Afford plenty of ventilation early in the morning in the house in which they are growing.

NAMES OF PLANTS: *M. W.* 1, *Nephrolepis todaeoides*; 2, *Adiantum Capillus-veneris*; 3, *Cypripedium barbatum*; 4, *Adiantum formosum*; 5, *Hemanthus natalensis*; 6, *Asplenium bulbiferum Colensoi*.—*H. B.* 1, *Ceanothus azureus*; 2, *Escallonia marantha*; 3, *Spiraea Menziesii* var. *triumphans*; 4, *Cotoneaster viburnifolia*.—*W. E.* 1, *Abutilon vitifolium*; 2, *Buxifolium* sp., probably a variety of *tomentosum*.—*D. P.* 1, *Acer truncatum*; 2, *A. Pseudo-cerasus* var. *purpureum*; 3, *Veronica Teucrium*; 4, *Rubus* sp. (send when in fruit);

5 and 6, varieties of *Prunus Padus*.—*J. C.* *Syringa pekinensis*.—*C. S. & Co.* *Cupressus macrocarpa*.—*J. G. & Co.* *Senecio Heritieri*.—*Miss Eubank.* *Aristolochia Clematites*, *Cistus ladaniferus*, *Heliotrope* (garden variety), *Orchis maculata*.—*R. Y. & Sons.* *Scilla peruviana*.—*G. C.* *Vaccinium Vitis Idæa* ("Cowberry").—*Thanker.* 1, *Mesembryanthemum conspicuum*; 2, *Hieracium aurantiacum*; 3, *Dianthus superbus*.—*C. B.* 1, *Galium saxatile*; 2, *Lotus uliginosus*; 3, *Stellaria graminea*; 4, *Prunella vulgaris*; 5, *Crepis virens*; 6, *Matricaria Chamomilla*.—*L. W.* What miserable specimens, and merely shoots without flowers. 1, *Gasteria* sp.; 2, not recognised; 3, *Salvia* species; 4, *Aconitum Napellus*; 5, *Chrysanthemum uliginosum*; 6, not recognised; 7, *Achillea* sp.—*B. T.* 1, *Oncidium serratum*; 2, *Lælia Dayana*; 3, *Epidendrum O'Brienianum*; 4, *Dendrobium infundibulum*; 5, *Sophronitis cernua*.—*Herbert.* 1, *Rhyncostylis* (*Saccolabium*) *retusa*; 2 and 5, both varieties of *Vanda Bensonii*; 3, *Aërides odoratum*; 4, *Dendrobium crystallinum*; 6, *Cypripedium superbiens* (*Veitchii*).—*H. C.* *Worce.* *Iris ochroleuca*.—*A. C. H.* *Cypripedium barbatum*, *Rhyncostylis retusa*, and *Spathoglottis plicata*.—*C. W. P.* 1, *Listera ovata* (Twayblade); 2, *Viola* sp.; 3, *Claytonia foliolata*.—*Holywood.* *Scilla peruviana*. The Pea is probably the Crown or Mummy Pea.—*W. E. M.* *Saponaria Vaccaria alba*.—*S. J. M.* The specimen was insufficient: it is probably *Lemnanthes Douglasii*.

NECTARINE FRUITS SPLITTING: *Hortus.* The trouble is due to excessive moisture at the roots. Next season overhaul the border and see that the provision for drainage is ample.

NEPENTHES: *C. H.* Messrs. James Veitch & Sons, Chelsea, cultivate a collection of these plants, but we do not know if they have those you instance. It is not surprising that examples in their natural habitat attain to the size you mention. *N. Northiana* has pitchers 12 to 16 inches in length, and 3½ to 5 inches in breadth. Pitchers 10 to 12 inches long are not uncommon in several species.

PEACHES: *Enquirer.* The fruits were over-ripe when packed, and arrived in a smashed condition. You did not observe the conditions printed in the last issue. See reply to *H. B.*, p. 32.

PEAS DYING: *Subscriber.* The injury is caused by a fungus, *Thielavia basicola*. Water the roots thoroughly with a solution of sulphate of potash, at the strength of 1 ounce in 1 gallon of water.

POTATO DISEASE: *W. C. H.* Potato blight is present on the leaves. Spraying with Bordeaux mixture is the only thing you can do to save the crop.

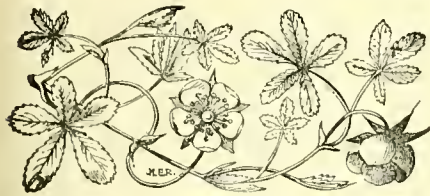
RASPBERRIES: *K. S.* The plants are perfectly healthy, but the flowers have not been fertilised, probably due to excess of rain having destroyed the pollen.

ROSE LEAVES: *E. W. Dell & T. S.* The foliage is injured by scorching. No disease is present.

VINES: *S. J. E.* After reading your letter, we do not think that the injury to the vines was caused by disordered drains. Any imperfection in the drainage of the border would not be likely to injure pot plants in the same house; it is much more likely that there is some communication between the house and the stoke-hole. At certain times the fumes of sulphur from the furnace may gain access into the vinery. The presence of such fumes would fully account for the condition of the foliage of the various plants you describe. A thorough examination should be made to determine whether this is the cause of the trouble.

VIOLA PLANTS EATEN: *C. W.* The injury is caused by a millipede, *Julus pulchellus*, eating the roots. Water the plants with a solution of nitrate of soda, using 2 ounces in 1 gallon of water.

Communications Received.—*A. Hope*.—*W. A. C.*—*A. D. W.*—*J. McF.*—*Herbert*.—*J. W.*—*J. McA.*—*G. Petrie*—*A. J. E.*—*J. E.*—*Miss Rayner*.—*E. M.*—*H. J. E.*—*S. & S.*—*T. W. B.*—*T. S.*—*S. W. F.*—*T. H.*—*A. B. H.* and *Soc.*—*Rev. Geo. H.*—*W. E. G.*—*W. J. B.*—*C. W.*—*A. R.*, *Florence*—*L. S. G.*—*H. F. M.*, *Ceylon*—*F. S.* (photograph)—*S. & W.*—*W. G. S.*—*G. B.*—*W. T.*—*R. G. W.*—*R. S. P.*—*A. B.*—*F. G. B.*—*E. M. W.*—*W. H. J.*—*J. A. R.*—*W. T.*—*L. I.*—*M. T. M.*—*J. B.*—*S. F. & Sons*—*W. H.*—*W. T. F.*—*W. C. J. M.*—*Kelway & Son*—*C. D. L.*—*S. J. M.*—*W. P.*—*Son*—*S. D.*—*C. & Co.*—*R. J. E.*—*Day*—*J. H.*—*W. H.*—*G. R. L.*—*A. H.*—*T. R.*—*W. H. A.*—*H. J. M.*—*B. & Sons*—*W. H.*—*F. W. P.*—*J. F.*—*Mrs. D.*



THE

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CASTLE ASHBY.

(See figs. 22, 23, 24 and 25.)

THE place of the Ash trees—Asebi or Esseby as it was originally called—is situated a distance of about eight miles from the county town, and is the seat of the Marquess of Northampton. The history of Castle Ashby takes us back to very early times. Asebi is mentioned in the *Domesday Book*, not that the present mansion (see fig. 23) dates from so remote a period, for in the fifteenth century a chronicler wrote of “a castle that now is clene down, and is made but a septum for bestes.” The manor, together with the remains of the old castle, were purchased by Sir William Compton in the sixteenth century. This gentleman’s great-grandson, William, became the first Earl of Northampton, and from the time of his occupation dates most of the modern glories of the place. This nobleman married a wealthy heiress in the person of Elizabeth, only child of Sir John Spencer, who was Lord Mayor of London in 1593, and thus the name of Spencer was added to the family titles. The history of the Spencers contains many interesting incidents—the danger of abduction by pirates, to which Sir John was exposed owing to his great wealth; the runaway marriage of his daughter, the reconciliation by the interposition of Queen Elizabeth, and even his funeral, at which a thousand men attended in mourning cloaks or gowns, and 320 poor men, every one of whom was given a basket, which

contained a black gowne, four pounds of beef, two loaves of bread, a small bottle of wine, a candlestick, a pound of candles, two saucers, two spoons, a black pudding, a pair of gloves, six herrings, six sprats, two eggs, and a dozen points (small laces for securing their garments).

But we must turn our attention to the gardens and pleasure-grounds, although a few words on the mansion may not be inappropriate. The castle forms a huge, rectangular building in stone, and although additions have been made by succeeding generations of the family, no part is incongruous, the stately pile appearing as though designed by some one master mind.

The balustrading around the roof is a dominant feature (see fig. 23). The words, “Nisi Dominus custos custodiverit, frysta vigilat qui custodit eam” (“Except the Lord, the Keeper, keeps the house, in vain he watches who keeps it”), and “Nisi Dominus aedificaverit domum, in vanum laboraverunt qui aedi-

with a hedge of Box, interrupted at intervals by fastigate Yews and Portuguese Laurels, the latter being clipped in the form of half-spheres rising from a main stem. These Laurels are exceedingly handsome, but it is regrettable that two of them—there are 30 in all—have suffered damage. These two are situated at a spot where cold winds sweep past the south-east corner of the castle. The flower-beds are planted in summer time with Coleus, Irisine, Ivy-leaved Pelargoniums, and Lobelia compacta. A flight of steps leads to what is known as the lower enclosed garden. This is shown in the foreground of our illustration in fig. 23. The stone vase seen in the centre is a beautiful example of the sculptor’s art. There are four main heds cut in the sward, and these have as their design monograms of the Compton and Spencer families. We saw them planted with Violas and Cerastium tomentosum, their confines being a dwarf line of Box, a simple but effective combination.



[Photograph by H. N. King.]

FIG. 22.—CHURCH AT CASTLE ASHBY AS SEEN FROM THE EAST TERRACE.

ficant eam” (“Except the Lord build the house, they have laboured in vain who build it”) are formed in the stonework.

The south front enjoys a magnificent landscape. A wide, sunken lawn is bounded by a terrace wall, having stone vases at intervals, and then commences a magnificent avenue of Elms, that stretches for a distance of four miles. The grandeur of this vista is enhanced by its great width. But these stately lines of trees form only one feature of the landscape. They do not approach close to the house, and therefore a view from the mansion on this side enables other features of the park, so extensive that its confines cannot be discerned, to come into view.

From a garden point of view the east front is the more interesting. It overlooks an Italian garden (see fig. 24), a bizarre of flower-beds, paths, and turf, with two imposing water basins and fountains. It is bordered

Proceeding, the visitor reaches another enclosed part, known as the Laurel garden (see fig. 25), there being large beds of Cerasus laurocerasus, and a beautiful water basin containing Nymphæas. A terrace wall divides this pleasure-ground from the park, the balustrading having classical quotations formed in stone.

The illustration in fig. 22 shows the parish church of Castle Ashby as seen from the east terrace. The church and churchyard contain the remains of the Earls of Northampton and their families. In the church itself are numerous monuments of older members of the family, whilst in the churchyard are several erected in more recent times. The wall of what was formerly a Palm house forms one of the limits of the churchyard and a fine background to a pretentious tombstone erected to the memory of the late Marchioness. There is a new Palm house, which

dominates a large pleasure-ground with four sunken lawns forming large panels, and having at intervals pyramidal-trained Conifers, including some magnificent golden Yews. There is also a large Mulberry tree near to the central walk, the trunk of which we found to be 7 feet in girth at breast high. The exterior walls of the Palm house are clothed with Austrian Copper and Persian Yellow Roses. Opposite the entrance to this building is a water-basin or Lily pond, planted with *Richardia africana* and *Aponogeton distachyon*. There are many fine Palms, and on pillars are trained *Brugmansia*, *Abutilon Thomsonii*, *Streptosolen Jamesonii*, Fortune's Yellow Rose, and other plants of a climbing habit. Fortune's Yel-

Numerous paths intersect this part of the garden, and the eye constantly alights upon some new feature, such as a pergola, herbaceous border, a small lawn enclosed by tall hedges, and even glasshouses, which are very numerous. Then there is a large herb-garden, quarters planted with Roses, and, finally, the part devoted to kitchen-gardening, there being 4 acres for this purpose enclosed by walls and as much outside. The vegetables and fruit trees all exhibited the best of culture, reflecting the skill of the gardener, Mr. Searle, and his staff. It is not necessary for us to describe in detail the numerous crops of vegetables, nor the vineries, Peach houses, orchard houses, conservatory, Banana pit, and numerous other plant-houses. These presented an excel-

high, with Tobacco-like leaves, and an inflorescence which certainly does not suggest a member of the Compositæ, the very small flowers, arranged on a large, loose panicle, with gracefully pendulous branches clothed with red, involucre bracts, having more the appearance of the plume of the Pampas Grass. The plant is popular for conservatories and for sub-tropical bedding, the strong Balsamic odour of the leaves and the elegance of the flower panicles being its chief attractions. It sets seeds freely under cultivation, and these should be sown not later than July.

About 20 years ago the late Baron Mueller, then Director of the Melbourne Botanic Gardens, sent to Kew seeds of a *Humea* which he thought was



FIG. 23—CASTLE ASHBY, NORTHAMPTON.

low Rose is also extensively cultivated in other houses. Next to a fernery solidly built of stone is a duplicate house, the entire roof inside being covered with this charming Rose. This season no fewer than 3,000 blooms have developed on these plants. The house is rather dark, in consequence of the luxuriant foliage of the Roses, but the walls are clothed with Oak-leaved Pelargoniums, *Heliotropiums*, and *Cestrum aurantiacum*. A flight of stone steps outside leads to the roof, from which a view of the Palm house and the gardens can be obtained, a feature being a Carnation garden planted in the design of the Union Jack in red, white, and pink-flowered varieties, viz., Agnes Sorrel, Uriah Pike, Keepsake, Gloire de Nancy, Leander, and Mrs. Nicholson. The Carnation garden is surrounded with broad hedges in Yew and Box, the latter being 9 feet through.

lent appearance, and readers are already aware that the satisfactory results of Mr. Searle's efforts may frequently be seen at the more important competitive exhibitions.

NEW OR NOTEWORTHY PLANTS.

HUMEA ELEGANS GIGANTEA.

HUMEA ELEGANS was introduced from Australia, where it is a native, about a century ago. It flowered in the garden of Lady Hume, Wormleybury, Herts., and was named in compliment of her by Sir James Edward Smith, who published a figure of it in his *Exotic Botany* in 1804. It is a robust-growing biennial, 6 to 9 feet

either a new species or a well-marked variety of *H. elegans*. Plants were raised, and they flowered in the temperate house, but, failing to set seeds, they were not perpetuated. Two years ago seeds of *Humea* were again sent to Kew from the Melbourne Botanic Gardens, and the plants raised from them are now in flower in the temperate house. Although scarcely distinct enough to rank as a species, this *Humea* may well be named the gigantic variety of *H. elegans*, as it is about 20 feet high, with a stem an inch in diameter, and the largest leaves are 15 inches by 5 inches. The panicles are correspondingly large, and there are dark red and pink forms. A *Humea* of these proportions can be grown only in tall conservatories, except in sub-tropical countries, where it ought to prove very serviceable. W. W.

NURSERY NOTES.

LAXTON BROTHERS, BEDFORD.

Charmer, and Earliest of All, until we come to Gradus, the first really hardy dwarf Pea of the Marrowfat type. This was a great acquisition and the forerunner of a class which has quite ousted the older type of Pea that had been used for early cropping. Their next effort was seen

crop also is very prolific, the pods being well filled with large Peas. This variety Messrs. Laxton regard as their finest early Pea. The firm's work in raising new Strawberries is well known, and the variety Royal Sovereign, which was put into commerce in 1893, has

Few firms have obtained such excellent results in the raising of new Strawberries as have been achieved by this Bedford firm. Messrs. Laxton Brothers have also introduced into cultivation some of the finest culinary Peas, of which Gradus alone may be instanced as a distinct break quite different from anything before seen in early varieties. Then with Roses, Pelargoniums, and other flowers, several leading sorts have originated with this firm. Although Messrs. Laxton are always more or less connected with Strawberry culture and raising, it must not be inferred that their nursery is a Strawberry farm only. Their specialising so largely in this fruit has given many the impression that this is their sole business, but their stock is general and includes hardy fruits in particular. It is a very busy season in any nursery at the present time, and particularly so at this one at Bedford. Not only is the Strawberry season at its height, but there is the work of attending to the rooting of the layers, the majority of which are sent out in small pots. There is much work connected with the examining of the many thousands of seedlings, some of which are fruiting for the first time, and others after one or more previous crops. This repeated inspection is necessary, because, whilst some new varieties do not justify themselves in their first season, others fail to maintain the qualities they have previously shown in their second or later croppings. There is also the training of many thousands of fruit trees of all kinds, the budding of Roses and other plants, and the hundred and one details connected with a general nursery.

To consider the culinary Peas first. Messrs. Laxton, if they did not grow Strawberries, would probably be known as specialists in culinary Peas. Their work in this direction commenced about 1865. Mr. Thomas Laxton, the father of the present members of the firm, was induced to take up the hybridisation of Peas and other plants by Charles Darwin. His first success was with Supreme Pea. This was raised from Ne Plus Ultra and the old Sugar Pea, a variety



[Photograph by H. N. King.]

FIG. 25.—LAUREL GARDEN WITH LILY POND AT CASTLE ASHBY.

in the variety Thomas Laxton, a very large-podded, first-early Pea of the wrinkled Marrow type. But both Gradus and Thomas Laxton grow to a height of 3 feet, and something was wanted to take the place of the still dwarfier kinds, in which the haulm does not exceed

enjoyed a greater popularity than any other variety. The first seedling which they introduced into commerce was the variety Traveller, and this was followed by many others, including King of the Earlies, Captain, Noble, The Laxton, The Bedford, Reward, Laxton's Latest, Leader, Bedford Champion (the largest of all Strawberries), Progress, Reliance, Cropper, &c. This list constitutes some of the best varieties, especially in the matter of cropping, size of fruit, and robustness of constitution. But a demand arose for varieties possessing greater flavour, such as is found in the Queen variety, which, however, has several defects, such as small berries, and is shy in bearing. With this end in view, Messrs. Laxton started breeding especially for flavour, with the result that they have placed on the market three Strawberries of especial merit in this direction, namely, Pineapple, Epicure, and Connoisseur. None of these varieties has large fruits, but all are prolific, and produce fruits of good colour and excellent flavour. Epicure was raised from British Queen and Fillbasket, and the rich flavour of the first-mentioned parent has been transmitted to the seedling. The free-bearing character of Fillbasket has also been inherited by the progeny, and with this is combined a vigorous constitution. Pineapple is a mid-season variety, somewhat conical in shape and very luscious, having a bright scarlet skin. This variety is recommended for forcing purposes. Connoisseur is descended from Scarlet Queen and Fillbasket. It ranks as an early variety, and as it sets very freely, it should prove an acquisition for cultivation under glass. Varieties capable of prolonging the fruiting season are valuable. Many growers now depend on Givon's Late Prolific, but this has a defect, as the plant often throws all its energies into one or two fruits, the others failing to swell. We noticed numerous instances of this in plants of this variety at Bedford, and it was curious that the flowers where the inflorescence branched, even in the secondary branching of the truss, were those only which gave promise of



[Photograph by H. N. King.]

FIG. 24.—ITALIAN GARDEN AT CASTLE ASHBY, NORTHAMPTON.

18 inches or 2 feet. This was secured in the seedling named Laxtonian, which, whilst sown in the nursery on the same date as Gradus, Thomas Laxton, and others of that type, had pods several days in advance of these. The

with an exceptionally large pod, which did not fill well. Then followed such standard kinds as Alpha, William I., Dr. Hogg, Marvel, Omega, Fillbasket, G. F. Wilson, Minimum, John Bull, William Hurst, Evolution,

maturing. In the variety Utility, sent out by Messrs. Laxton for the first time this year, this defect is not present. The fruits are of good colour, the plant crops well and is robust. Another new variety for 1909 is Rival, raised from Givon's Late Prolific and Royal Sovereign; but the very latest in cropping is Laxton's Latest (1904). It was interesting to observe the great number of seedling Strawberries in all stages, from those pricked off in boxes in the houses to great breadths in the open. Here was seen as wide divergence as could well be. Some were short in the foliage and compact, others tall and spreading, some had not more than a single truss of bloom, others produced great sheaves of flowers and fruits. Sometimes the stalk of the inflorescence was quite short, and in other cases it grew far beyond the foliage. We were especially interested in one variety which had its fruits in hundreds. We were informed, however, that the berries lacked flavour and were of a poor colour, but, like many other seedlings not worthy of placing into commerce, it will be used for breeding purposes. Then again some good things have to be passed over because they are so like existing varieties.

The market growers require a special type of Strawberry. They need one with a hardy constitution and heavy cropping quality; one that produces a solid fruit so that it will not bruise readily, in transit, and one in which the seeds are set deeply so that the skin is not injured by rubbing. We were shown several, at present unnamed, that have the making of good market varieties. One in particular, raised from The Laxton and Bedford Champion, will probably be utilised for commercial purposes. Of all the Strawberries we saw amongst the named kinds, none was fruiting with greater freedom than The Cropper, and this notwithstanding that the same plants last year furnished the stock plants of this variety.

The layering is very carefully performed. The runners are spread out, and when of a suitable size the first plantlet, or at the most the second only, is placed into small pots, which are plunged into the ground. Last year 180,000 of these little pots were employed. The parent plants are not allowed to fruit, all their energies being directed to the formation of runners, and they are plants in their first year. We were impressed with a new variety of Red Currant named Perfection. Quite small bushes were carrying large bunches of finely-coloured berries, some of the racemes having 15 to 20 berries, and we were informed that as many as 24 have been counted on the largest. A very interesting class of fruits is being raised from the plants of the Blackberry family. The firm's finest acquisition in this connection is the Loganberry, which was raised from the Loganberry crossed with Raspberry Superlative. The Dewberry (*Rubus caesius*) has been crossed both with the Raspberry and the Loganberry, although it was too early to see what the fruits were like. The Blackberry has also been hybridised with the Loganberry, and altogether there were several hundreds of these seedlings.

Amongst Apples, Pears and Plums, much work has been expended in endeavouring to obtain novelties. The firm has placed into commerce a new Plum, of which we saw a well-fruited specimen. It is a large, black fruit, raised from Grand Duke and the Czar. It is in season between Early Prolific and Victoria. Many of these seedling Apples, Pears and Plums have been several years in the nursery, and their fruiting is being anticipated with interest. Some are carrying their fruits for the first time this year. They are all unnamed at present. One of the most promising is a cross between Allington Pippin and Worcester Pearmain. Peaches have also been crossed with Nectarines. Plums with Peaches, and Cherries with Plum.

In addition to those subjects named, there are great breadths of Roses, fruit trees of all kinds, hardy flowering plants, shrubs, and, in glass-houses, Carnations, Ferns, and many other subjects. Especially interesting was a house filled with *Eucharis grandiflora*, the plants being extremely healthy and all magnificently flowered.

ORCHID NOTES AND GLEANINGS.

VANDA BENSONII.

THE great variation in the size and colour of the flowers of this Burmese species has been shown in a marked degree in the flowers submitted recently by several correspondents. The one extreme, whilst being of the true shape of *V. Bensonii*, has the flowers of a uniformly pale olive-brown tint, minutely spotted with darker brown. The lip is whitish, with the diverging lobes at the apex light brown. This is probably the variety *tristis* or var. *anchorifera* of gardens. The intermediate form is near to typical *V. Bensonii*, the reverse of the segments being white, the surface yellowish, closely dotted with purple-brown. The side lobes of the lip and the spur are white, the front tinged with rose-purple. The other extreme is a much showier form, veined with pale violet on the reverse side, the surface yellowish, veined with dull purple and spotted with the same colour on the basal halves of the segments. The base of the lip is white, tinged with blue, and with an orange blotch beneath the column, the front being rose-purple. The Burmese Vandas are pretty garden plants, though they seldom last many years under cultivation. The most prolific source of their decline and failure is doubtless that, under cultivation, they are kept too warm and moist during the winter-time. It is singular that those who carefully rest and keep dry the deciduous *Dendrobiums* from the same localities as the Vandas and *Saccolabiums* continue to give excessive heat and moisture to Vandas, for no other reason than that they are evergreen. After the end of March Vandas require heat and moisture, but during the dead of winter they should be rested by being kept cool and comparatively dry, though not so dry as the resting deciduous species.

ORCHIDS AT BELSIZE COURT, HAMPSTEAD.

THE interesting gardens of J. S. Bergheim, Esq. (gr. Mr. Page), although in London, contain a remarkable collection of plants, many of them reputedly difficult to grow, yet here they have been successfully managed for many years.

Curious plants of all kinds are a special feature, a selection of insectivorous plants including a fine lot of *Nepenthes*, *Sarracenias*, *Droseras* and *Pinguiculas*; a representative selection of succulent plants, with the columnar habited *Euphorbias* and *Cacti* arranged to show the similarity of the growth of totally different plants from widely-separated arid regions; and a set of plants showing movement, such as *Desmodium gyrans* and *Mimosa sensitiva* are never-failing sources of interest.

In the Orchid houses a selection of the singular species takes precedence, although the showy varieties are well grown, especially so the fine lot of *Dendrobium Phalenopsis Schröderianum*, and *D. Dalhousianum*.

At the present time the collection of *Cataseptums* has several dissimilar species in bloom, ranging from the curious *C. callosum*, with narrow, quaintly-arranged segments, to the more massive *C. tridentatum*, with a fleshy labellum, having three prominent teeth at the opening. With them are arranged a good example of the

Swan Orchid, *Cycnoches chlorochilon*, with four large flowers on one spike; another of *C. peruvianum*, with two pendulous spikes, one of which bears about 40 curious, chocolate-red spotted flowers. Overhead are some interesting *Bulbophyllums*, including two fine specimens of *B. barbigerum*, with several racemes of its curious feathery-lipped flowers, which are constantly moving with the currents of air. The rare *Megacalinium triste* has just passed out of flower. Other pretty species are *Platyclinis filiformis*, with about 50 of its gracefully-drooping racemes of yellow flowers; *Oncidium Krameri*; *Cypripedium concolor* and other *Cypripediums* exceptionally well flowered; and *Anguloa Clowesii*, with several large, pale-yellow blooms. These, with a profusion of flowers of *Gloriosa superba* on the roof, well-flowered *Eucharis grandiflora*, coloured leafed *Codiaeums* and *Dracenas*, and scarlet-spathed *Anthuriums*, make an interesting display.

CODIAEUMS.

MANY of the warm-house plants that a generation ago were esteemed for their handsome foliage have dropped into comparative obscurity, but some are still grown to a considerable extent.

The *Codiaeums*, known generally in gardens as Crotons, are still favourites, and some of the forms are largely cultivated, not only in private gardens, but also in many of the principal market nursery establishments. Some of the more slender-growing kinds form ideal table plants; while the larger and bolder varieties make elegant specimen plants. For this reason they are often employed in vases or in similar receptacles. In the arranging of ornamental groups of stove plants, *Codiaeums* are in great demand. The leaves also are largely used for decorative purposes by florists.

Although the garden varieties of *Codiaeums* are very dissimilar from each other in the shape of the leaves and their colouring, also habit, they are all forms of *Codiaeum variegatum*, also known as *C. pictum*. This plant is a native of Malaya, but it is a common shrub in tropical countries, where, under the influence of the brilliant sunshine, it acquires a richness of colouring seldom seen in European gardens.

Although two or three *Codiaeums* have been grown in our stoves for many years, the great stimulus to their culture was the number of new and distinct forms introduced by the late John Gould Veitch during his travels to the South Sea Islands from 1864 to 1866. According to *Hortus Veitchii*, no fewer than 23 distinct kinds were collected during that journey. In addition, several varieties have been received from Australia, chiefly from Sydney, some of these, in all probability, having emanated from the Pacific Islands. Numbers have been raised in other parts of the world, including Great Britain.

In making a collection of *Codiaeums*, a rigid selection is necessary. Taken as a class, the narrow-leaved kinds are the more popular; but on the Continent those with broader foliage are extensively grown. As the leaves vary so much in colour according to their position on the plant and the treatment given, no definite line can be laid down as to the exact markings of any one variety. The following selection may be considered a good and representative one:—

Aighurth Gem (different shades of crimson, leaves curiously interrupted); *angustifolius* (very narrow, golden-yellow leaves); *Baronne James de Rothschild* (the broad leaves are heavily suffused with crimson; the plant forms a bushy specimen); *B. Comte* (similar to the last-named; this makes a handsome specimen, the leaves being bright orange in colour); *caudatus tortilis* (peculiarly-twisted leaves of a rich golden-yellow); *Chelsonii*

(very narrow, twisted leaves, orange-red in colour); Countess (bright yellow, narrow leaves). These last three are particularly desirable grown as single-stemmed plants for table decoration. Delight (medium-sized leaves, heavily marked with ivory white); elegantissima (very long, narrow leaves, of a bright yellow colour); Emperor Alexander III. (broad, bright red leaves; the plant makes a handsome specimen); Etna (fiery

green, with a bright rose-coloured centre); Musai-cus (bright crimson, medium-sized leaves); Nestor (leaves of medium width, blotched with red and yellow); Reidii (stout, broad leaves of various shades of cream, pink and red); Sinitzi-anus (narrow, interrupted leaves, coloured green and yellow); Thomsonii (trilobed leaves, the centre being yellow and bordered with green); Van Oerstedii (a very distinct variety, with short,

leading. Owing to this variability, it is useless, except in a few instances, to attempt the naming of *Codiaeums* from leaves alone.

The plants are propagated by means of cuttings, the general time for inserting them being the spring and early summer. The cuttings should be selected from clean, well-coloured shoots that have passed their succulent stage, and are in what is termed a half-ripened condition. The placing of several cuttings in one pot cannot be advised in the case of *Codiaeums*, particularly if they are desired as small plants. In this latter case, the preservation of every leaf that can possibly be saved is an advantage, hence it is a good plan to insert each cutting singly in a small pot, which should be quite clean inside. As the spreading leaves occupy a considerable space, and propagating cases are, in the stove, limited, a good plan is to put three small sticks around the side of the pot and to tie the leaves into a partially upright position.

The pots containing the cuttings should, if possible, be plunged in a gentle bottom heat, under which conditions they will soon form roots. They need to be shaded from sunshine, and the lights of the propagating case must be kept closed till the cuttings are rooted. As soon as this stage is reached, fresh air should be admitted until the plants are inured to the ordinary atmosphere of the stove. They may then be shifted into larger pots, using a compost consisting of good yellow loam and peat or leaf-mould in equal parts, adding a liberal sprinkling of sand. The plants will also thrive in any ordinary potting compost.

Further details consist in affording the plants as much light as possible and a liberal amount of sunshine, shading them during the hottest part of the day only. The plants are sometimes attacked by scale, but the worst enemy is red spider, which not only disfigures the leaves, but causes them to drop. This pest is best combated by a free use of the syringe, taking care to direct the spray on the under as well as the upper sides of the leaves. The structure in which they are grown should be kept freely damped. When the pots are well furnished with roots, a little weak liquid manure and soot-water mixed may be given the plants occasionally. If the plants are needed for indoor decoration, some less objectionable fertiliser must be substituted. W.

ERIGERON MACRANTHUS VAR.

UNDER the name *Aster mesa grandiflora*, an ornamental border plant was distributed a few years ago by François Gerbeaux, of Nancy, who stated that the plant was raised in his nursery, and was supposed to be a hybrid between an *Aster* and an *Erigeron*. At the meeting of the Royal Horticultural Society on June 22 last, flowers of this plant were shown by Messrs. W. Cutbush & Sons, and deservedly secured an Award of Merit. However, the plant does not belong to the genus *Aster*, but appears to be a seedling form of *E. macranthus*, which it closely resembles in habit and flower. *E. macranthus* is a variable species, with a wide range of habitat over the Rocky Mountains of North-western America, extending south to New Mexico. Among the collected wild specimens are some with larger flowers than those in the present plant; these were called *E. grandiflorum* by Nuttall. This name, however, was made a synonym of *E. macranthus* by Asa Gray in the *Flora of North America*. The name *Aster mesa I* cannot find published in any botanical work, and there certainly appears to be no evidence of *Aster* influence in the present plant. The correct name should be *Erigeron macranthus* var. The plant is a very decorative subject, and, being of easy cultivation, like the better-known *E. speciosus*, it is well worth growing in the herbaceous border. It has an erect habit, forming bushes about 2 feet in height, and bearing numerous well-formed flowers of a bright tint of satiny-purple. W. Irving.



FIG. 26.—ERIGERON MACRANTHUS VAR.: COLOUR OF FLOWERS, SATINY-PURPLE.

red leaves; the habit is bushy); Flambeau (narrow, brilliant-red leaves); Golden Ring (narrow, golden-yellow, twisted leaves); Laingii (narrow, somewhat twisted leaves, the centre of the leaf and the footstalk being reddish yellow); Lucy (narrow leaves, rich orange-green, blotched with crimson); Mortii (very broad leaves, heavily marked with golden-yellow); Mrs. Icton (olive-

narrow, green leaves, spotted with yellow; this makes a small bush); Warrenii (leaves long and twisted, olive green, yellow and red, one of the finest for all purposes); and Williamsii (fiery-red leaves of medium width).

As above stated, the leaves, even on one plant, vary so much in colouring that the approximate descriptions may, to some, appear mis-

THE ALPINE GARDEN.

APHYLLANTHES MONSPELIENSIS.

This plant has proved perfectly hardy in cold places far north of the Forth. There are few cultivated plants which resemble it, and its hardiness will commend it to those who are interested in flowers of distinct appearance. The stems resemble those of a Rush, and are about a foot in height. On them are produced the little heads of blue flowers, about an inch across at the top. The flowers are of a pretty shade of violet-blue, and are produced from June to August.

Aphyllanthes monspeliensis is generally treated as a border plant, but its proper position is in the rock-garden, where it will grow well if planted in a sunny place in sandy soil, not too high up. Propagation is effected by division.

STENANTHIUM ROBUSTUM.

This North American plant is one of two species which constitute the genus *Stenanthium*, and, so far as I am aware, the only one which has yet been brought into commerce by British nurserymen; indeed, it is only within the last year or two that this species has been offered for sale. I have no knowledge that it will stand the average winters of the northern parts of the United Kingdom.

Last year I was much impressed by seeing a good group of *Stenanthium robustum* growing by the side of a little streamlet, just away from its margin, and in such a place that its roots received plenty of moisture. There it showed to great advantage, the long plumes of white flowers, from 3 to 4 feet high, being exceedingly beautiful; so beautiful, indeed, that it is difficult to do justice to them without laying oneself open to a charge of exaggeration.

S. robustum is a native of several of the States of America, and, as it loves a moist soil in its own land, so it seems to love one here, although it does not always follow that what suits a flower in its native habitat will answer for it in our climate. With the *Stenanthium*, however, it will be found advisable to give it a moist soil, for in such a medium it will give the best results. It is curious that *S. gramineum* or *angustifolium* prefers a dry soil in its habitats. The favour now shown to *S. robustum* will probably lead to the introduction in gardens of its congener, *S. Arnotti*.

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Strawberries in pots.—Plants intended for early forcing next season must be placed in their final pots as soon as they are sufficiently rooted. Every effort should be made to have them well rooted and the crowns matured before autumn. Prepare enough soil for potting the whole batch, and place it under cover to keep in workable condition. Strawberries require a rich rooting medium. Here we use the first spit from an old pasture, and this is chopped and mixed with an 8-inch pot-full of $\frac{1}{2}$ -inch bones to each barrow load of soil, the whole being turned two or three times. Very light soils need a quantity of well-decomposed farmyard manure and a little soot in addition to the bones. Pots $5\frac{1}{2}$ inches in diameter will be large enough for the early batches, but 6-inch pots must be used for later plants. Care must be taken to see that the pots are well cleaned and properly drained. A little soot sprinkled over the crocks will prevent worms entering. When potting, endeavour to so arrange the plants that the crowns are just above the surface of the soil; ram the soil firmly in the pots. It is a good plan, after potting, to place the plants in the shade for two or three days until they recover from the check, then stand them on a bed of ashes or gravel in a position fully exposed to sunshine; syringe them each morning and afternoon until they are well established. Apply water very

carefully till the roots are active, and should there be continuous heavy rains place the plants on their sides. Remove all runners and side crowns.

Cucumbers.—Cucumber plants require much attention at this time of the year to encourage them to produce a steady supply of fruits. They have a tendency to make an unnecessary amount of growth, and if this is not kept properly regulated and thinned, the plants soon become exhausted. Do not allow them to carry more fruits than are needed to maintain the supply. Cut the fruits before they become too large, and place them in a cool cellar, where they will keep in good condition for several days. The plants must be given frequent top-dressings of loam and decomposed horse manure, also an occasional sprinkling of some approved fertiliser. The roots will require copious supplies of water, well saturating the soil each time water is afforded them; liquid manure may be given twice a week. Syringe the plants twice a day and frequently damp down the paths to encourage a moist atmosphere in the house. Avoid overheating the water pipes, otherwise red spider will make its appearance. An occasional syringing with a mixture of soft soap and sulphur will tend to keep the plants clear of this pest. Make another sowing for supplying fruits during autumn.

Cucumbers in unheated frames.—So far the weather has not been favourable for the development of Cucumbers in frames. Air must be admitted with care during cold, stormy weather, otherwise growth will be stunted and the plants will be attacked by aphid. Should this pest appear on the leaves, lightly fumigate the frame with a nicotine compound. Plants in full bearing should be liberally watered and fed with manures; an occasional top-dressing may also be afforded them.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Fruit gathering.—This work will necessitate considerable time and care during the present month, for many of the soft fruits ripen almost at the same time. It is desirable that fruit intended for preserving should be gathered when perfectly dry. The practice of using the best Strawberry fruits for dessert and subsequent gatherings for preserving is a good one. Vi-comtesse Héricart de Thury should be included in all collections. It is of good flavour, possesses an excellent constitution, and crops abundantly. Raspberries require to be examined at frequent intervals, as the fruits ripen rapidly and commence to decay very quickly afterwards. Being so extremely soft, they require extra care in handling. In cases where it is necessary to send Raspberries and other soft fruits a considerable distance by rail, those intended for culinary purposes are best packed in wide-mouthed bottles. Such bottles can easily be packed amongst the vegetables in boxes or hampers. Black Currants being liable to split this season, owing to the wet weather, it is necessary to gather the earliest fruits as soon as they ripen, leaving the remaining fruits on each bunch to ripen afterwards. Red and White Currants may be left hanging much longer than Black ones. They will therefore afford a succession of fruit for a long period. Those who have planted Red and White Currants against a wall with a north aspect may expect a supply of fruit even late in autumn, especially if the shoots have been cut back as advised in previous Calendars in order the better to expose the fruits. Gooseberries intended for dessert should be packed in shallow boxes or punnets, care being taken to preserve the stalk of the fruit intact. If it is necessary to send them some distance, the berries should be picked before they are perfectly ripe, but those for home consumption, if allowed to become fully ripe upon the bushes, will have the better flavour. The fruiting season is prolonged if plants are cultivated as cordons against a wall facing north, or as bushes in a border under the shade of such a wall. Warrington is a variety of unusual reliability. Early Cherries are splitting badly, and it is not advisable to attempt to pack fruits which have split, as they decay quickly. Culinary Cherries, including the Morello, should be thinned as soon as the fruits commence to ripen. The thinnings may be used for the making of tarts, whilst the best fruits

will be useful for preserving when fully ripe. Such cherries will usually keep in good condition for a considerable time upon the trees if the weather is favourable, but they should be closely watched, and on the first signs of shrivelling or decaying, the whole crop should be gathered.

THE ORCHID HOUSES.

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

Epidendrum.—Plants of *E. radicans* which have been in flower for several months past should have their flower-spikes removed very soon after growth has recommenced. If large specimens are required, the scandent shoots should be tied around neat stakes, keeping the top of the young growths well up towards the light. In collections where space is of consideration, and many cut flowers are required, it is a good plan to cut off the shoots, that did not flower this season, into lengths of about 2 or 3 feet, tie each stem to a tall stick, and insert six or eight into a 6-inch pot in well-drained peat and Sphagnum-moss. The old growths and flower-stems frequently produce offshoots, which may be removed and potted up in the same manner, or they may be planted out and trained around pillars, or against a wall, the bright orange-scarlet flowers being useful and attractive. The fine, bright, vermilion-red *E. Schomburgkii* is also a plant well growing in considerable quantity; its large panicles of bloom last for several months in good condition. *E. xanthinum*, *E. ellipticum*, *E. elongatum*, *E. evectum*, *E. Ibaguense*, *E. cinnabarium*, *E. crassifolium*, *E. pristes* and *E. arachnoglomum* produce their flowers in terminal clusters, and are all useful plants; the following hybrids, *E. Boundii*, *E. Dellense* and *E. O'Brienianum*, may also be included. All of these species and hybrids may be treated the same as *E. radicans*. They thrive well in the same kind of compost, but are not so free in producing offshoots as that species. Choose a light position in an intermediate house, for the plants, and let them remain there during the whole year. When well-rooted, they require copious waterings at all seasons. Such species as *E. alatum*, *E. aromaticum*, *E. atropurpureum*, *E. ciliare* and *E. Randii* are best grown in the Mexican house, while *E. memorale* and *E. bicornutum* prefer a light position in the warmest house. Any of these plants that require more space may be repotted when growth begins. The material used should consist chiefly of *Osmunda* and polypodium fibres, and they should be potted as previously advised for Cattleyas. *E. prismatocarpum*, now starting into growth, may also be repotted in the same materials; a light position in the Cattleya or intermediate house is the most suitable place for it. Other species as *E. Cooperianum*, *E. Frederici-Guilielmi*, *E. myrianthum*, *E. syringothrysis*, *E. porphyreum* and *E. vitellinum* all do best when subjected to cool intermediate treatment. *E. Wallisii*, *E. Endresii* and the hybrids *E. Endresio-Wallisii*, *E. elegantulum* and *E. Clarissa* should be grown in a light position in the cool house during the summer months, and be given a very little warmth when the nights begin to turn cold.

Odontoglossum.—Any plants of *O. Rossii*, *O. Cervantesii*, *O. Madrense*, *O. Humeum*, *O. aspersum* and the rare *O. Galeottianum* that require more root room, or fresh material to root in may be given attention at once, for by this time the young growths will be making roots. These dwarf species require small pans and a shallow compost consisting of *Osmunda* and polypodium fibres. Suspend the plants in the cool house, and afford copious waterings until the flowering season is past. *O. grande*, *O. Schlieperianum*, *O. Inseyi* and its variety *leopardinum*, now making their growth, will require plenty of water at the root until the new pseudo-bulbs are completed.

Lycaste.—*L. Skinneri* and its varieties, also *L. Balliæ*, *L. costata*, *L. cruenta*, *L. macrobulbon*, *L. lanipes*, *L. gigantea*, *L. Peppæi*, &c., are cool, moisture-loving plants. Whilst care should be taken not to over-water them at this period, they may be watered copiously when they commence to form their new pseudo-bulbs. Do not allow water to lodge in the centre of the partially-developed growths, or they will be likely to decay.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Cyclamen.—If last season's plants have been kept with a view to their blooming in winter, these should be turned out of their pots, and the greater part of the old soil shaken from the roots. After this has been done repot the combs into clean pots of a similar size, or just a little larger, but do not use unduly large pots. After repotting, the plants should be placed near to the glass in an unheated frame or pit. Syringe them every morning and evening. Do not ventilate the frame much or apply much water to the roots of the plants until growth has recommenced, when they may be treated in the same manner as the seedlings that were raised last autumn. *Cyclamen* need always to be watered with great care, but the surroundings should be kept damp, otherwise red spider will be likely to put in an appearance.

Gloxinia.—Place the plants which have finished flowering in a cool house or frame, where the combs will mature well. They may be given frequent applications of weak manure water so long as the foliage remains green, but afterwards the supply must be gradually decreased until it is withheld altogether. Having been kept in somewhat dry conditions during the flowering period, the plants may exhibit signs of red spider or thrip. In this case fumigation with a nicotine vaporiser will be necessary.

Lachenalia.—The bulbs having rested sufficiently should now have the dry soil shaken from them. Sort the bulbs into three or more sizes, so that each size may be potted separately, and thus produce uniform specimens. Some gardeners cultivate *Lachenalia*s in shallow pans of soil, but 5-inch or 6-inch flower-pots are best for most purposes. A suitable compost is one consisting of loam three parts and leaf-mould and dried cow manure one part, adding a good sprinkling of coarse sand. For 5-inch pots, six or seven of the largest-size bulbs will be sufficient, but in the case of smaller bulbs a greater number may be placed in each pot. Stand the pots on a base of ashes in an unheated frame. Keep the conditions as cool as possible until the end of the year, at the same time preventing cold draughts which disfigure the foliage.

The tropical houses.—If there should be a spell of hot weather, the fires which heat these houses may be discontinued during the day-time. Indeed, it may not be necessary to use them even by night for a few weeks. Considerable care will be necessary, however, in attempting to do without them altogether, because high temperatures by day are sometimes followed by unusually low temperatures at night. During a time when fire heat is not in use, the afternoon syringing must be done sufficiently early to allow the foliage to become dry again before sunset, and it will not be necessary to damp the houses in the afternoon.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Cabbage.—Seeds should be sown towards the end of the present month for raising plants to mature next spring. A further sowing should be made in the second week in August. There are always complaints as to spring Cabbages running to seed prematurely; the principal cause of this is sowing the seeds too early. They should not be sown before July 20. Select an exposed position for the seed bed where the soil has not been cropped for a year at least with any of the Brassica family, and that has not been lately manured. Rake the surface soil finely before sowing the seeds, and afterwards protect them against birds by the use of nets. The three favourite varieties here are Ellam's Early, Sutton's April, and Flower of Spring. Ellam's Early and Sutton's April mature quickly, and possess excellent quality. Flower of Spring is later, but it produces larger heads. We have never found that true stocks of these varieties when sown at the proper time "bolt" to any appreciable extent.

Coleworts.—These should be cultivated in all gardens. The earliest plants are now ready for putting into their permanent quarters. The ground should be prepared in the same way as for ordinary Cabbage, making it very firm, and planting Coleworts in rows 1 foot apart each

way. Apply a good watering immediately after planting, and stir the surface of the soil frequently with the draw hoe. Rosette Colewort and London Hardy Green are two of the best varieties of these small-growing Cabbages.

Winter greens.—It is time that all these were already planted in their respective quarters, but if by any chance the work has been delayed, let the later ones be planted immediately upon well-prepared ground. Sturdy plants of Savoys, if planted even now on a south border or in a good open place in the garden, will produce satisfactory heads.

Carrots.—Make further sowings of Short Horn varieties in frames placed on old hot-beds, which have already been occupied with early crops, such as Potatoes, Beetroot, or Turnips.

Letuce.—Sow small quantities of seed of both Cos and Cabbage varieties about every 10 days. Hick's Hardy White is one of the very best Cos varieties for sowing after this date.

Endive.—Make sowings of both curled and round-leaved varieties every fortnight. Plant out the seedlings on well-prepared ground as soon as each successive batch is ready.

Shallots.—These having practically finished their growth, may now be lifted and laid on a sunny border to become thoroughly ripened. If the weather remains unfavourable for this, remove the Shallots to a cool house, pit, or frame, spreading them out that they may dry perfectly.

Radishes.—Sow the varieties Early Rose and Black Spanish for autumn and winter use.

Peas.—See that the later Peas are properly supported that the growths will not fall down or become cramped. However well these may have been staked, it is sometimes necessary to tie the leading growths with raffia, especially in cases where the plants exhibit unusual strength.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Layering Carnations.—This work should be proceeded with as soon as the plants have finished flowering. It is advisable to raise a number of fresh plants each year, as these give much better results than older plants. Before proceeding to layer the shoots, remove a quantity of the old soil about the plants, and replace it with a few inches of fresh material, as recommended in the issue for July 3, p. 5. Select the most suitable shoots, and remove some of the foliage from the part that is to be layered. With a sharp knife make a long, deep cut in a slanting direction, and with a peg press the cut portion into the soil. Take care to see that the slit portion is not closed; press the soil tightly around the stem, and afterwards sprinkle a little more fresh soil about the layer, but do not heap it in a mound, as in that case it would be difficult to thoroughly soak it in dry weather. Roots grow more freely when the soil about the shoots is kept moist. Pinks may be increased readily by cuttings, which may be either placed under hand lights or inserted closely together in a small trench beneath a wall on a border. The soil must have sharp sand mixed with it to keep it porous, but the ground should be trodden firmly when the cuttings are in position.

Polyanthus.—The old plants of Polyanthus that have been laid in for the purpose should now be divided. The stools are best pulled apart and each crown inserted separately. Cut away most of the old roots, leaving them only about 1½ inches long. Plant them in well-prepared soil on a north border. Some leaf-mould and decomposed cow manure should be incorporated with the staple. Plant the roots firmly, and guard the plants against slugs. Young plants of Polyanthus raised this season should have the soil about them stirred with the hoe to prevent weeds and promote aeration.

Violets.—Do not allow runners to remain on the plants. Stir the soil frequently with the hoe, and afford the roots water as often as necessary.

Roses.—Budding may be commenced as soon as the bark will part freely from the wood. Showery weather is favourable for Rose budding, and should the weather after the buds are inserted prove hot and dry, spraying with clear water must be carried out. Roses are propagated

readily from cuttings. The shoots root well in an old hot-bed frame, and they need to be kept shaded from the sunshine. A little manure forked into the soil is beneficial to Roses in July and August.

Liliums.—See that the flower-spikes are properly staked and tied as they develop. *L. auratum* and its varieties will need care to prevent the flower-spikes being broken by wind or heavy rain. Attend to the staking also of such plants as Dahlias and Hollyhocks. Certain other plants that do not need strong stakes can be supported by twiggy branches, and if these are placed in position now the growths will hide them when the plants are in bloom later.

General work.—Much time must be spent in keeping the beds and borders tidy by the removal of old flower-heads, decaying leaves, and weeds. The mowing of the grass verges and the rolling of the paths will also demand constant attention.

THE APIARY.

By CHLORIS.

Foul brood.—There is little need to go into the history of the disease known as foul brood, except to say that many are of opinion that it has been imported into this country by feeding bees on foreign honey containing the disease germs. The disease is very common in all parts of the country, and can only be stamped out by the concerted action of apiarists. Some bee-keepers confuse this disease with chilled brood.

What it is and how to detect it.—Foul brood is caused by a microscopic germ. It befores all who have foul brood in their hives to do all in their power to prevent the spread of the disease. They can do this by examining hives on still days, so that the wind shall not assist in the dispersal, and by invariably washing the hands in some disinfectant immediately after every manipulation of the hive or hives. There are two kinds of foul brood—one which creates a terrible, unbearable smell, and is difficult to cure, and the other of a mild nature, nearly without smell, and easy to cure. Since chilled brood is often mistaken for foul brood, it may be well to describe this. Chilled brood is not due to disease. It generally occurs during cold weather, when clusters of bees congregate in masses to secure greater warmth; consequently some brood is exposed and dies. The young brood, which was nearly nearly-white whilst living, turns grey, and then nearly black, and the bees drag them out of the hive. When the brood is dead and it is attacked by the disease "foul brood," it turns brown and never black. When sealed brood has been attacked by disease, the cappings, instead of being slightly convex, become concave and are punctured. If a piece of stick be inserted in a cell thus indented, and then withdrawn, it will be found that there is adhering to it a coffee-coloured, evil-smelling, sticky matter, which will assume a thread-like appearance before breaking. The bees remain about the entrances and seem to have no desire to work. Those who have modern or bar frame hives can easily discover the disease in its earliest stages, and thus are in a better position to fight it successfully. Generally speaking, if the colony attacked be weak, it is best to destroy the bees, frames and quilts, and then thoroughly cleanse the whole hive with disinfectants. The usual and best disinfectant is Calvert's No. 5 Carbolic. Take some boiling water and thoroughly scrub all parts inside and out with carbolic soap. Then thoroughly paint every portion with carbolic solution—one part of Carbolic No. 5 to two of water. If the colony be strong and the queen young and vigorous, shake the bees into an empty skep and feed them for 48 hours on good syrup; during this period the diseased bees will have died. The bees may then be placed in a perfectly clean hive on as many frames as they will cover—from four to six. The frames should be fitted with full sheets of foundation, and the bees must be fed for a few days. The skep in which the bees found a temporary home should be burned. The entrance to the hive should only permit one bee at a time to leave and enter the hive, for when bees are being fed there is great danger of robbing, and this is not desirable, for two reasons: (1) the bees may not be vigorous enough to defend themselves, and (2) if the disease is present, the visiting bees will be the means of spreading it.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

Editors 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 EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JULY 28—
Midland Carnation and Picotee Soc. Exh. at Birmingham Bot. Gardens (2 days). Newcastle Fl. Sh. (3 days). Haywards Heath Fl. Sh. Leamington and County Fl. Sh. (2 days).

FRIDAY, JULY 30—
Cheadle and Cheadle Heath Floral and Hort. Soc. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.6°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, July 21 (6 P.M.): Max. 69°; Min. 58°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 22 (10 A.M.): Bar. 29.8; Temp. 65°; Weather—Overcast.

PROVINCES.—Wednesday, July 21 (6 P.M.): Max. 68° Buckingham; Min. 59° Lincoln.

The Principles of Mendelism.

(See Supplementary Illustration.)

Nearly 50 years ago a man grew some Peas in a garden. The Peas were soon forgotten and the man died. But years afterwards several botanists of distinction, delving into old papers, discovered what the man had written about his Peas. With that rediscovery the whole trend of thought in matters relating to heredity suddenly changed. Few probably realise how great that change has been and what an enormous influence it must come to exert on all pursuits in which a knowledge of heredity plays part. The work is so new and so upsetting that many may well have hesitated to trust to it for guidance in their breeding operations until they had received from high quarters some definite assurance of the practical value claimed for it. That assurance they now have. Professor Bateson's book* has supplied this want, and there is a peculiar fitness in the fact that the first great exposition of the Mendelian principles of heredity should have come from one who has done more than any man alive to proclaim the extraordinary value of Mendel's work and to extend the field of research which Mendel himself opened up. It is high

praise, but none too high, to say that no book so full of moment for the development of horticulture has been published since Darwin's treatise on the Variation of Animals and Plants under Domestication. Like that great work, Professor Bateson's book is a storehouse of facts, a book to be drawn upon for inspiration, a book to be consulted in difficulty. Those who remember Professor Bateson as president of the last international congress of genetics held in London need no reminder of the firm and sympathetic grip with which he handled the problems which confront the breeder of plants. High expectations were then formed of the book upon which it was understood he was engaged. Those expectations have been amply fulfilled in the present volume, and it is not too much to say that the practical man who resolutely masters it will be able to conduct his operations, whether they be the raising of novelties or their fixation, with exceptional advantages over his less enterprising competitors.

We are sometimes asked by the horticulturist what the Mendelian principles can do for him. He will tell us that he understands Mendel's Law in such simple and familiar cases as that of the Pea, where the cross between a tall and a dwarf gives only tall, which themselves give rise to a generation composed of three dominant tall to one recessive dwarf. But he goes on to explain that the cases with which he is constantly meeting are very different. For example, that, though the hybrid shows resemblances to the parents, it is as a rule quite distinct from either parent, and from the hybrid may come all manner of different forms. Can Mendelism give any rational explanation of such cases as these, and if so, can it be of any use to him in fixing those of the new forms that he wants to keep? For because he does not meet with the stock 3 : 1 ratio staring him in the face at every turn, he is apt to discredit the whole Mendelian teaching as irrelevant to the type of problem with which he is most brought into contact. Such criticism may best be answered with reference to a concrete instance, and the coloured plate which we have been permitted to reproduce from Professor Bateson's book is the record of a typical experiment.

Two white Sweet Peas, Emily Henderson and Blanche Burpee, were crossed together, and the cross resulted in nothing but purples of the type called Purple Invincible. From the seed of these hybrid purples came the second, or F₂ generation, as it has been termed, consisting of eight different forms. Blanche Burpee and Emily Henderson both reappeared, and there were many purple Invincibles. But in addition to these there appeared five new coloured types, of which three were purples and two were reds. Now let us examine into how far the results of this cross can be made to tell us of the nature of the new forms and of the chances of getting them to come true.

Inspection of the F₂ generation shows that the flowers may be regarded as either possessing or not possessing a definite and limited number of alternative pairs of characters. Any given plant may be coloured or white, purple or red (if coloured), with deep-coloured or with light-coloured wings, with a hooded or an erect standard. Painted Lady, for instance, is a coloured, red form

with light wings and an erect standard: Duke of Sutherland is a coloured, purple form with dark wings and a hooded standard. All the different forms are the outcome of different combinations of these four alternative pairs of characters. One point, however, should be noticed. There are no reds with a hooded standard. In this family there is an incompatibility between those two characters, red and hood, such that plants carrying the one cannot carry the other. Now let us imagine that we wish for a true strain of the Duke of Sutherland variety. How far will the knowledge of the facts already acquired simplify our task? Duke of Sutherland is a hooded form like the original Blanche Burpee. Hood is alternative and recessive to the erect form of standard; for the original hybrid purple had an erect standard. Hence Duke of Sutherland must breed true to the hooded standard. Again, inspection of the F₂ generation will show us that among the coloured forms those with light wings are three times as numerous in the F₂ generation as those with dark wings. Dark wing is recessive to light, and the dark-winged Duke of Sutherland must consequently come true to that character. Further, we have already seen that there is an incompatibility between the red and the hooded characters such that the hooded forms cannot produce reds and vice versa. There remains yet white: what are the chances of a Duke of Sutherland throwing white? Since colour was originally made from two whites, it follows that the ratio of coloured to whites in the F₂ generation is 9 : 7, and that, of every nine, coloured forms, one will not throw whites. Out of every nine Duke of Sutherlands therefore which appear in the F₂ generation one will be completely fixed and will continue to breed true without any further selection. In order to obtain it the grower has only to collect the seeds of, say, two or three dozen of the F₂ plants, and to sow them separately. He will be practically certain to hit upon one or two which throw no whites, and could at once put the seeds from these on the market with complete confidence that the variety would continue to come perfectly true to type.

But it may sometimes happen that a type cannot be got fixed, and Professor Bateson gives us a pretty instance of that in the present case. Were a breeder seized with the desire to establish as a race the erect purples, he would find that no matter how strenuously he selected they would never cease to throw hooded purples and also reds. This, again, could have been predicted from the knowledge that the hooded and red characters are here incompatible. What we wish to emphasise is that the whole of the striking and apparently complicated results arising from this cross are in strict accordance with Mendelian principles, and are in reality simple if regarded from the proper point of view. From a knowledge of the original parents, the form of the hybrid, and the composition of the F₂ generation, the breeder can predict the chances of any form being got true to type in a single further generation. For the rapid raising and fixation of new forms, the moral of these Mendelian experiments is perfectly clear. Large numbers of plants must be raised in the F₂ generation, and the forms required must be tested *individually*, in order

* Mendel's Principles of Heredity, pp. 396, with 6 coloured plates and 33 figures, 12s. net. (Cambridge: University Press.) 1909.

to pick out those which are already fixed. And where plants are liable to cross fertilisation by insects, it is essential that they should be protected from such visitors.

In the light of Mendelian knowledge, selection is a term that will probably have to undergo some revision. Let us illustrate our meaning by returning to the Duke of Sutherland Sweet Pea. This variety is one of the rarer forms in the families we have just been considering, occurring about once only in every 30 plants. And, as we have already

process of selection. He would succeed simply because, on the laws of chance, he is in time bound to strike purples which are not carrying white. By replacing chance with intelligence, he could accomplish in one generation what he is to-day content to take several generations to effect.

Of one thing the grower may feel certain. Mendelism has come to stay. Even in its present, early stages it can be of considerable value, and, in view of the developments which may confidently be looked for during coming

enthusiasts, and we trust that their number will ever grow, for whom horticulture is the chosen occupation of their leisure and who pursue the fascinating subject of hybridisation through a love of the material on which they work and a desire for more intimate knowledge of all that concerns it. To those workers Professor Bateson's book must come as a wonderful stimulus. Rightly read, it will clear up many things that were mysterious, it will bring together much that seemed remote, and will suggest the likeliest



FIG. 27.—PORTION OF MESSRS. BAKERS' EXHIBIT AT THE WOLVERHAMPTON SHOW.

This display was awarded a Vase for the best exhibit in the Show, and two Gold Medals. (See *ante*, p. 44.)

(Photograph by Bennett Clark.)

seen, eight out of every nine on the average will throw whites. For the thorough-going selectionist, the method of establishing the variety is to collect and sow together the seeds of several purples. He gets, of course, a considerable number of whites. The seed of several purples is again collected in this generation. Again whites come, but probably this time fewer. By continual repetition of this "selection" process he looks forward to eventually establishing the pure purple. In time he will undoubtedly do so. But it will be through no inherent virtue lying in his

years, we should like to feel that the great firms are alive to its possibilities. Breeding has at last become a science. That is the gist of Professor Bateson's book. And if, like the manufacturing chemists, the iron masters, and the brewers, those who are occupied commercially with hybridisation place upon their staffs experts versed in the scientific aspects of their undertakings, we feel sure that they will never have cause to regret their enterprise.

But, after all, the commercial side is not the only side of the matter. There are many

paths for fresh adventure. Lastly, to him of greater soul this book may come to mean much more. For if he catches the creative note that underlies it, there will reach him also a vision of what it all may some day come to mean for the world, and a joyous feeling that he, too, may be privileged to add a few lines to that new edition of the book of life of which the foreword was written by Mendel in his own garden years ago. If we have interpreted our author aright, it is to these disciples above all that his message is addressed.

BRITISH GARDENERS' ASSOCIATION.—We are informed that on Wednesday next, July 28, meetings of gardeners will be held in connection with the summer show of the Horticultural Society of Northumberland, Durham, and Newcastle-on-Tyne, by permission of the chairman and council. The first-meeting will be held at 2.30 p.m. in the Recreation Ground, North Road, Newcastle-on-Tyne, in a special tent provided by the executive council of the B.G.A., and will be addressed by Mr. J. WEATHERS, general secretary of the association. Another meeting will be held in the same place at 7.30 p.m. Members of the B.G.A. have the privilege of entering the flower show on the first day at half-price (1s.) up to 5 p.m. on showing their cards of membership at the gate.

THE PRODUCTION OF WHEAT IN THE BRITISH EMPIRE.—The *Journal* of the Royal Society of Arts reports a paper by Mr. A. E. HUMPHRIES dealing exhaustively with the prospects of Wheat cultivation in the United Kingdom and the Colonies. The author also discusses the "rust problem," and alludes to the remarkable discoveries of Prof. BIFFEN at Cambridge, due to the application of Mendelian principles to the breeding of Wheats.

HORTICULTURAL EXAMINATIONS.—The Royal Horticultural Society's annual general examination on the principles and practice of horticulture took place on April 21 last. The following details have been furnished us by the secretary:—151 senior candidates (over 18 years of age) entered, of whom 19, or upwards of 12 per cent., obtained a place in the first class; 69, or upwards of 45 per cent., gained a second class; and 60, or nearly 40 per cent., are placed in the third class. Three candidates only failed to satisfy the examiners. In addition to these, four students resident in India entered for the examination, the questions set by the other examiners being specially adapted to India by the kind assistance of Lieut. Colonel PRAIN, F.R.S., and of these four candidates three obtained a second class and one failed altogether. In their report to the council the examiners (the Rev. Professor GEORGE HENSLOW, M.A., V.M.H., and Mr. JAMES DOUGLAS, V.M.H.) lay stress on the fact that the answers to the questions on the "Principles of Horticulture" were very satisfactory, especially those on Physiology, which were certainly the most important, and which, they are glad to say, were generally answered. The examiners also report that they were pleased to find that several of the candidates were well instructed in the somewhat new subjects of Ecology and Mendelism. It is necessary, however, to again urge the importance of candidates studying the instructions printed at the head of their paper before beginning to answer the questions. Fourteen candidates, for example, attempted to answer all the eight questions in "Operations and Practice," instead of confining themselves (as they were instructed) to four. In some cases, again, candidates were so prolix in their answers—had so much to say—that they only left themselves time to reply to three questions instead of to four. It is therefore necessary to again urge the importance of candidates practising conciseness in answering questions, otherwise they waste their own time and the examiners' also. The questions on "Practice" were for the most part very well answered. Although the same questions were this year set to the juniors (under 18 years of age) as to the seniors, an entirely different standard was looked for in their replies. One hundred and forty junior candidates entered, of whom 17, or upwards of 12 per cent., have been placed in the first class; 41, or 30 per cent., in the second; and 60, or nearly 43 per cent., in the third; 22 failed altogether. With regard to

"Principles," the examiners report that as a rule it was only quantity and not quality that was deficient. As far as the students had learnt there were no serious mistakes, and the answers, were distinctly encouraging. In "Operations and Practice," again, the examiners report that, considering the age of the candidates, the answers were very satisfactory, and they specially note that many of them showed a fair knowledge of the different kinds of manures and of their application to the different kinds of soils.

FREAM MEMORIAL PRIZE.—The Board of Agriculture and Fisheries have awarded a Fream Memorial Prize of the value of £7 ls. 8d., to Mr. WM. LAWSON, Guildhouse, Forth, Lanark, a student of the West of Scotland Agricultural College, who obtained the highest marks at the examination held in April last for the National Diploma in Agriculture.

THE BRUSSELS EXHIBITION, 1910.—An informal meeting of horticulturists was held recently in the Lecture Room of the Royal Horticultural Society, Vincent Square, at which representatives of the Council of the Royal Horticultural Society, of the National Chrysanthemum Society, and of other horticultural organisations were present. The principal object of the meeting was to receive the chairman of the executive committee of the British section of the exhibition, the Right Hon. the Earl of LYTTON, to hear from him particulars of the work and operations of the Royal Commission, and to afford to horticulturists the opportunity of obtaining detailed information with a view to their sending exhibits to the exhibition. The chair was taken by Sir ALBERT ROLLIT, who told the meeting what had already been done in preparation for the exhibition. Lord LYTTON stated the principal reasons why exhibitors should come forward to represent the British horticultural industry. There will be space for the maintenance of a permanent garden in the grounds, and periodical flower shows will be held. The Rev. W. WILKS, with several members of the Council, Mr. HARMAN PAYNE, and others requested information, and the proceedings closed with a cordial vote of thanks to Lord LYTTON for his attendance and speech. The new department of the Board of Trade which deals with foreign exhibitions has greatly simplified the business of exhibiting for this and future occasions. It is hoped there will be representative exhibits of all the trades of this country at Brussels. Full particulars may be had from the Director, Board of Trade (Exhibitions Branch), Queen Anne's Chambers, Westminster.

EXHIBITIONS OF THE AMERICAN SOCIETIES.—The first exhibition of the National Sweet Pea Society of America was held on July 7 and 8, in the Museum of Natural History, New York. The organisation of the society formed the first part of the proceedings, a set of rules being drawn up and adopted, and the officers appointed. Later, Professor CRAIG read a paper on "Variety Testing with Special Reference to Sweet Peas." A considerable display of Sweet Peas and other flowers was made in the exhibition hall. —The thirty-fourth annual convention of American Nurserymen was held at Rochester on June 9, 10, and 11. The society has, during the past year, been engaged in much work of a legislative nature, especially in studying the nurseryman's interest as affected by the tariff laws, and rules governing the inspection of imported nursery stock. The new president for 1909-10 is Mr. F. H. STANNARD, of Messrs. F. STANNARD & Co., Ottawa, Kansas. —The seventh annual meeting of the American Pæony Society was held at the Cottage Gardens Nursery Co., Queens, L.I., on June 11 and 12. The society held its meeting under

most agreeable circumstances. In a field immediately adjacent to the exhibition hall there was a splendid collection of Pæonies in different stages of development. Exhibits were staged on the first day and judged early the following morning. The president, Mr. C. W. WARD, was prevented by illness from being present, and Professor CRAIG presided in his absence. The report of the committee on nomenclature was given by Professor CRAIG and Mr. L. D. BATCHELOR, who has immediate charge of the Pæony plots at Cornell. Professor CRAIG drew attention to the publication of a bulletin giving the culture, history and botany of the Pæony, together with accurate descriptions of a select list of varieties.

INTERNATIONAL EXHIBITION AT LE TOUQUET-PARIS-PLAGE.—To the other permanent attractions of the popular French holiday resort of Le Touquet are to be added this year those of an international horticultural exhibition. The exhibition will consist of two parts, the one a "permanent" exhibition opening on July 1, and continuing till the end of September; the other, a temporary show, which is to last from August 21 to August 29. The exhibition, which is under the patronage of the National Horticultural Society of France, will be divided into 18 sections, among which may be noted the following:—Sections I.-V.—Greenhouse and hot-house plants: prizes being offered for plant novelties and for fine culture. VI.-X.—Plants grown in the open air: flowering plants, Conifers, Ferns, &c. XI.—Floral art: displays serving for the adornment of rooms, &c. XII.-XIII.—Fruit and vegetable cultivation. XIV.—Horticultural education. XV.—Landscape gardening. XVI.—Fine art in its relations with plants. The plan of the exhibition is now published, and we are glad to say that an ample and well-situated space has been reserved for British horticulturists.

DEATHS IN AMERICA.—The losses recorded last week in the American gardening papers include the following names:—ABRAHAM GARRISON BURNETT, formerly a florist in Maiden Lane, New York, died in Bronxville, N.Y., on Monday, July 5, at the age of 72. DAVID MILLER, aged 83 years, died at Washington Heights, near Camp Hill, Pa., on June 25. Mr. MILLER had lived a retired life since he removed to Washington Heights about five years ago. He was born at Lampeter Square, Lancaster Co., September 13, 1825. At the age of 12 he moved with his parents to Green Hills, near Carlisle; here he conducted the Green Hills Nursery. He moved to Boiling Springs in 1875 and to Camp Hill in 1879. Mr. MILLER was the originator of the Cumberland Raspberry. PHILIP PURCELL, a florist of Bay Ridge, N.Y., died on Saturday, June 26, at the age of 59 years. ADAM C. ULLRICH, one of the pioneer florists of Ironton, died on June 27. He was born in 1826, in Mutterstadt, Germany, and settled in America in 1847.

FUNGUS DISEASE OF FUNTUMIA ELASTICA.—A new "Canker" disease affecting this tree is described in the *Kew Bulletin*. The trunks are attacked, the bark becomes thickened and cracked, and eventually large wounds are formed. The injury has been found to be primarily due to a species of *Nectria*.

IRIS REMBRANDT.—In the sketch of this new bulbous Iris, raised by Mr. C. G. VAN TUBERGEN, reproduced in fig. 2, p. 3, it was made almost to appear as if the foliage were similar to that of the rhizomatous section. This was a mistake, the leaves of the new Dutch strain are long, linear, and deeply channelled, like others of the Xiphion section.

FLOWERS IN SEASON.—We have received a number of sprays of interesting flowering shrubs from Earl ANNESLEY'S garden at Castlewellan. Mr. THOS. RYAN, the gardener, states that many of the plants have developed into large specimens, some of them being 20 feet in height and as much through. The list includes *Drimys Winteri*, *Abelia floribunda*, the flowers being reddish-purple; *Hydrangea arborescens*, *Escallonia Phillipiana*, *E. langleyensis*, *Lomatia ferruginea* (see Supplementary Illustration, Sept. 23, 1907), *Escallonia pteracladon*, a free-flowering species; *Cornus Kousa*, *Olearia macrodonta*, *Halesia hispida*, the racemes of whitish flowers develop from the old wood; *Schizophragma hydrangioides*, the specific name describes the plant, the inflorescence is a corymb, the outer flowers being much larger than the others; *Cestrum Parqui*, the racemes of yellow flowers are somewhat like those of *Ribes aureum*; *Desfontainia spinosa*, *Senecio Greyi*, the under-surfaces of the leaves are covered with a white tomentum; *Sophora grandiflora*, the tree is 15 feet high and 12 feet wide; *Olearia argophylla*, the flowers are borne in a laxer manner than those of *O. stellulata*, and the leaves are longer and silvery beneath; *Abutilon vitifolium purpureum*, *Weigela Eva Rathke*, and *Calycanthus floridus*.

Several varieties of *Pæonies* have been sent us by Messrs. KELWAY & SON, Langport, Somerset. Very handsome were those labelled Grizzel Muir (white, flushed with pink at the base), Sir Madha Singh (a large crimson flower), Mrs. Manning (crimson), Duchess of Somerset (a large pale pink bloom), Mrs. Asquith (a pretty pink flower of large size), and Marchioness of Lansdowne (a small flower of bluish-pink shade).

Messrs. Wm. PAUL & SONS, Waltham Cross, have sent us blooms of their beautiful new *Rose Juliet*, which gained an Award of Merit at the meeting of the Royal Horticultural Society in Tuesday last. The colouring is a distinct break in *Roses*, and in addition the blooms are large and of beautiful form. —Messrs. R. VEITCH & SON, Exeter, send sprays of several interesting shrubs, also the curiously-flowered *Periploca græca*. *Lonicera Hildebrandtii* has very large yellow flowers. The most showy subjects sent are two varieties of *Ceanothus* named Marie Simon and albus plenus. Another handsome flowering plant is *Philadelphus Yokohamis*. The others include *Stephanandra Tanakae*, *Phoridium Hookeri*, *Caragana argentea* and *Senecio Greyi*.

THE RECENT INTERNATIONAL EXHIBITION AT BERLIN.—The total receipts at the Great International Horticultural Exhibition at Berlin in April last amounted to 140,603 marks, in which is included the contribution of the Minister of Agriculture, 10,000 marks, and a sum of 20,000 marks contributed by the Society. The expenses have been about equal to the receipts; but as the cost of lighting, installation, removal, and the repairs to the Zoological Hall is not so far included, the guarantors may yet be called upon to pay a small contribution.

A NATIONAL CEREAL-BREEDING STATION.—In the course of a paper read before the recent Conference of the National Association of British and Irish Millers, Mr. A. E. HUMPHRIES, of Weybridge, made the valuable suggestion that a National Cereal-breeding Station should be established. Mr. HUMPHRIES pointed out that the committee of the association known as the Home-grown Wheat Committee had for its object the breeding of ideal British Wheats—that is, such Wheats as come nearest to satisfying the requirements of the grower, the miller, the baker, and the consumer. He referred to the well-known facts that, whereas the miller wants a strong Wheat, the strength of English Wheat has decreased. The lack of this quality of strength in English Wheat is often attributed

to climate, but Mr. HUMPHRIES maintained that Wheat of great strength can be produced in this country, and that this can be done without detriment to yield of grain or quantity and quality of straw. He urged that the idea that Wheat growing could not pay in this country was erroneous, and maintained that what was wanted was that breeders should do for cereals what has been done for cattle and horses. The proposal recommending the establishment of a national station for the breeding of cereals was put to the conference by the president, Mr. J. M. Frost, of Chester, and was carried unanimously. There can be no doubt that such a station would confer an enormous benefit on agriculture, and we hope that effect will be given in the near future to this resolution. We are hearing constantly from this and that quarter that this or that improvement is impossible; that all possible advances have been already made; that, for example, if better Wheat could be produced in this country, it would have been done long ago. This sort of argument—if it may be dignified by such a name—is unscientific, and to all such pessimistic thinkers we would apply the famous advice of John Hunter: "Don't think—try." The trying in this case, however, must be on so large a scale as to be beyond the range of single individuals, and hence the need of a national station for the breeding of cereals.

THE PREVALENCE OF EELWORM.—From information received by the Board of Agriculture it appears that considerable damage has been done to the Oat crop by the stem eelworm (and also by the frit fly). The stem eelworm commonly attacks Wheat, Oats, Hops, Clover, and Onions, and also various garden plants, as, for example, *Chrysanthemums*. Leaflets describing the life-history of the pest and giving advice as to its treatment may be obtained gratis from the Secretary, Board of Agriculture, Whitehall Place, London, S.W.

PUBLICATIONS RECEIVED.—*Artificial Manures, Their Chemical Selection and Scientific Application to Agriculture*, by M. Georges Ville. New edition. Revised by Sir William Crookes, D.Sc. and John Percival, M.A. (Longmans, Green & Co.) Price 10s. 6d. net.—*The Foundations of the Origin of Species*, by Charles Darwin. Edited by his son Francis Darwin. (Cambridge University Press.) Price 7s. 6d. net.—*The Book of Nature Study*, by Bretland Farmer, D.Sc. Vol. IV. (Caxton Publishing Co., Surrey Street.) Price 7s. 6d. net.—*The Garden Week by Week Throughout the Year*. An illustrated Handbook to Gardening Operations and the Culture of all Important Plants. By Walter P. Wright. (London: Grant Richards, 7, Carlton Street, S.W.) Price 6s. net.—*Winning a Living on Four Acres*, by Fred. A. Morton. (London: A. C. Fifield.) 6d. net.—*Trees and Shrubs of the British Isles, Native and Acclimatised*, by C. S. Cooper, and W. Percival Westell, F.L.S., and illustrated by C. F. Newall. (Parts V., VI., VII. and VIII.) (London: J. M. Dent & Co., 29 and 30, Bedford Street, W.C.) Price 1s. each net.—*The Journal of the British Gardeners' Association*. (July.) Price 1d.—*Botanical Magazine*. (July.)—*East Coast Holidays*. The Great Eastern Railway Company's Handbook, to be obtained free from the Superintendent of the Line, Liverpool Street Station, London, E.C.—*The Journal of the Board of Agriculture*. (July.) (London: Board of Agriculture and Fisheries.) Price 4d.—*The Women's Agricultural and Horticultural International Union's Monthly Leaflet*. (London: Lower Sloane Street, S.W.) Price 2d.—*Practical School Gardening*, by Percy Elford, M.A., and Samuel Heaton. (Oxford: Clarendon Press.) Price 2s.—*Fertilisers and Manures*, by A. D. Hall. (London: John Murray, 50a, Albemarle Street, W.) Price 5s. net.—*Proceedings and Journal of the Agricultural and Horticultural Society of India for July to December, 1908*. (Calcutta: Agri-Horticultural Society of India, 17, Alipur Road, Alipur.)—*Annual Report of the Bee-Keepers' Association of the Province of Ontario, 1908*. (Toronto: Ontario Department of Agriculture.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PLANT ECOLOGY.—In T.'s article* on Prof. Warming's work on ecology, he says that the author "assumes that plants 'possess a peculiar inherent force, by the exercise of which they directly adapt themselves to new conditions, &c.'" To assume so much appears to be to renounce the attempt at real scientific explanation altogether. What T. calls an "assumption" is really a logical conclusion from a world-wide induction, coupled with an abundance of experimental verification. No scientist can have, even if he wished it, more proof. The former is based on the very "plant associations" which Dr. Warming and Dr. Schimper before him have so well described. For example, when you find that similar physical conditions are always characterised by similar plant associations, in that the members of the plant-groups have, respectively, the same vegetative structures in adaptation to their environments, whatever be the natural orders to which they belong, you cannot escape from the induction that there is a similar cause and effect—that the plants respond to the "direct action" (Darwin's term) of the environment and so "adapt themselves" to it. Dr. Warming's "assumption" is, therefore, an inductive proof of the identity in the cause. Thus, the Cactaceæ and Aloë-like Amaryllids of Mexico are just like the fleshy Euphorbias and the true Aloë of Africa. Their massive structures being storehouses of water in all alike. In this case no experimental proof is required, any more than for the conviction that the earth revolves on its axis every 24 hours; for which no proof is possible. Take an opposite case, viz., a hydrophytic association. A large number of Dicotyledonous aquatic plants of widely different families have their submerged leaves finely dissected; while, if they have others floating or in the air, they are complete. The accumulation of coincidences establishes the conviction that water is the cause (through response) of the dissected leaf, especially when it is seen that if a leaf be half in and half out of the water the former half is dissected but not the latter. But experimental evidence is to hand. Mr. McCallum, starting with the *a priori* assumption that the protoplasm was so supersaturated that it was unable to make a complete leaf under water—to put his "working hypothesis" to the test—dissolved nutritive salts in the water, with the view of setting up osmosis. The result was just what he anticipated, that subsequent leaves were completely formed though submerged. The plant he experimented with was *Proserpinaca palustris*, which has lanceolate, serrated blades in the air, but pectinate ones below water. Similarly spinescence is simply the result of drought, and has nothing to do with any teleological assumption of self-protection from browsing animals. Pears and Plums, as well as Barberry, Furze, and Rest-Harrow, when grown in a garden or in continuously moist soil and air, soon develop their spines into leafy shoots. In Dr. Schimper's work may be found an abundance of similar illustrations taken from all kinds of associations. The result of observations is everywhere the same. Induction, or the accumulation of similar facts, comes first. Then experimental verification follows, as seen in *Animals and Plants under Domestication*,† the title of Darwin's work, wherein he first expounded the same ecological view as modern ecologists hold, telling us that the "results of the direct action of changed conditions of life" are either "indefinite" or "definite"; if the latter, then "a new variety will be formed without the aid of natural selection." He did not then realise that there is no alternative, that nature has not two distinct and diametrically-opposed methods of making species, but only one, i.e., by the "definite" method. Darwin told Prof. M. Wagner in 1876 that to have overlooked this was his greatest mistake.‡ Consequently, we find it frequently introduced in the sixth edition of *The Origin of Species* (1878). Darwin was thus the pioneer in modern ecology; we are but his followers, and are endeavouring to establish the results from a new starting-point. George Henslow.

* Gard. Chron., vol. xvii., 3rd series, p. 13.

† An. and Pl. under Dom., vol. ii., pp. 271-2.

‡ Life and Letters, vol. iii., p. 158.

CARROT FLY IN NORTH HAMPSHIRE.—Very serious damage has been done to Carrot beds in North Hampshire by the Carrot fly, causing great loss to allotment growers and small holders. In over 30 cases enquired into the complete crop is destroyed. The crops were sown at dates varying from the middle of March to April 22. Most had been thinned, but some not; in about half the cases the ground had been previously double-trenched. The fly was first noticed on June 28. In many cases, where the crop was believed to be sound, the fly has been found on closer inspection. In one large garden at Oakley the appearance of the fly was noticed on July 9, but the crop is now growing well. *R. S.* [Every effort should be made to enable the young Carrots to grow quickly and without check. For this reason thinning should be done early, and, if the weather is dry the crop should be watered frequently. A sprinkling of guano or some other quick-acting fertiliser should be afforded. The watering of attacked plants with water containing one ounce of petroleum to the gallon is recommended, also frequent doses of salt water. Avoid wetting the foliage with these liquids.—Eds.]

A NEW CUCUMBER.—I have forwarded two fruits of a new Cucumber named Nelson's Prolific, a cross between Locket's Perfection and Telegraph. The fruits are from 1 foot to 1½ feet in length, and straight; the plants are very prolific. *Wm. Jno. Nelson, The Limes, Acombe, Yorks.* [Good solid fruits of the Telegraph type, rather pale in colour.—Eds.]

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 20.—The fortnightly exhibition, held on Tuesday last in the Society's Hall, Vincent Square, Westminster, was representative of all branches of horticulture. The building was well filled with groups of flowering plants, including many Orchids, and there were large exhibits of vegetables, also fruit trees in pots. A gold medal was awarded for a group of Souvenir de la Malmaison Carnations shown by C. F. RAPHAEL, Esq., Shenley, and a similar award was conferred for a collection of fruit trees in pots shown by Messrs. JAMES VEITCH & SONS, LTD. Other notable exhibits were groups of Roses, Delphiniums, Sweet Peas, Eremuri, Liliiums, Cacti, Ferns and collections of hardy flowers.

The FLORAL COMMITTEE granted six Awards of Merit to novelties, and the ORCHID COMMITTEE conferred two Awards of Merit and three Botanical Certificates.

The FRUIT and VEGETABLE COMMITTEE made no award to a novelty, but confirmed certain marks awarded to Cabbage Lettuces at Wisley.

At the 3 o'clock meeting in the lecture room an address on "Mendelism and Barley" was delivered by Mr. R. H. Biffen.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Henry B. May, John Green, Geo. Renthe, Chas. T. Druery, W. Cuthbertson, J. T. Bennett-Poë, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, Arthur Turner, Chas. E. Pearson, Chas. Dixon, J. F. McLeod, Jas. Hudson, Jno. Jennings, R. Hooper Pearson, R. W. Wallace, J. W. Barr, W. J. Bean, E. A. Bowles, and Jas. Walker.

The excellent group of Carnations shown by C. F. RAPHAEL, Esq., Porter's Park, Shenley (gr. Mr. A. Grubb), was comprised of varieties of the Souvenir de la Malmaison type. It was an extensive and boldly-arranged group, a number of large Nephrolepis Ferns being disposed at intervals and afforded a pleasing relief to the flowers. Many of the Carnations were of the Princess of Wales variety, these being shown in large, well-flowered plants, the individual blooms being remarkably fine. King Oscar, a variety with scarlet blooms, was grouped on either side of the pink-flowered variety, and there were in addition groups of Maggie Hodgson (clove), the Old Blush, and The Colonel (scarlet), whilst in the middle of the group was a batch of the yellow Miss Audrey Campbell. (Gold Medal.)

Another fine display of Carnations was shown by Messrs. WM. CUTBUSH & SONS, Highgate,

London, N. Here tall vases were utilised for displaying the blooms, most of which were of the perpetual-blooming type. At the back were tall epergnes of bamboo, these being grouped at their bases with pink-flowered Astilbes and Ferns, whilst the upper parts were filled with choice blooms of Carnations. In the body of the exhibit arose tall vases containing excellent flowers of Enchantress, Victory, White Enchantress, Mrs. T. W. Omake (pale pink), and other popular kinds. The group was arranged with skill for general effect. (Silver-gilt Banksian Medal.)

Messrs. STUART LOW & Co., Enfield, Middlesex, showed varieties of Souvenir de la Malmaison Carnations, many of them novelties raised at Bush Hill. The exhibit was arranged as a pyramid arising from a circular plateau. We noticed a large plant of the variety Irene with 15 large blooms, and others in the bud stage. The colour is a pale shade of pink. It was raised by Messrs. Low, as also were Lady Mary Hope (terra-cotta), Irene (salmon-pink), Maggie Nettlefold (a large bluish-pink flower), The Colonel (cerise), Sunset and Sunrise. The remaining portion of the group was composed of fine flowers of standard kinds. In another part of the hall the same firm displayed Roses in variety. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, LTD., Chelsea, showed an extensive group of perpetual-blooming Carnations, the collection containing most kinds in commerce. The same firm exhibited a number of small plants of Solanum Wendlandii, each specimen having a large inflorescence of the pretty blue flowers. They showed remarkably fine culture, and were the best flowered plants we have seen. In addition were Cannas in variety, well-flowered plants, although small, of Romneya Coulteri, a climbing Sollya, S. Drummondii, with small blue-coloured bell-shaped flowers; a magenta-coloured Lobelia labelled L. Erforda and Liliium miriophyllum, resembling L. Brownii. (Silver Flora Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, Surrey, showed Carnations of the florist's type, the best being Ellen Douglas (silvery grey), T. E. Henwood (pink), Hercules, Miss Willmott (coral pink), Cardinal and Agnes Sorrel (maroon).

Mr. L. R. RUSSELL, Richmond, staged a floor group of Caladiums; each plant was well furnished with foliage, although the leaves were not extra large. Such beautiful varieties as Candidum (white and green), Mikado (red and green), Pictum (small green and white leaves), Golden King, General Berger (rose suffusion on green), and Leonard Bause (silver) were well shown.

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed Ixias, Abutilon triumphans with rose-coloured flowers, Allamanda grandiflora, and a large hatch of plants of Acalypha hispida. Messrs. MAY also showed a collection of Ferns, in which crested and plumose varieties of Nephrolepis were a feature. (Silver-gilt Banksian Medal.)

Messrs. WM. BULL & SONS, Chelsea, showed ornamental-leaved plants of stove and greenhouse varieties, as a setting to their exhibit of Orchids.

A group of Cacti exhibited by Messrs. H. CANNELL & SONS, Swanley, proved a pleasing change from the usual exhibits. The collection embraced more than 200 plants, the genera represented being Echinocactus, Mammillaria, Cereus, Opuntia, Euphorbia, Senecio, Cotyledon, and Crassula. Amongst the more interesting we observed Euphorbia grandicornis, having formidable spines along the ridges of the stem; Astrophytum myriostigma (known popularly as the Bishop's Hood); Pilocereus senilis (Old Man Cactus); Cereus peruvianus monstruosus (called by some Rock of Ages); Cotyledon edulis (used sometimes as a salad); Cereus Sargentianus (with a dense row of stiff spines along the furrows); Opuntia robusta; Echinocactus Grusonii (golden Cactus); and the exquisite little Mammillaria micromeris, with rosettes of hairs that absorb water like a sponge. (Silver Flora Medal.)

Messrs. H. J. JONES & Co., Hither Green, Lewisham, showed varieties of Phlox decussata, Gaillardias, a stand of Scabiosa caucasica, and, along the front some bunches of Zonal Pelargoniums, a red-leaved Coleus, and a row of Adiantum Ferns, with Abutilon Thompsonii intermixed. Three good Phloxes are Independence (white), Ideal (orange-red), and Eugene Danzanvilliers (mauve and white).

Messrs. JAMES CARTER & Co., High Holborn, arranged an archway with vases of Sweet Peas, the manner of exhibiting being novel and much admired. It formed a connecting link between the firm's exhibits of culinary Peas and Tomatos on either side of the central transept. (Silver-gilt Banksian Medal.)

Messrs. CARTER, PAGE & Co., London Wall, made a large exhibit of Sweet Peas, representative of about 70 varieties. We noticed fine blooms of Constance Oliver, Elegance, Prince Olaf, Helen Lewis, George Herbert, Mrs. W. Wright, Lady Althorp, Queen Alexandra, and other popular varieties. (Silver Flora Medal.)

Mr. W. J. UNWIN, Histon, Cambridge, showed these dainty flowers in great assortment. Each vase contained large, brightly-coloured spikes of such varieties as Evelyn Hemus, Mrs. Harcastle Sykes, Constance Oliver, and Clara Curtis.

Messrs. KELWAY & SON, Langport, Somerset, showed varieties of Sweet Peas, also Gaillardias and a quantity of fine spikes of Delphiniums.

Messrs. DORRIS & Co., Rothesay and Marks Tey, exhibited a small but select group of Sweet Peas, having many novelties, including Mrs. A. Ireland, Masterpiece, Improved Mrs. Henry Bell, Clara Curtis, and New Crimson.

Mr. F. LILLEY, Guernsey, showed varieties of Gladioli, as on former occasions. (Silver Banksian Medal.)

Messrs. R. & G. CUTHBERT, Southgate, showed new varieties of Ivy-leaved Pelargoniums. The best were Mrs. Hawley, bearing large trusses of bloom with purplish-red flowers; Sabrina (scarlet, with a faint flush of purple), Resplendent (purplish-red), Southgate Perfection (purplish mauve), Beauty of Castle Hill (pale rose), and Holly Wreath (with silvery variegated foliage). Hydrangea alba grandiflora was shown very finely, the large corymbs being composed of flowers of the purest white. (Silver Banksian Medal.)

An interesting group of hybrid Delphiniums was shown by G. FERGUSON, Esq., Weybridge (gr. Mr. F. W. Smith). The best was Nulli Secundus (see Awards). There were others showing less of the black centre, notably Gradation. Some showed yellow colouring in the centre, the best of this type being Flava. Miranda has creamy-yellow petals with a lemon-shaded centre. Amongst blue-flowered varieties, a notable plant was the one labelled Lady Faudel Phillips, the large flowers being of the shade of blue seen in the Gentians. Baroda has pretty pale blue flowers. (Silver-gilt Flora Medal.)

Roses were extensively shown by Messrs. WM. PAUL & SONS, Waltham Cross, Herts. A large table was filled with epergnes, vases and boxes of choice varieties, the epergnes occupying the middle portion of the display with a standard plant of a climbing variety at intervals, and here and there a Dracena. The collection embraced such handsome varieties as Liberty, Frau Karl Druschki, Grace Darling, Wm. Shean, Mrs. Isabelle Milnes, Lyon Rose, and Joseph Hill. (Silver-gilt Flora Medal.)

Other exhibitors of Roses were Mr. W. R. CHAPLIN, Waltham Cross, and Messrs. R. HARKNESS & Co., Hitchin.

Mr. AMOS PERRY, Enfield Chase, Middlesex, staged a group of Delphiniums that extended almost the entire width of the building, a group of Liliiums completing the exhibit. Of the Delphiniums the more noticeable were Danube (Cambridge blue, tinged with pale mauve), Queen Wilhelmina (palest blue, flushed with mauve), Alfred Henderson, Duke of Connaught (a rich Gentian blue), Pedro Hamel (dark plum colour), the spikes attain to a height of 9 feet, and Jubilee, a semi-double-flowered variety of pale blue colour. The Liliiums included L. giganteum, a white form of L. Krameri, L. Grayi, and varieties of L. elegans. (Silver Flora Medal.)

Messrs. ARTHUR CHARLTON & SON, Summer-ville Nursery, Tunbridge Wells, showed seasonable border flowers, including many Delphiniums, one labelled The Navy being of deepest blue colour. There were also Phloxes, Campanulas, Irises, Thalictrums, Lychnis Chalcedonica, &c.

FROM THE GUILDFORD HARDY PLANT NURSERY many interesting and uncommon garden plants were exhibited. Lysimachia clethroides has a large spike of whitish blossoms. (Eriogonum, Campanulas, Delphiniums, Alstromerias, Phloxes and Irises were shown in great assortment.)

Messrs. G. & A. CLARK, LTD., Dover, made an exhibit of herbaceous flowers, amongst which we noticed the handsome red-flowered Gilia

coronopifolia, also a fine variety of Scabiosa caucasica labelled Pride of Riverslee. (Silver Banksian Medal.)

Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester, showed some superb blooms of Iris Kœlperii, a batch of hybrid Eremuri, Lilium Brownii, L. auratum platyphyllum and L. elegans, together with Delphiniums and many Ferns for greenery. (Silver Flora Medal.)

Mr. G. REUTHE, Keston, Kent, showed seasonable border flowers, one of the brightest being Anthemis Kitaibellii (a rich shade of yellow). We also noticed Campanula Mœrenheimi, Veratrum album, Sollya heterophylla, with blue bell-shaped flowers, and Gentiana thibetica, having heads of whitish flowers set in four large bracts. (Silver Banksian Medal.)

Messrs. WARE, LTD., Feltham, showed a rock-garden exhibit, amongst which we noticed the dwarf Geranium lancastrisense, Pratia repens, a trailing white-flowered plant; Betonia grandiflora, having large mauve-coloured blossoms borne in a spike, Lychnis Haageana, of richest scarlet, and Orchis elongata.

Messrs. J. CHEAL & SONS, Crawley, exhibited garden flowers in variety. (Silver Flora Medal.)

AWARDS OF MERIT.

Delphinium Nalli Secundus.—An excellent white or pale cream-coloured variety with dark centre. Shown by F. FERGUSON, Esq., Weybridge.

Eremurus Sir Michael.—A seedling variety from D. Shelford, which it greatly resembles. Shown by Messrs. WALLACE & Co.

Nymphaea Mooreana.—This Nymphaea was sent to Mr. Hudson by a friend in Australia some eight years ago. It took a few years to establish itself, but has now been flowering for five or six years past. The friend in question, when at Gunnersbury and inspecting the Water Lilies there, said that they had in Australia a better yellow variety than N. Mariacea chromatella, and he promised to send a plant on his return. It has proved better in colour than N. M. chromatella, whilst it is equally as floriferous. In foliage it is also distinct, the leaves possessing greater substance, whilst they are not mottled or marbled, as in that variety. The flowers when expanded are more rounded, the petals being shorter and broader. In colour it is deeper, being more distinctly yellow. Mr. Hudson was not informed as to its origin. It has proved to be perfectly hardy and of good constitution. Shown by LEOPOLD DE ROTHSCHILD, Esq.

Rose Juliet.—In this Rose Messrs. W. PAUL & SON, of Waltham Cross, have raised and introduced the most distinct in colour that has appeared for very many years past. The petals are rich yellow at the base for about 1 inch upwards, and the underneath side of each petal is cream-coloured. The remaining portion of the front or upper side of the petal is a distinct shade of red very difficult to describe. It may be said to resemble the colour of the Orchid Cochloda Noezliana! The extraordinary sheen observable over the whole flower is probably due in some measure to the yellow colouring at the base. At any rate, the new Rose may be recommended as a charming variety for the garden, introducing, as it does, a distinct and pleasing tint of colouring. It has to be said, however, that the blooms lose all this extra attractiveness directly they have fully developed, the fully-blown flower exhibited being scarcely recognisable as the same variety. Messrs. PAUL state that the plant grows about 6 feet thick. It has thick, dark green foliage, and may be grown as a pillar Rose. It is a cross from a H.T. variety and one of the Briars, possibly the Austrian Briar, but of this fact we are not informed.

Spiraea Veitchii.—Some flowering sprays of this new Spiraea were exhibited by Messrs. JAS. VEITCH & SONS, Chelsea. We have seen the plant itself in the Coombe Wood nursery earlier in the month, when the flowers were a much purer white than they were on the sprays shown. It is a shrub of exceedingly graceful habit, making slender, arching growths 6 feet to 8 feet long in one season, which become covered with flowers on the upper side from end to end the next season. The flowers are produced in corymbs 2 inches to 3 inches across. The leaves are of a rather bluish-green, oblong-lanceolate and toothed towards the end. The species

is a native of Central China, where it was discovered by Mr. E. H. Wilson, and it is a member of the same great group of Spiræas as S. canescens. Two nearly allied species have also been introduced from China by Messrs. VEITCH, viz., Henryi and S. Wilsonii. We believe it is Mr. Wilson's opinion that S. Veitchii is the finest of the three, and probably the best of all the Chinese species. It ought to make a charming shrub for a lawn where it can be given room for the full display of its elegant, arching branches. Like all the Spiræas it will need a rich, loamy soil to develop to perfection.

Sweet Pea Edna Unwin.—This is an excellent bright red flower with purple shade in the wings. It may be described as a larger, better form of St. George. Shown by Mr. J. UNWIN, Histon, Cambs.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec), Sir Jeremiah Colman, Bart., de B. Crawshaw, G. F. Moore, R. G. Thwaites, Gurney Wilson, F. M. Ogilvie, W. Bolton, W. Boxall, F. Sander, J. Förster Alcock, A. A. McBean, C. H. Curtis, W. Cobb, J. Cypher, W. H. Hatcher, J. Charlesworth, H. G. Alexander, A. Dye, H. A. Tracey, H. Ballantine and W. H. White.

Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed a magnificent dwarf specimen of the beautiful rose-coloured and white Vanda Miss Joaquim (teres × Hookeriana) with five spikes of large flowers, and a number of dwarf plants of the bright cinnabarscarlet Habenaria rhodocheila with a profusion of flowers. Mr. W. H. White was awarded a Cultural Commendation for each of these exhibits. Sir TREVOR LAWRENCE also showed the deep violet-purple Calanthe japonica atropurpurea and Cirrhopetalum papillosum.

Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park, Reigate (gr. Mr. Collier), staged a charming little group of rare and curious species, amongst which were the elegant white Bulbophyllum laxiflorum, B. coccinum (white, tinged with rose), B. biflorum (each spike bearing two long purple-tinted blooms), Cirrhopetalum Macraei (a pretty Ceylon species), Nephelaphyllum pulchrum, Masdevallia trichæta, and the chaste, pure white Spathoglottis plicata alba (see Awards). The hybrids with these species were Odontoglossum Astarte (Harrayanum × tripudians); the showy Lælio-Cattleya Epicasta Gatton Park variety, and the new Lælia Gattonensis (L. anceps Dawsonii × L. cinnabrosa) which in shape resembles L. tenebrosa, one of the agents in its composition, and has bright chrome-yellow sepals and petals and deep claret-veined lip.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), was awarded a Silver Flora Medal for a fine group, principally of good forms of Odontoglossum crispum. The gem of the collection was O. crispum Madonna, with a fine spike of snow-white flowers with chrome-yellow crest to the lip. The best spotted form was O. crispum Mrs. J. W. Whiteley, with handsomely blotched sepals. Considering the lateness of the season, all the flowers were remarkably fine.

Colonel G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), sent Lælio-Cattleya purpurato-Schilleriana Westonbirt variety, a handsome rosy-lilac flower with ruby-purple front to the lip, and L.-C. Radium (purpurato-Schilleriana × Warscewiczii), a large and profuse-flowering hybrid of bright colour. The sepals and petals were rose-purple, and the elongated front of the labellum, glowing ruby-crimson, darkest at the base.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed Odontoglossum Queen Alexandra variety Magnificence, a superb hybrid which is the best of Mr. CRAWSHAY'S fine strain of this cross. The massive spike bore very large flowers, broad and flat in the segments, the large shield-shaped white lip 1½ inches long and nearly as broad, being handsomely marked with violet, the sepals and petals yellow, nearly covered with olive-brown blotches. Mr. CRAWSHAY also showed O. Astarte (Harrayanum × tripudians) and O. Nerissa rosefieldensis (naevium × crispum), both improvements in their classes, and Odontioda gattonensis (O. Kegeljani × Cochloda Noezliana), originally described from Sir Jeremiah Colman's specimen in the *Gardeners' Chronicle*. Mr. CRAWSHAY'S plant plainly indi-

cated the parentage, there being more of the yellow of O. Kegeljani visible on the red surface of the flowers than in the original.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for an effective group of good and rare Orchids, the centre being composed of several grand plants of the best bright blue-tinted Vanda cœrulea, with which was a good example of the rare Vanda Charlesworthii, a natural hybrid between V. cœrulea and V. Bensonii. The flowers are prettily tessellated with a peculiar shade of blue, the lip being violet with white ridges. Sobralia macrantha alba magnifica had a fine large snow-white bloom; Bifrenaria tetragona, a cluster of curious wax-like flowers; Bulbophyllum barbigerrum, Disa sagittalis, Satyrium ochroleucum, S. membranaceum and other rare species were noted; Cattleya Mossie alba variety, with very fine white flowers, with a pale pink freckling on the front of the lip, and C. Gaskelliana alba; a finely-flowered patch of the best orange scarlet Epidendrum vitellinum, the fine Dendrobium superbum giganteum (macrophyllum giganteum) of the original type, its flowers strongly aromatic; Miltonia vexillaria albiflora with very large white flowers slightly tinted with rose; and a selection of hybrid Odontoglossums were included in this exhibit.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a good and interesting group, which included some Odontoglossums, the best of which were the massive and darkly-blotched O. crispum-Harrayanum Brugense, raised by Messrs. SANDER from seeds borne by a blotched O. crispum fertilised with O. Harrayanum, and the new O. ardentissimum Starlight (see Awards). Amongst others noted were a pretty Sophro-Lælio-Cattleya between C. Harrisoniana and Sophro-Lælia læta, some good Cypripediums, including C. Lord Derby; Vanda cœrulea of good quality; the deservedly favourite Cattleya Warscewiczii Sanderiana, with many fine rose and ruby-crimson flowers; several Brasso-Cattleya Pluto, a very beautiful Lælio-Cattleya Ophir with flowers of fine shape having deep yellow sepals and petals and a rose-freckled front to the lip; L.-C. Clive var. Eroomfieldensis, with a finely-coloured flower, and other Lælio-Cattleyas.

Messrs. STUART LOW & Co., Royal Nurseries, Bush Hill Park, were awarded a Silver Flora Medal for an effective group, in which their importation of Cattleya Gaskelliana showed great variation in the flowers of the plants staged, which ranged from white to rose and purple. One very remarkable variety had the labellum of a deep violet purple with a lighter margin. Amongst the Odontoglossums, O. crispum Annie had finely-blotched flowers, O. Pescatorei bore a branched spike of 35 blooms, Oncidium macranthum and other Oncidium were well flowered, Brasso-Cattleya Pocahontas alba (E. Eldorado alba × B. Digbyana) was a charming white flower with fringed labellum and petals, and very fragrant; Cypripedium Juno Drewett's variety, bore an excellent flower.

Messrs. WILLIAM BULL & SONS, Chelsea, showed a batch of light-coloured Lælio-Cattleya Norba (L. xanthina × C. Mossie).

Mr. JAS. H. HILL, Burgess Hill, staged a small group of Miltonia vexillaria, Oncidium macranthum, and other Orchids.

C. J. LUCAS, Esq., Warnham Court, sent Brasso-Cattleya Madame Chas. Maron.

W. THOMPSON, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed Odontioda Charlesworthii superba, very finely grown and with two stout spikes of flowers from the leading pseudobulb. (Cultural Commendation.)

Mr. GURNEY WILSON, Haywards Heath, again showed his fine white Brasso-Cattleya Digbyana-Mossie Glenthorne variety, with four flowers, and which had previously obtained an Award of Merit.

EUSTACE F. CLARK, Esq., Teignmouth, sent a flower of his Cypripedium Eustaccanum (superbiens × Argus).

Mr. GEO. BAILEY, Burgess Hill, sent four Odontoglossum crispum.

AWARDS.

AWARDS OF MERIT.

Spathoglottis plicata alba, from Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. Collier).—A very beautiful and remarkable albino of the pretty purple species. The plant bore a

head of pure white flowers, with a slight yellow tinge at the base of the lip. The variety is supposed to be unique.

Odontoglossum ardentissimum "Starlight" (*Pescatorei* × *crispum* Starlight), from Messrs. SANDER & SONS, St. Albans.—A remarkable variety with a strong resemblance in its markings to *O. crispum* Starlight, the numerous small purple spots on the inner parts of the pinkish segments being disposed in a similarly attractive way. The lip is white, of good shape, and has some red-brown blotches in front of the crest.

BOTANICAL CERTIFICATE.

Nephelephyllum pulchrum, from Sir JEREMIAH COLMAN, Bart.—A dwarf plant with stalked leaves bearing cordate blades prettily marked with olive brown on a yellowish ground. The dwarf flower-spikes bore several green and white flowers.

Megacalinum Arnoldianum, from Messrs. SANDER & SONS, St. Albans.—A pretty species, with the general appearance of *M. falcatum*, but with flowers of a lighter tint. The habit of the plant is also different, and the angular pseudo-bulbs of a lighter green.

Oncidium pumilum, from Mr. GURNEY WILSON, Glenthorne, Haywards Heath.—A dwarf, fleshy-leaved, Brazilian species, with only rudimentary pseudo-bulbs and bearing a branched inflorescence some 4 inches in height with small yellow flowers.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (Chairman), and Messrs. A. H. Pearson, J. Cheal, H. S. Rivers, J. McIndoe, O. Thomas, J. Harrison, W. Bates, J. Jaques, A. Dean, E. Beckett, E. Hobday, P. D. Tuckett, G. Reynolds, H. Parr, and G. Wythes.

The chief exhibit was a superb collection of Peach, Nectarine, and Fig trees in pots, and of flat-trained Gooseberry bushes, also in pots, shown by Messrs. JAS. VEITCH & SONS, Chelsea. Peaches and Nectarines, all either three or four-year-old trees, were heavily fruited, the 36 plants being in luxuriant health; of Figs there were 16, and of Gooseberries 38 plants. The Gooseberries were trained as cordons, some with five leading shoots and about 3 feet in height, all laden with fine fruits. Some of the best were Langley Beauty, Langley Gage, Keepsake, Forester, Gipsy Queen, Speedwell, Broom Girl, Early Sulphur and the Pilot. The Peach trees included the varieties Peregrine, Duchess of Cornwall, Duke of York, and Royal George. The Nectarines were Cardinal, Early Rivers, Pineapple, and Lord Napier. Of Figs the chief sorts were Bourdissotte Noire, Osborne's Prolific, and Brown Turkey. (Gold Medal.)

Messrs. T. RIVERS & SONS, Sawbridgeworth, staged four aged Cherry trees in pots. The trees were fairly well fruited, thus proving that pot trees will continue in a fruiting condition for many years. (Silver Banksian Medal.)

Vegetables were largely exhibited. The chief group was a remarkable collection of heavily-fruited Tomato plants in 10-inch pots displayed by Messrs. SUTTON & SONS, Reading. There were about 100 plants, pleasingly grouped in a carpet of Ferns. Of red kinds we noticed Early Market, Eclipse, Abundance, Magnum Bonum, Best of All, Satisfaction, Princess of Wales, Winter Beauty, Al, and Peachblow. Yellow kinds were represented by Golden Nugget, Dwarf Gem, Sunbeam, Golden Queen, Golden Perfection, and Chiswick Peach. The plants were examples of high culture. (Silver-gilt Banksian Medal.)

Messrs. JAS. CARTER & Co., High Holborn, had a very representative collection of edible Peas in dishes, there being some 150 kinds. They were all sown on the same date in the open field; the earliest were getting ripe, whilst very late ones, such as Rearguard, required yet some three weeks to fill the pods. Fine samples of Quite Content, Harvestman, Duke of Albany, International, Superlative, Leviathan, Stratagem, Early Morn, Centenary, Telegraph, Daffodil, and others were plentiful. There were many seedlings in the exhibit. (Silver-gilt Banksian Medal.)

Messrs. JAS. VEITCH & SONS filled a long table with a representative collection of vegetables, including (as a background, secured to wirework) several dwarf Peas, such as Chelsea Gem, Lang-

ley Gem, The Sherwood, and Green Daisy. In dishes were pods of Telegraph, Gradus, Duke of Albany, Little Marvel, International, Quite Content, Laxtonian, and many others. The group also embraced a representative collection of Cabbage. In addition to these there were Cos Lettuces, Tomatos, very fine Pearl Cauliflowers, Scarlet Model Carrots, Green Marrows, &c. (Silver-gilt Banksian Medal.)

COMPETITIVE CLASSES.

The only exhibit of two boxes of Cherries came from the gardens of Mrs. ENGLISH, Addington Park, Surrey (gr. Mr. J. M. Smith). The fruits were of medium size and named Bigarreau and White Heart. The only exhibit of three dishes of Currants was shown by E. G. PRESTON, Esq., Kelsey Park, Beckenham (gr. Mr. M. Webster), and comprised fine White Dutch, Red La Versailles, and superb Black Boskoop Giant. The 1st prize was awarded in each case.

AWARDS TO CABBAGE LETTUCES.

A deputation of the FRUIT COMMITTEE visited the Wisley Gardens on the 13th inst., for the purpose of examining a trial of Cabbage Lettuces. The stocks comprised 110, and each one included two rows of some 50 plants. The breadth thus comprised some 11,000 plants. All were from a sowing made in the spring on the same ground. Necessarily, many of the stocks under whatever names sent, were the same. One section or type being represented by no fewer than 12 stocks. In some few cases the plants had all bolted, but these were of the old Winter Hammernith type, thus showing their unfitness for summer cultivation. Some varieties, such as the small early Tennis Ball, Commodore Nutt, or Tom Thumb type, had hearted very early, and were already bolting to flower. Those varieties or stocks it was recognised were the best suited for frame culture. The finest type was that designated as "All the Year Round" or "White Dutch," which gave remarkably fine stock. So also did two stocks of a very green Dutch form, and two stocks of a very red variety with solid hearts. There were several of the blood-spotted or Passion Lettuces, and the Dutch with reddish-tinted leaves. Also of the large rough-leaved Drumhead, Malta, or Neapolitan form, all of which were excellent. Having classed the various stocks into types or under heads, the deputation selected from each the best and truest stocks for later mention. Representative heads of these Lettuces, some 22 diversely-named varieties, were placed before the full Committee on the 20th inst., being grouped into the following types:—Drumhead or Malta, Red-leaved or Marvel, White-leaved or German Giant, Ideal, and Paris Market, Tennis Ball or Tom Thumb type, Passion Lettuces, with red-spotted leaves, and All the Year Round section. The selected stocks were each awarded three marks. Their names will be published in the Society's Journal.

NATIONAL SWEET PEA.

ANNUAL OUTINGS.

EACH year the National Sweet Pea Society organises a series of trials of new varieties. The Floral Committee inspects the plants when in bloom, and upon their condition bases the awards of merit or certificates for those of conspicuous excellence. This season the plants at the University College, Reading, where the trial is conducted, were late in flowering, and the Floral Committee did not pay its first visit until the 16th inst. No awards will be made until the second inspection.

On the 17th inst. about 80 members of the Society—of whom no fewer than 40 went direct from London—visited the trials. There were exactly 350 rows. Included in these rows were standard varieties, novelties and seedlings. The plants were splendidly grown, and there were not more than a dozen failures. The most interesting feature was the mixtures among nearly all the American Spencers, while a few home-grown varieties, old as well as new, were very little better. Some of the most promising new, or comparatively new, varieties were Kathleen Macgowan, Gwendoline, Rosabelle, Marian Cautley, Mrs. Henry Bell (Dobbie's strain), Clara Curtis (Unwin's strain), Mrs. Tigwell, Mrs. C. W. Breadmore, Spencer America, Edrom Beauty,

Orange King, small, but rich in colour; Florence Wright, Splendour Spencer, a rose flake (No. 289) from Unwin; George Stark, and Dazzler No. 7. After spending about three hours in the gardens the members of the party were entertained at tea on the lawn by Mr. Owen Ridley, chairman of the Board of Governors of the college. The excellent manner in which the plants had been grown for the Society reflected the greatest credit upon Mr. Charles Foster and his successor, Mr. Drew.

The Society had arranged a far more ambitious programme for the 18th inst., since the members were invited to leave Liverpool Street Station at 8.45 and proceed thence to Witham, Kelvedon and Coggeshall, the home train leaving Kelvedon just after 7.30. Some 50 or 60 members availed themselves of the opportunity, and the first gathering was in the grounds of Messrs. Cooper, Taber & Co., Ltd., Witham. This is one of the leading British wholesale seed firms, and, like other houses, it conducts elaborate trials. There were plenty of Sweet Pea plants, but flowers were comparatively few owing to the exceptional lateness of the season. Any reader of the *Gardeners' Chronicle* who desires to see a complete Sweet Pea trial should go to Messrs. Cooper, Taber & Co.'s grounds about the 28th inst., and they will see much that is interesting and instructive. Failing the Sweet Peas, the members of the National Sweet Pea Society turned their attention to the culinary Peas. The trial is a magnificent one, and it was extremely difficult to get the visitors out of the quarters even to partake of the excellent lunch which the firm had provided. From Witham the party proceeded in conveyances, provided jointly by Mr. Wm. Deal and Messrs. E. W. King & Co., to Mr. Deal's home fields at Kelvedon, where there were about 13 miles (single rows) of Sweet Peas on sticks to be inspected. Whether any individual traversed the entire distance I cannot say, but all appreciated the splendid plants and purity of the stocks. After partaking of tea, which Mr. and Mrs. Deal prepared, brakes were requisitioned for Coggeshall under the direction of Mr. Ernest King, head of the firm of Messrs. E. W. King & Co. The rows of plants were remarkably true both in the small variety trials and in the groups—some extending to half an acre—grown for seed. Mrs. and Miss King had also prepared tea for the guests. *Orache.*

SCOTTISH HORTICULTURAL.

JULY 6.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, was in the chair, and there was an attendance of about 100 members.

A paper was read by Mr. W. H. Massie, of Messrs. Dickson & Co., the Royal Nurseries, Craigmillar, on Roses. Mr. Massie referred to the importance of selecting proper stocks for the various types of roses, and in dealing with their cultivation he laid much emphasis on proper pruning. He considered there was still great possibilities in the raising of new kinds.

One new life member and eight new ordinary members were elected.

Among the exhibits was a batch of seedling Aquilegias, shown by Mrs. SCOTT ELLIOTT, Teviot Lodge, Hawick. The Committee highly commended the strain.

The paper for the monthly meeting on August 3 will be on "The Flora of Tannahill," by Mr. A. Johnstone, Hay Lodge, Edinburgh.

NATIONAL ROSE AND LUTON AND DISTRICT SWEET PEA AND ROSE.

JULY 14.—The provincial exhibition of the National Rose Society, like the great metropolitan show, was favoured with beautiful weather. The exhibition was held at Luton, in conjunction with the Luton and District Sweet Pea and Rose Society. The competition, in the leading classes, was very keen. The Roses, taken as a whole, were surprisingly fine, and only once before has so many blooms been staged at a provincial show of the Rose Society. Throughout the whole of the afternoon the Wardown Park, in which the exhibition took place, was crowded with visitors.

The competition in the Jubilee Trophy class

for 36 blooms of distinct Roses was very keen, there being no fewer than nine competitors. The 1st prize was won by Mr. HUGH DICKSON, Belfast; 2nd, Messrs. A. DICKSON & SONS, Newtownards, Co. Down; 3rd, Messrs. D. PRIOR & SON, Colchester.

The 1st prize in the class for 72 varieties of Roses was awarded to Messrs. A. DICKSON & SONS; the 2nd to Messrs. B. R. CANT & SONS, Colchester; and the 3rd to Messrs. FRANK CANT & Co., Colchester.

Messrs. G. & W. H. BURCH, Peterborough, were awarded the 1st prize for 36 blooms; Mr. W. LEGGETT, Colchester, and Messrs. J. BURRELL & Co., Cambridge, taking the 2nd and 3rd prizes respectively.

In the leading class for Tea Roses, Mr. GEORGE PRINCE, of Longworth, Berks., was awarded the 1st prize, while Mr. HENRY DREW, Longworth, Berks., and Messrs. B. R. CANT & SONS were respectively placed 2nd and 3rd.

The Challenge Cup offered by Mr. Harry Kirk

Theodore Roosevelt, shown by Mr. HUGH DICKSON; the best Hybrid Perpetual, Ben Cant, shown by Messrs. B. R. CANT & SONS; and the best Tea, Mrs. Edward Mawley, exhibited by Mr. GEORGE PRINCE.

(Amateurs.)—The best Hybrid Tea was Mme. Melanie Soupert, shown by Mr. W. H. CALVERT, Helen's Bay, Co. Down; the best Hybrid Perpetual, Her Majesty, shown by Mr. R. FOLEY HOBBS, Worcester, and the best Tea, Mrs. Myles Kennedy, shown by Mr. W. O. TIMES.

GOLD MEDAL ROSES.—There were many new seedling Roses exhibited for awards, and these following were awarded Gold Medals:—

Leslie Holland, H.T.—A shade of bright crimson, shown by Mr. HUGH DICKSON.

Mrs. Hubert Taylor, T.—Creamy-white, tinted pink, shown by Messrs. ALEX. DICKSON & SONS.

Miss Ethel A. Malcolm, H.T.—Creamy-white, with peach shading towards the centre.

Sir John Llewellyn, Bart., presided at the lunch kindly provided by Mr. Rothschild, and after the usual loyal toast, proposed Mr. Rothschild's health, also a cordial vote of thanks to Mr. Harry J. Veitch for the admirable way in which he had enabled them to profit by their host's hospitality. Mr. Veitch, in his reply, made a well-merited reference to the services of Mr. Jennings, the head-gardener, who acted as guide on this occasion.

The weather, fortunately, was delightful, the only reminder of bad weather being a few minutes of threatening, misty rain, when, after lunch, the party was driven over to Mentmore, the Earl of Rosebery's estate. Returning to Ascott, tea was provided, after which the party returned to London with pleasant reminiscences of another delightful outing added to the list of those which it has been the privilege of the members of the club to enjoy for many years past.

MIDLAND COUNTIES SWEET PEA.

JULY 19.—The second annual show was held in the Arboretum, Walsall, in connection with the Walsall Florists' Society, on the above date. The show was not so extensive or the quality of the flowers equal to those exhibited at Wolverhampton a year ago. Very few non-competitive exhibits were sent, due largely to the cold, wet, sunless season and the difficulty of Sunday travelling.

OPEN TO MEMBERS OF THE SOCIETY.

In the principal class, which was for 24 varieties, Mr. W. MARPLE, Penkridge, was the only exhibitor. The collection included very good flowers of Helen Lewis, Countess Spencer, Nora Unwin, Marquis, Evelyn Hemus, Audrey Crier, King Edward, Paradise Ivory, Stark's White, Mrs. Routzahn, John Ingman, Elsie Herbert, and St. George.

Mr. MARPLE also won the 1st prize in a class for 12 varieties.

AMATEURS.

Of the four contestants in the class for 18 varieties, Mr. G. KERTLAND, 49, Burleigh Road, Wolverhampton, took the lead with rather small but good flowers of Elsie Herbert, Mrs. Collier, Mrs. C. Foster, Helen Lewis, Nora Unwin, John Ingman, and Syeria Lee. 2nd, Mr. JOHN E. CULLWICK, Grange Road, Wolverhampton.

The best collection of 12 varieties was shown by Mr. A. LONGSTON, Wychbold, Droitwich, with good examples of Olive Ruffle, George Herbert, Nora Unwin, Constance Oliver, St. George, Zephyr, and Elsie Herbert.

The 1st prize in a class for nine varieties was won by Mr. A. W. THORPE, Lichfield, with Cod-sall Rose, Helen Lewis, Minnie Christie, Etta Dyke, Mrs. C. Foster, Elsie Herbert, The King, Mrs. H. Sykes, and John Ingman.

A class for 12 varieties was reserved for growers residing within five miles of the exhibition. Only two entries were made, and the flowers were of indifferent quality.

In a class for six varieties having waved standards, Mr. BURD, Cannock Road, Penkridge, won the 1st prize with a very handsome set of flowers; 2nd, Mr. A. W. THORPE, Lichfield; 3rd, Mr. A. LANGSTON, Droitwich.

SINGLE-BUNCH CLASSES.

In the single-bunch classes 1st prizes were awarded as follow:—*White*: Etta Dyke, shown by Mr. JOHN E. CULLWICK, Grange Road, Tettenhall. *Blush or pink*: Mrs. Hardcastle Sykes, shown by Mr. G. KERTLAND, Wolverhampton. *Scarlet or crimson*: *Queen Alexandra*, from Mr. A. W. THORPE, Lichfield. *Rose, carmine, or cerise*: John Ingman, shown by Mr. E. SHORTHOUSE, Hammerwich. *Orange*: An unnamed variety from Mr. T. E. DALTON, The Wergs School, Wolverhampton. *Yellow or buff*: Harold, shown by Mr. E. SHORTHOUSE. *Lavender or pale blue*: Frank Dolby, shown by Mr. J. PERKS, Min-y-don, Wolverhampton. *Maroon*: Tom Belton, from Mr. A. W. THORPE. *Bicolor*: Mrs. A. Ireland, from Mr. A. LANGSTON. *Striped, flaked, or marbled*: Helen Pierce, shown by Mr. T. W. KENDRICK, Tettenhall. *Fancy*: Mrs. Rentzahn, from Mr. G. KENTLAND.

SPECIAL PRIZES.

Messrs. Bakers, Wolverhampton, offered four prizes for 12 varieties of Sweet Peas. Mr. G. KERTLAND, Wolverhampton, obtained the 1st



FIG. 28.—HYBRID TEA ROSE MISS ETHEL A. MALCOLM: COLOUR CREAMY-WHITE WITH PINK SHADING.

(Awarded a Gold Medal by the National Rose Society.)

for nine blooms of the variety Harry Kirk was won by Messrs. FRANK CANT & Co.

In the leading class for decorative Roses, Mr. J. MATTOCK, Headington, Oxford, secured the 1st prize for 18 distinct varieties, and also the 1st prize in the class for 12 varieties.

The Jubilee Trophy class open only to amateurs attracted as many as 12 exhibitors. Mr. E. B. LINDSELL, Hitchin, was awarded the 1st prize, and he was followed closely by Mr. ALFRED TATE, Leatherhead, while the 3rd prize was taken by Mr. F. DENNISON, of Leamington.

In the class for 36 varieties of Roses the Rev. T. G. W. HENSLOW, Chippenham, was awarded the 1st prize; Mr. E. B. LINDSELL and Mr. A. TATE being placed 2nd and 3rd respectively.

In the principal class for growers of fewer than 2,000 Roses, Mr. W. O. TIMES, Hitchin, secured the 1st prize, and Mr. E. B. LEHMANN, Crawley, Sussex, won the 1st prize in the leading class for growers of fewer than 1,000 plants.

The best blooms in the show were adjudged as follows:—

(Nurserymen.)—The best Hybrid Tea, Mrs.

Mrs. Maynard Linton, H.T.—A white bloom tinted with flesh colour. Both these varieties were shown by Messrs. S. MCGREY & SON, Portadown, Ireland.

A card of commendation was awarded to Messrs. A. DICKSON & SONS for "Duchess of Wellington," a bright orange-yellow coloured garden Rose.

HORTICULTURAL CLUB.

(ANNUAL OUTING.)

JULY 15.—By invitation of Leopold de Rothschild, Esq., a party of members and friends numbering between 60 and 70, and including many ladies, visited the beautiful estate of Ascott, Leighton Buzzard, on the above date. Mr. Harry J. Veitch, who undertook the arrangements, saw to the provision of saloon carriages at Euston and brakes at Leighton. The party inspected the delightful gardens at Ascott, the renowned stud farm, where several teams of race-horses were paraded for the visitors' pleasure, and the stag hounds.

prize with good examples of Helen Lewis, Nora Unwin, John Ingman, Mrs. H. Sykes, Frank Dolby, Evelyn Hemus, Marquis, Mrs. Routzahn, Countess Spencer, Marjorie Willis, Apple Blossom and Elsie Herbert.

Messrs. Bakers also offered prizes in another class open to gentlemen's gardeners only. 1st, Mr. W. H. SHAW, Horsley Hall Gardens, Gresford.

Mr. Robert Bolton's prizes were for three bunches of Sweet Peas. Mr. J. PERKS, Wolverhampton, the only competitor, showed excellent flowers of Marjorie Willis, Marquis and Constance Oliver.

Mr. Robert Sydenham's prizes were offered for nine varieties. 1st, Mr. G. KERTLAND, with shapely flowers of St. George, Clara Curtis, George Herbert, Frank Dolby, Mrs. Routzahn, Etta Dyke, Syeria Lee, Evelyn Hemus and Paradise.

have an area of 50 acres, by Mr. Kirk, who proved an instructive guide. The pleasure grounds, kitchen garden, Melon, Tomato and Orchid-houses, Pine stoves and frame ground were visited, and, after making a detour through the pleasure grounds, the mansion—built in the old Scottish baronial style—was reached. The rockery, flower garden, conservatory, Nectarine, Peach and orchard-houses and stove were duly inspected. The system of growing vines in separate compartments, advocated by Mr. Kirk in his book on the vine, was seen in practice in one of the vineries.

BRITISH GARDENERS' ASSOCIATION. (LONDON BRANCH.)

JULY 10.—On this date the members of the London branch of the above association visited

MANCHESTER AND NORTH OF ENGLAND ORCHID.

THE session of 1908-1909 is now completed.

A. WARBURTON, Esq., Haslingden, proved to be the principal prize winner of the year, taking the "Bromilow" Cup offered for the best general displays, the "Charlesworth" Cup for plants not previously certificated in Manchester, and the "Ward" Cup for *Odontoglossums*.

H. J. BROMILOW, Esq., Rainhill, Liverpool, was the winner of the "Sanders" Cup offered for *Cypripediums*.

J. MCCARTNEY, Esq., Bolton, won the "Low" Cup offered by Messrs. Hugh Low & Co. for *Cattleyas* and *Laelias* only.

Z. A. WARD, Esq., Northenden, gained the highest number of points outside the above competitions, and was awarded a Gold Medal, R.



FIG. 29.—AN EXHIBITION GROUP OF GLÖXINIAS AS CULTIVATED BY MESSRS. SUTTON AND SONS, READING.

In Messrs. Webb and Sons' class there was only one exhibitor, Mr. W. H. SHAW, Gresford, who was awarded the 1st prize.

HONORARY EXHIBITS.

Honorary exhibits of Sweet Peas were received from three trade firms, viz., Messrs. W. H. SIMPSON & SONS, Birmingham (Gold Medal); MESSRS. BAKERS (Gold Medal), and Messrs. TOM B. DOBES, both of Wolverhampton.

STIRLING AND DISTRICT HORTICULTURAL.

JULY 10.—On this date about 70 of the members visited Norwood, Alloa, the seat of J. Thomson-Paton, Esq., whose gardener is Mr. Alex. Kirk, the well-known Grape grower. The party was conducted through the grounds, which

Aldenham House, Elstree. The party was conducted through the gardens by the gardener, Mr. Edwin Beckett. Hardy *Nymphaeas* were very fine, and some magnificent colour schemes, obtained by the bold grouping of various trees and shrubs, such as *Acer*, *Cornus*, *Prunus*, *Salix*, *Populus*, *Betulus*, *Sambucus*, and *Ligustrum*, were much admired. After passing through the fruit houses and kitchen gardens, the party was met by the Hon. Vicary Gibbs, and was conducted by him through the remaining portions of the pleasure grounds.

The outings arranged for August include visits to Messrs. J. Veitch & Sons' nursery at Coombe Wood on August 14, and to Battersea Park on August 28. Gardeners who are not members of the association are invited to attend these outings. Particulars can be obtained from Mr. A. G. Barnes, 154, Dunstons Road, E. Dulwich.

ASHWORTH, Esq., Newchurch, being placed 2nd.

In the small amateur section, Mr. C. PARKER gained a Gold Medal, Mr. H. ARTHUR a Silver-gilt medal, and Mr. J. STOTT a Silver Medal.

S. GRATRICK, Esq., Whalley Range, has been very successful in gaining Certificates, but he did not enter in any of the competitions. His collection of *Cypripediums* is unequalled in the North of England.

In the session 1909-1910 just commenced, the following are to be competed for:—Messrs. Sander & Son offer a cup for *Cypripediums*; Messrs. Charlesworth & Co. again offer a valuable challenge cup for new plants; Z. A. Ward, Esq., presents a cup for *Odontoglossums* grown by amateurs who do not employ a gardener; Mr. J. Robson gives a gold cup for *Odontoglossums*, and Messrs. Stuart Low & Co. offer a cup for *Cattleyas*, *Laelias*, and hybrids in this section of Orchids. P. W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JULY 12.—The monthly meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on Monday last. Mr. Chas. F. Harding occupied the chair. Eight new members were elected. The death certificate of the late Mr. William Colton was produced, and a cheque for £71 10s. 2d. was ordered to be paid to his nominee. The usual quarterly payments from the Benevolent Fund were made, and two lapsed members' accounts paid out.

CARDIFF AND COUNTY HORTICULTURAL.

JULY 21, 22.—This society held its twenty-first annual exhibition on these dates. The event took place in the beautiful grounds known as the Sophia Gardens, situated on the banks of the River Taff, which passes almost through the centre of the city and close to the castle, a seat of the Marquis of Bute. Every effort was made to obtain an exhibition of sufficient importance to fittingly mark the Coming-of-Age of this society, and these were eminently successful. A deputation from the Royal Horticultural Society visited the show, and bestowed a number of awards, in addition to those granted by the Welsh Society. The Cardiff and County Horticultural Society is not only the most influential in the principality, but it has prospered so in recent years that its show may now be classed with the first six in these islands. The lead thus given to horticulture in Wales and in some of the western counties of England is deserving of all praise. We are obliged to hold over our detailed report of the show until next week.

NATIONAL CARNATION & PICOTEE. (SOUTHERN SECTION.)

JULY 21.—The annual exhibition was held in the Royal Horticultural Hall, Vincent Square, Westminster, on Wednesday last. Notwithstanding the backwardness of the season, a large number of exhibits was staged, and the blossoms themselves appeared to show no signs of injury from the inclement weather. There were 56 classes, and, with one exception (Class 53, for a vase of seedlings, undressed, with Carnation foliage, that have bloomed at least the second year), they were well filled.

In the First Division there were five classes for dressed flowers and four for undressed blooms. In the five classes 18 blooms had to be shown, the two great rivals for honours being Mr. JAMES DOUGLAS, Great Bookham, Surrey, and Mr. CHAS. BLICK, The Warren Carnation Nurseries, Hayes, Kent. Mr. DOUGLAS was 1st with dressed flowers of bizarres and flakes, selfs, fancies, white-ground Picotees, and yellow-ground Picotees. Mr. BLICK being 2nd in each case. In the classes for undressed blooms, Mr. DOUGLAS was 1st for six self-coloured blooms, including Daffodil, Miss Willmott, Cardinal, Mrs. Griffith Jones, Mrs. T. E. Henwood, and Miss Agnes Sorrel, Mr. BLICK being 2nd.

Mr. DOUGLAS was also 1st with six fancies—Lord Steyn, Mrs. Penton, Highland Lass, Pasquin, Erl King, and Miss A. Young; Mr. BLICK being again 2nd.

In Class 8 for six varieties of yellow-ground Picotees, Mr. BLICK won the 1st prize with Daisy Boston, Her Majesty, Princess Juliana, Colleen Bawn, F. W. Goodfellow, and Miss Winifred. Mr. DOUGLAS was 2nd.

For 12 distinct varieties of selfs, fancies, and yellow-ground Picotees in Class 9, Mr. DOUGLAS was 1st with Liherté, Daffodil, Mrs. R. Berkeley, A. Sorrel, Lord Steyn, Cardinal, Miss Willmott, Pasquin, Amy Robsart, Peregrine, Santa Claus, and a new seedling. Mr. BLICK was 2nd.

In the Second Division, which was open to the trade, like the First Division, there were some very fine blossoms. Mr. H. R. TAYLOR, of Cheam, won the 1st prize in Class 10 for 12 dressed Carnation blooms, bizarres, and flakes, not fewer than nine varieties, in Class 11 for 12 selfs, not fewer than nine varieties, and in Class 13 for 12 white-ground Picotees, not fewer than nine varieties. He was 2nd in Class 14 for 12 yellow-ground Picotees.

Mr. H. MATHIAS, of Stubbington, took the 1st prize for 12 fancies in Class 12 and for 12 yellow-

ground Picotees in Class 14, being 2nd for 12 bizarres and flakes in Class 10, and for 12 white-ground Picotees in Class 13. Messrs. PHILLIPS & TAYLOR, of Bracknell, secured 3rd prizes in Class 11 and Class 14, Mr. W. SYDENHAM, of Melbourne, Derbyshire, having a similar prize in Class 12 for 12 fancies.

In the section for undressed blooms, Mr. H. LAKEMAN, of Thornton Heath, was 1st for four vases of selfs.

In Class 16, Miss SHIFFNER, Mr. R. MORTON, of Woodside Park, and Messrs. PHILLIPS & TAYLOR, of Bracknell, won 1st, 2nd, and 3rd prizes, respectively for four vases of fancies.

In the class for four vases of yellow-ground Picotees, Mr. H. R. TAYLOR, Cheam, was 1st, and in that for nine distinct varieties of selfs, fancies, and yellow-ground Picotees in separate vases, Mr. H. MATHIAS won the 1st prize.

Class 19, for six blooms of bizarres and flakes, was won by Mr. J. FAIRLIE, of Acton, with the varieties J. S. Hedderley, Geo. Melville, Wm. Skirving, Sportsman, Merton, and a maroon-coloured seedling.

In Classes 20 (six selfs), 21 (six fancies), 22 (six white-ground Picotees), and 23 (six yellow-ground Picotees), the 1st prizes went to Mr. LINZEE.

In Classes 24 to 34, Mr. CHARRINGTON took four 1st prizes for pink or rose selfs, dark-red or maroon selfs, huff or terra-cotta selfs; and two 2nds. Mr. J. FAIRLIE took 1st prize for three white selfs; 2nd prizes for three yellow-ground Picotees and three yellow-ground fancies; and 3rd prizes for maroon or dark-red selfs, fancies, six selfs, and yellow-ground Picotees. Mr. C. A. LINZEE took four 1st prizes, viz., for yellow selfs, yellow-ground Picotees, fancies, and six selfs, fancies, and yellow-ground Picotees; also taking the 4th prize in five other classes. Mr. C. A. PHILBRICK took a 2nd prize in this section for yellow selfs, and a 3rd for yellow-ground Picotees. Mr. SHELDON, of S. Woodford, took 1st for selfs and yellow-ground fancies, and 4th for yellow-ground Picotees, whilst Mr. F. E. GRAY took 3rd for yellow-ground fancies, and Mr. GRYPSPERDT, Croydon, 2nd for selfs.

In Classes 35 and 36, for six vases of selfs and six vases of fancies, dissimilar, Mr. J. H. LININGTON won the 1st prize.

In the classes open to all, Mr. JAMES DOUGLAS swept the board of the 1st prizes in six out of the nine classes, and came 2nd in Class 40 for nine white selfs, and 3rd in Classes 39 and 44 for nine rose or pink selfs, and for nine yellow-ground Picotees respectively.

Mr. R. MORTON took 1st prize in Class 40 for nine white selfs; he also took 2nd in pink and rose selfs, dark red or maroon selfs, 3rd for yellow-ground fancies, and 4th for fancies other than yellow-ground. Other prize-winners in this group were Mr. H. R. TAYLOR, 1st with Miss Willmott in the rose selfs, 3rd in Class 41, 2nd in 44, 2nd in 46, and 3rd in 47; Mr. H. LAKEMAN, 4th in Classes 39 and 40; Messrs. PHILLIPS & TAYLOR, 1st in Class 44 for yellow-ground Picotees, 3rd in Class 41, 2nd in Classes 42, 43, 45 and 47, and 4th in Class 46. In this particular group it is interesting to observe that although the classes had been specially designed to encourage entries from the trade growers, yet this year there were a very large number of amateur competitors in them.

For seedling bizarres and flakes, selfs, and white-ground Picotees, Mr. H. R. TAYLOR took the 1st and 2nd prizes in Classes 48, 49 and 51, Mr. H. MATHIAS securing the 1st prize in the yellow-ground Picotees with Libra.

Cup prizes.—H. R. Taylor, Esq., having offered two cups for competition, one was won by Mr. C. A. LINZEE for the highest aggregate number of points in the third division (Classes 19 to 34), and the other cup was won by Mr. TAYLOR himself for the highest points in the second division (Classes 10 to 18).

The "Cartwright Challenge Cup," value 20 guineas, offered by R. Chetwynd Cartwright, Esq., was won for the second time by Mr. JAMES DOUGLAS, the best exhibitor in Classes 39 to 47. This trophy also carries with it a Silver-gilt Medal in addition to the prize-money to commemorate the event.

Mr. C. A. PHILBRICK won the Silver Medal for the highest number of points gained in the fourth division (Classes 35 to 38 inclusive) by any one competitor.

A new feature of the show was the granting of "premier" awards for dressed and undressed flowers. Mr. DOUGLAS secured the honour for dressed bizarres, fancies, and white selfs; Mr. TAYLOR for scarlet flakes (Torchtlight) and white-ground Picotee (Fort Rose), also securing the 1st prize for undressed blooms of "Onward" in the light-ground Picotees. Mr. DOUGLAS took the "premier" award for his lovely undressed flower of the self-coloured Cardinal.

The show was excellently managed and staged by Mr. T. E. Henwood, the secretary, assisted by his son and the members of the committee.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 17, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was generally unsettled and cloudy, but there were several fair or bright intervals in most parts of the Kingdom, and in some western and south-western localities there was very little rain. Thunderstorms or thunder only occurred in various stations in England on Tuesday, and at Kew on Thursday.

The temperature was below the average generally, but just equalled it in Ireland S. The divergence amounted in nearly all districts to less than 2°, and was less than during the week immediately preceding. The highest of the maxima, which were recorded on irregular dates, ranged from 77° in England E. and the Midland Counties, and 74° in England S.E. to 66° in the English Channel. On Sunday the thermometer remained below 55° at many eastern stations, and only touched 52° at Skegness. The lowest of the minima were registered in most places early in the week, in Scotland E. and N. the respective values were 37° and 39°, and elsewhere the readings ranged from 40° in Scotland W. to 46° in England N.E. and the Midland Counties, and to 51° in the English Channel. The lowest grass readings reported were 35° at Marchmont and Aspatia, 36° at Hereford and Armagh, and 37° at Glasgow.

The mean temperature of the sea.—On the north-east coast of Scotland and also at some stations on the south-west coasts of England and Ireland, the water was warmer than during the corresponding week of last year, but generally it was colder. The actual temperature ranged from 60.7° at Plymouth, and about a degree lower at Margate, Eastbourne, and Seafeld to 52.7° at Burumouth and 60.7° at Lerwick.

The rainfall was rather more than the average in England N.E. and N.W. and Scotland W., but less elsewhere. Late on Thursday or early on Friday the fall amounted to about an inch at Stonyhurst and Southport. At Kilkenny and Scilly the week was quite rainless.

The bright sunshine was very deficient generally, but exceeded the average in Scotland E. The percentage of the possible duration ranged from 14° and 19° respectively in Ireland N. and S., and 22° in Scotland N., 23° in England S.E. and 24° in the Midland Counties to 34° in the English Channel and to 35° in Scotland E.

THE WEATHER IN WEST HERTS.

Week ending July 21.

The highest temperature yet registered of this summer.—During the past week there were three warm days, and but one cold night. On the warmest day, however, the highest reading in the thermometer screen was only 76°. This, although only about 6° warmer than the average maximum for the time of year, proved the highest temperature as yet recorded here during the present summer. The ground temperatures have risen during the week, but the readings are at the present time still 1° colder than is reasonable, both at 1 and 2 feet deep. Rain fell on three days, but to the total depth of less than half an inch. The percolation through the soil gauge on which short grass is growing ceased at the beginning of the month, but there are still small quantities of rain-water coming each day through the bare soil gauge. The sun shone on an average for 7½ hours a day, or for 1½ hours a day longer than is usual at this period in July. Light winds have prevailed during the greater part of the week, and the direction has been exclusively some westerly point of the compass. The mean amount of moisture in the air at 3 p.m. exceeded a reasonable quantity for that hour by 3 per cent. E. M., Berkhamsted, July 21, 1909.

SCHEDULES RECEIVED.

Abingdon Horticultural Society's summer show on August 19. Secretary, Mr. J. H. Viner, 2, The Abbey, Abingdon.

Cambridge Horticultural Society's autumn show, to be held on Wednesday and Thursday, November 3 and 4. Hon. sec. Mr. A. Mathew, 20, Trinity Street, Cambridge.

Northampton Municipal Horticultural Society's exhibition of flowers, fruits, and vegetables, to be held on Wednesday and Thursday, August 4 and 5, at Abington Park, Northampton. Secretary, Mr. James B. Palmer, 96, Cyril Street, Northampton.

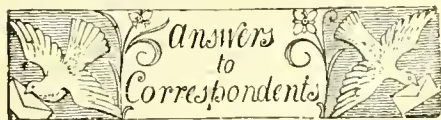
Kingstown Horticultural Society's exhibition, to be held in the People's Park, Kingstown, on Wednesday, August 11. Hon. secretaries' address: Municipal Technical Schools, Kingstown.

Altrincham and District Chrysanthemum Society's exhibition, to be held on Friday and Saturday, November 5 and 6, in the Drill Hall, Hale. Hon. secretary, Mr. Wm. Hazlehurst, 20, Ashley Road, Altrincham.

TRADE NOTE.

THE GARTON-COOPER SEED CO., LTD.

This private company has been registered with a capital of £20,000 in £10 shares. Its purpose is to carry on the business of cultivators and buyers of plants and seeds (particularly the new breeds of plants and seeds originated by J. Garton, of Warrington, suitable for American cultivation), and to adopt an agreement between Garton, Ltd., J. Garton, Sir Richard P. Cooper and R. A. Cooper (trading as William Cooper and Nephews), and the company. The registered office is at the offices of Messrs. Gartons, Ltd., Thynne Street, Warrington.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ADIANTUM FERNS: *Mrs. E.* We suspect your treatment is at fault. Ferns, in common with other plants, should be allowed plenty of space, so that light may reach them on all sides and air circulate freely about them. The usual fault is in the matter of watering; Ferns must never be allowed to become dry at their roots, and the atmosphere of the greenhouse must always be kept moist. Over-watering is equally to be avoided. Ferns need manurial stimulants occasionally, for which purpose weak liquid manure and clear soot-water are to be recommended.

APPLE TREES KILLED: *M. T. M.* The grub that has caused the damage is probably the larva of the goat moth. The wood smelled strongly of paraffin; perhaps in your endeavours to kill the insect by this means you completed the destruction of the tree. A wire passed into the burrow will generally destroy the intruder.

ASTERS DYING: *R. L.* The plants are affected by Aster disease, Erysiphe cichoracearum. Burn all the diseased plants and spray the healthy ones with a fungicide.

BEANS UNHEALTHY: *W. J.* No disease is present. The roots have been injured by centipedes. Apply a little soot and a sprinkling of sulphate of potash and lightly fork it into the soil.

BEECH COCCUS: *D. P. H.* This pest is often confined to the trunk and main branches of the tree, when it can be eradicated by scrubbing the bark with some strong insecticide. As your trees form a hedge, scrubbing may not be practicable, in which case you must resort to spraying. The following is recommended in the *Board of Agriculture Leaflet* on this subject:—1, The trees should be sprayed, when in the dormant condition, with the following emulsion-soda wash, as used at the Woburn Fruit Farm: Paraffin, 2 gallons; soft soap, 1½ lb.; caustic soda (98 per cent.), 6 lb.; water, 28 gallons. In order to prepare the wash the soft soap should be dissolved in a gallon of boiling water; the paraffin should then be added and the mixture churned thoroughly until a cream-like mass results. The thoroughness of the churning is important. The 6 lb. of caustic soda should next be dissolved in the remaining 27 gallons of water and then poured into the paraffin emulsion. The whole should be well mixed and used immediately. Recent experimental work at Woburn, however, indicates that there are advantages in using a wash composed of:—Sulphate of iron, ½ lb.; lime, ¼ lb.; paraffin (solar distillate), 5 pints; caustic soda (98 per cent.), 2 lb.; and water to make 10 gallons. This may be prepared for use by proceeding as follows:—(a) Dissolve the sulphate of iron in about nine gallons of water; (b) shake the lime in a little water, and then add a little more water to make it into a "milk"; (c) run b into a through a piece of coarse sack to remove grit; (d) pour the paraffin into the mixture c and churn the whole thoroughly; (e) add the caustic soda in powdered form just before

using, and stir thoroughly. In using either of these mixtures the face and hands must be protected, as the mixtures are caustic in character. One advantage of the caustic soda is that it helps to clear the tree of such growths as lichens and algae.

BOILER: *C. W.* You should advertise if you wish to make the boiler known to the public.

BOOK: *J. W.* No book, however excellent, will enable you to become a first-class gardener unless you supplement knowledge so gained with practical experience. Thompson's *Gardener's Assistant* (new edition, by William Watson, Curator, Royal Gardens, Kew; six volumes, cloth, 8s. 4d. each; also in two volumes, Roxburghe binding, 52s.) will be useful for cultural information. Other good works will be found in the list of garden books obtainable free from our publishing department.

BUTTONHOLE: *Calypso.* You must be guided largely by the material you can best obtain, and its suitability for the purpose. In any case the flowers must be of neat habit and small size.

COLTSFOOT: *G. W. & Co.* The Coltsfoot is one of the most troublesome weeds with which the farmer has to contend. The only mode of destroying it is by picking out every fragment of the root-stock, which operation will be most successful in spring, the plant suffering more from disturbance whilst it is in flower than at any other time. The Coltsfoot weed is always an indication of nitrogen exhaustion in the soil; therefore, after the land has been thoroughly cleaned of all particles of root in the spring, apply a manurial dressing (of 3 cwt. superphosphate and 2 cwt. nitrate of soda per acre, and sow the ground with Oats.

CUCUMBER CULTURE: *E. M.* The leaves will be liable to scorching in summer-time if wetted when the sun is shining fully on them. This can be avoided by lightly stippling the glass.

EELWORMS ATTACKING CARNATIONS: *Enquirer.* These noxious pests spread with such rapidity that it is advisable to burn any plants affected, and to sterilise the soil in which they were growing. Some good in checking the trouble has resulted by using sulphate of potash as a manure. The makers of Apterite claim that it will kill eelworm with certainty. Vaporite is also recommended.

EPILOBIUM: *W. H. Y.* The white variety of *Epilobium angustifolium* is a well-known plant. It is cultivated in gardens as *E. a. alba*. It also occurs wild.

GRAPES: *Muscat, Cheshire,* and *W. H.* The trouble is due to shanking. Shanked Grapes have generally browned, shrivelled stalks.

GRASS UNDER CHESTNUT TREES: *J. McF.* Afford liberal doses of liquid manure to the turf and a sprinkling of sulphate of ammonia. Next spring lightly fork the turf and sow with a mixture containing a large percentage of *Poa nemoralis* and *P. trivialis*. Light top-dressings of rich soil should be afforded at intervals.

HORTICULTURAL STATION AT MERTON: *B. D. G.* Money to found this horticultural institution was left by the late Mr. John Innes, and is known as the Innes Bequest. Particulars were given in the issues for January 30, p. 72, and February 13, p. 105.

LUCCOMBE OAK: *J. M.* This is generally believed to be a hybrid between *Quercus cerris* and *Q. suber*. It was raised by Mr. Luccombe, a nurseryman of Exeter, about the year 1762. You will find much information on the subject in the issues for September 13, 20, 1902, pp. 195 and 221.

MARKET WEIGHTS: *J. McA.* The following are the weights, approximately, of the fruits you mention, as recognised in Covent Garden Market: Black Currants (sieve), 48 lbs.; Gooseberries (sieve), 56 lbs.; Cherries (sieve), 48 lbs.; Strawberries (peck), 12 lbs.; Spinach (bushel), 20 lbs.; Beans (bushel), 30 lbs.

MELONS DISEASED: *Mrs. D.* The leaves are attacked by a fungus—*Cercospora melonis*. Spray the plants at intervals of four days with liver of sulphur, using one ounce in three gallons of water. Afford plenty of ventilation in the house even at night-time.

NAMES OF PLANTS: *H. S. J.* 1, *Veronica decussata*; 2, *Buddleia globosa*; 3, *Deutzia crenata purpurea-plena*; 4, *Spirea japonica* (syn. *callosa*); 5, *Adiantum Waltonii*.—*Parasite.* 1, *Orobancha* sp.; 2, *Hypoxis villosa*.—*W. M.* *Oxalis Ortgiesii*. (The stamps have been placed in the R.G.O.F. box.)—*A. H.* *Sutherlandia frutescens*, the Cape "Bladder S. nna," a native of South Africa. This plant requires the protection of a cool greenhouse in winter, except in sheltered spots in the south-west, where it survives mild winters. It is used in some of the London parks for summer bedding, notably Finsbury Park.—*F. A. E.* 1, *Melanthus major*; 2, *Crataegus speciosa*; 3, *Syringa Josikaea*; 4, *Kalmia latifolia*.—*W. T., Wigton.* *Dendrobium moschatum*.—*Torbay.* *Asclepias curassavica*.—*R. H.* 1, *Oncidium flexuosum*; 2, *Oncidium pubes*; 3, *Odontoglossum Lindleyanum*; 4, *Masdevallia simula*; 5, *Pleurothallis rubens*; 6, *Odontoglossum llandum*.—*T. M. F., S. Wales.* 1, *Lastrea rigida*; 2, *Cystopteris regia*; 3, *Asplenium fontanum*, syn. *Halleri*; 4, *Polystichum Lonchitis*, if a mature specimen. —*M. J., Devon.* 1, *Hedychium Gardnerianum*; 2, *Eucomis regia*.—*P. J. P.* *Tecoma jasminoides*, so far as we can judge by the decayed flower.—*H. P. M.* 1, *Erigeron speciosus*; 2, *Achillea Ptarmica flore pleno*; 3, *Galega officinalis*.—*Mrs. B.* *Cotoneaster frigida*.—*E. W. P.* *Crambe cordifolia*.—*A. H.* 1, *Campanula trachelium*; 2, *C. rhomboidalis*; 3, *C. Portenschlagiana*; 4, *Linaris pallida*; 5, *Veronica spicata*; 6, *Aster alpinus albus*.

NECTARINE FRUITS DISFIGURED: *A Reader.* The injury is not caused by a fungus, but is due to some cultural defect. Too much moisture at the roots will cause stone fruits to become cracked.—*G. B.* The damage is due to the Peach-rot fungus (*Penicillium glaucum*). Moisture condensing on the fruit favours the growth of this disease. The ventilators of the Peach house should be opened early in the morning, and the atmosphere kept drier at all times.

ROSE LEAVES DISFIGURED: *H. J. M.* The blotches are caused by a fungus—*Septoria rosea*. It is too late to do anything this season. Next spring spray the bushes with a solution of liver of sulphur at a strength of one ounce in three gallons of water, commencing when the foliage is young.

ROSE SHOOTS: *H. T. H.* There is no disease present on the shoots. The general symptoms appear to indicate an excess of humic acid in the soil.

ROSES FAILING TO GROW: *William Haddon.* Ants are the cause of the trouble. Drench the soil with a solution of sulphate of ammonia—one ounce in one gallon of water. Ants' nests may be destroyed by pouring paraffin into their burrows.

SELACINELLA: *G. R. L.* The common greenhouse species, *S. Kraussiana* and *S. denticulata*, are hardier than is generally believed. If you refer to an account of Grimston Park, Yorkshire, published in the issue for July 25, 1903, you will find it stated that *S. denticulata* has established itself in the grass there and is perfectly hardy.

STRAWBERRIES: *W. B. & P. J.* We cannot undertake to name varieties of Strawberries.

TOMATOS FAILING TO COLOUR: *J. J. A.* The defect has been attributed to a lack of potash in the soil.

WORMS IN LAWNS: *Herbert.* Lime-water would not damage the turf, but it would destroy many of the worms. You can purchase specifics ready for use from sundriesmen and nurserymen, or you can employ ½ ounce of corrosive sublimate (poison) in 15 gallons of water. Do not allow poultry to eat the dead worms, as the substance is very poisonous.

Communications Received.—*W. M. McB., San Francisco*—*J. R. D.*—*W. R. D.*—*C. T. D.*—*A. D. W.*—*A.* and *B.*—*T. H. S.*—*A. J. E.*—*M. B.*, Java—*Rev. D. R. W.*—*W. A. C.*—*C. F. B.*, Dublin—*H. F. McM.*, Ceylon—*W. D.*—*A. L.*, Manila—*M. C. W. C.*—*E. J. L.*—*B. L.*—*Subscriber*—*G. T. H.*—*J. W.*—*Dr. R. Miss E. T. R.*, New York—*J. D. G.*—*W. J. V.*—*P. W.*, Manchester—*R. F.*, Switzerland—*G. P.*—*E. B.*—*A. W. C.*—*Fencote*—*T. B. G.* and *Son*—*A. B.*—*J. T. H.*—*Anxious*—*W. T.*—*J. D. W.*—*J. L. R.*—*F. E. G.*—*A. E. S.*—*W. G.*—*W. C.*—*W. F.*—*H. C.*—*A. P.*—*C. F.*—*F. S.* & *Co.*—*H. B.*—*L. G. M.*



Mendelian Heredity in Sweet Peas.

Top row:—Middle flower=F₁ (Purple Invincible) the first generation of a cross between Emily Henderson (1st flower of the row, white, flat standard), and Blanche Burpee (3rd flower of row, white, hooded standard).

Rows 2, 3, 4:—Offspring (F₂) resulting from the self-fertilization of F₁ (Purple Invincible).

Row 2:—Offspring with light wings (from left to right), Purple Invincible, Duke of Westminster and Painted Lady.

Row 3:— .. with dark wings (..) unnamed purple seedling, Duke of Sutherland and Miss Hunt.

Row 4:— .. white.

NOTE.—There is no hooded red in F₂.

THE
Gardeners' Chronicle

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IN THE KARINTHIAN MOUNTAINS.

THE little village of Heiligenblut sits tight at the end of a narrow mountain valley, its chalets clustering close round the tall, squeezed-looking church. And at the valley's end, high over everything, towers the gleaming pinnacle of the Gross Glockner, an awful spire of pure snow, rising supreme above half-a-dozen huge gables of granite at the head of the glen. The road towards the snows winds upwards from Heiligenblut very steeply on the right-hand side of the valley over banks that now, in mid-July, are all ablaze with the reckless splendour of Dianthus sylvestris, abundant and richly rosy everywhere as I have never seen it before. Aster alpinus is just coming into bloom, and Campanula barbata is even more backward in bud. Among these are the golden showers of Biscutella lævigata, and the paler but more brilliant yellow of Erysimum ochroleucum. The pink spikes of Habernaria conopsea are common here, but Orchis ustulata is a rarity; and rare, too, is Herminium Monorchis, but rarest of all is the beautiful, snow-pure form of Dianthus sylvestris, and the ghostly-pale variety of Campanula linifolia.

A little higher and the road curls round into the woodland, and here, on open banks and sunny glades, are Primula farinosa and the gorgeous sapphire stars of Gentiana utriculosa, which it is no good collecting because the plant is only an annual Campanula pusilla is coming into bud here on every stony bank, amid the low tyrian-purple masses of Calamintha alpina. Higher and higher yet: the Alpenrose is now blooming everywhere in the more open places amid the trees, and, far more interesting, Daphne striata: but to me it is a great disappointment, for the plant is so completely inferior to D. Cneorum, until at last, high on a bank I discovered a pure albino form which is nearly as lovely as D. Blagayana. Incomparably the

most beautiful inhabitant of these woods, though, beating even the waxy-white sweet Pyrola uniflora on moss banks by the tree roots, is *Atragene alpina*, sending its flights of glorious purple Clematis-like flowers in drifts and scuds and flights and galaxies far up through the Pine boughs, far down over the rock faces, and over and about every dead bush or tree stump by the way. I had never before realised the full beauty of this, nor its strength as a climber and capacity for coming thinly up on one frail stem through 10 feet or more of boscaje, until it emerges into the light at the top of bush or bough and there breaks into a wide spray of blossom. But let no one be rash enough to attempt the taking of its abominable, great, endless root!

As the woodland thins out towards the upper Alps, new plants begin to occur—*Saxifraga aizoon* on every rock, thickly clustered, *Gentiana verna*, and, most miraculous of all, growing down by the roadside and gutters like any common weed, that daintiest and most difficult of rarities, *Dianthus glacialis*, of which, bright and splendid and neat as it is, I will only say, alas and alas, that it is not the far more gorgeous *D. alpinus*, of which botanists pronounce it to be only a form! But now the road comes well out into the open and up on to the Alpine slopes, where only a few huge Larches still stand among the grasses, gaunt and ghostly and dying. And here the early Alpine flora is still rich. *Gentiana verna* and *G. acaulis* (a bad type), *Myosotis alpestris*, *Androsace obtusifolia*, *Potentilla alpestris*, *Primula farinosa*, *Ranunculus alpestris*, and *Anemone alpina*—a surprise, this, on the granite. *Primula minima* is over, *Arnica*, *Campanula barbata*, *Aster alpinus* not yet out, *Lilium Martagon* is rare, and generally flowerless in the grass; *Edelweiss* occurred in one poor, spindly bud among the herbage.

So we reach at last the Glockner House Inn, and strike off above it again, higher and higher over the Alpine grass and gullies of the mountain, filled as yet with snow. And here is *Primula minima* still in gorgeous bloom in these damp, shady hollows. And, alas! that this huge-flowered wee-growing *Primula* should have the same grim magenta taint which disfigures *Saxifraga oppositifolia*. I choose this comparison, for the two colours are so like that, as I first saw the *Primula* down in a gulch, I took it, afar off, for the *Saxifrage*. The *Saxifrage*, indeed, occurs with it on rockier ledges, but less commonly down here. The *Primula* makes a good third of this Alpine herbage, and from its carpets sprout *Lloydia serotina* and *Anemone alpina*, which here seems faintly inclined to verge towards the variety *sulphurea*. A little lower, in heaps of stone and on stony banks, abounds the ineradicable little white *Anemone baldensis*, above a turf which is full of the rare but not, I am afraid, dazzlingly brilliant, *Ranunculus rutefolius*. *R. pyrenæus* is also here, but passing out of bloom. Down on the ledges of the gullies grows *Saxifraga cœsia* and abundant *Edelweiss*, and that interesting rarity, the true *Saxifraga Rudolphiana*, minute as *squarrosa* in growth, with dark-purple flowers like those of *S. oppositifolia*, but deeper in colour. All purples, though, and all other colours, are wiped clean out by the gorgeous violet bells of *Primula glutinosa*, which here begins to abound. I have never

seen a more impressively beautiful wild plant than this, hanging out its heavy tyrian clusters over the sodden moor grass. It is more purple than *P. capitata*—a genuine match for any Royal Violet, no less in colour than in refreshing sweetness of scent. If only it flowered in cultivation as willingly as it grows! *Soldanellas alpina* and *pusilla*, on melting snow slopes, are but little appreciated after seeing the *Primula*; nor even the pretty pale golden stars of *Gagea Liotardii* down by the rivulets.

Higher and higher now, towards the last snow slopes and scree of barren shale. To my horror, *Myosotis alpestris* remains *alpestris* even here, and makes not a move towards becoming *M. rupicola*. *Silene acaulis* is common; so are yellow *Drabas* and *Hutchinsias* and *Saxifraga oppositifolia*. But of the high Alpine flora, no trace. *Androsace glacialis* appears once in a few poor, little, thinly-flowered plants of an anæmic white form, but, after that, is not seen. The rare *Saxifraga Kochii* is the last moraines is a fat and fleshy thing, and certainly not so attractive as *biflora* or even *oppositifolia*. As for *Cerastium glaciale*, I know it by heart. And, oh! the utter uninterestingness of these high slopes of the primary formations! Think of the myriad treasures I should have got here at the snow's edge on limestone or dolomite. But on this horrible granite there is nothing but dullness. There isn't even *Ranunculus glacialis*. Though I hunt through many hours, over many scree all spotted with doddies, not a single trace do I find, not so much as a bud or a capsule, of *Eritrichium nanum*. And why, why has even *Androsace glacialis* refused to reappear at this, its proper level? Shows its good sense! I hastily will follow its example and trot down again from these infertile granites, and away from Heiligenblut to the goodly land of dolomite. *Reginald Farrer, July 19.*

REMOVAL OF THE STYLE IN CUCURBITACEOUS FRUITS.

It is sometimes said that the fruits of Cucumbers and Melons become larger and ripen faster if the withered styles are allowed to remain on the maturing fruit. In order to test the truth of this statement, I carried out tests with Melons, Cucumbers and Luffas.

Two flowers, growing in similar positions on the plant, were pollinated, and when they had withered I removed the styles of one of the flowers and left those of the other intact.

The rate of growth of the developing fruits was determined daily, and the records demonstrate that the removal of the withered styles at a time when the fruit is still very small makes no difference whatever in Cucumbers, Melons or Luffas to the rate of growth of the fruits. I give the following extracts from the records which have led to this conclusion:—

CUCUMBERS.

A₁ = fruit with intact styles.
A₂ = fruit from which styles were removed.

MEASUREMENTS IN INCHES.

	July 11.	July 16.	July 21.	July 24.
A ₁	2 $\frac{3}{4}$	5 $\frac{1}{4}$	12 $\frac{1}{2}$	16 $\frac{3}{4}$
A ₂	2 $\frac{1}{4}$	5 $\frac{1}{2}$ *	13 $\frac{1}{2}$	16 $\frac{3}{4}$

Similar results were obtained with Melons and Luffas. The Cucumbers were pollinated in order to ensure uniformity of conditions. *K. M. Pearce Gould, Whiteknights.*

* Styles removed.

NOTES FROM GLASNEVIN.

RHODODENDRON YUNNANENSE.

THIS Rhododendron is a native of Western China, having been found in Yunnan by the Abbé Delavay. A plant obtained from Messrs. Jas. Veitch & Sons flowered at Kew in 1897 (see fig. 161 in *Gard. Chron.*, June 23, 1906). Owing to the presence of lime in the soil, most Rhododendrons do not succeed at Glasnevin, but this species does remarkably well here. It forms an erect shrub (see fig. 30) 5 feet high by 4 feet through; the evergreen leaves are 2½ to 3 inches long, elliptic-lanceolate in shape, covered with stiff hairs. In May it is usually one of the sights of the garden, for the flowers are produced in such profusion that scarcely a leaf can be seen. The type plant figured in the *Bot. Mag.*, t. 7614, has flowers 2 inches across the short, funnel-shaped corolla. The flowers are white, with red, oblong spots on the upper corolla lobes. The Glasnevin plant differs slightly in colour, for the corolla is a creamy white, and the spots and anthers are yellow. Planted in close proximity

fort describes how eagerly his Armenian companions gathered and ate the fruits. He also mentions that the trees were the size of Oaks. C. F. Ball, Royal Botanic Gardens, Glasnevin, Co. Dublin.

NOTICES OF BOOKS.

* ILLUSTRATIONS OF CONIFERS.

THE first volume of this work, which has recently been published, seems to show that the interest in Conifers, which was greatest between 1840 and 1860, is again reviving, though it is not so active as it was when California and Japan were virgin fields, and new introductions were more numerous than at present. Mr. Clinton Baker, who inherited one of the finest collections of Conifers in the Midland Counties, at Bayfordbury, near Hertford, has been happily moved to put on record the notable work of his grandfather, who, during a long life, was one of the most ardent arboriculturists of his time. It is to be hoped that others will follow his example, for, in the course of my endeavours to

world has been ransacked, not more than five or six seem to find our climate generally congenial, and of these only the Scots and the Corsican Pine can, in most places, be looked upon as profitable trees to plant on a large scale. Mr. Clinton Baker, having realised the difficulty of identifying the species from descriptions alone, has illustrated his work with excellent photographs of the cones and leaves of all the species which he possesses or could procure, and, though the variation in the size and appearance of both cones and leaves grown in England is often so great that they cannot always be recognised with certainty even by experts, yet these illustrations will be of great service. The analytical key to the genus, which was prepared after much labour and study by Dr. A. Henry for the *Trees of Great Britain and Ireland*, and is here printed in advance of its publication in the fifth volume of that work, will aid the identification materially, and a short notice of the origin and history of the trees, with measurements of the specimens which have survived at Bayfordbury, though not adding much to Veitch's *Manual of the Coniferae*, are carefully done. The plates, letterpress and type are well printed by Simson and Co., of Hertford, and the book, when complete, will form a nice addition to the country house library. An admirable photograph of the splendid group of Lebanon Cedars on the lawn at Bayfordbury, planted in 1765, forms the frontispiece of the work, which, we believe, will be shortly completed, and serve as an encouragement to other landowners to go and do likewise. H. J. Elwes.

* TREES.

THIS volume, concerned especially with Form as displayed in the habit of the commoner trees and shrubs, has a useful appendix devoted to seedlings, which was left unfinished by the author; but, as the editor points out, is sufficiently complete to be of great value to students. It is well illustrated by drawings of numerous seedlings drawn to scale.

The earlier portion of the book contains much interesting information as to the characteristic features of trees and shrubs, their general habit and branching, nature of bark, &c.

A chapter entitled "Non-typical Shoots," dealing with such structures as the shoots of aquatic plants, corms and rhizomes, does not appear to have any special connection with the other portions of the book, the examples being chiefly herbaceous plants.

The Week's Work.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to SIR EDMUND G. LODER, Bart., Leonardslee, Sussex.

Roses.—Continue to remove the decaying flowers from the plants and frequently stir the soil in the bed by means of the Dutch hoe. Some of the older varieties have done exceedingly well in spite of the adverse weather. General Jacqueminot, for instance, has succeeded in the wet weather much better than most others of the same colour. Amongst some of the best dwarfs this season may be mentioned Mme. Abel Chatenay, Mrs. R. G. Sharman Crawford, Margaret Dickson, Ulrich Brunner and Liberty.

Herbaceous plants.—Up to the present time we have had to remove weeds by hand, as the ground has been too wet for hoeing. A larger number of stakes has been necessary than usual owing to the extra vigorous growth the plants have made. Unless sufficient supports are given the plants to keep them to a tidy shape, half their charm is lost. The Michaelmas Daisies or perennial Asters will need particular attention in this respect, and should be supported before they begin to fall over. Late sowings of Sweet Peas may also be instanced as plants requiring attention.

* By the late Marshall Ward, Sc.D., F.R.S. Cambridge Biological Series. Vol. V. Form. (Cambridge University Press.) 4s. 6d.



[Photograph by C. F. Ball.]

FIG. 30.—RHODODENDRON YUNNANENSE, FLOWERING IN GLASNEVIN BOTANIC GARDENS.

is the ordinary type, but so far it has not flowered so freely as the yellow-spotted variety, which is a decided acquisition to the flowering shrubs.

CRATEGUS TANACETIFOLIA.

THIS Tansy-leafed Thorn is an Oriental species, and can be recommended as a specimen plant for lawns. Near to the entrance of the Glasnevin Botanic Gardens is an exceptionally fine specimen, about 27 feet in height, with a spread of 30 feet, the girth of the stem being 6 feet. At a distance, when in flower in May and June, it somewhat resembles a gigantic Guelder Rose, for the white flowers are large and borne in close corymbs. The leaves are deeply pinnatifid, and both these and the young shoots are very downy. The flowers are about an inch across, and have a strong fragrance. They are succeeded in autumn by a crop of globose yellow fruits, resembling small Apples, and with the same smell. Although the fruits are not very palatable, children seem to relish them. Tourne-

describe and illustrate the trees of Great Britain, I have often regretted the rarity of accurate records of the age and origin of the beautiful trees which adorn our parks and pleasure grounds to an extent that no other country can rival. The value of such records from the personal, historic, and economic points of view is much greater than most landowners seem to realise, and now that planting is likely to be carried out more largely for the production of timber, a knowledge of what trees are and what are not suited to particular soils and climates will save much useless expense and disappointment. The first volume of the work relates principally to the genus Pinus; and though Pines grow better in Hertfordshire than most of the other Conifers, it is surprising how few species seem likely to have any permanent value in our rural economy, for out of the very numerous species for the introduction of which the

* By H. Clinton Baker. 4to. (Hertford; Privately printed.) 1909.

Shrubs.—Many shrubs still require pruning. Cuttings of the earlier-flowering varieties may now be prepared from half-ripened wood, making each cutting 8 inches to 1 foot in length. Insert them in fine soil containing some sharp sand and road scrapings, making each cutting very firm in the soil. The more tender varieties may be inserted under hand-lights or in an unheated frame. Cuttings will make very nice plants by spring, when such species as *Olearia*, *Weigela*, *Ceanothus*, and *Philadelphus* may be planted for another season on a well-prepared plot of land. In 1911 they will be ready for planting in the shrubberies or borders.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORB, Pencarrow, Cornwall.

Acalypha.—If cuttings are now propagated they will make, during the present season, plants of sufficient size for placing in vases. The cuttings may be placed singly in pots or three may be inserted around the side of each pot. Plunge them in a brisk bottom heat and shade the cuttings from sunshine. As soon as the cuttings have rooted and become hardened after removal from the propagating case, they should be potted singly. Later they will need a shift into pots of a slightly larger size.

Pelargonium.—Plants of the show and fancy sections of *Pelargoniums* should now be pruned. Show *Pelargoniums* should have nearly the whole of the current year's growth cut away, but the fancy varieties must not be pruned so severely. In each case the pruner must be guided by the shape of the plant. After the plants are pruned and cleansed, they should be placed in a cold frame, affording each specimen plenty of room for development. The frame should be liberally ventilated. Lightly syringe the stems at least twice a day, but, for the present, do not give them any water at the roots.

Souvenir de la Malmaison Carnations.—These and other summer-flowering *Carnations* should be layered immediately they have finished blooming, so as to obtain strong plants for flowering next season. The best method is to turn the plants out and replant them in prepared soil in frames. Only healthy plants should be used for propagating. If necessary, the foliage should first be thoroughly cleansed. Tall plants should be planted nearly on their sides to allow the shoots to lay on the soil. In making the layers, care should be taken not to make the cut more than an inch long, as this will be found quite enough. When the layering is finished, give the soil a good watering and close the frame. The frame must be kept somewhat close and the soil moist until the layers are sufficiently rooted to be severed from the parent plant. After that stage, gradually increase the ventilation.

THE ORCHID HOUSES.

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

Terete-leaved Vandas.—The flowering period of *V. teres* is now over. If the stems have grown too tall, cut them off at about 2 feet from the top, and insert five or six pieces into a 6-inch pot, keeping the cuttings at equal distances apart. Tie each stem to a neat stick, and fix the stakes in the pot with broken crocks, filling the pot to about three parts of its depth with these, and surfacing with freshly gathered *Sphagnum*-moss. Another good plan is to fix the stems to upright teak rafts, about 4 feet in length, each raft consisting of three or four rods, each rod $\frac{3}{4}$ of an inch in diameter and at least 1 inch apart. Do not use square rods, for if the sharp edges of the wood are planed off the roots will be the more easily entwined around them. The lower part of the raft with the plant affixed to it should be inserted in a suitable sized pot, filling up the pot with crocks and moss as previously advised. The remaining part of the stem from which the tops have been removed, if kept in a warm and moist atmosphere, will soon produce fresh growths and roots, and in this way the plant may be propagated. *V. Hookeriana* may be treated in a similar manner soon after its flowers fade, which is generally about the beginning of September. The hybrid *Vanda* known as *Miss Joaquim*, having just passed out of flower, should now be treated in the same manner as *V. teres*. When in full growth,

terete-leaved plants should be exposed to direct sunshine and treated to copious overhead syringings several times a day, using tepid rain-water. *V. teres* should thrive admirably in a house where such species as *Lælia anceps* succeed well—such, for instance, as is generally known as the Mexican house; whilst the other species and the hybrid mentioned grow better at the sunniest end of the hottest house. When these plants grow freely, they produce a large number of roots. When the roots are long enough they should be carefully tied to the teak rods, making the point of each root touch the wood, to which they will quickly adhere. The plants will then produce more flowers on the spike than when the roots are allowed to ramble about in the air. Other terete-leaved *Vandas*, such as *V. Kimballiana* and the pure white *V. Watsonii*, are growing and rooting freely in a light, moist position in the *Cattleya* house. They should be potted in crocks and *Sphagnum*-moss, and be given copious waterings at the roots until their flowers expand.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Figs.—Thin out the young growths upon *Fig* trees, leaving only sufficient to thinly furnish the allotted space. Expose the fruits to the sun as much as possible, for *Figs* have very little flavour when ripened under the shade of dense foliage. Old-established trees now carrying heavy crops should be given dressings of some suitable fertiliser at intervals, following the dressings by immediate applications of water. Place a liberal mulching around each tree, unless this has already been done. Young trees do not as a rule need much manure, as its use encourages the production of shoots of greater strength than is desirable.

Raspberries.—As soon as the fruit has been gathered the old fruiting canes should be cut off at the ground level and removed to the fire heap. After their removal, it will be easy to determine how many young canes will be required to cover the trellis or poles. All others should be removed as soon as possible. The ground in the *Raspberry* quarters should be lightly hoed over and thoroughly cleansed. The canes which will fruit next season will afterwards have every opportunity to grow strongly and mature their shoots.

Autumn-fruiting Raspberries.—Keep the shoots of autumn-fruiting *Raspberries* thinly disposed. Make the ground perfectly free from weeds, and place a mulch over the roots of the surface. In the event of a spell of dry weather, it will be necessary to apply water to *Raspberries* growing on light and gravelly soils.

Black Currants.—When the fruit has been cleared from the *Black Currant* bushes, any thinning that is necessary can be carried out. Thin out the shoots somewhat severely, as this is necessary to keep the bushes in a good cropping condition. Encourage the young growths which spring from the base, as these usually produce the finer fruit. The aim of the grower should be to have as much young wood in the bushes as possible. Any bushes which may have been neglected in the past, if treated according to the directions I have given, will soon exhibit improvement. The variety *Boskoop Giant* is in all respects better than the older varieties. It is so vigorous that the bushes are seldom attacked by any insect pests. The fruits are large and bright, and they are yielded in great abundance.

THE KITCHEN GARDEN.

By E. BRACKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Potatos.—Most of the early varieties are now sufficiently advanced to be lifted and stored. It is important to remember that all kinds of *Potatos* should be lifted immediately they have perfected their crop. If this were always practised the trouble with *Potato* disease would not be experienced in anything like the degree now common. Even if the outer skins are not sufficiently ripened to prevent rubbing during the lifting operations, this will cause no harm to the tubers; Nature will soon provide them with another.

Later crops.—If green winter vegetables are planted between rows of late *Potatos*, the

Potato haulm must be carefully laid down. This often proves an advantage to both crops, as each is the better exposed to sunlight and air.

Cardoons.—Keep this crop thoroughly well supplied with water, both at the roots and overhead. See that each plant is made secure by staking; let the blanching be done by piecemeal, using strips of brown paper and haybands.

Onions.—Owing to the adverse season, *Onions* grown for large bulbs are not nearly so satisfactory as they once promised to be, but no doubt on lighter lands than ours they will be good. During the next ten days or a fortnight *Onions* should be thoroughly watered at the root twice a week with properly diluted farmyard manure water. Any unsatisfactory plants and all rubbish should be carefully removed from the beds. Autumn-sown *Onions* of last year should now be lifted and ripened before storing them. The silver-skinned varieties are not good keepers, and consequently they should be used first.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Early vines.—It is of the utmost importance that the vines in this house should be well matured and the buds plumped up before the time of pruning. Climatic conditions having been so unfavourable, it may be necessary to have a little warmth in the water-pipes. Any laterals still growing may be removed, but it is advisable to defer the shortening of the main shoots for two or three weeks longer. Continue to syringe the foliage in the evening of fine days. The hose, or garden engine, may be used occasionally to give the vines a thorough wash, care being taken not to damage the leaves by applying the water with too much force. If mealy bug makes its appearance, the rods should be scrubbed two or three times during the autumn with strong soapy water. Early vines growing in well-drained borders will be benefited if occasional waterings of diluted liquid manure are given them. Borders requiring renovating should now be given attention. If there are both inside and outside borders, no fear need be entertained for next season's crop, as the inside border only need be dealt with in the first year. Following such renovations, however, it is advisable not to subject the vines to hard forcing until a season has passed. In cases where the roots are restricted to the inside of the house, the vines should not be forced at all in the first season, but allowed to come on naturally. Turning to the actual work of renovation, sufficient loam should first be at hand and in proper workable condition to enable the work to be done as expeditiously as possible. Broken bricks, lime rubble, wood ashes and coarsely-crushed bones should be incorporated with the soil, determining the quality of these ingredients by the nature of the staple, but remembering it is better to give too little manure than too much. Dig out a trench at the outside of the border down to the drainage, making it about 3 feet wide, then gradually fork out the soil from among the roots, carefully preserving as many roots as possible, and taking particular care not to damage any of the larger roots. The quantity of old soil to be taken out must be determined by its condition, but in any case it will be safe to expose the roots to within 2 or 3 feet of the vines. Before commencing to add the new soil, ascertain that the drains are quite clear. Should the sub-soil be of a cold, retentive nature, a layer of concrete should be placed over the surface to prevent the roots from growing downwards. Provide ample drainage to allow water to pass freely away, say, about 9 inches or a foot, according to the depth of the border, and place a layer of turves, grass downwards, over the surface of the drainage. After this has been done, commence to add the new soil in layers about a foot deep and see that each layer is made quite solid. Lay in the roots towards the surface, spread them out evenly over the soil, and cut back any damaged portions of the smaller roots, shortening all of them. The width of the new border should not be more than 4 feet at the commencement, but more soil can be added at intervals of two or three years until the whole space is filled up. If the vines have only inside borders, the house should be kept rather close for a week or 10 days following the operation, and the vines shaded during bright weather. Syringe the vines twice daily, and give the new soil a good soaking with clear water.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 76.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
0. Scotland, N.										
CAITHNESS	Over; good	Average; good	.....	Under; bad	.....	.....	Average; very good	Over; very good	.....	W. F. Mackenzie, Tburso Castle Gardens, Caithness.
MORAYSHIRE	Over; very good	Average; very good	Over; good	Average; good	Average; good	Over; good	Over; good	Average; good	.....	William Ogg, Duffus House Gardens, Elgin.
	Over; good	Average; good	Over; good	Average; good	Average; good	Average; good	Over; very good	Over; very good	.....	John Macpherson, Mayne Gardens, Elgin.
	Over	Average	Over	Average	Over	Over	Over	Average	.....	D. Cunningham, Darroway Castle Gardens, Forres.
ORKNEYS	Over; good	Under	.....	Over; very good	Over; very good	.....	Over; very good	Over; very good	.....	William Liddell, Balfour Castle Gardens, viâ Kirkwall.
SUTHERLANDSHIRE	Over	Average	Average	Over	.....	.....	Over; good	Average; good	Average	D. Melville, Dunrobin Castle Gardens, Golspie.
	Over	.....	Average; good	Average; good	.....	.....	Over	Over; very good	.....	John Melver, Skibo Castle Gardens, Dornoch.
1. Scotland, E.										
ABERDEENSHIRE ...	Over; good	Average; good	Average; good	Average; good	.....	.....	Over; very good	Average; good	.....	James Grant, Rotbearnman Gardens.
	Over; very good	Average	Average	Average; good	.....	.....	Over; very good	Over; very good	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Average	Under	.....	Average	.....	.....	Over; good	Over; good	.....	John M. Iroun, Balmoral Castle Gardens, Ballater.
BANFFSHIRE	Average; good	Average; very good	Over; good	Over; good	Average	Over; very good	Average	Under	.....	Chas. Webster, Gordon Castle Gardens, Fochabers.
	Over; good	Under; bad	Over; good	Average; good	.....	.....	Over; very good	Over; very good	.....	Geo. Edwards, Ballindalloch Castle Gardens, Ballindalloch.
BERWICKSHIRE	Over; good	.....	Over; good	Over; good	.....	Over; good	Over; good	Over; good	.....	James R. Redpath, Duns Castle Gardens, Duns.
	Average; good	Under	Average; good	Average; very good	.....	.....	Over; very good	Over; very good	.....	Robert Stuart, Tbirlestane Castle Gardens, Lauder.
CLACKMANNAN-SHIRE	Average	Under	Average	Over	Under	Average	Over	Average	Under	Alexander Kirk, Norwood Gardens, Alloa.
EAST LOTHIAN	Average; good	Average; good	Average; good	Average; good	Over; good	Over; good	Over; good	Over; good	.....	R. P. Brotherton, Tynningbame Gardens, Prestonkirk.
FIFESHIRE	Average	Average	Average	Average	.....	Over	Over	Average; good	.....	Chas. Simpson, Wemyss Castle Gardens, E. Wemyss.
FORFARSHIRE	Average	Average	Over	Over	.....	.....	Over	Under	.....	William Alison, Seaview Gardens, Monifeth.
KINCARDINESHIRE	Over	Average	Average	Average	Average	.....	Over; good	Over; good	.....	John M. Brown, Blackhall Castle Gardens, Banchory.
	Over	Over	Average	Average	.....	.....	Over	Over	.....	William Knight, Fasque Gardens, Laurencekirk.
MIDLOTHIAN	Over	Under	Under	.....	.....	Over; good	Average	Average	.....	Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg.
	Over; good	Average; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	.....	James Whytock, Dalkeith Gardens, Dalkeith.
PEEBLESHIRE	Over	Under	Average	Average	.....	.....	Over	Average	.....	Wm. McDonald, Cardrona, Traquair, Innerleithen.
	Under; good	Under; bad	Average; good	Under; bad	.....	.....	Over; very good	Average; good	.....	George Haig, Garvald House Gardens, Dolphinton.
PERTHSHIRE	Average; good	Average; good	Average; good	Under; very good	Average; very good	Under; good	Over; very good	Average; good	.....	J. Farquharson, Kinfauns Castle Gardens, Perth.
	Over; good	Average	Average; good	Average	.....	Average	Over; good	Under	.....	Thomas Lunt, Keir Gardens, Dunblane.
	Average	Under	Average	Average	Under	Under	Over; very good	Under	.....	John Robb, Catherine Bank, Milnab Terrace, Crieff.
6. Scotland, W.										
ARGYLLSHIRE	Under; bad	Under; bad	Average; good	Over; good	Over; good	.....	Over; very good	Average; good	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead.
	Average	Average	Over	Average	.....	.....	Average	Average	.....	Henry Scott, Torloisk Gardens, Aros, Isle of Mull.
AYRSHIRE	Under; good	Under; bad	Average; good	Average	.....	.....	Over; good	Average; good	.....	William Priest, Eglinton Gardens, Kilwinning.
	Average; good	Under	Average; good	Over; good	.....	.....	Over; very good	Over; good	.....	John McInnes, Kirkmichael Gardens, Kirkmichael, by Maybole.
	Over; very good	Average; very good	Over; very good	Over; good	Average; good	Average; good	Over; good	Average; good	Average; good	D. Buchanan, Bargany Gardens, Dailly.
BUTESHIRE	Under	Under	Under	Average	Under	.....	Under	Average	.....	M. Heron, Moant Stewart Gardens, Rothesay.
DUMBARTONSHIRE	Under	Under	Average	Average	.....	Under	Over	Average	Under	George McKay, Balloch Castle Gardens.
	Over; very good	Under	Over	Average	.....	.....	Over; very good	Average; very good	.....	D. Stewart, Knockderry Castle Gardens, Cove.
DUMFRIESHIRE ...	Under	.....	Under	Average	.....	Under	Under	Under	.....	John Urquhart, Hoddom Castle Gardens, Ecclefechan.
	Under; good	Under; good	Over; good	Over; good	.....	.....	Average; good	Over; good	.....	James MacDonald, Dryfeholm Gardens, Lockerbie.
KIRKCUDBRIGHT-SHIRE	Average; good	Average; good	Average; good	Average; good	Average; good	.....	Over; good	Over; good	.....	Wm. Kinneir, Glenlee Gardens, New Galloway.
RENFREWSHIRE ...	Over; good	Average	Over; good	Average	.....	.....	Over; very good	Average; good	.....	Thomas Lunt, Ardgowan Gardens, Inverkip.
STIRLINGSHIRE	Under	Under	Average	.....	.....	.....	Average; good	Average; good	.....	Peter Brown, Kerse Gardens, by Falkirk.
WIGTONSHIRE	Under; good	Average	Average	Average	Average	Average	Over	Over	Under	James Day, Galloway House Gardens, Garlieston.
	Over; good	Average; good	Under	Average; good	.....	.....	Over; good	Average; good	.....	John Bryden, Dunragit Gardens, Dunragit.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND:										
2, England, N.E.										
DURHAM	Average	Under	Average	Under	.....	Under	Average ; good	Average ; good	.....	James Machar, Smelt House Gardens, Howden-le-Wear, R.S.O.
YORKSHIRE	Average	Under	Under	Over	.....	.....	Average	Average ; good	.....	J. Simpson, Studfield, near Sheffield.
	Average	Under	Average	Under	.....	.....	Over	Over	Average	F. Jordan, Chaver Priory Gardens, York.
	Average	Average	Over	Over	.....	Average	Over ; good	Over ; good	.....	J. G. Wilson, Chertey Park Gardens, Wakefield.
	Under	Average ; good	Average	Average ; good	Average	Average ; very good	Over ; very good	Average	Over ; good	W. Jackson, Dalton Hall Gardens, Dalton Holme, Beverley.
	Under	Over ; good	Average	Under	Under	Average	Over ; very good	Over ; good	Under	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under	Average	Under	Under	Average	Average ; good	Average	Average	Average	Henry J. Clayton, Wharfe Bank House, Uleskell, York.
	Under	Average good	Under	Average	Under	Average	Average ; good	Average ; good	.....	Geo. P. Bound, Grimston Park Gardens, Tadcaster.
	Average	Under	Average ; good	Average ; good	Average ; good	Average ; good	Average	Over ; good	Under	A. E. Sutton, Castle Howard Gardens, Welburn.
3, England, E.										
CAMBRIDGESHIRE	Under	Average	Under	Average ; very good	Average ; good	Average ; good	Average ; very good	Average	Under	T. W. Birkinshaw, Hatley Park Gardens, Gamlingay.
	Average	Under	Average	Average ; good	Over	Over	Over ; bad	Over ; bad	Average	W. J. Snell, Wimpole Hall Gardens, Nr. Royston.
	Over ; good	Average ; good	Average ; good	Over ; very good	Over ; very good	Over ; very good	Over ; very good	Average ; good	Average ; good	W. Stretton, Hall Gardens, Six Mile Bottom, Newmarket.
ESSEX	Over ; good	Average ; good	Average ; good	Over ; good	Over ; good	Average ; good	Over ; very good	Over ; good	Average ; good	B. Goodacre, Moulton Paddocks Gardens, Newmarket.
	Average ; good	Average ; good	Average ; good	Under ; good	Over ; good	Over ; good	Over ; very good	Average ; bad	.....	A. Bullock, Copped Hall Gardens, Epping.
	Over	Average	Average	Average	Over	Over	Average	Average	.....	Henry Lister, Easton Lodge Gardens, Dunmow.
	Under ; good	Average ; good	Average ; good	Under ; good	Average ; good	Under	Over ; good	Over ; good	Under	W. K. Johnson, Stanway Hall Gardens, Colchester.
	Average ; good	Average ; good	Average ; good	Average ; good	Average ; very good	Average ; good	Over ; very good	Average ; good	Average ; good	W. Johnson, Stansted Hall Gardens, Stansted.
LINCOLNSHIRE	Average	Under	Average	Average	Over	Average	Average	Under	.....	H. W. Ward, Lime House Nurseries, Rayleigh.
	Under	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	Over ; very good	Over ; very good	Average	H. Vinden, Harlaxton Manor Gardens, Grantham.
	Average ; very good	Under ; good	Under ; bad	Under ; bad	Over ; very good	Average ; good	Average ; good	Over ; very good	Average ; good	John Hope, Ranceby Hall Gardens, Grantham.
	Average ; good	Average ; good	Average ; good	.....	Over ; very good	Over ; very good	Over ; very good	Average ; very good	.....	F. J. Fleming, Welcby Old Hall Gardens, Grimsby.
	Over ; good	Under	Average	Over	Over ; good	Over	Average	Under	Under	F. C. Stagsby, Brocklesby Park Gardens.
NORFOLK	Under ; good	Under ; good	Under ; good	Average ; good	.....	Average ; good	Average	Average	Under ; bad	F. Barton, Hainton Hall Gardens, Lincoln.
	Average ; good	Average ; good	Under ; good	Under ; bad	Over ; good	Over ; good	Over ; good	Over ; bad	Under ; good	H. Louth, Boothby Hall Gardens, Grantham.
	Average ; good	Over ; very good	Average ; good	Average ; very good	Over ; very good	Average ; good	Over ; very good	Average ; good	Under ; bad	J. Wynn, Sedgeford Hall Gardens, King's Lynn.
	Under ; bad	Average	Under	Average ; good	Average ; good	Average	Average ; good	Under ; bad	Bad	Lewis Smith, Shotesham Park Gardens, Norwich.
	Average	Under	Under	Average	Over	Over	Under	Average	.....	J. W. Bradbrook, Ketteringham Park Gardens, Wymondham.
SUFFOLK	Average ; good	Average ; good	Average ; very good	Over ; good	Over ; very good	Average ; good	Average ; good	Under ; bad	Under	W. N. Thurston, Witton Park Gardens, North Walsham.
	Over ; very good	Under	Under	Average ; good	Over ; very good	Over ; very good	Over ; very good	Average ; good	Under	Thos. Simpson, Henham Gardens, Wangford.
	Under ; good	Average ; good	Under	Average	Average	Over	Over ; good	Over ; bad	Under	Alfred Andrews, High House Gardens, Campsea Ashe, Wickham Market.
	Average ; very good	Under ; good	Under ; good	Under ; bad	Average ; good	Average ; good	Average ; good	Average ; good	Under ; bad	W. Messenger, Woolverstone Gardens, Ipswich.
4, Midland Counties.										
BEDFORDSHIRE	Average ; good	Average	Over ; good	Over	Over	Over ; very good	Over ; very good	Under ; bad	Average	F. J. Foster, Cranfield Court Gardens, Woburn Sands, R.S.O.
	Under	Average	Under	Over ; good	Average ; good	Over	Average	Average	Over	A. Carlisle, Henlow Grange Gardens, Biggleswade.
	Under ; good	Under ; bad	Under ; bad	Average ; good	Under ; bad	Under ; good	Average ; good	Over	Under	H. W. Nutt, East End Farm, Elywick.
	Average ; good	Average ; good	Over ; very good	Average ; good	Average ; good	Average ; good	Average ; good	Over ; good	Average	C. J. Elett, Chicksands Priory Gardens, Bedford.
	Average	Average	Average	Over	Over	Average	Over	Over ; good	Average	George Mackinlay, West Park Gardens, Amphill.
	Average	Average	Under	Average ; good	Average ; good	Average ; good	Average ; good	Under	Under	Wm. F. Palmer, Froxfield Gardens, Woburn.
BUCKINGHAM-SHIRE	Average ; good	Under	Average ; good	Average ; good	Average ; good	Over ; very good	Average ; good	Average ; very good	Average	James Wood, Hedsor Park Gardens, Bourne End.
	Average ; good	Average ; good	Under ; good	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	Under ; good	John Fleming, Wexham Park Gardens, Slough.
	Under ; bad	Average ; good	Under ; bad	Average ; good	Average ; good	Average ; good	Average ; good	Over ; very good	Average ; good	James MacGregor, Mentmore Gardens, Leighton Buzzard.
	Over ; good	Under ; bad	Average ; good	Average ; good	Average ; good	Under ; good	Over ; good	Average ; very good	Average ; good	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Average	Average ; good	Under ; good	Average	Average ; good	Over ; good	Average	Over ; bad	Average	Chas. Page, Dropmore Gardens, Maidenhead.
CHESHIRE	Average	Over	Over	Average	.....	.....	Average	Average ; good	.....	Peter Wilkinson, Walton Lea Gardens, near Warrington.
	Over ; good	Over ; very good	Under ; good	Over ; very good	Over ; very good	Average ; good	Over ; very good	Average ; good	Average ; good	Charles Flack, Cholmondeley Castle Gardens, Malpas.
	Average	Average	Average	Over ; good	Average	Average	Over ; good	Over ; good	Under	W. E. Wright, Alderley Park Gardens, Chelford.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
DERBYSHIRE	Under	Under	Average	Average; good	Average	Under	Average; good	Average	Under	A. Harris, Shipley Hall Gardens, Derby.
	Under	Average	Under	Average	.....	.....	Over; very good	Over; very good	.....	Bailey Wadds, 181, Uttoxeter New Road, Derby.
	Under	Average; good	Average	Average	.....	Average; good	Average	Average; good	Under	T. Keetley, Darley Abbey Gardens, Derby.
	Under; bad	Under; bad	Average	Average; good	.....	.....	Average	Average	.....	F. Jennings, Chatsworth Gardens, Chesterfield.
HERTFORDSHIRE ...	Under; good	Average; good	Average; very good	Over; very good	.....	Under; bad	Average; very good	Average; very good	.....	James Tully, Osmaston Manor Gardens, Derby.
	Average	Average; good	Under	Over; very good	Over; good	Average; very good	Over; very good	Average; good	Over	C. E. Martin, The Hoo Gardens, Welwyn.
	Average; good	Under; good	Under; good	Average; good	.....	.....	Over; very good	Over; very good	Average	Thos. Rivers and Son, Sawbridge, Hertford.
	Average; good	Average; good	Under; good	Over; very good	Over; good	.....	Average; very good	Average; good	Average; good	H. Prim, Hatfield House Gardens, Hatfield.
LEICESTERSHIRE ...	Over; good	Average	Average	Average	Over; good	Over; good	Average; good	Over	Average	Geo. Kelf, Danesbury Gardens, Welwyn.
	Under; good	Under; bad	Under; good	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Average	Edwin Beckett, Aldenham House Gardens, Elstree.
	Average	Average	Under	Average; good	Over	Over; good	Average; good	Over; good	Over	Wm. Whitclaw, Batchwood Gardens, St. Albans.
	Under	Average	Average	Average; good	Over; very good	Average	Average; good	Average; good	Under	Hy. Parr, Trent Park Gardens, New Barnet.
NORTHAMPTONSHIRE	Under; bad	Under; good	Under; bad	Average; bad	Average; good	Under; good	Over; good	Average; good	.....	Daniel Roberts, The Gardens, Prestwood Hall, Loughborough.
	Under; good	Average; good	Over; good	Over; good	Over; good	Over; good	Average; bad	Over; good	Average; bad	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Under	Under	.....	.....	.....	.....	Average; good	Average; good	.....	W. Wadsworth, Barkley Lane Nurseries, Queensborough.
	Under; good	Under; good	Under; good	Under; bad	Average; good	Average; bad	Average; good	Over; good	Average; good	F. Ibbotson, Rolleston Hall Gardens, Leicester.
NOTTINGHAMSHIRE	Under; good	Over; good	Under; bad	Under; bad	Under; bad	Under; bad	Average	Over; good	Under	John Harrison, Overdale, Aylestone.
	Average; good	Average; good	Under; good	Average; good	Average; good	Average; good	Under; good	Under; good	.....	R. Johnston, Wakefield Lodge Gardens, Stony Stratford.
	Under	Under	Average	Over; very good	Average; good	Average	Over	Over	Average; very good	Thos. Masters, Estate Office, Shuckburgh, Daventry.
NOTTINGHAMSHIRE	Average	Average	Over	Average; good	Average	Average	Over	Over	Under	John Blayson, Cotterstock Hall Gardens, Oundle.
	Under; good	Under; good	Under; good	Average; good	Average; very good	Over; very good	Average; very good	Average; bad	Average; good	Amos Parr, Holme Pie; report Hall Gardens, Nottingham.
	Average; very good	Average; good	Under	Over; very good	Average; very good	Under; good	Average; very good	Over; good	Under; bad	James B. Allan, Osberton Gardens, Workson.
OXFORDSHIRE	Average	Under	Under	Average	.....	Under	Average	Under	Average	J. R. Pearson and Sons, Lowdham.
	Under	Under	Under	Average	.....	Under	Under	Average	.....	A. W. Colloch, Newstead Abbey Gardens.
	Average; good	Under	Average; good	Average; good	Over; good	Under	Over; very good	Over; very good	Average	John Hall, Shiplake Court Gardens, Henley-on-Thames.
SHROPSHIRE	Over; good	Average; good	Average; good	Average; very good	Average; very good	Average; good	Average; good	Over; very good	.....	A. J. Long, Wyfold Court Gardens, near Reading.
	Average; good	Under	Over	Average	Under	Under	Over; good	Average	.....	A. W. Perry, Middleton Park, Bicester.
	Over; good	Average; good	Over; good	Average; very good	Average; good	Average; good	Over; good	Over; good	.....	A. S. Kemp, Broadway, Shifnal.
STAFFORDSHIRE ...	Average; good	Average	Under	Over; very good	Over; very good	Average; good	Over; very good	Over; very good	Average; good	Alex. Haggart, Moor Park Gardens, Ludlow.
	Average; very good	Average; good	Under; good	Average; good	Over; good	Average; good	Over; very good	Average; good	Under; bad	Edwin Gilman, Ingestre Gardens, Stafford.
	Under; bad	Average; good	Average; good	Under; bad	.....	Over; good	Average; good	Over; very good	Average; good	A. Cheney, Shenstone Court Gardens, Lichfield.
WARWICKSHIRE ...	Under; good	Average; good	Under; bad	Average; good	.....	.....	Average; good	Under; good	Under; good	T. Bannerman, Blithfield Gardens, Rugby.
	Average; bad	Average; bad	Under; good	Average; good	.....	Average; good	Over; good	Average; good	Under; bad	G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.
	Under; bad	Under; bad	Over; very good	Over; very good	Average; good	Average; good	Over; good	Average; good	.....	J. B. Shipston-on-Stour.
WARWICKSHIRE ...	Average; good	Average	Under	Over; very good	Average; good	Under	Average; very good	Over; very good	Under	James Wm. Smith, Coundon Court Gardens, Coventry.
	Under; good	Average; good	Average; good	Average; good	Over; good	Over; good	Over; good	Over; good	.....	Chas. Harding, Ragley Hall Gardens.
	Average; good	Average; good	Average; good	Average; good	Over; good	Over; good	Over; good	Over; good	.....	John Masterson, Weston House Gardens, Shipston-on-Stour.
5. Southern Counties.	Average; good	Under; good	Average; good	Over; good	Over; very good	Over; good	Over; good	Over; very good	Over; good	H. F. Smale, Warwick Castle Gardens.
	Average; good	Average; good	Average; very good	Under; good	Under; bad	.....	Over; very good	Over; very good	Average	John Lloyd, Compton Verney Gardens, Warwick.
	Average	Over; very good	Average; good	Over; very good	Over; very good	.....	Over; very good	Over; very good	.....	F. Capp, Charters Gardens, Ascot.
BERKSHIRE	Under; bad	.....	Under; good	.....	.....	.....	.....	.....	.....	C. O. Walker, Ickleton House, Wantage.
	Over	Under	Average	Over	Average	Average; good	Under	Over	Average	J. Howard, Benham Park Gardens, Newbury.
	Under	Under	Under	Under	.....	Under	Over	Over; good	Under	William Fyfe, Lockinge Gardens, Wantage.
DORSETSHIRE	Average; bad	Under; bad	Average	Over	Over; very good	Over; very good	Over	Over	Average	T. Turton, Castle Gardens, Sherborne.
	Average; good	Under	Over; good	Under	Average	Under	Over; good	Average; good	Average	Thos. Denny, Down House Gardens, Blandford.
HAMPSHIRE	Over; good	Average	Under; good	Average	.....	.....	Over; good	Over; good	.....	A. J. Bouley.
	Under	Under	Under; good	Average; good	Average; good	.....	Over; very good	Over; good	Under	Edwin McInnes, Swanmore Park, Bishop's Waltham.
	Under; good	Average; good	Over; very good	Average; good	Average; good	Average; good	Average; good	Average	Over	A. G. Nichols, Strathfieldsaye Gdns., Mortimer, R.S.O.
KENT	Under	Under	Under	Over	Over	.....	Over	Over	Average	R. Learmouth, Sherfield Manor, Basingstoke.
	Under	Under	Under	Over; very good	Average	.....	Over; except Black Currants	Over	Under; bad	George Woodward, Barham Court Gardens, Maidstone.
	Under	Average	Under	Average	Over	.....	Average	Over; very good	Under	George Bunyard, Royal Nurseries, Maidstone.
	Under; bad	Average; good	Under; bad	Average; bad	Average	.....	Average; good	Average; good	Average	Wm. Lewis, East Sutton Park Gardens, Maidstone.
	Under; good	Under; bad	Under	Over; bad	Under	Under	Under	Over; Currants under	Over	Geo. Fennell, Bowden Gardens, Tonbridge.
KENT	Under; good	Under; good	Average; good	Under; good	Under	Under	Over; very good	Over; very good	Under; good	B. Champion, Barons Place Gardens, Mereworth.
	Under; bad	Under; bad	Average	Average; good	.....	.....	Average; good	Average; good	Over; very good	H. Cannell and Sons, Swanley.
										George Lockyer, Mereworth, near Maidstone.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
KENT (continued).....	Under	Under	Under	.....	.....	.....	Over; good	Over; good	.....	Charles E. Shea, The Elms, Fooks Cray.
	Average; very good	Over; good	Under; good	Over; good	Over; very good	.....	.....	Over; very good	.....	John Thos. Shann, Bettshanger Park Gardens, Eastry, near Dover.
MIDDLESEX	Over	Over	Over	Over; good	Average; good	Under	Over; good	Over; good	Under	J. G. Weston, Eastwell Park Gardens, Ashford.
	Average	Average	Average	Average	Over	Under	Average	Average	Average	H. Markham, Wrotham Park Gardens, Barnet.
	Over; good	Over; good	Over; good	Over; good	Over; good	.....	Over; good	Over; good	Average; good	W. Poupard, Marsh Farm, Twickenham.
	Over; good	Average; good	Under; good	Over; good	Over; good	Under	Over; good	Over; good	Average; good	James Hudson, Gunnersbury House Gardens, Acton.
SURREY	Average	Average	Average	Average; good	Average; good	Over; good	Over; good	Over; good	Average	W. Watson, Harefield Place Gardens, Uxbridge.
	Average	Under; good	Average	.....	Over; very good	Average	Average; bad	Over; good	Average; good	W. Bates, Cross Deep Gardens, Twickenham.
	Under	Under	Under	Under	.....	.....	Over; very good	Average; good	Average; good	James Hawkes, Osterley Park Gardens, Isleworth.
	Average; good	Over; good	Average	Over	Average	Under	Over; good	Over	Under	S. T. Wright, R.H.S. Gardens, Wisley, Ripley.
	Average	Average	Average	Over	Over	Average	Over	Over	Over	A. Dean, 62, Richmond Road, Kingston-on-Thames.
	Over; good	Average; good	Average; good	.....	.....	.....	Over; very good	Average; very good	Average; good	Geo. Kent, Norbury Park Gardens, Dorking.
SUSSEX	Under	Under	Under	Under	.....	.....	Over; good	Over; bad	Under	Geo. Halsey, Riddings Court Gardens, Caterham Valley.
	Under; good	Under; good	Average; good	Over; good	Over; good	Over; very good	Over; very good	Over; very good	Over; good	W. H. Honess, Hopedene Gardens, Holmbury St. Mary, Dorking.
	Average	Under	Average	Average	Over	Under	Over	Over	Under	G. J. Hunt, Ashtead Park Gardens, Epsom.
	Average	Average	Under	Average	Average	Average	Average	Average	Average	James Watt, Mythenurst Gardens, Reigate.
	Under; bad	Average; good	Average; good	Average; very good	Average; good	Under	Over; good	Over; good	.....	Jas. Lock, Outlands Lodge Gardens, Weybridge.
	Under; good	Under; bad	Under; good	Under; bad	Over; very good	.....	Over; very good	Over; very good	Under; good	J. Osborne, Wykehurst Park Gardens, Bolney, Nr. Haywards Heath.
	Under; bad	Average	Average	Over; good	Over; good	Over; good	Over; good	Average	Average	J. Muddell, Sedgwick Park Gardens, Horsham.
	Under; good	Average; good	Under; good	Average; good	Average; good	.....	.....	Over; bad	Average; bad	A. Wilson, Eridge Castle Gardens, Tunbridge Wells.
WILTSHIRE	Average; good	Under; good	Average; good	Average; good	Average; good	.....	Over; good	Over; good	Under	William E. Bear, Magham Down, Hailsham.
	Under	Average	Under	Under	.....	.....	Average	Average	.....	Alex. Reid, Possingworth Gardens, Cross-in-Hand.
	Average; good	Average; good	Average; good	Average; bad	Over; good	Average; good	Over; good	Over; good	.....	T. H. Slade, South Lodge Gardens, Horsham.
	Under; bad	Average; good	Over; good	Over; good	Average; good	.....	Over; good	Average; good	Average; good	W. H. Smith, West Dean Park Gardens, Chichester.
	Under; good	Over; very good	Under; good	Over; bad	Over; good	Under; good	Average; good	Over; good	Average; good	W. A. Cook, Leonardslee Gardens, Horsham.
	Under; good	Under; good	Average; good	Average; very good	Over; good	.....	Over; very good	Over; good	Under; bad	H. C. Prinsep, Euxted Park Gardens, Uckfield.
	Average; good	Under; good	Average; good	Average; good	Average; good	Average; good	Under; bad	Average; good	.....	W. J. Lagridge, Ote Hall Gardens, Burgess Hill.
	Average; bad	Under; good	Under; bad	Over; good	Over; good	Over; good	Over; good	Over; good	Under; bad	George Brown, Bowood Gardens, Calne.
	Average; good	Under; good	Under; bad	Over; good	Over; good	Over; good	Over; good	Over; good	Under	Walter Tinley, Malmesbury.
	Average; bad	Under; good	Under; bad	Over; good	Over; good	Over; good	Over; good	Over; good	Under	Thomas Challis, Wilton House Gardens, Salisbury.
7, England, N.W.										
LANCASHIRE	Average; good	Over; good	Average; good	Average; good	.....	Under	Average	Under	.....	E. F. Hazelton, Knowsley Gardens, Prescot.
	Over; bad	Over; bad	Under; good	Average; good	Average; good	.....	Average; good	Average; good	.....	Wm. P. Roberts, Cuerdon Hall Gardens, Preston.
WESTMORELAND ...	Under; good	Under; bad	Over; very good	Average; good	.....	.....	Average; good	Under; bad	Under; bad	T. Wyton, Abbeystead Gardens, nr. Lancaster.
	Average; good	Under; good	Average; good	Over; good	.....	.....	Over; good	Average; good	.....	W. A. Miller, Underley Gardens, Kirkby Lonsdale.
	Under; bad	Under; bad	Over; very good	Average; good	.....	Average; good	Average; good	Average; good	.....	F. Clarke, Lowther Castle Gardens, Penrith.
	Average; good	Under; bad	Average; bad	.....	Under; bad	Average; good	Average; good	Under; bad	.....	W. Anton, Brougham Hall Gardens, Penrith.
CORNWALL	Average; over	Under	Average; good	Average; good	.....	Under	Under	Average; good	Under	J. Moorhouse, Dalton Hall Gardens, Burton.
	Average; good	Average; good	Over; good	Average; good	Average; very good	.....	Over; very good	Over; very good	.....	W. Caton, Helme Lodge Gardens, Kendal.
	Average	Under	Average	Over	Average	.....	Over; good	Over; good	.....	A. Mitchell, Tehidy Park Gardens, Camborne.
DEVONSHIRE	Over	Under	Over	Average; very good	Over; very good	Over	Average; good	Under; good	Under	A. C. Bartlett, Pencarrow Gardens, Bodmin.
	Average; good	Average; good	Over; good	Average; good	Average; bad	Average; good	Over; good	Over; good	.....	G. Lock, Newcombes Gardens, Crediton.
	Average	Under	Average	Under	Over	Average	Average	Average	Average	James Mayne, Bicton Gardens, Budleigh Salterton.
	Average; good	Under; good	Average; good	Over; very good	Average; good	.....	Over; very good	Over; good	Average	E. E. Bristol, Castle Hill Gardens, South Molton.
	Under; good	Over	Under	Average; good	Average	Under	Average; very good	Average; good	Under	J. Wilson, Killerton Gardens, Exeter.
GLOUCESTERSHIRE	Over; very good	Average; good	Average	Average; good	Average	.....	Over; good	Average; good	.....	Geo. Baker, Memblaad, Newton Ferrers, near Plymouth.
	Average; good	Average; very good	Under; good	Over; very good	Over; very good	Under; bad	Over; good	Over; good	Under; bad	J. R. Tooley, Toddington Manor Gardens, Winchcombe.
	Average	Average	Average	Average	Over; good	Over; good	Average	Over; good	Over	William Keen, Bowden Hall Gardens, near Gloucester.
	Under	Average; good	Average; good	Average; good	Average; good	Average; good	Over; good	Average; good	Average; good	John Banting, Tortworth Gardens, Falfield.
	Average	Under	Average	Average; good	Average	Over	Average	Average	.....	William Nash, Badminton Gardens, Gloucester.
	Under	Average	Under	.....	Average	.....	Average	Over	.....	Wm. J. Jeffries, Royal Nurseries, Cirencester.
	Over	Average	Over	Over; very good	.....	.....	Over	Average	Average	George Ketteringham, Estate Office, Exford, Lower Slaughter, R.S.O.
	Average	Average	Average	Over; very good	Over; good	Over; good	Over; very good	Over; good	Average	F. C. Walton, Stanley Park Gardens, Stroud.
	Average	Average	Average	Average	Over; very good	Under	Average	Average	Under	Arthur Chapman, Westonbirt Gardens, Tetbury.
	Average	Average	Average	Average	Average	Under	Over; good	Over; good	Average	W. H. Berry, Hicham Court Gardens, Gloucester.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
8, England, S.W.										
HEREFORDSHIRE ..	Average; good Over; good Under; good	Under; good Average; very good Average; good	Average; good Average; very good Under; good	Over; very good Over; good Under; bad	Over; very good Average; very good	Average; good Under; very good Average; good	Over; very good Over; good Average; good Over; very good	Over; very good Over; good Average; very good Over; good	..... Average; very good Average Average	Thos. Watkins, Newport Hall Gardens, Eardisley R.S.O. A. Buckingham, Stanage Park, Brampton Brian. Thos. Spencer, Goodrich Court Gardens, Ross. George Mullins, Eastnor Castle Gardens, Ledbury. W. F. Wood, Llanfrechfa Grange Gardens, Caerleon. Thos. Coomber, The Hendre Gardens, Monmouth. G. Shawley, Halswell Park Gardens, Bridgewater. W. Hallett, Cossington, Nr. Bridgewater.
MONMOUTHSHIRE	Average; good Under	Average; good Average	Average; good Under	Over; very good Average	Over; very good Average; good	Average; good Under	Over; very good Over; good	Over; very good Over; good	Average	.....
SOMERSETSHIRE ...	Average; good Over; good	Under; very good Average	Average; bad Over; good	Average; bad Average	Under; bad Over; good	Average; very good Average	Average; good Over; very good	Over; very good Over; very good	Average; good Average	A. Spurdle, Leigh House Gardens, near Chard. F. J. Little, Knowle, Dunster.
WORCESTERSHIRE	Average; good Over; very good Over; good Average; bad Over	Average; good Over; very good Under; bad Average; good Average	Average; good Average Over; good Under	Under; bad Over; good Over; good Average; good Under	Average; very good Average; good Average Over; very good	Under; good Over; very good Under; bad Over; good Average; very good Average; good Average	Over; very good Over; good Over; very good Over; good	Over; very good Average; good Over; very good Average; good	Average; bad Over Over Average	J. T. Rushton, Barons Down Gardens, Dulverton. Geo. H. Head, Kingsdon Manor Gardens, Taunton. Samuel Kidley, Chipley Park Gardens, Wellington. A. Young, Witley Court Gardens, Worcester. C. Bayford, Davenham Gardens, Malvern. William Crump, Madresfield Court Gardens, Malvern.
WALES:										
CARNARVONSHIRE	Average; good	Under; bad	Average	Under	.....	.....	Over; very good	Over; good	Under	G. Evans, Gwydyr Castle Gardens, Llanrwst.
DENBIGHSHIRE	Over; good	Average	Average	Over; good	Over	Over; good	Average (Black Currants bad)	Under; bad	Over	J. Martio, Bryn Estyn Gardens, Wrexham.
FLINTSHIRE	Over; very good Average; good	Average	Over; good	Over	Average	Over; good	Over	Average	Average	J. A. Jones, Chirk Castle Gardens, Ruabon. John Forsyth, Ilwarden Castle Gardens, Chester.
GLAMORGANSHIRE	Average	Over; very good Average	Average; good Under	Under; bad Over	Average; good Over	Over; good Average	Over; good Over	Under; bad Over	..... Over	James Barnard, Mostyn Hall Gardens, Mostyn. R. Milner, Margam Park Gardens, Port Talbot.
MERIONETHSHIRE	Under	Under	Under	Over; very good Average; good	Over; very good .....	.....	Over; good (Black Currants bad)	Average; good Average; good	Average	C. T. Warmington, Penllegacwr Gardens, Swansea. John S. Higgins, Rbŷg Gardens, Corwen.
PEMBROKESHIRE ...	Over; good	Under	Over	Average	Average	.....	Over	Over; good	Average	Geo. Griffin, Slebeck Park Gardens, Haverfordwest.
RADNORSHIRE	Over; very good Under; good	Average; good Average; good Under	Over; very good Average; good Average	Over; very good Average; good Average	Over; very good Over; very good	Average; good Over; very good Average	Over; very good Average; good Over	Over; very good Average; good Over; good	Over; good Over Under	W. A. Baldwin, Clynfnew Gardens, Boncath. J. MacCormack, Maesllwch Gardens, Glasbury. C. M. Nixon, Knighton. Wilson Palliser, Nortoo Manor Gardens, Norton, R.S.O.
IRELAND:										
9, Ireland, N.										
DUBLIN	Average	Under	Average; good	Average	Over; good	Over	Over; very good	Over; good	Average; good	A. Campbell, St. Anne's Gardens, Clontarf.
GALWAY	Under; good	Under; good	Over; very good	Average; good	.....	.....	Over; good	Average; good	.....	Thomas Dunne, Lough Cutra Castle Gardens, Gort.
MAYO	Over; good	Average; good	Under; bad	Over; very good	Average; good	Under; bad	Over; very good	Average; good	Over; very good	R. Savage, Belleek Manor Gardens, Ballina.
MEATH	Average; very good Average; good Over	Under	Average; good Average; good	Average	.....	.....	Average; good Over; very good	Over; good	.....	Michael McKeown, Juliastown, Drogheda.
TYRONE	Average; good Over	Average; good Over; very good	Average; good Average	Over; very good Over; good	Average; good .....	.....	Over; very good Over; very good	Average; good Average; very good Over; very good	Average; good	J. B. Pow, Dunsany Castle Gardens. Fred. W. Walker, Sion House Gardens, Sion Mills.
WEST MEATH.....	Over	Average; good	Over; good	Average; under	.....	Under	Average; good	Over; very good	Average	George Bogie, Falkenham Hall Gardens, Castlepollard.
10, Ireland, S.										
ATHLONE	Average; good	Average; good	Average; bad	Average; bad	Over; very good .....	.....	Over; very good	Average; very good	.....	J. Murray, Moydrum Castle Gardens, Clontarf.
CORK	Over; very good	Average	Average; good	Average	.....	.....	Over; very good	Over; very good	.....	Maurice Colbert, Abero, Couma.
KILDARE	Over; good	Average; good	Average; good	Average	Under	Over; good	Over	Average	.....	Fredk. Bedford, Straffan House Gardens.
KILKENNY.....	Average; good Average; very good Over; good	Average; good Average; good Average; good	Average; good Average; good Average	Over; good	Over; good	Average; good	Over; very good Over; very good	Over; good Average; bad	Under	Alexander Black, Carton Gardens, Maynooth. Isaac Dearnaly, Piltown.
ROSCOMMON	Over; very good	Average; good	Average	Average	Average; good	.....	Over; good	Average	Average	Terence Rogers, Frenchk Park House Gardens, Frenchk Park.
WATERFORD	Over; very good Over; good	Average; very good Under; bad	Under; good Average; good	Over; very good Average; good	Average; very good Average; good	..... Under; bad	Over; very good Over; good	Average; very good Average; good	..... Under; bad	Thomas Dunn, Strancally Castle Gardens, Tallow. David Crombie, Curraghmore Gardens, Portlaw.
CHANNEL ISLANDS:										
GUERNSEY	Over; very good	Average; very good	Over; good	Over; good	Over	.....	Over; very good	Over; very good	.....	Chas. Smith and Son, Calendon Nursery.
JERSEY	Under; good	Average; good	Over; very good	Average; good	Over; very good	Average; good	Over; good	Average; good	.....	T. Sharnan, Imperial Nursery, St. Heliers.
ISLE OF MAN:										
Under	Under	Under	Average	Average	.....	.....	Over	Under	.....	James Inglis, Brunswick Road Nurseries, Douglas.
Average	Over; good	Over; very good	Over; very good	Over; very good	.....	.....	Over; very good	Over; very good	.....	E. Bishop, White House Gardens, Kirkmichael.

SUMMARY.

SCOTLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(42)	(40)	(38)	(39)	(16)	(17)	(42)	(42)	(5)
Average	12	22	22	26	9	6	7	21	2
Over	21	1	11	10	4	7	33	16	—
Under	9	17	5	3	3	4	2	5	3

IRELAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(15)	(15)	(15)	(14)	(9)	(6)	(15)	(15)	(7)
Average	6	10	11	9	5	1	2	10	4
Over	6	1	2	5	3	2	13	5	1
Under	1	4	2	—	1	2	—	—	2

ENGLAND.

Number of Records	(172)	(171)	(170)	(163)	(137)	(132)	(168)	(168)	(124)
Average	80	86	81	85	65	61	67	64	62
Over	25	16	23	54	61	33	96	91	16
Under	67	69	63	24	11	33	5	13	46

CHANNEL ISLANDS.

Number of Records	(2)	(2)	(2)	(2)	(2)	(1)	(2)	(2)	—
Average	—	2	—	1	—	1	—	1	—
Over	1	—	2	1	2	—	2	1	—
Under	1	—	—	—	—	—	—	—	—

WALES.

Number of Records	(13)	(13)	(13)	(13)	(9)	(8)	(13)	(13)	(10)
Average	3	6	5	6	4	3	2	6	3
Over	8	2	5	5	5	5	11	5	5
Under	2	5	3	2	—	—	—	2	2

ISLE OF MAN.

Number of Records	(2)	(2)	(2)	(2)	(1)	—	(2)	(2)	—
Average	1	—	—	1	1	—	—	1	—
Over	—	1	1	1	—	—	2	1	—
Under	1	1	1	—	—	—	—	1	—

FOR GRAND SUMMARIES OF 1909 AND 1908 SEE PAGE 76.



[Photograph by D. C. Harris, Llandilo.

FIG. 31.—GROUP OF NINE SPECIMEN PLANTS OF CŒLOGYNE CRISTATA IN THE GARDENS OF EARL CAWDOR, GOLDEN GROVE, LLANDILO (GR. MR. FRANK SURMAN). THE PLANTS ARE IN 6-INCH POTS; THEY HAVE NOT BEEN REPOTTED FOR THREE YEARS.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

Appointments for August.

- MONDAY, AUGUST 2—
Bank Holiday. Atherstone Fl. Sh. Datchet Fl. Sh. Perry Bar Fl. Sh. (2 days).
- TUESDAY, AUGUST 3—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. F. W. Moore, on "Water Plants"). British Gard. Assoc. Ex. Council meet. Clevedon Fl. Sh. (2 days). Abbey Park, Leicester Fl. Sh. (2 days).
- WEDNESDAY, AUGUST 4—
Northampton Fl. Sh. (2 days).
- SATURDAY, AUGUST 7—
Soc. Franc. d'Hort. de Londres meet.
- MONDAY, AUGUST 9—
United Hort. Bee. and Prov. Soc. Com. meet.
- WEDNESDAY, AUGUST 11—
Taunton Fl. Sh. (2 days). Kingstons Fl. Sh.
- THURSDAY, AUGUST 12—
Malmesbury Fl. Sh. Hyltopp Fl. Sh.
- TUESDAY, AUGUST 17—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Walter F. Reed, on "Bees in relation to Gardening").
- WEDNESDAY, AUGUST 18—
Shropshire Hort. Soc. Sh. at Shrewsbury (2 days). Hemel Hempstead Fl. Sh.
- THURSDAY, AUGUST 19—
Roy. Hort. Soc. of Aberdeen Exh. in Duthie Park (3 days). Abingdon Fl. Show.
- THURSDAY, AUGUST 26—
Peebleshire Hort. Soc. Sh. at Peebles.
- TUESDAY, AUGUST 31—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. James Hudson, on "The Gardens by the Lake of Como").

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62.5°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, July 28 (6 P.M.): Max. 67.3°; Min. 56.8°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, July 29 (10 A.M.): Bar. 29.9; Temp. 65°; Weather—Overcast.

PROVINCES.—Wednesday, July 28 (6 P.M.): Max. 66° Brighton; Min 54° Durham.

SALES FOR THE ENSUING WEEK.

FRIDAY—
600 Cattleyas Mossiae and other Imported Orchids; also choice Established Orchids, Freesias, Liliums, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Fruit Crops. In the present issue we print our annual reports on the condition of the hardy fruit crops in Great Britain and Ireland. These appear to afford good grounds for a large amount of satisfaction. Take the Apple crop, for instance. The returns show a crop quite equal to that of last year, and certainly better than that of 1907. Last year, out of 275 instances, there were 185 which indicated average or over average crops, and 90 that were under the average yield. This year there are 246 returns, and 165 of these show crops equal to, or above the average, and 81 below what is considered a normal crop. But whilst the proportion of under-average crops is seen to be much about the same as last year, it has to be pointed out that a greater number of correspondents now

report the crop as over average; therefore, the prospects of the yield appear to be even better than in 1908, which was certainly to be reckoned amongst our best Apple years. It is a matter for congratulation that growers in the northern parts of the country, and particularly in Scotland, who do not always share in the good crops obtained in England, report this season in favour of a better Apple yield than for several years past. Out of 42 returns from Scotland, only nine of these estimate the crop as under-falling the average. This is a great improvement on last year, when there were 30 under-average crops out of a total of 45 returns. In Wales and Ireland equally satisfactory estimates are returned; in each case they are better than those published a year ago, as may be seen from the grand totals of the two years printed on this page for comparison.

Pears have been stated to be only a very moderate crop, but our present returns scarcely bear out the earlier forecast. In Scotland there are 17 under-average crops out of 40 reported upon; in England 69 out of 171; in Wales 5 out of 13; and in Ireland 4 out of 15. Our tabulated figures show a crop of double the value of that of last year; indeed, the yield so far is better even than in 1907, a season when Pears were unusually plentiful. If we consider the figures relating to Plums, they are equally promising. Last year there were 126 reports of average or over-average crops out of a total return of 272; this season there are 163 out of 240 returns. It will be remembered, however, that the yield of Plums in 1907 was far above the average, and better than is indicated by the figures of either last year or this season. It is somewhat curious that the present crop of Plums is heaviest in Scotland and Ireland, and lightest in England and Wales; in most seasons the distribution is of a totally-different character. Cherries are an unusually heavy crop, for out of 233 returns, only 29 are reported to be under the average, whilst last year there were 85 under-average crops out of a total return of 258.

In the next subject, that of Peaches, we have an instance in which early flowering was a decided advantage to the crop. We do not mean that Peaches and Nectarines flowered earlier this season than usual; as a matter of fact, they were later, but naturally they bloom earlier than Apples and Pears, and this season the weather was more genial during their flowering period than it was for the later kinds. This fact is further demonstrated by the Almond, which, blooming at almost the same period as Peaches, had exceptionally genial weather, with the result that

Almond trees in all the districts round the metropolis are bearing such crops of fruit as are very rarely seen on these trees. Reverting to the crop of Peaches and Nectarines, we find that, out of 174 returns, 159 report average or over-average crops, and only 15 of our correspondents have stated the crop to be less than average. This is the more satisfactory when it is remembered that last year, out of 177 reporters, as many as 104 indicated crops below the average yield. Apricots were the greatest failure last season, for, out of 159 returns, there were only eight average crops, and not one was reported above the average. This year, out of 164 returns, there are 119 that indicate crops equal to, or above the average, and 45 below average. Small fruits, which for our purposes are made to include Gooseberries, Black and White Currants and Raspberries, were good crops last year, but they are even more plentiful this year. Of 242 correspondents, only seven report these crops as being below the average; last year there were 42 deficient crops out of 272 that were reported upon. It may be added that Black Currants are the least satisfactory among the small fruits.

There have been many complaints recently of the glut of Strawberries, but our reports show that, if the present crop has been a plentiful one, that of last year was even more bountiful. There were 275 returns then, and only four of these reported deficient crops. This year there are 21 described as under the average out of 242 returns. The glut may be partially explained by two circumstances: first, the recent weather having been cold and wet, it was not calculated to strengthen the public demand for soft fruits; and, in the second place, the berries themselves have been so large, watery and devoid of flavour the public has exhibited little appreciation for them. It is worth recording that in some instances the wholesale price offered to the cultivator is said to have been as low as one halfpenny per pound. No wonder that we hear of cases in which the berries have been given gratuitously to anyone who cared to gather them. There is much room for improvement in Strawberries, for many modern varieties, whilst possessing good cropping qualities and large-sized fruits of attractive appearance, are deficient in flavour. So impressed were we that greater attention needs to be given to this quality, and therefore to the selection of varieties for cultivation, that we invited our correspondents who so kindly furnish us with the details of the fruit crops to take part in a Strawberry election. They were asked to state what they considered to be the three best early, mid-season and late Straw-

GRAND SUMMARY, 1909.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(246)	(243)	(240)	(233)	(174)	(164)	(242)	(24)	(146)
Average	102	125	119	128	84	72	78	102	71
Over	63	21	44	76	75	47	157	119	22
Under	81	97	77	29	15	45	7	21	53

SUMMARY OF 1908 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(275)	(272)	(272)	(258)	(177)	(159)	(272)	(275)	(161)
Average	138	69	103	127	57	8	155	103	63
Over	47	7	23	46	16	—	75	168	19
Under	90	196	146	85	104	151	42	4	80

berries, and, in addition, which varieties they found to possess most flavour. The results are interesting, and we purpose publishing them in a future issue.

The only crop that we have not so far alluded to is that of Nuts, which is slightly better than last year. It will be seen, therefore, that the present promise for fruit is exceptionally good, for rarely have we published more satisfactory returns in the 40 years or so which have elapsed since the practice of collecting reports was established. It is to be hoped that no adverse circumstances will arise to seriously prejudice the chances of harvesting the yield thus promised, but it has always to be remembered that in this country the vagaries of climate may have that effect. At the present time the dull wet weather which has characterised the summer season still prevails, therefore more sunshine is needed if we are to have a bountiful harvest of well-ripened, good-flavoured fruit. We hope that a change of this character will be forthcoming in the near future.

London International Exhibition.

We have very great pleasure in publishing the following communication from the Council of the Royal Horticultural Society relating to a proposal to hold an international horticultural exhibition in London.

From time to time horticulturists from these shores visit foreign countries to take part in international courtesies of this nature, and they are always welcomed with cordial hospitality. They learn many lessons from these visits and obtain much enjoyment from the greetings of friends from various parts of the world. But it is desirable that we should not continue to leave these things entirely to our Continental friends. After the lapse of forty-three years, it is again Britain's turn to act as host, to arrange an exhibition that shall adequately represent the horticulture of the country, commercial as well as ornamental—one capable of interesting foreign visitors, and of conveying to them some instruction. If a genetic conference is held in connection with such an exhibition, both events will gain some advantage from the other, and the visit of scientific men from abroad will be made the more memorable. It is frequently claimed that British horticulture is at the least equal to that practised in any part of the world, and we are not disposed to question the truth of the statement. But if this be so, it is one of the best of reasons for adopting the proposals now put forward by the premier horticultural society in this country. In March last, being present at the Berlin Show, we expressed in these columns how desirable it is that British horticulturists should again organise an exhibition on the lines of the ever-memorable one of 1866. We therefore commend the Royal Horticultural Society's scheme to the sympathetic consideration of our readers, trusting it will meet with general support.

“From time to time, in recent years, international horticultural exhibitions have been held at various centres on the Continent as at Paris, Berlin, Ghent, Turin, etc. The last occasion on which Great Britain took part in these international courtesies was in 1866, and it has occurred to the Council of the Royal Horticultural Society that it is time that our country made an effort (say in 1911) to return some part of the hospitality

which foreign countries have so often extended to this country during the 40 years which have elapsed since such a gathering was held in London. It has further been suggested that in connection with it a fourth conference should be held on genetics, i.e., on the origin, breeding, and heredity of plants.

“The first point to be considered is, of course, the financial one. In the case of the 1866 International Show at South Kensington the balance-sheet gives an expenditure of £13,000, and although this was more than covered by the receipts, it is only prudent to endeavour to raise such a sum. And this may be done, as it was in 1866, by a combination of a general guarantee fund and a definite subscription fund, every guarantor of 25 guineas receiving a ticket admitting to the show on the opening day, and on one other day; and every subscriber of one guinea receiving a ticket admitting on the opening day.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are requested to remind members and friends of the National Chrysanthemum Society that the annual outing will take place on Monday, August 9, when a visit will be paid to Sir FRANK CRISP's residence at Friar Park, Henley-on-Thames. Tickets will be half a guinea each, and application for these must be made to the secretary before August 4. The party will assemble at Paddington at 9 o'clock in the morning, and will leave Henley Station on the homeward journey at 8.20 p.m.

DESTRUCTION OF CHARLOCK BY CALCIUM CYANAMIDE.—Calcium cyanamide, one of the most recently-introduced nitrogenous fertilisers, appears, according to experiments carried out at the Agricultural School at Arenenberg, Switzerland, to be of considerable value as a specific against Charlock. The experiments were started in consequence of observations made on grass-land manured with calcium cyanamide, it having been observed that on such land, though the weeds

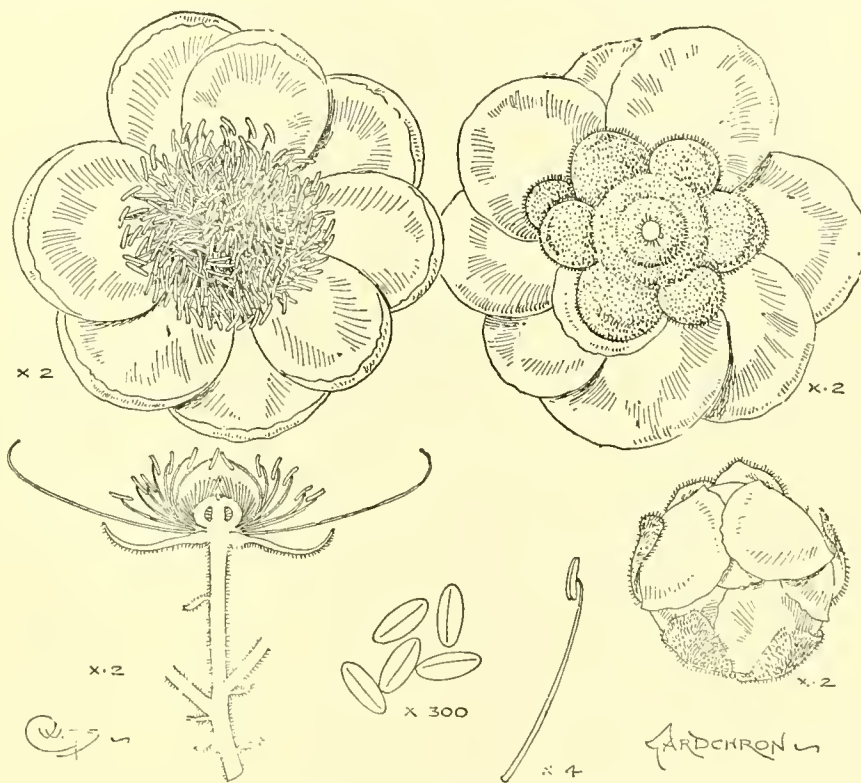


FIG. 32.—MALE FLOWERS OF ACTINIDIA CHINENSIS: FLORAL DETAILS (MAGN.).
(See pp. 78 and 79, and Supplementary Illustration.)

“The Royal Horticultural Society will, in due course, call a meeting of horticulturists and others to consider the matter, and if the suggestion be adopted, and an influential general committee be appointed to carry it out on these lines, the Council are prepared to guarantee £5,000 on condition that all the Fellows of the Society receive admission tickets (not necessarily on the first day), one ticket for £1 1s. Fellows, two tickets for £2 2s. Fellows, and four tickets for £4 4s. Fellows.”

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place in the Society's Hall, Vincent Square, Westminster, on Tuesday next, August 3, at 3 o'clock. A lecture on “Water Plants” will be given by Mr. F. W. MOORE, V.M.H.

were burnt badly, the grass was acted on favourably. In the following year, therefore, a quarter of an acre plot of Barley was dressed on June 5 with 22 lbs. of calcium cyanamide. The results observed a month afterwards proved extremely satisfactory. On the treated plot scarcely a trace of Charlock was to be seen, and the Barley was 4 inches taller than on the untreated plots. Other weeds had also suffered. There is evidently room for further experiment in the use of calcium cyanamide as a weed destroyer for use on cultivated land.

PHENIX CANARIENSIS AT HYERES.—The *Revue de l'Horticulture Belge et Etrangere* (No. 13) contains an account of the culture of this Palm on a large scale at Hyères, as well as descriptions of some of the more interesting trees and shrubs, which are cultivated in the neighbourhood of Marseilles and Hyères.

VARIETIES OF SCAB IN POTATOS.—The irregular, more or less corrugated patches so frequently met with on Potato tubers are generally described as scabs; but it is useful to point out, as is done in the *Journal* of the Board of Agriculture, Vol. XV., No 10, that scab of Potatos is not merely one form of disease, but that the different types of scabbing are due to distinct causes. Thus a very prevalent form of scab consists of rough patches of very variable size, often covering the greater part of the surface. This type of scab is due to mechanical injury, and is not infectious, hence, Potatos showing it may be used for "sets." Black scab, or warty disease (see p. 79), is recognisable by reason of irregular, corrugated warts, pale in the young, but turning blackish in the old tuber. When such scabbed Potatos are used for "seed," the young shoots which they produce grow abnormally, and become, together with the old tuber, covered with irregular, Cauliflower-like masses. Tubers infested with this fungus disease must be burned or otherwise destroyed. Another type of scab consists of narrow patches of a pinkish-white colour, with rows of purple spots, and is caused by the millepede *Julus pulchellus*. In a severe attack, the substance of the Potato may be so destroyed as to leave a large hollow space. A fourth form of scab is due to the fungus *Pospora scabies*, Thaxter. In appearance, it resembles that due to mechanical injury, but it may be distinguished from this latter form by the delicate greyish bloom which may be seen on the wounded parts. Lastly, another scab, due to an organism called *Spongospora scabies*, Mass., may be recognised by the snuff-coloured mass of spores which occur on the surface of the wound.

THE "GARDEN" FLOWER SHOW.—Our contemporary held its second annual show on Wednesday last in the Royal Horticultural Hall, Westminster, when the readers of that journal contributed a very fine show. So many exhibits were received that, in addition to both annexes and the large hall, the lecture-room and one of the committee rooms also had to be filled with the produce. About 2,000 bunches of Sweet Peas were shown, the best collection coming from Mr. T. STEVENSON, Woburn Place Gardens, Addlestone. Fruit was well represented. There were Peaches, Gooseberries, Currants and Raspberries. Some of the collections of vegetables were of high-class quality. The Gold Medal for the best exhibit in the whole show was awarded to H. J. TATHAM, Esq., Kendall Hall, Elstree, Herts. (gr. Mr. W. Gaiger), for a splendid collection of 12 kinds. There were 47 decorated tables, Sweet Peas, Roses, and other flowers being those chiefly employed for this purpose.

THE PROTECTION OF SEED.—According to trials made recently at the Kansas State Experiment Station, seed, e.g., of Corn, may be protected from burrowing animals, such as mice, by coating it with an offensive-smelling substance, such as coal-tar. The procedure recommended for Corn is as follows:—The Corn is slightly wetted with warm water, and then stirred in the tar; one teaspoonful of tar is to be used for each quarter-hushel of Corn. The seed is stirred thoroughly till each grain is covered with tar. Afterwards the seeds are dried and planted.

TO EXTERMINATE COCKROACHES FROM ROOMS.—Where it is possible to leave a room unoccupied for a day or two, cockroaches infesting it may be destroyed by fumigating with bisulphide of carbon. A note in the *Journal* of the Board of Agriculture, Vol. XV., No. 10, gives the method to be adopted. Saucers containing the carbon bisulphide are placed about the room, which is made as air-tight as possible. They are left for 24 to 48 hours, and then, after ventilating for an hour or two, the room may be used.

GRAFTING OF HERBACEOUS PLANTS.—M. GRIFFIN contributes to the current number of the *Bulletin de la Société Botanique de France* an illustrated article recording his experiments in grafting herbaceous plants. Besides repeating his earlier experiments on Potatos and Tomatos, and comparing the results with those previously obtained, he describes, among others, the following instances:—*Solanum nigrum* grafts very readily on *S. Lycopersicum* and remains perfectly distinct. M. GRIFFIN did not observe in his experiments the slight modifications in foliage observed by WINKLER in Germany. Several varieties of Haricot Beans, distinct in foliage, flower, and fruit, were grafted together. No modification of stock or scion was observed, either in habit or constitution. In the case of *Helianthus annuus* grafted on *H. latifolius*, the specific characters are preserved in both stock and scion. Small variations in the shape of leaves, &c., occurred in a few cases, but these were as frequently observed in control plants which were not grafted. M. GRIFFIN summarises the results of his experiments on Solanaceæ, Leguminosæ, and Compositæ by stating that in none of his very numerous experiments has he observed the slightest indication of the production of a graft hybrid. Slight unimportant variations occur occasionally with regard to nutrition, but all his experiments support the views as to the complete independence of stock and scion.

FLOWERS FROM THE MARITIME ALPS.—Several interesting species have been forwarded by Mr. EDWIN AVERY, who writes from the Villa Victoria, Grasse, Alpes Maritimes, France:—"I am posting a small box of wild flowers gathered in the district. The *Lilium* grows abundantly on the wooded slopes of the mountains above Grasse at 3,000 feet altitude. The *Statice* I found on the seaside rocks of the Isle St. Marguerite off Cannes. The enclosed *Ranunculus*, which I take to be *R. graminens*, I found at an altitude of about 5,000 feet, where, on a little grassy plateau, it blended charmingly with *Orchis Morio* and *Orchis militaris*. *Aristolochia pistilochia* is frequently found nearer Grasse; also *Nigella damascena*. *Cineraria maritima* grows everywhere; also *Rhus Cotinus* and *Pistacia Terebinthus*. Among many interesting plants I have been able to recognise at various altitudes are *Pæonia peregrina*, *Cistus*, *Daphne Gnidium*, *Anchusa italica*, *Chlora perfoliata*, *Primula Auricula*, *Anemone Hepatica*, *Saxifraga lingulata*, *Androsace maxima*, *Anthyllis montana*, *Orchises* in variety, *Ophrys apifera*, *O. Scopolax*, *O. Bertolina*, *Cephalanthera grandiflora*, *Epipactis latifolia*, and *Limodorum abortivum*. I enclose in the box what I think is probably *Cephalanthera rubra*." Those sent for identification were as follow:—1, *Echinops Ritro*; 2, *Cirsium* sp.; 3, *Centaurea collina*; 4, *Rhododendron ferrugineum*; 5, *Osyris alba*; 6, *Cephalanthera rubra*; 7, *Clematis flammula*; 8, *Filago spathulata*; 9, *Dianthus* (probably *D. Caryophyllus*); 10, *Linum strictum*; 11, *Arenaria capitata*; 12, *Phagnalon sordidum*; also *Lilium pomponium*, *Aristolochia pistilochia*, *Ranunculus gramineus*, *Bupleurum protractum*, *Nigella damascena*, *Statice cordata*, *Campanula* (probably *C. Scheuchzeri*), *Leuzea conifera*, *Helichrysum serotinum*, *Nepeta Nepetella*, *Dianthus Balbisii*, and *Armeria bupleuroides*.

BOARD OF AGRICULTURE AND FISHERIES' REPORT ON CROP PROSPECTS.—The Crop Estimators of the Board in reporting on the condition and prospects of the principal crops on July 15, generally comment on the backwardness of the season as compared with former years, caused more particularly by the cold and dry spell of weather during May and the first two or three weeks of June, which has retarded the growth of late-sown corn and early root crops,

and has especially resulted in a deficient growth of grass. The abundant rains which fell from the third week of June onward appear to have had beneficial effects on the growth of the crops generally, though their continuance has been detrimental in some respects and especially in regard to the Hay harvest. General reference is made to the suitability of the season, from the autumn seed-time onwards, to the growth of Wheat, the acreage of which is said to have been increased. An over-average crop is anticipated throughout Great Britain, but particularly in England. Barley also has been favoured by the seasonal conditions, and appears to give good promise throughout the country, except in Wales. The Oat crop on the other hand is unsatisfactory throughout England and Wales, the wide prevalence of insect attacks having materially reduced the prospects of an average yield. In Scotland, however, the yield may slightly exceed the average. Roots and Potatos promise well, though the season has not hitherto been favourable to the growth of Mangolds. As already indicated the yield of Hay is low, on account of the unfavourable spring and early summer. The yield in Scotland though not up to the average seems to be better than in England. Hops compare unfavourably with last year, and are stated to be seriously affected by vermin and blight. Summarising the reports, and representing an average crop by 100, the appearance of the crops in mid-July indicates yields for Great Britain which may be represented by the following percentages:—Wheat, 104; Barley, 103; Oats, 96; Potatos, 104; Roots, 104; Hay, 92.

SAGO.—The method employed in the Malay Straits for producing Sago starch is, according to an article in the *Journal* of the New York Botanic Garden, extremely simple. A full-grown plant of the true Sago Palm, *Metroxylon Sagus*, is felled and cut up into lengths of 3 or 4 feet. The chunks are immersed in water for several days, and then the outer fibrous layers are removed. The remainder is ground to sawdust, which is put into a receptacle made of coarse sacking. A native then enters the receptacle, into which water is poured. The native tramps up and down, and the starch, liberated from the tissues of the Palm stem, sinks, and is drawn off through a Bamboo trough into a vessel placed below the sacking. After some days the water is drained off from the Sago meal, which is dried and put into bags for shipment.

ACTINIDIA CHINENSIS.—In reference to this Chinese species now figured, we believe, for the first time from natural specimens, it may be said that the first flowers that came before our notice were sent us by Mr. J. COMBER, gardener at Nymans, near Crawley, in Sussex, where a plant bloomed very early this season. These flowers were partly withered on receipt. Since Mr. WOODALL very kindly sent us the flowering spray now figured in the Supplementary Illustration, information has reached us that plants have flowered in Messrs. JAS. VEITCH & SONS' nursery at Coombe Wood. The existence of the species in China has long been known, for ROBERT FORTUNE sent dried specimens to this country, and PLANCHON'S first description was published in Hooker's *London Journal of Botany*, vol. vi. (1847), p. 302. There is a figure in the *Journal* of the Royal Horticultural Society, vol. xxviii., pt. i., doubtless prepared from dried specimens. *Actinidia chinensis* was introduced to cultivation by Mr. E. H. WILSON whilst travelling in China for Messrs. JAS. VEITCH & SONS.

PUBLICATIONS RECEIVED.—*Small Estate Management*, by Albert C. Freeman, M.S.A. (London: Rebman, Ltd.). Price 2s. 6d. net.—*Successful Jam Making and Fruit Bottling*, by Lucy H. Yates (London: Rebman, Ltd.). Price 2s. 6d. net.—*Successful Dairy Work*, by A. T. Matthews (London: Rebman, Ltd.). Price 2s. 6d. net.

ACTINIDIA CHINENSIS.

(See Supplementary Illustration.)

ACTINIDIA CHINENSIS, the subject of the accompanying illustration, flowered for the first time in Europe this spring. The specimen, here so faithfully delineated, came from Nice, where it was grown on a pole in the open air in my garden. Owing to the distance it had to travel, the cut blooms are decidedly smaller than specimens which expand on the plant as it grows in the open. Hitherto all the plants that have flowered have proved males or "pollen bearing," so since the plant is dioecious we may have to wait some considerable time before we see the fruit, which is said to be highly esteemed by the Chinese in its native mountain district.

The plant is a handsome and hardy climber, with rounded, rather heart-shaped leaves, and the rose-red petioles or leaf-stalks contrast well with the fresh green of the summer foliage. At Nice it has grown most luxuriantly in very poor, calcareous soil in a sheltered and sunny valley, where a little infiltration of moisture keeps the ground somewhat moist during the trying drought and heat of summer. It is evident, therefore, that its requirements are few. The male flowers, though numerous, are not effective, as they are generally hidden by the leaves. They appear in irregular clusters in the axils of the young growths, and are at first pure white with orange stamens, but in a few hours the colour turns to a dirty white or pinky buff, according to the temperature, and the flower withers on the second day. As the female flowers have not yet been seen, let us hope they are more ornamental and of a clear yellow colour, as reported by the discoverer of the species. This handsome deciduous climber may yet prove a considerable gain to our fruit and flower gardens. From the altitude at which it grows, it must be hardy in England, but it remains to be proved whether our summers are long enough or our suns hot enough to ripen the vigorous growths sufficiently to bear fruits, even when we have the female form in our gardens. It is a tiresome job to wait for the "pairing plant" when one remembers that it was quite 50 years after the introduction of the common Aucuba before the pollen-bearing plants were brought to Europe and the first fruits were produced! The fruit of *Actinidia chinensis* is said to be of the shape of a small Plum, but in structure like the Gooseberry, with internal seeds in the juicy pulp. It will be interesting when we can taste it to compare our sensations with those of the Chinese, who like it so well. If it fulfils expectations, it will be a delightful thing to welcome a successor to the early and hardy Gooseberry, now so threatened by new and fell diseases. *Edward H. Woodall, La Selva, Brancolar, Nice.*

NEW FACTS CONCERNING WARTY DISEASE OF POTATO.

In 1896 Schilberszky gave an account of a new disease of Potatos which had been sent to him for investigation from a certain district of Upper Hungary. Although the description he gave was brief and in many respects incomplete, it is clear that the disease was the same as that which is now sometimes spoken of as black scab. Since the term scab does not adequately indicate the character of the disease and it is not black, the name "black scab" should be abandoned in favour of "Potato wart."

In the autumn of 1900 several tubers exhibiting this peculiar disease were sent to me for examination from the district round Burton-on-Trent, but owing to other duties I was unable to do more than note in the diseased tissues of the Potato the presence of the resting spores of the parasite which was named *Chrysophlyctis endobiotica* by Schilberszky. During the present

season I have been able to carry out some experiments which have made clear the main facts of the development of the parasite.

When a cross section is made in late summer or autumn of the warty or Cauliflower-like excrescence of a diseased tuber, large brown, thick-walled spores are seen embedded in the tissues beneath the surface. Usually only one spore is present in each infected cell, but some of the latter occasionally contain two. The diseased portion of the tuber left in the ground becomes disorganised and the spores are set free into the soil. In spring, the thick outer coat of the spore bursts, and from the opening is produced a thin bladder-like case or sporangium containing a large number of zoospores. These make their way out of a slit or pore in the wall of the sporangium, and for a time swim about in water in the soil by means of a single cilium. I have frequently observed that the zoospores just after emerging remain crowded together and quiescent for a short time, before becoming motile. Motion by means of the lashing cilium ceases in 20 minutes or less; the zoospores then

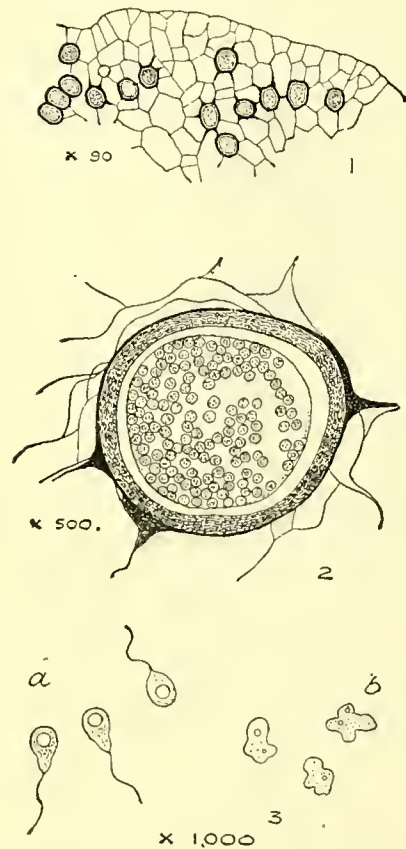


FIG. 33.—CHRYSOPHLYCTIS ENDOBIOtica IN POTATO TUBER.

(1) Section of warty growth showing spores embedded in the tissue (x 90). (2) Section of "spore" showing zoospores within (x 500). (3) a, Free zoospores just after emerging from sporangium; b, the same in amoeboid condition (x 1,000).

become amoeboid and enter into the cells of any young Potato plant with which they come in contact. After gaining access into their host they grow very rapidly and consume the protoplasmic contents of the cells which they infect. Ultimately each organism surrounds itself with a cell wall, but soon afterwards breaks up into a number of zoospores, which escape and extend the disease to other parts of the tubers and stems of the Potato below or on the surface of the soil. The formation of zoosporangia and the setting free of the zoospores go on repeatedly during the early summer, but later resting cells are produced, the contents of which do not appear as zoospores until the following spring and summer.

The parts attacked by the parasite are stimulated in a remarkable manner, rapid division occurs in cells near those which are infested, and extraordinary proliferation of tissue goes on, the new growth often resembling a piece of Cauliflower.

The pest is a fungus belonging to the Chytridiaceæ, and in its life-history very closely resembles the simpler representatives of the genus *Synchytrium*. Potato wart has already become a serious trouble in many districts in this country, and it is likely to develop into the worst pest with which the grower will have to deal unless vigorous measures are adopted to stamp it out. Much credit is due to the Board of Agriculture in making it a notifiable disease under the Destructive Insects and Pests Act. All interested in the Potato should read and carry out the suggestions regarding the treatment of this fungus given in the Board's Leaflet No. 105. *John Percival.*

NURSERY NOTES.

MESSRS. JAMES CYPHER & SONS.

RECENT additions at this Cheltenham nursery have completed the joining of the two ranges of glasshouses, so that now they form an uninterrupted line of glass structures abutting on the Queen's Road.

Cattleyas are especially well cultivated, and at the present time there is a good display of flowers on the various specimens, especially fine being *C. Warszewiczii Sanderiana*, even small plants bearing from four to six large and richly-coloured flowers. Many varieties of *C. Mossiæ* are in bloom, including several white varieties, also plants of *C. Mendelii*, a few of *C. Gaskelliana*, one having white sepals and petals; several examples of the true *C. Warneri*; *C. intermedia*, with its white variety; and other species. Arranged with them are three fine species of *Oncidium*, viz., *O. divaricatum*, with cream-white flowers spotted with red-brown; the graceful bright-yellow-flowered *O. flexuosum*, and the profuse-flowering *O. sphacelatum*.

In another intermediate house are some good examples of *Lælia purpurata*, the plants being still in bloom. The white-petalled forms are the most showy, by reason of the contrast of the white and the rich ruby-claret of their labellums. A still greater number of *L. tenebrosa* are in flower, the blooms being good and very freely produced. These *Lælias* and other Brazilian Orchids are shaded during strong sunlight only, the result being freer flowering than in the case of plants which are grown in too dense shade. In the same house is a collection of hybrid *Lælio-Cattleyas*, also *Brasso-Cattleyas* and *Cattleyas*, a large number of the best kinds being suspended from the roof. The varieties of *Lælio-Cattleya Canhamiana* are in flower, the specimens bearing from four to ten blooms. Amongst other *Lælio-Cattleyas* is a new, dwarf-habited variety—believed to be a cross with *L.-C. Ingramii*—having purplish-bronze sepals and petals and a dark, velvety, maroon lip with a white base. *Brasso-Cattleya Digbyano-Mossiæ*, *B.-C. Digbyano Mendelii*, as well as the parent *Brassavola Digbyana*, are also in bloom.

Dendrobiums are a speciality with Messrs. Cypher, and although not so much in request as formerly, it must be put to their credit that they will furnish a display of flowers from January until July. The varieties of *D. nobile* and its hybrids alone supply a wide assortment, and, when well grown, few plants give a better show of flowers. At Cheltenham they are accommodated in a warm, moist house, that becomes very hot with sun heat, but immediately the growths are developed the plants are removed to cooler quarters, where they are kept dry until the time for again starting them into growth. *Dendrobium Dalhousianum*, *D. chrysotoxum*, *D. suavisimum*, and other Burmese species are also in bloom.

Another cool plant-house is gay with plants of *Miltonia vexillaria*. Most of the specimens were in small pots, and bearing from three to six inflorescences with rose and white flowers.

Several specimens of the handsome *Epidendrum prismatocarpum* had developed many flower-spikes, whilst a batch of the orange-scarlet-flowered *E. vitellinum majus* and a number of the scarlet *Cochlioda Noezliana* give a bright display of colours. *Vanda cœrulea* also thrives well in this nursery, and several plants with the large, white, and sky-blue flowers were noticed, one variety being veined with violet and having a dark, violet-coloured labellum.

In the next cool house the variously-coloured varieties of *Masdevallia coccinea* (Harryana) had produced a profusion of their purple and scarlet flowers; *M. Veitchiana*, still one of the showiest of *Masdevallias*; *M. ignea*, *M. Schröderiana*, some varieties of *M. chimera*, an interesting selection of the small-growing *Masdevallias*, and several hybrids, including *M. Leda* and *M. Courtauldiana*, being in bloom.

The collection of *Cyripediums* includes a large number of the finest varieties of *C. insigne* and a choice selection of hybrids, among which the varieties of *C. aureum* are especially fine. Good specimens of *C. grande* and its darker variety *atratum* are in bloom in large specimens,

flower, and, in a warm, moist corner, is *Coelogyne pandurata*, bearing a spray of its large pale green flowers, with blackish markings on the labellum.

In other houses there is a fine collection of flowering and foliage stove and greenhouse plants, the large specimen plants being on the whole the finest in the country. *Bougainvillea Cypheri* is apparently the best decorative *Bougainvillea*. Well-grown plants bearing large, rosy-mauve inflorescences were seen both as small plants and large specimens. The house of *Anthuriums* is bright with the scarlet spathes. Showy florists' flowers are another pleasing feature in the plant-houses. On the rising ground opposite the range of glasshouses is a fine show of herbaceous perennials, Carnations, Roses, etc., with bright tints of variegated-leaved shrubs. A rock-garden is specially interesting at the present time, whilst the many *Wichuraiana* Roses trained on pillars and arches are a gay scene. J. B.

NOTES FROM A "FRENCH" GARDEN.

OWINO to the unfavourable weather, Melon fruits are only slowly ripening. In the event of a few days of fine weather, all the fruits will be

watered twice a day. Thin out the young plants as soon as needed. This crop is generally cleared late in September or early in October.

Celery has grown well, and, for the time of the year, the crop is very forward.

Owing to maggots being found on the leaves of *Celeriac*, we have had to remove the young shoots growing round the main root.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

STENANTHIUM ROBUSTUM.—It is a difficult matter to anticipate Mr. S. Arnott in acquaintance with ornamental plants, but he writes (*Gardeners' Chronicle*, July 24, p. 54) that he has no knowledge of how *Stenanthium* will stand our average winter. Whilst confirming all that he says about the beauty of this fine plant, I am happy to report that it has stood unprotected here during the two last winters, and is now coming into abundant flower. It is growing in a deep soil of loam and peat, in a north and shady aspect. Like *Roscoea purpurea*, *Gaura Lindheimeri* and some other plants reputed to be tender, it is saved from spring frosts (more destructive than the severest winter) by starting late into growth. *Herbert Maxwell, Monreith.*

THE CARROT FLY.—Although the damage in this district has not been so great as that described last week (see p. 60) by a correspondent from Hampshire, yet the loss in many gardens through the ravages of the grub of the Carrot fly is serious. The fly usually puts in an appearance every season in these gardens. I keep a watchful eye on the beds, and at once pull up and burn any suspected root. But "prevention is better than cure," and much may be done on the lines indicated in the Editorial footnote on p. 60 to lessen the effects of a threatened attack. After the crop has been cleared from the ground, it is well, if the grub has been present, to give the land a good dressing with fresh gas-lime to kill the pupæ, in which form the Carrot fly passes the winter. It emerges in the spring as a shining, black fly, slightly tinged with a greenish lustre. It has yellowish legs, white "balancers," and hyaline transparent wings. This is the fly which, in the spring, lays its eggs in the young Carrots. The eggs quickly hatch into grubs, which live on the roots of the Carrots. When mature, the grubs leave the Carrots and burrow into the earth to become pupæ. I feel sure that the unusual prevalence of the Carrot grub this year is the outcome of the extremely dry spring. The surface soil being dry, it exposed the tops of the roots to the attacks of the fly. To prevent these attacks, immediately the rows have been thinned or weeded the soil should be drawn around the plants with a hoe. A watering with diluted manure water at the time of thinning will assist the young Carrots to grow away freely, and will also make them distasteful to the fly. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

VITALITY OF SEEDS.—Your leading article (p. 40) brings to my mind an incident bearing upon the subject which may be worth putting on record. It happened at Wortley Hall Gardens, in this county, about the years 1858 or 1859. I began my gardening career there in 1856 under a gardener named Edward Law, who died in 1860. One wet day I was set to clear out a wooden loft over the stokeholes situated in the enclosed shed behind the vineries, at that time heated with brick flues. I came across a box with a number of old seeds in various papers and packets. Amongst them were some of Melons, named, if my memory serves me right, Orion, Cantaloupe, and Egyptian Green Flesh, dated 1836 or 1837. At any rate, I am clear upon this—it was before Mr. Law went as gardener, and he was there 23 years. A lad's curiosity prompted me to sow some of them and to put the pots in the Cucumber pit when they germinated. I well recollect showing them to Mr. Law, and have mentioned the fact several times to others when this subject has cropped up. The seeds were more or less stuck together in the packet, no doubt through the glutinous substance present on many seeds, and especially those of the Cucurbitaceæ family. This natural coating had probably helped the seeds in retaining their



FIG. 34.—POTATO TUBERS AFFECTED WITH WARTY DISEASE.

(see p. 79.)

also the pale green and white-flowered *C. callosum Sanderæ*, *C. Maudia*, and a number of others. In the *Odontoglossum* houses *O. crispum* gives a fine show of bloom, with varieties of *O. luteo-purpureum*, *O. cordatum*, *O. nebulosum*, *O. Andersonianum*, and other species.

Amongst older well-known species, specially finely flowered, are *Thunia Marshalliana*, with nodding sprays of white flowers with yellow labellums, and *Thunia Bensoniæ superba*, with still larger, deep, rosy-mauve blooms developed from the tips of the stout Bamboo-like growths. These are excellent plants for ordinary decorative purposes; they grow freely, and can be propagated with ease. *Anguloa Clowesii* was noticed with its large pale yellow flowers. *Epidendrum O'Brienianum*, the flowers being scarlet to rose-purple, and *E. Boundii*, orange-scarlet, are largely grown by Messrs. Cypher for arranging in the houses. Mention must also be made of *Brassia verrucosa*, *Oncidium phymatocilium*, *O. macranthum*, and a good batch of *Lycaste Skinneri*.

The collection of varieties of *Vanda tricolor* and *V. suavis* includes several good forms in

ready for use at the same time, and thus there will be a glut on the market.

We are finishing the planting of Cauliflowers among the Melons, which work has had to be delayed this year because we could not leave the lights open at night-time. This ventilation is most necessary for Cauliflowers as soon as they are properly established in their new quarters.

Endives planted early this month on the old manure beds are growing well, and we have planted a batch of Cauliflowers "Driancourt" as an inter-crop, putting one row of Cauliflowers to every three rows of Endives. The young seedlings of Endive and Batavian Green are also doing well, and we are preparing the ground ready for their transplantation in the middle of August.

The Cauliflowers grown as an inter-crop following the Cos Lettuces under the cloches have been cleared, and, as stated in a previous "Note," the beds have been prepared for sowing broadcast a batch of the "Bellot" Carrot. As a rule, this crop is very profitable, but in hot, summer weather the seed does not always germinate freely, and the first growth afterwards is a critical stage. The beds should be

vitality so long. Ever since, when I wished to keep Melon, Cucumber, or Tomato seeds for some time, I have had them sun-dried as taken from the fruits, and not washed, as is often done. *Yorkshire Gardener.*

THE RAINFALL, 1909 (see pp. 5, 19).—Mr. J. S. Higgins, Rig Gardens, Corwen, records 14.3 inches of rain for the first six months of the year, and as Rig is only 30 miles from Dolgelly, it will no doubt interest many to learn that in the same period we registered 22.42 inches, which is considerably less than for the corresponding period of last year, viz., 30.73. For the whole of 1908 the rainfall was 60.4 inches. *F. G. Brewer, The Gardens, Bryntirion, Dolgelly, N. Wales.*

—The rainfall recorded here for the first half of the year 1909 was 15.87 inches, against 16.73 inches in 1908. After a partial drought of 23 days during May our heaviest fall in June was .56 inch on June 25. In May, 1908, we had 1 inch more rain, followed by a fall of 1.62 inch on June 4. The gauge is 1 foot above the ground level and about 650 feet above sea level. *J. Edwards, Sylfaen Gardens, Welshpool.*

SEVERE HAILSTORM IN KENT.—Soon after two o'clock p.m. on the 26th inst. and following upon many showers, there occurred a heavy thunderstorm directly over this place. The results are to be seen everywhere in the devastated vegetation. Most crops are damaged, and many of them are ruined for the season. The flower-beds, which, after nearly two months' unseasonable weather, had begun to look a little brighter under the influence of a few days' sunshine, are now in a hopeless condition, the plants being battered almost beyond recognition. Begonias, Pelargoniums, Heliotropes, &c., being completely smashed. No one in this immediate locality seems ever to have seen anything like it. The storm spent itself in a very small radius, for a mile or two away no hail was seen. *J. G. Weston, Eastwell Park Gardens.* [Specimens of various out-door plants sent us with the above letter only too well bear out our correspondent's description of the injuries inflicted by the storm.—Eds.]

SOCIETIES.

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JULY 21.—The annual show of Roses and mid-summer flowers was held at the Botanical Gardens, Edgbaston, on the above date. The principal features included Carnations, hardy flowers, and a neatly-constructed water-garden. Considering the cold, late season, Roses were well shown. The weather was fine and pleasant, and the show was visited by a record number of visitors. Two Gold, one Silver-gilt, three Silver and four Bronze Medals, two Awards of Merit and one Cultural Commendation were awarded.

The Right Hon. JOSEPH CHAMBERLAIN, M.P. (gr. Mr. John Deacon), sent a large group of Souvenir de la Malmaison, tree, and border Carnations, showing excellent culture. The plants were sturdy, the "grass" broad and leathery, and the flowers large, shapely and of good colour. The "Malmaison" varieties occupied the front part of the group, and were arranged in three bold semi-circles, the centre one composed of the Old Blush, the other two consisting of the pretty pink Princess of Wales variety. On either side of the "Malmaisons" two dark-flowered varieties—H. J. Jones and Maggie Hodgson—were seen to advantage, and interspersed in the exhibit were good examples of Nautilus (very pale pink) and Draycott (cherry red). Behind these a high broad band was formed of tree and border varieties, backed by Palms, which gave relief. Of Border Carnations Lady Hermione (flesh), Lord Roberts (yellow), Lady Hinton (buff), Sam Weller (yellow ground), Helene Countess of Radnor (dark crimson), Helmsman (white), and King Arthur, an unusually large scarlet flower, were well shown. The tree section was represented by many of the leading varieties. (Gold Medal.)

Mr. A. R. BROWN, Wychell Lane, King's Norton, exhibited a handsome group of Roses arranged in bamboo stands and show boxes. Richmond, Mrs. W. J. Grant, Earl of Warwick, Ulrich Brunner and Queen of Spain were the most meritorious varieties. (Silver Medal.)

Messrs. J. H. WHITE & Co., Worcester, had an assortment of hardy cut flowers and sprays of flowering trees and shrubs. (Bronze Medal.)

W. BYNO KENRICK, Esq., Somerset Road, Edgbaston (gr. Mr. James Webb), exhibited a group of foliage and flowering plants, which included a pretty strain of well-flowered Gloxinias; also double and single-flowered tuberous-rooted Begonias, Hydrangeas, Lilliums, Caladiums, and Coleuses, together with a number of bunches of species and varieties of hardy cut flowers. (Bronze Medal.)

From Messrs. GUNN & SONS, Brookfield Nurseries, Olton, Birmingham, came an extensive collection of Roses, Phloxes, and a beautifully-arranged and carefully-planted water-garden. In the water-garden Nymphaea flowers and leaves were to be seen floating on the water, and near the sides such plants as Sarracenias, Rushes, Spiraes, Tritonias, Funkias, Grasses, and Foxgloves were grouped with great taste. A rock-work edging along the lower sides was nicely clothed with Campanulas, Ericas, and Ferns. At one corner a clump of plants of Spiraea Queen Alexandra was effective. Of Roses the following varieties were noteworthy: Mons. Joseph Hill, La Tosca, Frau Karl Druschki, Dean Hole, and Tausendschön. A large arch clothed with the variety Dorothy Perkins was much admired. Phloxes bearing huge trusses of fragrant flowers were represented by such excellent varieties as Mrs. Oliver (pink), General Van Hentsz (bright salmon-scarlet), Ironie (pink), Le Mahdi (purplish-blue), Fraulein Von Lassberg (pure white, large, exceptionally good), Tapis Blanc (dwarf, white), and Antoine Mercie (delicate lavender). (Gold Medal.)

THE LAPWORTH NURSERIES, Hockley Heath, Birmingham, contributed 18 varieties of beautifully fresh, but rather small Sweet Pea flowers. (Bronze Medal.)

The best and most effectively-arranged group of hardy cut flowers came from Mr. C. H. HERBERT, Hazelwood Road, Acocks Green, whose flowers were displayed in tall stands and vases. Delphiniums, Coreopsis grandiflora, Chrysanthemum maximum W. H. Gabb, Erigeron speciosus, and Pink "Progress" were shown in large masses. (Silver-gilt Medal.)

W. P. WILCOX, Esq., Park Hill, Moseley (gr. Mr. A. E. Hartwell), exhibited plants of a very good strain of double and single-flowered tuberous-rooted Begonias. (Bronze Medal.)

ROBERT SYDENHAM, LTD., Tenby Street, Birmingham, sent a collection of Sweet Peas containing excellent vases of Saint George, Constance Oliver, George Herbert, Evelyn Hemus, Tuckwood, Helen Lewis, Anna Lumley, Paradise Opal, Mrs. A. Ireland, and Etta Dyke. (Silver Medal.)

Messrs. DICKSONS, LTD., Chester, exhibited hardy herbaceous flowers and Roses. Of the latter we noted good examples of Lady Roberts, Liberty, Killarney, Corallina, Lady Battersea, Mrs. W. J. Grant, and Mme. Ravary. The border flowers included Delphiniums, Pentstemons, Heucheras, English Irises, and Gladiolus. (Silver Medal.)

AWARDS OF MERIT.

Lalio-Cattleya callistoglossa superba.—A large, shapely form of the type, with a very rich, deep purple lip. Shown by the Right Hon. JOSEPH CHAMBERLAIN, Highbury (gr. Mr. John Mackay).

Sweet Pea S. Lee.—Flowers large, salmon-pink over a buff ground. Shown by ROBERT SYDENHAM, LTD., Birmingham.

CULTURAL COMMENTARY.

To Mr. JOHN MACKAY, grower to the Right Hon. Joseph Chamberlain, M.P., for two well-flowered plants of *Cattleya atalata superba* and *Lalio-Cattleya callistoglossa superba*.

LIVERPOOL HORTICULTURAL.

JULY 21.—This Society held an exhibition of popular flowers in the Corn Hall on the above date. This hall is a very suitable one for the purpose. It is a light building, and is situated in the midst of the business quarters of the city. Unfortunately the weather was detrimental to the holding of a good show. Many growers failed to exhibit owing to the heavy storms of wind and rain just previous to the show day.

In an open class for 18 vases of Sweet Peas, distinct varieties, Mr. R. WRIGHT, Formby, won the 1st prize, staging a capital lot of flowers, including Helen Lewis, Marjerie Willis, St. George, and George Herbert. 2nd, G. H. T. ROBERTSON, Esq., Gresford (gr. Mr. Ernest Jones). For 12 distinct varieties, G. H. T. ROBERTSON, Esq., J. E. PHILLIPS, Esq., Malpas (gr. Mr. W. Davies), and Messrs. S. SALISBURY & SONS were awarded the prizes. Mr. W. DAVIES had the best exhibit of 12 varieties with waved standards.

ROSES.—For 18 single blooms, distinct, J. U. HODGSON, Esq., Bebington (gr. Mr. S. Bell), won the 1st prize, G. H. T. CUTHBERTSON, Esq., being 2nd. This exhibitor had the best collection of 12 blooms of hybrid perpetual varieties. For 12 Hybrid Teas the prize-winners were Messrs. S. BELL, CUTHBERTSON and W. DAVIES.

CARNATIONS.—The best collection of 12 single blooms was shown by Mr. P. CORNELIUS, 2nd, C. ALCOCK, Esq. (gr. Mr. C. Russell). These exhibitors were placed in the same position for six varieties. Sir W. H. TATE, Bart. (gr. Mr. G. Haigh), had the best collection of 12 blooms of Souvenir de la Malmaison varieties.

The best arrangement of Sweet Peas, suitable for a dinner table, was shown by Miss S. PARLOW, Formby.

There were classes for amateurs, in which the exhibits were praiseworthy.

Many noteworthy exhibits were staged "not for competition." The following received Awards of Merit:—Mr. H. MIDDLEHURST, Liverpool (Sweet Peas); Mr. J. LEE (collection of Gooseberries); Mr. W. ROWLANDS, Childwall Nurseries (Roses); Mr. THOS. DAVIES, Wavertree (Lilliums and herbaceous cut flowers); Mr. H. ECKFORD, Wem (Sweet Peas); Messrs. W. CONWAY & SON, Halifax (herbaceous cut flowers); Mr. R. WRIGHT, Formby (Sweet Peas); Messrs. YOUNG (Carnations); and Messrs. R. P. KER & SONS (herbaceous cut flowers).

Mr. Harold Sadler carried out the duties of secretary to the satisfaction of all.

MANCHESTER ROSE SHOW.

JULY 21.—This exhibition was held under the auspices of the White City, and Mr. J. Calvin Brown acted as manager. A highly creditable display of blooms was staged, although in many cases they showed the effects of heavy rains.

For 60 distinct single blooms, Messrs. D. PRIOR & SON, Colchester, easily won the 1st prize. Their best blooms were J. B. Clarke, Captain Hayward, Hugh Dickson, Horace Vernet, Bessie Brown, Charles Graham and Maman Cochet. Messrs. G. & W. H. BURCH, Peterborough, were 2nd with smaller but bright blooms.

For 36 distinct single trusses, Messrs. PRIOR & SON again won the 1st prize, Messrs. G. & W. H. BURCH obtaining the 2nd prize.

Mr. G. PRINCE, Longworth, Berks., had the best collection of 24 blooms of Tea or Noisette varieties, showing beautiful blooms of Ernest Metz, Bridesmaid, Mme. H. Berger, Comtesse de Nadailac, Golden Gate, The Bride, Cleopatra, &c. Messrs. PRIOR & SON were 2nd.

The best collection of 12 blooms of any white or yellow Rose was shown by Messrs. W. & J. BROWN, Peterborough, Messrs. D. PRIOR & SON and THE KING'S ACRE NURSERY Co. obtaining 2nd and 3rd prizes. All three exhibitors staged the variety Frau Karl Druschki.

A similar collection of any other light Rose was shown best by Mr. PRINCE, who staged Dean Hole. Messrs. BURCH were 2nd with Lady Ashton, and Messrs. PRIOR & SON 3rd with Mrs. J. Laing.

Messrs. PRIOR & SON had the best crimson variety, and Messrs. W. & J. BROWN were 2nd. Both exhibitors showed well-coloured blooms of Horace Vernet.

In the amateurs' classes, exhibits were numerous and good. As many as eight collections were staged in the class for 24 blooms. Mr. E. B. LINDSELL, Hitchin, won the 1st prize with highly-creditable blooms of Horace Vernet, Duchess of Bedford, Bessie Brown, &c. Mr. TOM PARK, Bedale, and Mr. H. W. MACHIN, Worsop, won the 2nd and 3rd prizes respectively.

For 12 distinct trusses the prize-winners were Messrs. CONWAY JONES, Gloucester, T. PARK, and R. FOLEY HOES.

The best collection of 12 blooms of Tea or Noisette varieties was shown by the Rev. JOHN A. L. FELLOWES.

For 12 blooms of any white or yellow Rose, the Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex, won the 1st prize, and Mr. HOBBS the 2nd prize. Both exhibitors showed the variety Mme. Jules Gravereaux.

The best dozen blooms of any light Rose were shown by Mr. R. FOLEY HOBBS, and Mr. H. V. MACHIN was 2nd. The variety Bessie Brown was shown in both cases.

Mr. G. PRINCE had the best 12 bunches of buttonhole Roses.

Silver Medals were given to Messrs PRIOR & SON and Messrs. W. & J. BROWN for the best H.P. or H.T., and the best Tea or Noisette, Messrs. PRIOR & SON staging C. J. Graham, and Messrs. W. & J. BROWN Mme. Jules Gravereaux. Sweet Peas were well shown. Mr. J. L. WELCH, Timperley, Mr. C. BURGESS and Mr. G. A. ASHCROFT won the prizes offered for the best collection of flowers arranged in 12 vases.

CARDIFF AND COUNTY HORTICULTURAL.

COMING-OF-AGE SHOW.

JULY 21, 22.—As we stated last week, the 21st annual show under the auspices of this society took place in the Sophia Gardens, Cardiff. The committee marked its appreciation of the fact that the society had this year attained its majority by increasing the number and value of the prizes, and by making the show generally more attractive to both exhibitors and visitors alike. That this object was fully attained was evident to all those who are acquainted with the society, for never before in its history have so many and so varied exhibits been brought together as on this occasion. The deputation from the R.H.S. alluded to in our previous note consisted of the President (Sir Trevor Lawrence, Bart.), the Secretary (the Rev. W. Wilks, M.A.), and Messrs. Harry J. Veitch, J. Hudson, and H. B. May.

Notwithstanding the cold, sunless season experienced this year, the exhibits hardly showed any sign of it, for on every hand were to be seen flowers, fruits and vegetables which were examples of the best culture, and a credit to those who grew them. At the luncheon, presided over by the Marquis of Bute, Sir Trevor Lawrence congratulated the committee on the excellence of the display, which, together with the reception accorded to the deputation, had so impressed him that he expressed a hope that he would live to visit the city again at some future date, a hope shared by the Rev. W. Wilks.

PLANTS.

For a group of miscellaneous plants in or out of bloom, arranged in a space of 150 square feet, to produce the best effect, excellence of culture as well as taste in arrangement being taken into consideration, Messrs. J. CYPHER & SONS, Cheltenham, were awarded the 1st prize for a well-arranged lot of plants, among which Codiaums (Crotons), Aralias, Cocos, and a Kentia Fosteriana (centre-piece) were used as foliage plants, while the requisite amount of colour was imparted by the use of a number of Liliiums and a great variety of choice Orchids. LADY HILL, Llandaff (gr. Mr. D. Macintyre), was awarded the 2nd prize. This group was light and pleasing, the main features being composed of Humeas, Crotons and Caladiums, interspersed with Orchids and Maidenhair Ferns. HENRY OAKLEY, Esq., Newport, Mon., was 3rd with a very neat group.

Under identical conditions, excepting that the entries were restricted to amateurs, L. MORGAN, Esq., Llandaff (gr. Mr. G. Wall), showed a group arranged on a space of 50 square feet, for which he received the 1st prize. Crotons, Humeas, Francoas, Celosias, Schizanthus and Streptocarpus were among the principal plants used in this group. The same gentleman was awarded the 1st prize for a group (from which Orchids were excluded) occupying a space of 25 square feet. The plants used were very similar to those in the previous class. Dr. REES, Penarth (gr. Mr. W. Thurston), was 2nd, Liliium Harrisii being the outstanding plant used in this arrangement.

For a collection of six distinct varieties of

tuberous-rooted Begonias there was but little competition, and the quality of the plants staged was not good. 1st, W. GEEN, Esq., Penylan (gr. Mr. W. Metford). Far different from the foregoing was a collection—non-competitive—set up by Messrs. BLACKMORE & LANGDON, Bath. Some of the varieties most admired in this lot were Mrs. W. L. Ainslie, Mrs. G. F. Fry and Col. Turnor.

The class for six distinct kinds of table plants growing in 6-inch pots did not cause much competition, and those shown consisted principally of the finer-leaved Crotons, Aralias, Draconas, and Cocos Weddelliana. 1st, Mr. W. GARNER, Hale; 2nd, Lady HILL; 3rd, J. L. MORGAN.

CUT FLOWERS.

The competition in the class for a collection of Roses arranged for artistic effect, set out in a space 9 feet by 4 feet 6 inches, and limited to a height of 6 feet, resulted in an extremely fine display. Mr. J. MATTOCK, Oxford, won the premier prize in this class and was further the recipient of the R.H.S. Silver Flora Medal. The outstanding varieties in this collection were Gottfried Keller, Irish Elegans, Mme. Abel Chatenay, Countess of Gosford, Marie van Houtte, and Blush Rambler. Mr. JOHN CROSSING, Penarth, was placed 2nd with a collection among which there were several very fine examples of Victor Hugo, Dean Hole, Gustave Regins, and Mrs. J. Laing. 3rd, Messrs. S. TRESEDER & SON, Cardiff. The firm last mentioned was awarded the 1st prize for a collection of 12 distinct varieties of Roses, three blooms of each. Fine examples of Earl of Warwick, White Lady, Duke of Wellington, and Frau Karl Druschki were noticed in this exhibit. THE KING'S ACRE NURSERY CO., LTD., Hereford, were placed 2nd; whilst Mr. H. DREW, Bath, was 3rd. THE KING'S ACRE NURSERY CO. secured 1st position for a collection of Teas or Noisettes, 12 distinct varieties, three blooms of each. Mme. Jules Gravereaux, Maman Cochet, Golden Gate, and Mrs. E. Mawley were amongst the best varieties. Messrs. H. DREW and J. TOWNSEND & SONS, Worcester, were placed 2nd and 3rd respectively. Messrs. S. TRESEDER & SON were again placed 1st for a collection of 24 blooms, distinct varieties, out of which J. S. Mills, Dupre Jamain, Horace Vernier, and Earl of Warwick were the most noticeable. In Mr. MATTOCK's stand—which was awarded the 2nd prize—Lyon Rose and Capt. Hayward were good. Mr. H. DREW received the 1st prize for a stand of 18 blooms of Teas or Noisettes, the most noteworthy varieties being Medea, Muriel Graham, Anguste Comte, and Mrs. E. Mawley. 2nd, THE KING'S ACRE NURSERY CO. 3rd, Mr. J. MATTOCK.

With 12 blooms of the variety Fisher Holmes, THE KING'S ACRE NURSERY CO. took 1st place for the collection of any one variety other than Teas or Noisettes. Messrs. J. JEFFRIES & SON, Cirencester, were 2nd with a box of Her Majesty. THE KING'S ACRE NURSERY CO. showed 12 extra fine blooms of Mrs. E. Mawley, for which they were awarded the 1st prize in the class restricted to one Tea or Noisette variety.

Several beautifully arranged groups of Carnations and Picotees added considerable brightness and interest to the floral displays, and it is pleasing to note the disappearance of the old-fashioned method of exhibiting this lovely flower on a board with each bloom surrounded by a paper collar.

Mr. C. F. WALTERS, Balcombe, staged two fine collections—one of Border Carnations and Picotees and the other of tree or "Malmaison" Carnations—for which in both instances he was awarded the 1st prize. Among the former the most striking were Agnes Soral, Cecilia, Hon. C. Bathurst, and F. Samuelson; whilst in the latter collection Calypso, Mrs. T. W. Lawson, Enchantress, and Britannia were remarkably fine.

The Sweet Peas shown in the various classes were of such quality as to call forth the praises of all who saw them. The substance of the flowers and the robustness of stems and foliage were indications of the great attention which must have been brought to bear upon them by exhibitors.

Mr. T. JONES, Ruabon, displayed a collection of 19 distinct varieties, tastefully arranged with their own foliage (each variety in a separate vase), with which he secured the 1st prize. The King, Marquis of Wilts, John Ingman, Olive Bolton, and Nancy Perkins were well shown.

H. PITT, Esq., Abergavenny (gr. Mr. Townsend), was placed 2nd with a fine lot of blooms.

For 12 distinct varieties, arranged in bunches of 20 to 30 stems, the former competitor was again well to the front; whilst Mrs. JENNER, Wenvoe (gr. Mr. Wheeler), was 2nd.

The suitability of the Sweet Pea for table decoration was demonstrated by Mrs. PHILLIPS, to whom the N.S.P.S. Silver Medal, together with a piece of silver plate, were awarded for the decoration of a dinner table 8 feet by 4 feet. The arrangement was graceful and light, only two varieties—Mrs. H. Bell and Mrs. H. Sykes—being used.

Hardy flowers were a feature of the show. The competition in these classes was keen, and resulted in a very fine display being made. Mr. G. GIBSON, Bedale, Yorks., carried off the first prize for a highly interesting collection. The flowers used were of such great merit that it is difficult to select any for special mention, but undoubtedly the Oriental Poppy Mrs. Perry, the Delphiniums Mrs. Creighton and Ustane, and Gaillardia Meteor were among the best shown. Messrs. WM. ARTINDALE & SON, Sheffield, were placed 2nd; and Messrs. H. & W. EVANS, Llanishen, 3rd.

FRUIT AND VEGETABLES.

Fruit was better represented at the present show than has been the case for a number of years past. The Marquis of NORTHAMPTON, K.G. (gr. Mr. A. R. Searle), staged a fine collection of fruit, for which he obtained the 1st prize. This consisted of dishes of Grape Muscat of Alexandria, Nectarine Downton (extra good), Peach Grosse Mignonne, and Figs, Cherries and Strawberries. The 2nd prize was awarded to GEO. GIBBS, Esq., M.P., Bourton (gr. Mr. T. Wilkinson), who was placed 1st for six bunches of black and white Grapes, the latter being Muscat of Alexandria. D. C. LYSAGHT, Esq., Chepstow (gr. Mr. H. Perry), was placed 1st for two bunches of Black Hamburg and 1st for one bunch of Madresfield Court.

The Hon. VICARY GIBBS, Elstree (gr. Mr. E. Beckett), won the 1st prize for a collection of nine vegetables and 1st for a collection of six varieties. In the former the most important were Cauliflowers, Peas, Carrots, French Beans, and Potatoes, all of which were fine examples of culture.

NON-COMPETITIVE AND TRADE EXHIBITS.

Had no prizes been offered at the Cardiff Show on the present occasion, it would even then have been horticulturally a success, for the great number of non-competitive and trade exhibits were such as to have made an excellent display in themselves.

Two of the most admired exhibits of this character were those set up by the Marquis of BUTE (gr. Mr. H. Farmer)—one a group of flowering and foliage plants and the other a collection of fruit—and were each awarded a Gold Medal.

Awards made by the Royal Horticultural Society.

The deputation from the R.H.S. made the following Awards:—

GOLD MEDALS.—The Marquis of Bute (display of fruit), Mr. W. Treseder (exhibit of floral designs, florists' plants and hardy plants), Messrs. James Veitch & Sons (group of stove plants).

SILVER CUP.—The Marquis of Bute (a group of stove and greenhouse plants).

SILVER-GILT FLORA MEDALS.—Messrs. Blackmore & Langdon (Begonias), Lady Hill (group of plants), Messrs. Cypher & Sons (group of plants), Messrs. Wallace & Co. (rockwork, &c.).

SILVER-GILT BANKSIAN MEDALS.—Mr. T. Jones, Ruabon (collection of Sweet Peas), Mr. Eames (hardy herbaceous plants), Mr. G. Gibson (hardy flowers).

SILVER KNIGHTIAN MEDAL.—The King's Acre Nursery Co. (fruit trees in pots).

SILVER BANKSIAN MEDALS.—Mr. Ellison (Ferns), Mr. E. E. Hole (vegetables), Messrs. W. & H. Evans (rockwork, &c.), Mr. J. Crossling (Roses), Messrs. Bell & Sheldon (Carnations), Mr. R. Went (hardy flowers).

SILVER FLORA MEDALS.—Messrs. Breamore (Sweet Peas), Mr. J. J. Neal, Cardiff (insectivorous plants and Orchids), Mr. L. R. Russell,

Richmond (shrubs), Mr. J. Mattock (Roses), Messrs. Dickson's, Chester (hardy flowers), Messrs. Dobbie (Sweet Peas), Mr. Waters (Carnations).

The Gold Medal of the National Sweet Pea Society was awarded to Mr. Jones for his collection of 19 vases of Sweet Peas.

NON-COMPETITIVE EXHIBITS.

The Cardiff Society made the following awards to non-competitive exhibits:—

GOLD MEDALS.—The King's Acre Nursery Co. (fruit trees in pots), Messrs. Webb & Sons (flowers and vegetables), Mr. Basham, Bassaleg (fruit trees in pots), Messrs. Sutton & Sons, Reading (vegetables), the Marquis of Bute (group of plants).

Messrs. Stephen Treseder & Sons were awarded a R.H.S. Silver Medal for the best exhibit in the various classes for cut Roses displayed in boxes.

ROSE SHOW AT DUNFERMLINE.

JULY 22, 23.—The sixth Rose show under the auspices of the Carnegie Trust was held in the grounds at Pittencrieff Park, Dunfermline, on the above dates. The entries numbered 650, being 20 fewer than last year. This was accounted for mainly in the local classes for Pansies and Violas. The quality of the Roses was better than last year. The late season suiting the English and Irish growers, Scottish cultivators were unable to repeat their triumph of last year. The prize money offered was £200. Competition was keen, especially in the open Rose classes.

The Carnegie Championship.—The prize for 72 cut Roses in not fewer than 36 distinct varieties was won by Mr. HUGH DICKSON, Belfast; Messrs. R. HARKNESS & Co., Hitchin, being 2nd.

Mr. HUGH DICKSON again led for 36 cut Roses in not fewer than 24 distinct varieties; Messrs. R. HARKNESS & Co. winning the 2nd prize.

For 24 cut Roses, distinct, Messrs. R. HARKNESS & Co. were the most successful exhibitors, being followed by Messrs. G. & W. H. BURCH, Peterborough.

Mr. HUGH DICKSON secured the 1st place for 12 distinct blooms.

For 24 Tea or Noisette Roses, distinct, Messrs. HARKNESS & Co. won the first prize; and Messrs. D. & W. CROLL, Dundee, were 2nd.

The 1st prize for 12 Tea or Noisette Roses was won by Messrs. G. & W. H. BURCH; J. MCARA, Crieff, was 2nd.

In the classes open only to gardeners and amateurs, Mr. TOM PARK, Bedale, won the 1st prize for 24 Roses.

Mr. CONWAY JONES, Gloucester, was 1st for 12 blooms, and for 12 Teas or Noisettes.

Messrs. COCKER & Co., Aberdeen, and Messrs. GIBSON, Bedale, won 1st and 2nd prizes respectively for a display of herbaceous flowers.

Sweet Peas were a great show. Messrs. GEO. REID, Dundee, led in three classes; Messrs. SHAW, WATSON (both of Kippen), and YOUNG, Falkland Palace, being seconds.

Messrs. KIDD, Carbery Tower Gardens, and CAMPBELL, Meldrum Gardens, both of Dunfermline, had the best bouquets, baskets and floral devices.

NATIONAL SWEET PEA.

JULY 23.—The ninth annual exhibition of this Society was held in the Royal Horticultural Hall, Vincent Square, Westminster. Despite the fact that Sweet Peas, generally speaking, are not good this year, the exhibition was the finest yet held. The entire hall, with both annexes, were quite filled, whilst the overflow extended to two rooms upstairs.

SPECIAL AUDIT CLASS.

This was for 15 bunches of varieties enumerated in the schedule. The 1st prize included the Sutton Silver Challenge Cup and the Society's Gold Medal. There were eight contestants. Mr. THOS. JONES, Ruabon, was awarded the 1st prize for a fine display, pleasingly arranged. The varieties were Countess Spencer, Helen Pierce, Mrs. Harcastle Sykes, Clara Curtis, Black Knight, Helen Lewis, Constance Oliver, Frank Dolby, Sybil Eckford, Lord Nelson, Evelyn Hemus, John Ingman, Etta Dyke, King Edward VII. and Prince Olaf—not a weak variety

amongst them. Sir R. BAKER, Bart., Ranston, Blandford (gr. Mr. A. E. Usher), was 2nd, having good bunches of John Ingman, Helen Lewis, Mrs. W. Wright, Mrs. Harcastle Sykes, and Evelyn Hemus. CHAS. H. WILD, Esq., The Grange, New Eltham (gr. Mr. E. T. Usher), was 3rd; and Mrs. A. TIGWELL, Harrow View, Greenford, 4th.

In the class for 24 bunches, distinct, W. H. RAWNSLEY, Esq., Well Vale, Alford (gr. Mr. T. Vickers), won the 1st prize in a strong competition. His varieties were Evelyn Hemus, Betty, Helen Pierce, Helen Lewis, Emperor, King Edward VII., A. J. Cook, Mrs. Routzahn, Rosie Adams, Miss Audrey Crier, Alice Godman, Jeanne Gordon, Marbled Blue, Queen Alexandra, White Spencer, John Ingman, White Wings, Jas. Grieve, Sir J. Franklin, St. George, Nelson, Countess Spencer, Minnie Christie and Mrs. A. Ireland. Mrs. A. TIGWELL was 2nd with a good display; whilst Mr. J. T. TUBB, The Gardens, Oakbank, Seal, Sevenoaks, was 3rd.

HENRY ECKFORD MEMORIAL CLASS.

There was a keen fight for the Henry Eckford Memorial Challenge Cup, in which no fewer than 12 exhibitors took part. E. E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), was awarded the cup. His flowers were large, fresh, grand in colour, and had good, long stems. The varieties were Elsie Herbert, Countess Spencer, The Marquis, Lavender, George Herbert, Helen Lewis, Clara Curtis, Evelyn Hemus, Rosie Adams, Miss Audrey Crier, John Ingman, Mrs. Henry Bell and Prince of Asturias. Mr. T. JONES followed with some fine specimens, carrying extraordinary foliage. Mr. A. E. USHER won the 3rd prize.

For 12 distinct bunches, Mr. J. HAYCOCK, Waggoners Inn, Wrexham, secured the premier award; and Lady HESKETH, Neston, Towcester (gr. Mr. G. F. Hallett), the 2nd prize.

Class 5 was for 12 bunches, distinct, to include varieties specified in the schedule. This class attracted 18 entries. The 1st prize was well won by Mr. GEO. STEVENSON, who staged splendid flowers of Constance Oliver, Helen Lewis, Nora Unwin, Black Knight (Spencer), Mrs. Collier, The King, John Ingman, The Marquis, Mrs. A. Ireland, Prince Olaf, Princess Victoria and St. George. Mr. T. JONES was 2nd and Mr. A. E. USHER, 3rd.

"HORACE WRIGHT" CHALLENGE BOWL.

This class was for nine bunches of Sweet Peas, distinct varieties, and the exhibits made a very fine display. The Rev. J. McMURDIE, Woburn Park, Weybridge (gr. Mr. A. Basile), was awarded the 1st prize. He staged fine flowers of Jeanne Gordon, Countess Spencer, Helen Pierce, Dora Bredmore, King Edward (Spencer), Nora Unwin, John Ingman, Helen Lewis and Frank Dolby. Mr. G. F. HALLETT was 2nd (losing a little in staging); and Mrs. F. WALLIS, Avondale, West Byfleet, 3rd. There were nine entries.

THE "BREADMORE" CHALLENGE CLASS

provided another keen contest, no fewer than 17 collections being staged. E. A. P. BROAD, Esq., Rosehill, Par Station, Cornwall (gr. Mr. W. H. Prophet), won the 1st prize with some very fine flowers. The varieties were Black Knight, Paradise Red Flake, Etta Dyke, Paradise Carmine, Dora Bredmore, A. J. Cook, Primrose Spencer, M. Christie, Queen Alexandra, Miss Audrey Crier and Henry Eckford. Mr. E. COWDY, Greenhall Mills, Longhall, and Mr. R. HALLAM, Chestnut Grove, Radcliffe-on-Trent, were 2nd and 3rd in the order named.

For six bunches, distinct, Mr. JOHN HAYCOCK obtained the 1st prize for a capital collection with well-arranged bunches. The varieties were Mrs. Wilcox, Nora Unwin, Sunrise, Jas. Grieve, George Herbert and Paradise. Mr. A. E. USHER showed very well for the 2nd prize; whilst Mr. A. LAMBERT was 3rd.

The following class, for six bunches without any restriction as to varieties, proved popular with 30 competitors. Mrs. E. OTTER, Stanhope Park, Greenford (gr. Mr. F. Fairbairn), won the 1st prize with M. Christie, George Herbert, A. J. Cook, Mrs. Harcastle Sykes, Fred. Fairbairn and Frank Dolby; all were very fine flowers and well staged. Mr. A. LAMBERT was 2nd, and Mr. G. BALDWIN 3rd.

The prizes in the competition for the best flowers of the varieties Herbert Smith, Jet, Mother of Pearl and Miss Millie Maslin were won by Messrs. C. KEITH, A. E. USHER, and W. C. WHITE respectively.

For one bunch of the variety Sutton's Queen, E. J. JOHNSTONE, Esq., Groombridge (gr. Mr. A. T. Pockett), won the 1st prize with well-coloured flowers.

THE CLASSIFICATION CLASS (OPEN).

This class is intended to illustrate the colour distinctions in the Society's classification. The premier award was won by Mr. E. KEITH with the following 18 varieties:—George Herbert, Etta Dyke, The Marquis, Queen Alexandra, Jas. Grieve, Frank Dolby, Paradise, Mrs. H. Sykes, Minnie Christie, St. George, Rosie Adams, Hannah Dale, Evelyn Hemus, Jeanne Gordon, Marbled Blue, Sybil Eckford, Helen Pierce and Constance Oliver. Mr. A. E. USHER won the 2nd prize with a good collection; and Messrs. S. BIDE & SONS, Farnham, were 3rd.

For 16 bunches of Sweet Peas in eight varieties, Messrs. JONES & SONS, Coton Hill Nursery, Shrewsbury, were placed 1st, Mr. A. E. USHER 2nd, and Mrs. A. TIGWELL 3rd.

Class 14 was for 24 varieties, distinct. Mr. C. W. BREADMORE, 120, High Street, Winchester, led with fine examples of Constance Oliver, Mrs. Collier, Dusky Monarch, Elsie Herbert, Apple Blossom Spencer, Queen Alexandra, Paradise Ivory, Mrs. H. Bell, Lavender George Herbert, Mrs. C. W. Bredmore, Snowflake, Mrs. A. Ireland and King Alfonso. Mr. GEO. HUMPHRIES, Langley Nurseries, Chippenham, was a close 2nd, with Mr. W. MARPLE, Summer House, Penkridge, Staffs., 3rd.

The 1st prize in the smaller class for 12 bunches, distinct, was awarded to Mr. W. HOPKINS, who staged fine examples of Miss A. Crier, Prince of Asturias, Nora Unwin and Mrs. Routzahn. Messrs. JONES & SONS were 2nd, and Mr. A. J. PASKETT 3rd.

FLOWERS WITH WAVED STANDARDS.

The classes devoted to varieties with waved standards were very attractive. In that for 12 bunches, distinct, Mr. T. STEVENSON was irresistible. His varieties were Countess Spencer, Paradise Ivory, Black Knight (Spencer), Frank Dolby, Mrs. C. W. Bredmore, Helen Lewis, Mrs. H. Bell, America Spencer, Etta Dyke, Marjorie Willis, Kathleen McGowan and Mrs. Harcastle Sykes. Mr. A. J. PASKETT was 2nd.

For six bunches of the same type, distinct, there were 30 entrants. Here Mr. F. FAIRBAIRN scored with Asta Ohn, Helen Lewis, Mrs. H. Sykes, Mrs. C. W. Bredmore, Fred. Fairbairn and Nora Unwin in capital condition. Mr. W. H. PROPHET was 2nd, having large flowers though not so fresh as in the 1st prize group.

There were prizes offered for the best three bunches of Paradise, Lavender George Herbert, King Alfonso and Yellowhammer, and excellent specimens of these varieties were exhibited.

E. W. KING CHALLENGE CUP.

This was offered for 12 bunches of the newer Unwin and Spencer types. There were 17 entries. Mr. W. H. PROPHET won the 1st prize with splendid flowers, the varieties being The Marquis, Nora Unwin, Mrs. A. Ireland, Paradise Ivory, Helen Lewis, Frank Dolby, George Herbert, Mrs. H. Sykes, St. George, Elsie Herbert, Prince of Asturias and Mrs. H. Bell.

BURFEE CHALLENGE TROPHY.

This was offered for a display of Sweet Peas arranged on a table 4 feet by 3 feet. Mr. R. BOLTON, Warton, Carnforth, secured the premier award. The varieties were Zephyr, Fire King, Prince of Asturias, Chas. Foster, Clara Curtis, Nancy Perkins, Mrs. Chas. Foster, Tom Bolton, President, Mrs. H. Sykes, John Ingman, Mrs. H. Bell, White Spencer, Lancashire, Elsie Herbert, Maggie Stark, and some seedlings. Earl SPENCER, K.G., Althorp Park, Northampton (gr. Mr. Silas Cole), was 2nd; and Messrs. J. LAMU & SONS, The Nursery, Bingham, 3rd.

Mr. A. E. USHER was awarded the 1st prize for 12 bunches of American varieties, staging some very fine flowers. The varieties were Othello Spencer, Queen Victoria Spencer, Asta Ohn Spencer, King Edward Spencer, F. Morse Spencer, Tennant Spencer, White Spencer, Flora

Norton Spencer and Mrs. Rontzahn. Messrs. J. Box and BOLTON BROS. were the other winners in the order named.

The division for small growers was very popular, many of the classes having more than 30 entries, whilst the decorative classes were a good feature. The class for dinner tables secured an entry of 21 tables, most of these representing a very high order of merit. Mrs. A. ROBINSON, Norhyrst, Park Hill, Carshalton, was awarded the 1st prize for a light arrangement of the creamy varieties, and Miss JESSIE G. CUTHBERTSON, Mark's Tey, 2nd. Miss CUTHBERTSON and Messrs. J. LAMB & SONS were made equal 1sts in the class for epergnes; but Miss CUTHBERTSON was awarded the 1st prize for Sweet Peas arranged in a vase.

NON-COMPETITIVE EXHIBITS.

A fine feature of the show was the decoration of the balcony at the end of the hall. Huge Palms, towering high, formed a fine background, whilst stands and vases were filled with Sweet Peas, the front fringed with Asparagus Sprengeri. Great credit is due to Messrs. H. D. TIGWELL & C. H. CURTIS. (Gold Medal.)

The trade were well represented, their exhibits being arranged beside the walls of the building. The following firms made good displays:—Messrs. R. SYDENHAM, LTD., Birmingham; Messrs. DOBBIE & Co., Rothesay (Large Gold Medal); Mr. W. J. UNWIN, Histon (Gold Medal); Messrs. J. HOUSE & SON, Westbury-on-Trym; Mr. ROBERT BOLTON, Warton, Carniforth (Gold Medal); Messrs. W. ATLEE BURPEE & Co., Philadelphia (Gold Medal); Messrs. E. W. KING & Co., Coggeshall (Large Gold Medal); Messrs. G. STARK & SON, Great Ryburgh (Silver Medal); Messrs. GILBERT & SON, Bourne; Messrs. KELWAY & SON, Langport; Miss HEMUS, Upton-on-Severn; Mr. HENRY ECKFORD, Wem (Silver Medal); Messrs. JAS. CARTER & Co., High Holborn, London (Large Gold Medal); Messrs. HOBBIES, LTD., Dereham (Silver-gilt Medal); Mr. CHAS. BREADMORE, Winchester (Large Silver Medal); Messrs. BAKERS, Wolverhampton (Large Silver Medal); Messrs. J. W. KING & SONS, Coggeshall; Messrs. JONES & SONS, Shrewsbury (Large Silver Medal); Messrs. JARMAN & SON, Chard; Mr. W. O. CAUTLEY, Bury St. Edmunds; Messrs. BIDE & SONS, Farnham; Messrs. H. CANNELL & SONS, Swanley (Large Silver Medal); Messrs. G. & A. CLARK, Dover; Messrs. R. H. BATH, LTD., Wisbech; and Mr. W. DEAL, Kelvedon (Silver Medal).

SOUTHERN COUNTIES CARNATION.

JULY 23.—The annual exhibition of the Southern Counties Carnation Show was held on the Royal Pier, Southampton, on the above date. There was plenty of competition to make a representative and good display.

CARNATIONS.

FLAKES AND BIZARRES.—In the class for 12 blooms, distinct, five competed. Mr. H. R. TAYLOR, Oakleigh, Cheam, won the 1st prize with thoroughly good specimens of Mentor, Fireman, Joe Edwards, Torchlight, Murillo, Tom Attrill, Crusader, Gordon Lewis, Admiral Curzon, Bedouin and two unnamed seedlings. Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, Surrey, was a close 2nd, with Master Fred, Recorder and G. Melville as noteworthy sorts.

Mr. C. H. LINZEE, Bramdean Lodge, Alresford, was the only exhibitor of a collection of six flowers, staging Thalia, G. Melville, Robert Houlgrave and Sportsman.

FANCY VARIETIES.—Mr. DOUGLAS won the 1st prize for 12 blooms, distinct, with desirable blooms of Mrs. Penton, Hidalgo, Liberté, Sam Weller, Mrs. Gardiner, Lord Steyne, and seedlings possessing much merit; 2nd, Mr. HAYWARD MATHIAS, Alresford.

Mr. LINZEE had the best exhibit of six blooms, distinct, and was closely followed by Mr. J. A. FORT, Kingsgate Street, Winchester.

SELF-COLOURED FLOWERS.—Mr. TAYLOR was successful amongst five exhibitors for 12 blooms, distinct, showing commendable examples of Caruso, Snowflight, Maud Allen, Daffodil, W. H. Parton, Cardinal, Sultana and Miss Willmott. Mr. HAYWARD MATHIAS was again 2nd.

Mr. LINZEE and Mr. FORT won the 1st and 2nd prizes for six varieties, both showing creditably

Mr. ARTHUR R. BROWN, Wyehall Lane, King's Norton, Birmingham, won the 1st prize for three blooms of a white variety with Snowdrop; Mr. E. C. GOBLE, The Nurseries, Ryde, won in the similar class for blush or pink, with Blushing Bride; and Mr. H. R. TAYLOR for a salmon self and for terra-cotta and a dark self. Messrs. PHILLIPS & TAYLOR, Lily Hall, Bracknell, won the 1st prize in the class for "yellow" flowers.

Mr. A. F. DUTTON, Iver, Bucks., offered prizes for three American tree varieties. W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood), won the 1st prize with Fair Maid, Mrs. Lawson, and Beacon.

PICOTEES.—For 12 white-ground varieties, Mr. A. R. BROWN won 1st place with Hon. Mrs. Kenyon, Favourite, Queen of Spain, Mrs. Halden, John Smith, and Myra. For 12 yellow-ground Picotees in not fewer than six varieties, Mr. DOUGLAS won the 1st prize with capital blooms of Exquisite, Solomon Giles, Oberon, Santa Claus, Cymbeline, Lady Freemantle, and Burgomaster. Mr. HAYWARD MATHIAS was 2nd.

Encouragement was given to undressed blooms of border varieties, to illustrate their value for

won Messrs. Eckford's prize for nine varieties. For the best table decorated with Sweet Peas there were seven entrants. Mr. F. G. BEALING won the 1st prize quite easily.

TRADE EXHIBITS.

Messrs. B. LADHAMS & SON, Shirley, Southampton, exhibited hardy flowers (Gold Medal); Messrs. W. H. ROGERS & SON, Red Lodge Nurseries, Southampton, Roses in pots and cut blooms of Roses (Gold Medal); Mr. BURNETT, Guernsey, Carnations (Gold Medal); and Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, Surrey, Carnations.

DEBATING SOCIETIES.

DEVON AND EXETER GARDENERS'.—The annual summer outing was held on the 21st inst. The members proceeded to Plymouth and thence up the river Tamar by special steamer to Pentillie Castle, the seat of Col. Coryton. At Pentillie are many fine specimens of the rarer Rhododendrons, including R. Falconeri, R. Fortunei, R. Aucklandii, R. campylocarpum, and R. campanulatum. *Benthania fragifera* was represented by some fine trees in full bloom. A specimen of *Magnolia*



FIG. 35.—ROSE MRS. TAFT: A DWARF POLYANTHA VARIETY WITH ROSE-COLOURED FLOWERS.

This variety has received an Award of Merit from the Royal Horticultural Society. (See p. 345, Vol. XLV.)

out-of-door flowering, but there were not many entries. For 12 blooms Mr. HAYWARD MATHIAS won the 1st prize, showing Sam Weller, Lord Steyne, Viola, Douce Davie, and Mrs. F. Wellesley. Mr. E. GOBLE, Ryde, was 2nd.

Decorated dinner tables with Carnations and Picotees were numerous. Mrs. E. LADHAMS, Alresford House, Southampton, had the best arrangement.

SWEET PEAS.

For 12 bunches, distinct (Mr. Sydenham's prize), A. P. RALLI, Esq., Twyford Lodge, Winchester (gr. Mr. J. Hughes), won the 1st prize with fine blooms of Audrey Crier, Evelyn Hemus, Mrs. Hardcastle Sykes, Mrs. C. Foster, and Helen Lewis as the best. Admiral Sir J. HOPKINS, Greathridge House, Romsey (gr. Mr. Mattingley), was 2nd. Eight exhibitors competed for Messrs. Toogood's prizes for nine bunches, Mr. F. GREEN, Inverary, The Polygon, Southampton, winning with a capital set. G. H. KITCHIN, Esq., Compton End, Winchester (gr. Mr. D. Grant),

glauca, 12 feet in height, was much admired. Against the buttresses of the terrace, Pomegranates, *Lapagerias*, *Berberidopsis corallina*, and *Edwardsia Macnabiana* seemed quite at home. In a dell were British ferns, *Lomarias* growing as robustly as Bracken, *L. Magelliana* was particularly noticeable. A pleasant afternoon was spent in seeing the beauties of the villages abutting on Plymouth Sound and the warships. A. H.

ALTON HORTICULTURAL.—The members visited Aldenham House Gardens, Elstree, on July 21. Mr. Edwin Beckett conducted the party through the grounds. The scenery was much admired. The collection of flowering shrubs and trees afforded much that was of interest. After lunch the kitchen gardens and fruit quarters were inspected.

GUILDFORD AND DISTRICT GARDENERS'.—About 50 of the members visited the Royal Gardens, Frogmore, on Wednesday, July 21. A tour of inspection was made under the guidance of Mr. T. Edwards. The State Apartments were first visited and afterwards the terrace with its flower-beds, the pleasure grounds, and glass department. Next were visited the vineries, Peach and other plant houses. In the kitchen garden also the visitors saw much of interest. Returning to the castle some of the members ascended the Round Tower, whilst others inspected the interesting Alpine garden belonging to Sir Dighton Probyn, Bt. J. G.

MARKETS.

COVENT GARDEN, July 28.

[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.—Eds.]

Table with columns: Plants in Pots, &c.; Average Wholesale Prices (Cont'd.); s.d. s.d.

Cut Flowers, &c.: Average Wholesale Prices.

Table with columns: s.d. s.d., Mignonette, per dozen bunches, Myosotis, per doz. bunches, etc.

Fruit: Average Wholesale Prices.

Table with columns: s.d. s.d., Apples (English), Gladiolus, per bushel, (Tasmanian), etc.

REMARKS.—There is no alteration in prices, and conditions remain the same as last week. Edward J. Neuborn, Covent Garden and St. Pancras, July 28, 1909.

COVENT GARDEN FLOWER MARKET.

After this week, until next April, the Flower Market will not be open for the sale of pot plants except on Tuesdays, Thursdays, and Saturdays. For cut flowers the market will be open every morning, but on Mondays, Wednesdays, and Fridays the sales will not commence before 7 a.m., and they will continue for two hours. At the many wholesale stores about the vicinity of the market cut flowers can be purchased up to mid-day, and often later. I have recently visited several nurseries, and I find the growers complain that their secondary crops are all backward.

POT PLANTS.

Supplies of good flowering plants are abundant. Large quantities of white-flowered Marguerites of good quality failed to find purchasers this morning. Hydrangeas also are over plentiful. Fuchsias are seen in large quantities. These plants are well grown. The supply of Rambler Roses is not exhausted, but it will not last much longer. The dwarf Polyantha varieties are later. Campanula isophylla alba and C. i. Mayi are both very finely flowered. Pelargoniums in all sections are remarkably good. Best plants of Lobelia in 4-inch pots are much scarcer. One salesman informed me that he has sold all his stock and has since had several enquiries for more stock. Verbenas are good, and supplies will last for some time to come. The pink-flowered Spiraeas are not much in demand. Rhododendron is nearly finished for the season. Stocks of Mignonette hold out well. The plants are much better than those usually seen so late in the season. Musk is also good. Well-flowered plants of Coreopsis are plentiful. In Ferns, the plumose fronded Nephrolepis are very good. They may be purchased at reasonable prices. A few Chrysanthemums are seen.

CUT FLOWERS.

Supplies all round are over abundant. Good Roses may be bought for about 6s. per dozen bunches, but this does not apply to extra special blooms on long stems. Carnations also are very cheap. Much better blooms of white varieties are seen than was the case a few years ago. Enchantress is the most plentiful. Good crimson Carnations are scarcer. Lilies were making slightly advanced prices this morning, but these may not be maintained. Blooms of L. auratum are of much better quality, and there are some very well-coloured examples of L. speciosum rubrum. Double white Stocks are remarkably fine. I measured some bunches this morning, which, including stems, were fully 3 feet long; the flower-spikes were proportionately massive. Asters are of fairly good quality, but they are not selling freely. Sweet Peas are considerably over done, and many of the flowers are wasted. Gypsophila paniculata is marketed in large quantities, but it is not yet at its best. Gladioli, of several types, are good. I noted a very pretty pink-flowered variety of the gandavensis section. The only flowers that are scarce are best Orchids. Hardy flowers are seen in huge quantities.—A. H., Covent Garden, July 28, 1909.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 24, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The temperature was equal to the average in England N.E., slightly above it in England E., and below it elsewhere. In Scotland N. and W. the departure from the normal was nearly 2°. The highest of the maxima occurred during the earlier half of the week, and ranged from 76° in England E. and 75° in England S.E. and S.W. and the Midland Counties to 63° in Ireland N. and to 64° in Scotland N. The lowest of the minima were registered at most stations on the 20th, where they varied from 40° in Scotland N. and England S.E. to 46° in England E. and N.W. and to 53° in the English Channel. The lowest grass readings reported were 31° at Llangamarch Wells, 34° at Birmingham, and 36° at Crathes, Hereford and Greenwich.

The rainfall was considerably more than the average in Scotland N. and W. and England N.W., and about normal in Ireland, but less in all other districts, the fall being much below the normal in England E., S.E. and the English Channel. Douglas and some Scottish localities experienced more than an inch on one of the later days of the week. Holyhead 1.5 inch. The bright sunshine somewhat exceeded the average except in Scotland W., England N.W., and the English Channel. The percentage of the possible duration ranged from 65 in England S.E. and 64 in England E. to 28 in Scotland N. and Ireland N. and to 28 in England N.W.

THE WEATHER IN WEST HERTS.

Week ending July 28.

A cold and wet week.—All the days of the past week were cold for the time of year, and also most of the nights. The ground is now very cold for July, being 3° colder at 2 feet deep, and 4° colder at 1 foot deep, than is reasonable. Rain fell on all but the first day of the week, and to the total depth of nearly an inch—by far the greater part of that amount was, however, deposited on one day, the 27th inst. For the first time since the beginning of the month a few drops of rain-water came to-day through the soil gauge on which short grass is growing. On the same day 14 gallons passed through the bare soil gauge. The sun shone on an average for six hours a day, which is about a quarter of an hour a day short of the average duration at this period of July. The winds have been as a rule moderately high, and in the windiest hour the mean velocity amounted to 16 miles—direction W.S.W. For the third week in succession the direction of the wind has been almost exclusively some westerly point of the compass. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a reasonable quantity for that hour by 8 per cent.—E. M., Berkhamsted, July 28, 1909.

Cut Foliage, &c.: Average Wholesale Prices.

Table with columns: s.d. s.d., Adiantum cuneatum, per dozen bunches, Agrostis, per doz. bunches, etc.

Vegetables: Average Wholesale Prices.

Table with columns: s.d. s.d., Artichokes (Globe), per dozen, white, p. bushel, Beans, per lb., etc.

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

Table with columns: s.d. s.d., Anemone, per dozen, Aralia Sieboldii, p. dozen, Aspidistra, p. doz., etc.

Mustard and Cress, per dozen pun.

Table with columns: s.d. s.d., Mustard and Cress, per dozen pun., Onions (Egyptian), per bag, etc.

REMARKS.—English Cherries are arriving in a souder condition, but there is not much improvement in the demand for them. Bigarreau Napoleon and Waterloo are the most saleable varieties. There is still a few Strawberries arriving, but the bulk of the crop is over. Gooseberries remain very cheap. French Plums, including Gages, are received in larger quantities and are selling freely. Apricots from France are very cheap. Peaches and Nectarines are slightly cheaper. Tomatoes are firm at 9s. to 8s. 6d. per 12 lbs. The demand for vegetables is moderate. E. H. R., Covent Garden, Wednesday, July 28, 1909.

Table with columns: per cwt. s.d. s.d., Bedford's—per cwt., Early Puritan, Epicure, White Beauty of Helron, etc.

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. WALTER WAINWRIGHT, for 7½ years Gardener to the late RICHARD HOBSON, Esq., J.P., D.L., The Marfords, Bromborough, as Gardener to Mrs. STEPHEN WILLIAMSON, Copley House, Thornton Hough, Cheshire.

Mr. W. PHILLIPS, for the past 11½ years Gardener and Bailiff to J. H. BUXTON, Esq., as Gardener to W. INGLIS-JONES, Esq., Derry Ormond, Llangybi, Cardiganshire. (Thanks for 1s. contribution to the R.G.O. Fund.)

Mr. GEORGE A. RIBLEY, for the last 10 years Gardener to Viscount DERRHURST, as Gardener to JOSEPH PIKE, Esq., Dunsland, Glanmire, co. Cork.

Mr. G. BOOTH, previously Foreman at Poltimore Gardens, Devon, and Canwell Hall, Staffordshire, also at Aske Hall, Yorkshire, as Gardener to Lady PAYNE GALLWEY, Thirkley Park, Thirsk, Yorkshire.

Mr. W. RICH, for 2½ years Gardener to C. E. LACY-HULBERT, Esq., Mayfield, Cheam, and previously for many years Gardener to the late General G. B. FISHER, Paignton, Devon, as Gardener to FRANK REE, Esq., Antonsy, Pinner, Middlesex.

Mr. GEORGE BAILEY, for the past 5 years Foreman at Studley Royal Gardens, Ripon, as Gardener to A. J. MURRAY, Esq., The Hall, Thornton-le-Street, Thirsk, Yorks.

CATALOGUES RECEIVED.

JAMES VEITCH & SONS, LTD., Royal Exotic Nursery, Chelsea, London—Strawberry plants.
GEORGE BUNYARD & CO., LTD., The Royal Nurseries, Maidstone—Strawberry plants.
WILLIAM BULL & SONS, King's Road, Chelsea, London, S.W.—Orchids.
F. HERBERT CHAPMAN, Rye—Daffodils.
LITTLE & BALLANTYNE, Carlisle—Bulbs.

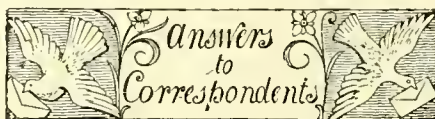
Obituary.

EUGENE-EMERY TRANSON.—A well-known French horticulturist has passed away in the person of Mons. Eugène-Emery Transon, whose death occurred last week at his residence, 1, Route d'Olivet, Orleans. The deceased nurseryman was 72 years of age. The funeral took place on the 23rd inst.

JOHN THORPE—On July 15, at Chicago, Mr. John Thorpe died in his 70th year, after a long illness. Mr. Thorpe had been for many years a prominent figure in American horticulture. "Uncle John," as he was familiarly known, will be remembered by British visitors to the Chicago World's Fair as the superintendent of the horticultural department. He had come to Chicago in 1892 for the purpose of laying out the exhibition grounds there. Thorpe was born at Keyham, in Leicestershire, England, in 1842. He was a member of the firm of Bell & Thorpe, nurserymen and florists, of Stratford-on-Avon. On the break up of the business in 1874, Mr. Thorpe went to the United States, joined the well-known firm of Hallock & Son, and became exceedingly popular in the American horticultural trade. He raised many seedling Pelargoniums and is credited with having raised the variety known as "Happy Thought." Having a natural liking for cross-fertilisation, he also raised many good Chrysanthemums and other plants. He was very fond of flowers of all kinds, and had a good knowledge of their culture and nomenclature. The Society of American Florists owes its inception to John Thorpe, and he was its first president in 1884-5. Had he lived he would have been an interested and interesting visitor at the 25th annual convention of this organisation, which is to be held at Cincinnati next month. The Ohio City was the venue of the first convention in 1885. Thorpe's memory will be kept green in America by the Rose Uncle John, which is a popular market variety here. Genial, kindly, and companionable, the personality of John Thorpe will be missed by a large circle of friends. *H. R. Richards, Chicago.*

ENQUIRY.

PRIMULA.—Are there other species of Primula besides *P. japonica* and *P. denticulata* which would grow easily and seed themselves in the damper parts of the wild garden? I am told by friends that *P. sikkimensis* does not really do well, as it has constantly to be replanted. But of recent years this genus has been enriched by discoveries in China. Concerning many of these species I have no experience. *B. L.*



BOOKS: *E. M. W.* We do not know a book of the description required.

CARNATION: *Waltham* and *G. J. H.* The plants are affected with Sclerotinia disease. Those already attacked cannot be saved, and should not be used for layering. Treat the soil with quicklime.

CUCUMBER: *H. C., W. W. C.* and *F. E. S. & Co.* The plants are subjected to an excess of humidity in the atmosphere, no less than in the soil. Give increased ventilation, especially in the early hours of the day.

GRAPES: *W. Gower.* The fungus *Gloeosporium ampelophagum* is undoubtedly present on some of the shoots. All such spotted shoots should be cut out and removed to the fire heap.—*J. C.* See reply to *W. C.* under "Nectarine."

INJURY TO THE SKIN CAUSED BY CONTACT WITH CERTAIN LIVING PLANTS: *J. W., Horsham.* If you refer to the issue of *Gardeners' Chronicle* for August 8, 1908, p. 110, you will find an article on the subject of plants and skin irritation. The statement made by your friend rests on a basis of truth, although in its baldness it may exaggerate the facts of the case.

LINNEAN: Instructor. Candidates for Fellowship are admitted by election. Write to the secretary of the Linnean Society, Burlington House, Piccadilly, London, W.

MARROWS: *W. C.* Your specimens present no appearance of disease. The failure is due to something unsuitable in the cultivation afforded the plants.

MELON: *S. O. J.* See above reply to *H. C., W. W. C.* and *F. E. S. & Co.* under "Cucumber."

NAMES OF FRUITS: *J. Nicol.* The cardboard box in which you packed the Peach fruit was so damaged in the post that the fruit itself was smashed before delivery here.

NAMES OF PLANTS: *W. D.* A species of *Linaria*, probably *L. reticulata*.—*G. H. S.*: 1, *Actea spicata*; 2, *Valeriana Phu*; 3, *Erythrochate palmatifida* (syn. *Senecio japonicus*); 4, Not recognised; 5, *Lysimachia vulgaris*; 6, *Lychnis chalcedonica*; 7, specimen withered; 8, *Lilium Martagon*. (Thanks for 1s. received for R.G.O.F.)—*H. B.* 1, Crown or Mummy Pea; 2, *Lathyrus rotundifolius*; 3, *Typha angustifolia*.—*A. E. S.* 1 and 2, *Sedum Sieboldii* probably, send when in flower; 3, *S. spectabile*.—*G. H.* 1, *Thalictrum flavum*; 2, *Lysimachia vulgaris*; 3, *Polemonium reptans*; 4, *Orobanchia lathyroides*; 5, *Lychnis chalcedonica*.—*A. P.* 1, The specimen was withered; 2, *Inula salicifolia*; 3, *Platycodon grandiflorum*; 4, *Gaultheria Shallon*; 5, *Aguga* species; 6, *Lysimachia vulgaris*.—*T. T.* 1, *Scabiosa ocbroleuca*; 2, *Astrantia carniolica*; 3, *Sidalcea malvaeflora*; 4, *Eriogonum fruticosum* Youngii; 5, *Veronica virginica* var.; 6, *Antemiss tinctoria*.—*B. R. D. & S.* *Abies cephalonica*.—*J. D. W.* 1, *Lonicera tatarica*; 2, *Ozothamnus rosmarinifolius*; 3, *Spiraea Thunbergii*; 4, *Cotoneaster microphylla* var. *glacialis*; 5, *C. Simonsii*; 6, *Ligustrum japonicum*.—*Legem.* 1, *Strobilanthes* sp.; 2 and 3, *Philadelphus* sp. (not recognisable); 4, probably *Rhus Toxicodendron* (Poison Ivy); 5, *Halesia hispida*; 6, *Cotoneaster Simonsii*; 7, *Spiraea canescens*; 8, *S. japonica*; 9, *Clematis* species.—*W. J.* 1, *Rehmannia angulata*; 2, *Adiantum cuneatum*, strong-

growing var.; 3, *Tilia platyphyllos asplenifolia*; 4, *Berberis vulgaris purpurea*; 5, *Rhus Cotinus*; 6, *Spiraea discolor*.—*C. A.* 1, *Pteris arguta*; 2, *Selaginella caulescens*; 3, *Lygodium japonicum*; 4, *Davallia bullata*; 5, *Asplenium alatum*; 6, *Blechnum orientale*.—*H. E. T.* 1, *Abutilon Golden Gem*; 2, *Abutilon Princess of Wales*; 3, *Adiantum formosum*; 4, *Magnolia acuminata*; 5, *Asclepias curassavica*.—*Urgent.* *Adiantum Capillus-veneris*.—*N. H. P.* *Digitalis lutea*.—*A. W. A.* We cannot undertake to name garden Roses; 9, *Spiraea japonica callosum*; 10, *Bambusa gracilis*; 11, *Spiraea media*; 12, *Hedera Helix glomerata*; 13, *Hedera canariensis aurea*, arborescent form. —*F. H. J.* 1, *Adiantum excisum*; 2, *Adiantum cuneatum Pacotii*; 3, *Cyrtomium Fortunei*; 4, *Panicum plicatum*; 5, *Bambusa Fortunei*; 6, *Abutilon Savitzii*; 7, *Begonia Madame Anna Low*.—*R. O. Y.* 1, *Oncidium obryzatum*; 2, *Oncidium prætexatum*; 3, *Odontoglossum Coradinei*; 4, *Brassia verrucosa*; 5, *Maxillaria picta*.—*J. C. Knowle.* Crown or Mummy Pea. *Pisum elatius*, known in gardens as *Pisum sativum* var. *umbellatum*.—*E. B.* 1, *Helenium pumilum*; 2, *Rudbeckia laevigata*; 3, *Lychnis chalcedonica*; 5, *Galega officinalis*; 6, *Alströméria aurea*.—*Fencote.* *Dictamnus fraxinella*.—*T. B. G. & Son.* The specimen was sent without foliage; it is probably *Lychnis grandiflora*.—*E. T.* *Phalaris arundinacea* variegated variety.—*R. G.* 1, *Achillea Ptarmica*; 2, *Pulmonaria mollis*.—*A. W. C.* Probably *Ptelea trifoliata*; send again when in flower or fruit.—*H. H. R.* *Olearia macrodonta*.

NECTARINE FRUIT: *W. C.* Soft fruits such as Nectarines, Peaches, Cherries, and Gooseberries, frequently split their fruits owing to an excess of moisture in the soil or atmosphere or both. You have probably noticed that the number of split Cherries this year is quite extraordinary, whereas in a dry, hot season such a thing is scarcely known on out-of-doors trees. As your Nectarines have been cultivated indoors, it may be useful to say that a tendency to splitting is caused by extreme conditions following quickly upon each other. For instance, if the borders are allowed to become very dry, and then for a time they are flooded with water, a set of conditions is produced which frequently results in splitting. Steady, rather than fitful, growth is to be encouraged. You should not apply any artificial or other kind of manure to a tree exhibiting the condition of which you complain.

PEAR FRUITS: *Jno. McC.* The fruits have been checked in growth at an early stage, causing the rupture of the skin and subsequent out-growths. There is no fungus disease present.

PLANE TREES: *J. L. R.* The trouble is caused by the fungus known as the Plane leaf scorch (*Gloeosporium nervisequum*). It is too late to employ remedies this season. Carefully collect and burn all fallen leaves. Spray the trees with dilute Bordeaux mixture next spring when the leaves are unfolding.

POLYGONUM BALDSCHUANICUM: *F. A. E.* The specimens are not affected by any fungus disease. There is something unsuitable to the plant in the soil or surroundings.

TOMATO DISEASED: *F. E. G.* The plants are attacked by "black rot." The fungus causing the disease enters by means of the style or through minute cracks in the skin. Remove and burn the affected Tomatos, and spray the plants—especially the flowers just before they set—with potassium sulphide, using ½ ounce in two gallons of water. Be careful not to spray the woodwork, as this chemical turns paint black.

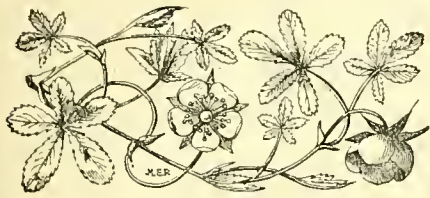
WEED ON LAWN: *C. W.* The specimen was small and shrivelled. It is probably *Prunella vulgaris* (Self-Heal). Apply some nitrogenous manure, such as sulphate of ammonia, in small doses. This will cause the grass to grow vigorously, and in time crowd out the weeds.

Communications Received.—*J. P.* (next week)—*F. H. B.*—*G. G.*—*H. J. W.*—*E. T. R.*—*W. H. W.*—*E. H. J.*—*A. B. J.*—*E. B.*—*J. D. G.*—*F. W. C.*—*W. G. S.*—*E. F. A.*—*W. Owen*—*W. A.*—*W. E. H.*—*W. G.*—*J. Lambert*—*A. B.*—*A. A.*—*C. R. F.*—*H. P.* (too late for inclusion in table)—*G. Hillman*—*W. B. H.*—*S. W.*—*A. D. W.*—*Asphalt*—*F. H. J.* (the photograph is unsuitable)—*W. E. G.*—*H. P.*—*Sir W. C. G.*—*W. W. P.*—*T. H.*—*P. Murray*—*J. C.*—*H. W.*—*Dr. P.*—*J. L.*—*G. D.*—*R. L.*—*J. W. J.*—*G. H. S.* Thanks for 1s, which has been placed in the R.G.O.F. box.—*J. D. G.*—*Dr. F.*—*H. J.*—*T. H.*



ACTINIDIA CHINENSIS.

A CHINESE CLIMBING PLANT, FLOWERING FOR THE FIRST TIME IN EUROPE IN 1909.



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***THE RATTANS OR ROTANGS.**

THE eleventh issue of the *Annals of the Royal Botanic Garden, Calcutta*, consists of an illustrated monograph of the genus *Calamus* by the eminent botanist and traveller, Dr. O. Beccari. Like most of its predecessors, it comprises more than one volume. In this instance there is a quarto volume of letterpress of 518 pages, and a folio volume, 22 inches by 15 inches, containing 238 plates. To say that it is a monumental work, apart from size, is to give no idea of the immense amount of labour and skill expended on it. During a long and very active life the author has made a special study of the Asiatic Palms, both in the forest and in the herbarium, and it may be safely asserted that there is no person, either of the past or present, with whom to compare him for knowledge of this family, at least as represented in the old world. Indeed, we feel that a critical review of this work which is the result of so many years of observation and investigation is impracticable. But an appreciation may be useful, especially as the book, from its size and cost, will be accessible to most persons only in the larger botanical libraries.

* *Asiatic Palms—Lopidocaryaceæ*, by Dr. Odoardo Beccari. Part I. *The Species of Calamus*, with 238 plates. *Annals of the Royal Botanic Garden of Calcutta*. Vol. XI. Calcutta: Printed at the Bengal Secretariat Press, 1908. Price Rs. 100, or £7.

The monograph is appropriately dedicated to the "illustrious memory" of William Griffith, author of the *Palms of British East India*, whose premature death in 1845, at the early age of thirty-five, was a great loss to botanical science. This dedication, preceded by the quotation, "In palmis semper-juvenis; in palmis resurgo," is followed by a preface, in which the author relates that he had prepared a monograph of the genera *Calamus* and *Dæmonorops* many years ago, with the intention of publishing it in his *Malesia*, but funds failing "the present monograph would probably never have seen light had it not been my good fortune, in 1899, to meet in Florence Sir George King, who most courteously and generously offered to arrange for the publication of the work in the *Annals of the Royal Botanic Garden of Calcutta*."

We learn also from this preface that the author had the advantage of examining and comparing the specimens of *Calami* belonging to all the principal herbaria of the world, including that of Kew, "which has been my main source of information regarding the *Palms* that form the subject of the present study."

The preface, dated 1905, is succeeded by a comprehensive "Introductory Essay" treating of the biological and organological characters of the genus *Calamus*; of its economic products; of its position in cultivation, and of the genus from a variety of other aspects.

Concerning *Calami* under cultivation, Beccari's remarks are disconcerting and inconclusive, for these show that the nomenclature employed is beyond correction in most cases. In his own words "the names by which cultivated *Calami* are known to horticulturists are, with hardly an exception, incorrect; and since, on the other hand, horticulturists are in the habit of putting on the market small seedlings or very young non-characterised plants, the foliage of which usually exhibits much uniformity in the various species and always differs considerably from that of the adult plant, it becomes very difficult for a botanist to reduce the species, rashly proposed by horticulturists as new, to their true position in scientific nomenclature." Further: "In the French edition of Nicholson and Mottet's *Dictionnaire d'Horticulture*, twenty-one cultivated species of *Calamus* are enumerated, and many of them bear the names of very well-known species, but, as it appears to me, in almost every instance misapplied."

The only species known to Dr. Beccari as having produced flowers in Europe are *C. ciliaris* and *C. javensis*, the latter cultivated at Kew under the name of *C. trinervis*. Some account of the former is given in the *Gardeners' Chronicle* for February 6, 1897, p. 86, f. 23. To these may be added *Dæmonorops Jenkinsianus*, which has flowered at Kew. Dr. Beccari, it may be mentioned, distinguishes *Dæmonorops* from *Calamus*, with which it is united by some authors, though not by any character easily explained, but by combinations of characters not repeated in the two genera.

The following notes may be useful to the cultivators of *Calami*: "The plants of *Calami* never have deep roots, and they acquire a luxuriant habit in the superficial layer of humus of the tropical forests, when

this overlies a siliceous subsoil, because *Calami*, like almost all other kinds of Palms, avoid a calcareous subsoil.

"In cultivation *Calami* thrive best in a compost of equal parts of sandy loam and vegetable soil formed by decomposed leaves. They require a warm, moist atmosphere and copious watering. I have, however, to observe that *Calami* grow in very different situations, from marshy plains at the level of the sea up to an elevation of 2,000 metres (about 7,000 feet), so that in the cultivation of *Calami*, as in that of any other plants, it is necessary to know beforehand the natural conditions of their existence and to modify their cultural conditions accordingly. If this be borne in mind, it may be found that probably not a few of the mountain species of *Calamus*, as for instance those of the Himalaya and Assam, will thrive better in the temperate, than in the hothouse, while others should receive the treatment of aquatic plants in warm water."

Respecting the uses of the stems, canes or rattans of the *Calami*, we learn that *C. javensis* and allied species have the most slender canes. They are employed entire for binding purposes and for making chairs, blinds, mats, baskets, fishing tackle, and a variety of other purposes. The larger and stronger canes of *C. rudentum*, *C. ornatus*, *C. palustris*, *C. albus* and others, are used entire as cables, &c. Particulars are given of the preparation of the various kinds of cane for different purposes. So far as the author is aware, no attempt has been made to cultivate *Calami* for economic purposes either in their native countries, or in countries having a similar climate.

Dr. Beccari describes 200 species of *Calamus*, which he considers as about two-thirds of those actually existing. They are generally spread, and most abundant in the warm regions of Asia, one species extending as far north as Kumaon in the west, and one to North Formosa in the east. Five species are known to occur in Australia, one extending southwards to the Clarence River, in lat. 29° 30', and eight species have been found in tropical Africa. Most of the species are endemic in somewhat restricted areas. Contrary to one's preconceived ideas, the *Rotangs*, we are told, are never gregarious, but always grow isolated in the forest, and none of the species is ever so abundant as to give a special character to the forest vegetation; and they are never met with in the secondary forest, or in that which springs up after the primary forest has been destroyed. A few species are of erect habit, and the rest climb over trees by means of hooked spines. The stems are always slender, sometimes very slender, not more than a quarter to a third of an inch in diameter, as in *C. javensis*, attaining in this species a length of 10 feet to 30 feet. The total length of the stems of *Calami* has, according to our author, been greatly exaggerated. Roxburgh describes his *C. extensus* as having stems 200 yards to 300 yards in length, and Loureiro assigns to his *C. rudentum* a length of 500 feet; whereas of all those measured by Beccari none exceeded 150 feet.

Dr. Beccari classifies the species of *Calamus* in sixteen defined groups. Diagnoses of eight to ten lines upon each species follow, and these are succeeded by full detailed descriptions and

details of distribution, which, including observations, occupy, on the average, nearly two pages for each species.

A list of names of unknown and excluded species includes no fewer than twenty-three names applied to cultivated plants which the author has not been able to identify. Some of them have been given to species of *Dæmonrops*, whilst others were given to plants which have entirely disappeared from cultivation.

The volume of magnificent plates illustrating this monograph calls for something more than mere mention. Apart from two quarto lithographed plates showing the general structure of the inflorescence and flowers, and a few folios, they are prints of Dr. Beccari's own photographs, admirably reproduced by a firm of printers in Florence. It is no detraction from the merits of other illustrations of herbarium specimens of Palms to say that the present series surpasses by a long way all previous productions. We are not acquainted with all the details of Dr. Beccari's mode of procedure, but we know that the specimens were detached from the sheets of paper and photographed in space with a near background without the labels. The effect is perfect. Exclusive of margin, the plates are 17 inches by 11 inches, and the figures, so far as we can judge, are uniformly of natural size. The absence of floral analyses is fully compensated by the detailed descriptions. Besides, the distinctive characters are derived mostly from the armature, leaves, inflorescences and fruits. The value of these plates is greatly enhanced by the fact that no one establishment possesses specimens of a large percentage of the species. In each instance the source of the specimen represented is recorded.

We congratulate the author and the botanical world on the appearance of this great work, due to the energy of the late Sir George King, the hearty co-operation of Lieut.-Colonel Prain and Captain Gage, his successor at Calcutta, and the munificence of the Government of Bengal. *W. Botting Hemsley.*

NOTES FROM THE BOTANIC GARDENS, CAMBRIDGE.

A good collection of hybrid Roses is now in flower. The following are hybrids of *Rosa rugosa*:—*Fimbriata* is a charming Rose with light green foliage and delicate salmon-tinted flowers, its distinctive quality being the prettily fimbriated petals; *Mme. Georges Bruant* is a white variety, with reddish stems and deep green foliage; *Rose Apples* is an extremely fine pink Rose, very profuse in flowering; *Mrs. Anthony Waterer* is one of the finest red varieties of this section; *Mercédès* has beautiful, pale pink flowers of large size; and *R. rugosa repens alba* is a creeping plant that produces large, single, pure white flowers, the petals of which curve in all directions, giving a delightfully informal effect. This last is one of the best for covering large spaces quickly, and is most distinct in flowering freely about 8 or 9 inches from the ground.

The *Wichuraiana* hybrids include a number of popular kinds, but I will mention only two. *Réné André* is without doubt one of the most charming. The buds are of a delicate salmon tint, and the open flowers are inclined to pink. *Ruby Queen* forms a low bush and produces large numbers of bright pink flowers.

Among *Polyantha* Roses I may specially mention *Helene*, a strong grower, producing trusses of delicate semi-double pink flowers, associated with beautiful green foliage; *The Lion* is an extremely large, single, red flower, measuring 4 to 4½ inches across; *The Dawson Rose* is particularly free in flowering, the blooms being semi-double and pink.

The principal parents in each group are also in flower, namely, *R. rugosa*, *R. Wichuraiana*, and the typical *R. polyantha*, more correctly known as *R. multiflora*. It is worth remark that they are all Japanese species.

HYDRANGEA PETIOLARIS.

This plant has made a fine show this season, growing on the east side of a wall. The main growth bearing the flower-heads has reached the top of the wall, and is extending upon an adjoining roof. The leaves are broadly ovate cordate, and are borne upon petioles 2 to 3 inches long. The plant makes a very handsome climber, and attaches itself by its own roots. It is sometimes confounded with *Schizophragma hydrangeoides*, but differs in having four or five styles, whilst *S. hydrangeoides* has but one, and flowers in autumn instead of June. It is a native of Japan.

HALESIA HISPIDA.

This plant is greatly admired on account of its gracefully drooping inflorescences. It is a hardy, deciduous tree, 20 feet in height, and bears charming white flowers in panicles. The leaves are large and very attractive, ovate in outline and of light green colour (see fig. 37).



[Photograph by R. S. Lynch.

FIG. 36.—*VACCINIUM SERRULATUM* VAR. *LEUCOBOTRYS*.

VACCINIUM SERRULATUM VAR. *LEUCOBOTRYS*.

This species is very attractive in the temperate house on account of its wax-like, pure white berries, which hang in numerous racemes 2 to 3 inches long. Each berry is produced upon a tapering white stalk, at its apex is a black spot which is surrounded by five black points, the remains of the calyx limb. It is a most attractive plant, as will be seen by the accompanying illustration (fig. 36), and quite uncommon.

LONIGERA GRATA

is now the most ornamental shrub in flower. In the *Kew Handlist* it appears to be referred to *L. Caprifolium*, but it differs from the latter in not being a climber. In Rehder's synopsis of the genus in the *Missouri Botanic Garden Report* (1903) it is placed under *L. Caprifolium* f. *parvifolia* as a hybrid with *L. italica*. At Cambridge it forms a round, spreading bush, requiring no support, and is 4 to 5 feet high. The buds are reddish-pink, whilst the interior of the open flower is of a delicate cream colour, the external colour remaining the same as in the bud. The flowers are very fragrant, and are borne in clusters of about four whorls at the end of all the very numerous branches. The leaves are about

2 inches long, ovate, glabrous, and slightly glaucous beneath, the upper ones being connate. According to Rehder, this hybrid is found near Lyons, and at Istria, near Trieste, and is very rare even in regions where the two parents grow together. The plant here referred to, with its obovate lower leaves, appears to answer the description of *Lonicera grata* of Aiton in *Hort. Kew*, ed. 1, i. 251. It is always referred to as North American, but this appears to be wrong. Rehder says in his synopsis, "There has never been found in North America a plant undoubtedly native which could be referred to *L. grata*, Ait." Apparently, Rehder has seen specimens from the localities above mentioned to which he attributes the plant. *R. Stewart Lynch.*

NURSERY NOTES.

STUART LOW & CO., ENFIELD.

NOWWITHSTANDING the deluge of rain during these last few weeks, the Roses at the Bush Hill Park Nurseries, if not looking at their best, gave me the opportunity of noting the weatherproof varieties—those which were the least affected by wet. The stock of dwarfs, ramblers, and climbers seem to have revelled in the moist conditions, and growth was in almost every case most cheering in robustness, height, general healthiness, and profusion of flowers and flower-buds. Surpassingly fine were General McArthur, of rare fragrance, one of the best H.T.s; Betty, H.T., of a coppery tint, with large, long petals; Antoinette Revoire, H.T., a splendid grower; *Mme. Segond Weber*, a fine H.P. variety of a pink colour, of American origin; *W. Shean*, H.T., also of a pink colour, very large, of fine form and great substance, the plant growing well in the heavy loam of this nursery; and *Mrs. W. J. Grant*, H.T., of a true pink colour, a large and full flower. The climbing variety of this Rose has striking foliage, large and bronzy, as are the shoots. *Lady Faire*, a sport from *Mrs. W. J. Grant*, is a very beautiful flower. *Dean Hole* seemed to be late in flowering and the growth of the plants was weak and short—only here and there were flowers visible. One of the finest novelties is *Paul Lede*, a white flower with a yellow suffusion at the base of the petals; *Killarney*, a big, filbert-shaped flower of pale pink, shaded blush and white, a hardy, free-flowering H.T.; *Richmond*, H.T., too well known to need a description; *Reine Olga von Württemberg*, H.T., a bright crimson; and *Flora Fairfield*, a pink-flowered rambler, and profuse bloomer. Every side shoot of *Flora Fairfield* bears many blooms, consequently its flowering season is more prolonged than that of any other of its class. Of *Minnehaha* and *Hiawatha*, fine ramblers, a large number was observed.

In the Carnation houses were the following perpetual-flowering varieties, growing in about 9 inches of soil deposited on "benches," as the Americans term these contrivances for dispensing with flower pots:—*Red Lawson*; *Victory*, a true scarlet; *Black Chief*, a much better flower than *Harlowarden*, its nearest relative as regards colour; some of the *Enchantress* race in variety; *Sarah Hill*, a large, pure white flower; and *Beacon*. The *Souvenir de la Malmaison* varieties were still showing a few blooms, but the season is practically at an end as regards these and the other Carnations. It may be of interest to some cultivators to learn that the propagation of the perpetual-flowering varieties is carried out on beds of clean sand in a comparatively cool house. There are hot-water pipes under the beds, but the warmth applied is only sufficient to raise the sand beds to 50° or 55°. Under this kind of treatment the growth is always strong. *F. M.*



FIG. 37.—HALESIA HISPIDA, A HARDY DECIDUOUS TREE; FLOWERS WHITE.
(See "Notes from the Botanic Garden, Cambridge," on p. 88.)

NEW OR NOTEWORTHY PLANTS.

ELISENA LONGIPETALA.

(See Supplementary Illustration.)

THIS interesting and beautiful Amaryllid has a singular history, but much yet remains to be discovered respecting its real home and its supposed congeners. Ruiz and Pavon described and figured this, or a very closely-allied species (*Fl. Per. et Chil.*, vol. iii., t. 263, f.b.), under the name of *Pancratium ringens*. Dean Herbert, recognising in it a genus distinct from *Pancratium*, described it more fully (*Amaryllidaceæ*,

The original species described by Ruiz and Pavon was cultivated in the gardens of Lima, and supposed by (or known to) the authors to be a native of the Andes, which is most probable; yet, so far as my researches go, it has not been actually verified, and there are no wild specimens either in the Kew Herbarium or the Herbarium of the British Museum.

Following Herbert's foundation of the genus *Elisena*, we find Lindley (*Botanical Register*, vol. xxiv., 1838, *Miscellanea*, p. 45, n. 79), describing *E. longipetala* from specimens cultivated by R. Harrison at Aighurth, near Liverpool, in 1837. In 1841, a coloured figure of the same appeared in the *Botanical Magazine*,

species as Miss Willmott's plant, represented in the accompanying plate.

In floral structure *Elisena* is most nearly related to *Pancratium* and *Hymenocallis*, from which it is distinguished by the very short tube of the perianth and by having only two ovules in each cell of the ovary.

Perhaps some readers of the *Gardeners' Chronicle* may know of the existence of wild specimens of a species of *Elisena*? W. Botting Hemsley.

TREES AND SHRUBS.

DIERVILLA (WEIGELA) EVA RATHKE.

Most of the garden varieties of *Weigela* flower in the spring and produce a few intermittent blooms later. The variety *Eva Rathke* forms an exception to this rule, for though somewhat later in expanding than most other varieties, it keeps up a succession of its brightly-coloured blossoms till summer is well advanced. A bed or group of this variety, with its bright claret-crimson-coloured blossoms, forms a pleasing summer feature in the garden, especially in July, when comparatively few shrubs are in flower. It is by no means a novelty, for it was given a First-class Certificate by the Royal Horticultural Society as long ago as August 29, 1893. The fact that it could be shown sufficiently well to gain such an award as late as the end of August proves the length of time over which its flowering season extends. Though they are by no means the equal of *Eva Rathke* in persistent blooming qualities, two other garden forms are to be recommended, viz., *Abel Carrière* (deep pink) and *candida* (white). The readiness with which these *Diervillas* can be propagated from cuttings of the young growing shoots and the short time necessary in order to ensure flowering examples are all points in their favour, whilst as to soil and situation their requirements are not exacting. A fairly good loam and an open situation suit them best.

SPIRÆA JAPONICA AND ITS VARIETIES.

Of the many shrubby *Spiræas* one of the best is *S. japonica*, more generally known in gardens as *S. callosa*. It is also noteworthy from the fact that it is one of the most variable members of the genus, as the several forms differ from each other, and from the type, in stature, colour of the flower, and other details.

The typical form of *S. japonica* is of free growth, and assumes the character of a rather upright bush from 4 feet to 5 feet in height. The flowers, borne in flattened corymbs, are bright red in colour, and a succession is produced from July to September. Given a sunny spot, the young leaves become deeply suffused with crimson, thus imparting a very pretty effect to a specimen. Of the several varieties, the most marked are *alba*, a compact bush about 2 feet in height, whose clusters of white flowers are borne to the end of October in mild seasons; *Anthony Waterer*, a dwarf form with bright crimson flowers; *Bumalda*, a somewhat taller and more lax-growing plant than the preceding, with a profusion of pink flowers; *glabrata*, a particularly sturdy form, whose stout branches reach to a height of about 3 feet, being terminated by very large heads of pink blossoms; and *superba*, a richly-coloured form of the type.

Similar to nearly all the shrubby *Spiræas*, this species is most effective when planted in fairly good soil that is not affected with drought at any time. A feature to which more attention than usual might well be paid is the removal of all flower-heads as soon as their beauty is over. This particularly applies to the dwarf-growing variety *Anthony Waterer*, which, if attended to in this respect, develops secondary clusters, and thus keeps up a display of flowers well into the autumn. W.



FIG. 38.—MECONOPSIS ACULEATA: FLOWERS BLUE WITH ORANGE-COLOURED STAMENS.
(See p. 91.)

p. 201), and named it *Elisena ringens*, without giving any explanation of the derivation of the new generic name. The gardeners' dictionaries and other works treating of plant-names had to supply this deficiency, and Paxton and Johnson give it as "an ancient name of romance," which is probable, as Herbert adopted many obviously classical names; but I am unable to confirm or disprove this origin. Other authorities, such as Wettstein, Nicholson, and Mottet, state that the genus was named after Elise, sister of Napoleon and Princess of Lucca and Piombino. It seems hardly likely, however, that Dean Herbert would have made such a dedication without putting it on record. Possibly a reliable record is somewhere in existence, though I have failed to find it.

t 3873; and much more recently another in the *Refugium Botanicum*, t. 264.

Dean Herbert contributed the letterpress accompanying the plate in the *Botanical Magazine*, and he there describes what he took to be a third species, his *E. sublimis*. It is not clear whether he had specimens or drawings before him, but he formed no herbarium, and I believe, there is no drawing in the Herbert collection in the Lindley Library of the Horticultural Society corresponding to his description. All the available evidence points to the existence of only one species, of which there are cultivated specimens in the Kew Herbarium from the gardens of Wilson Saunders, 1870; Mr. Elwes, 1875; and Colonel Trevor Clarke and Messrs. Henderson, 1877. All of these are evidently of the same

MECONOPSIS IN AN EAST-COAST GARDEN.

CONTRASTING unfavourably with the true Poppies in vegetative vigour, the species of *Meconopsis* are most charming in their flowers. In some, the colouring pigment is so delicately developed that the flowers have not inaptly been likened to some exquisite silken fabric. The stamens are usually of another colour to the petals, and thus form in some species pleasing harmonies, and in others distinct contrasts. It is interesting to note that in *Meconopsis aculeata* and *M. racemosa* there are colours unrepresented in the Papavers, nor is the particular shade of *M. integrifolia* common in Poppies, whilst the rich shade of orange found in *M. heterophylla* marks this species as distinct.

Few of the *Meconopsis* are perennial, the best known exception being the Welsh Poppy, *M. cambrica*. The type bears single flowers of a bright yellow, but it is also represented by double forms, having yellow and orange flowers respectively. This species and its varieties succeed in most soils, provided they are well drained in winter. With the exotic species, the cultural difficulties are encountered in the seedling stage, and they continue to the end. Seeds, under normal conditions, ripen in autumn, and may be sown then or even early in spring. They should be sown in well-drained pans or boxes, filled with light peaty soil, which latter should be placed in a moderately warm house, such as an early vinery in spring, or an intermediate house in autumn. The plants require a light shade during all stages of growth. Seedlings may be transplanted readily as soon as they have formed two or more true leaves. Slightly rougher soil should be used at each successive potting. A suitable compost is one formed of fibrous loam, sandy peat and decayed Oak leaves in equal parts. Plants raised from seed in autumn or spring and gradually hardened are grown in unheated frames from May onward. Planting out may be performed early in August, thereby ensuring the plants becoming established before winter. *M. heterophylla*, being an annual species, is planted out in May, and the plants flower in July of the same year.

The ideal position for species of *Meconopsis* is a deep "bay" among choice shrubs, or a woodland clearing. The position should be comparatively flat, and have enough protection from shrubs to break all rough winds and furnish a fair amount of overhead shade. The soil must be free from calcareous matter, and, in bulk, should approximate to that recommended for potting. Rich sandy loam, moss litter and decayed leaves, in default of anything better, have given excellent results here. Four parts of loam are used to one part each of the other ingredients.

I have secured the best results from the most porous bed. The natural subsoil here is chalk, upon this rests the fresh soil forming the bed, which never exceeds 2 feet in depth, therefore the surplus moisture passes away speedily. Overhead spraying of the plants with clean water in the evening is beneficial, but artificial waterings to the roots are rarely practised, and then only during periods of drought. Dwarf shrubs, like *Pernettya*, *Kalmia* and tree Heaths, are sparingly planted over the bed. These break up undercurrents of wind, and lend sufficient support to render much staking of the *Meconopsis* unnecessary.

The following species are given in the order in which they succeed in these gardens.

M. CAMBRICA (perennial) is the only European species. The flowers are yellow or a shade of orange. They are produced on stems 2 feet in height from May till autumn. The double flowers last well in a cut state. (See fig. in *Gard. Chron.*, May 30, 1896, p. 671.)

M. HETEROPHYLLA (annual).—The only American species. The flowers are a deep shade of orange, with a maroon blotch at the base of petals. The stamens are yellow. The plant forms a rounded bush and its branches freely. The flowers are produced on wiry stems; they are sweetly scented, and last over a week when cut. This plant attains a height of 30 inches in the open.

M. WALLICHII (biennial).—This species will sometimes miss flowering until the third and fourth year. The flowers are blue, or tinted with purple. The inflorescence is erect, much branched, and carries great numbers of flowers, which always open early in the morning, hence it is seen at its best from sunrise till before mid-day. The foliage of this species is most beautiful, and



FIG. 39.—MECONOPSIS ACULEATA.

Photograph taken one month later than that of same plant shown in fig. 38.

forming rosettes that, under favourable conditions, measure 4 feet across. The pinnatifid leaves are densely clothed with golden-russet hairs, among which the raindrops occasionally stand like pearls. The tallest stems produced by this species here were just over 7 feet 6 inches in height. A native of the Sikkim Himalayas, *M. Wallichii* is one of the most distinct and easy to grow; its only disadvantage lies in the ephemeral character of the flowers.

M. INTEGRIFOLIA (biennial) (see Supplementary Illustration in *Gardeners' Chronicle*, October 1, 1904).—This Chinese species has largely increased the interest taken in this genus. Occasionally the plants do not flower till the third year. In this species the rosettes often measure 30 inches

across. The stem is simple, branching at the top, the flowers being carried upon long peduncles. All parts of the plant are clothed with fine, tawny hairs. The flowers are globe shape, lemon-yellow in colour: well-grown specimens carry 12 to 15 flowers. The stamens are bright orange. This species is deciduous in winter, but the rudimentary leaves are always plainly visible, and form a projecting rampart around the central axis.

M. ACULEATA (biennial) (see figs. 38 and 39).—The entire plant, including leaves, stem and sepals, is densely clothed with long, white, rigid bristles or spines. The leaves are cordate in outline, somewhat five-lobed, the blunt point of each leaf forming the largest lobe. The stem is erect, producing 50 or more flowers, which are carried upon short peduncles, springing singly from the stem. The floral segments are empyrean blue, enclosing bright orange-coloured stamens. Individual flowers remain effective from five to seven days. The plant grows to a height of 2 feet. When in flower this species is a most beautiful plant.

M. RACEMOSA (biennial) (see fig. 40).—The rosettes consist of long, narrow leaves, with unbroken margins. Like *M. aculeata*, the whole plant is densely clothed with white spines, imparting to this species a thistle-like appearance. The petals of *M. aculeata* and *M. racemosa*, more than any of the others, are strikingly suggestive of fine woven silk. In *M. racemosa*, the flowers are variable; in some the floral segments are light chocolate colour, quite devoid of purple; in others purple alternates in irregular bands with the deepest indigo-blue. The stamens are white. The stem is erect, each bearing 12 or more flowers, which are carried singly upon short peduncles. *M. racemosa* attains a height of 18 inches, and flowers during June and July. This species and *M. aculeata* are deciduous in winter, no visible trace of them being left above ground at that season.

M. PANICULATA (biennial).—This species has foliage almost as beautiful as *M. Wallichii*. The presence of innumerable fine hairs gives the leaves a hoary, grey appearance. The plants are very susceptible to moisture in winter, and therefore they should be protected from rain and snow by placing pieces of glass above the crowns and tilting them to one edge. *M. paniculata* grows to a height of 3 feet or more, and forms slender, sparingly-branched stems. The flowers are somewhat of the colour of *M. integrifolia*, but singularly lacking in any attractive or pleasing feature. The beauty of this plant is in its leaves. *Thomas Smith, Walmsgate Gardens, Lincolnshire.*

THE ALPINE GARDEN.

ANEMONE SULPHUREA.

At a recent meeting of the Royal Horticultural Society some splendid flowers of this beautiful plant were exhibited by Messrs. W. Cutbush & Sons. Formerly the plant was known as *A. alpina* var. *sulphurea*, the type being of a variable character. I never remember seeing better examples, and on enquiry I found the flowers had been gathered from four-year-old, home-raised seedlings. In the text-books the reader is informed that Alpine wild flowers are easily raised from seeds, and that the plants succeed in ordinary garden soil, but the evidences of this are rare. The examples referred to were about 18 inches in height, and the soft, yellow colour of the cupped or saucer-shaped blossoms was delightful. The excellence of Messrs. Cutbush's flowers and the vigour of their plants were in marked contrast with the poorly-coloured, diminutive scraps from collected specimens usually seen in pots. By raising seedlings freely from fresh seeds, it is obvious that a greater measure of success can be assured. *E. H. J.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 70-76.)

0, SCOTLAND, N.

ORKNEYS.—The fruit crops in Orkney this season are above the average in quantity. We had a long spell of cold, dry weather in April, May and part of June, which retarded the crops. Since the middle of June, when rain began to fall, the prospects have been good. The soil here is heavy and cold, but strong. It yields good but late crops. *Wm. Liddell, Balfour Castle Gardens, via Kirkwall.*

SUTHERLANDSHIRE.—The fruit crops generally are very good this season, both as to quantity and quality, although up to now the weather has been rather sunless. Owing to the little sunshine and lack of warmth at nights, fruit will be later in ripening than usual. The soil here is a black, sandy loam, resting on gravel and sand. *D. Melville, Dunrobin Castle Gardens, Golspie.*

manure. *James R. Redpath, Duns Castle Gardens, Duns.*

EAST LoTHIAN.—Without exception, every fruit crop is good, a few bushes of Victoria Black Currant only being below the average. I hear that Plums in some gardens are deficient, but the rule is a heavy crop all round. The foliage is large and healthy, though Gooseberries are suffering from attacks of red spider, owing, perhaps, to the too abundant crop of fruits. *R. P. Brotherston, Tynninghame Gardens, Prestonkirk.*

KINCARDINESHIRE.—The blossom on all kinds of fruit trees was very plentiful, and, with the exception of some early Pears and Plums, which were damaged by frost, they have set well, and promise to be heavy crops. Especially is this the case with Apples and Gooseberries. We are getting plenty of rain; but as yet the weather has been unseasonably cold since March. *John Brown, The Gardens, Blackhall Castle, Banchory.*

MIDLoTHIAN.—Plums promised well both on standard trees and on trained trees on walls; but

when in bloom. Strawberries are a heavy crop, but owing to the cold, sunless weather, they are slow in ripening and deficient in flavour. We are 14 days later in gathering this season than last year. The soil here is a light sandy loam, with a gravelly subsoil. *Geo. Haig, Garvald House Gardens, Dolphinton.*

6, SCOTLAND, W.

ARGYLLSHIRE.—For the west coast of Argyll there was a fine display of healthy blossom on the Apple trees, but severe frosts and N. and N.E. winds destroyed the good prospects. The crop will be a meagre one. Gooseberries, Black and Red Currants are heavily laden, and the crops of Sweet and Morello Cherries are good. *D. S. Melville, Pottaloch, Lochgilphead.*

AYRSHIRE.—We never had a better show of bloom on all fruit trees than this season; but late frosts and dry, cold winds destroyed many of the flowers. What fruits there are left are looking well, but they are late. The soil is a stiff, retentive loam. *W. Priest, Eglinton Gardens.*

Owing to the almost entire absence of frost in April (a very unusual experience here), heavy crops of fruit set in nearly all cases. Apples and Plums had to be liberally thinned, whilst Pears look better at this date than they have done for years past. Dry, hot weather in June and the want of sufficient sunshine and heat at the present time are, however, retarding the proper development of all kinds of fruits. *D. Buchanan, Bargany Gardens, Dailly.*

DUMFRIESHIRE.—Strawberries have been firm in the flesh and of good flavour on young plants. They do remarkably well here on our light loam for two years after they are planted; but afterwards the fruits are so small the plants are not worth cultivation. We trench in half the number of plants every year. *James McDonald, Dryfeholm, Lockerbie.*

MORAYSHIRE.—As to quantity, the Apple crop here has the appearance of being the largest for 10 years past. *Wm. Ogg, Duffus House Gardens, Nr. Elgin.*

STIRLINGSHIRE.—The fruit crops as a whole are rather below the average, but Strawberries, Raspberries and Red Currants are very good. The Apple and Pear blossom was plentiful, but a frost of 11° which occurred on May 15 did a great amount of damage. Our soil is very heavy, having been reclaimed from the seashore. It is 13 feet above the sea-level. The subsoil is heavy clay to the depth of 30 feet or so. Our best Strawberries are Dr. Hogg, Dumbarton Castle, Leader and Garibaldi. Owing to the heavy clay, it is not every variety that is suitable. *Peter Brown, Kerse Gardens, by Falkirk.*

WIGTOWNSHIRE.—Small fruits of all kinds are abundant and promise to mature well. Currants during the dry weather were badly affected with aphids, which the recent heavy rains and hand-washings have cleared away. Apple trees flowered profusely, and some kinds have set well, whilst others are almost fruitless. Cherries are a better crop than for some years past. Pears and Plums are fair average crops. *James Day, Galloway House, Garieston.*

2, ENGLAND, N.E.

DURHAM.—Hardy fruits of all kinds in the flowering stage gave great promise of full crops. Plums, Cherries and Pears suffered badly from the sharp frosts and low night temperatures during May, causing lots of fruits to drop prematurely. Gooseberries, Currants and small fruits are generally plentiful. Strawberries were very good, though late. *James Machar, Smelt House Gardens, Howden-le-Wear, R.S.O.*

YORKSHIRE.—The fruits generally in this district are better than might have been expected, considering the untoward season. Strawberries were our heaviest crop, but they suffered severely from the excessive wet and cold weather. Raspberries, Currants and Gooseberries are plentiful and of fair average quality. Pears are scarce and of poor quality. Apples are a fair average crop and promise to be good. All vegetation here is very late and more or less unhealthy, the result of the cold and wet season. The foliage of Currant, Apple and other trees has withered prematurely, owing to had attacks of aphids. The soil is of a stiff nature, and it rests on a subsoil of marl, clay and chalk. *F. Jordan, Warter Priory, York.*



FIG. 40.—MECONOPSIS RACEMOSA: FLOWERS PURPLE WITH WHITE STAMENS.
(See p. 91.)

1, SCOTLAND, E.

BANFFSHIRE.—Fruit trees of all sorts had an exceptional show of blossom, and they now bear abundant crops, if we except Apples, which are partial. Insect and fungal diseases have been more prevalent than usual. There has been extra work in spraying the trees. The crops are fully a fortnight later than usual. More genial weather is very necessary. *Chas. Webster, Gordon Castle Gardens.*

The crops in this district are looking remarkably well, but they are three weeks later than last season. March frosts damaged the blossom on some of the more exposed trees. *George Edwards, Ballindalloch Castle Gardens.*

BERWICKSHIRE.—The fruit crops here are all above the average. The garden is well sheltered, and did not suffer to any extent from the cold weather in May. It is situated 500 feet above sea-level and 15 miles east from the sea. The soil is light red and gravelly, needing much

a sharp frost occurred whilst the trees were in flower, and this has lessened the crop. Pears suffered through the same cause. It has been necessary to thin Apricots severely. *Wm. G. Pirie, Dalhousie Castle Gardens.*

The prospects of good fruit crops are better than they have been for two or three years past. All fruit trees and bushes showed a great deal of blossom. The climatic conditions were favourable for the setting of fruit, excepting at the time Plums and Gooseberries were in flower. A frost of 7° injured these. The soil is a light sandy loam. *J. Whytock, Dalkeith Gardens, Dalkeith.*

PEEBLES SHIRE.—The fruit crop is not nearly so heavy as one would have expected from the show of blossom we had in the spring. Apple trees were covered with bloom, but owing to the cold, wet weather which occurred at a critical period, the crop is under the average. Plums, Cherries and small fruits were severely injured by frost

—There is a better crop of Apples than in 1908, and Pears on wall trees are equal to the average. There is a good crop of Plums locally, except in these gardens. All small fruits are heavy crops. Royal Sovereign Strawberry was spoiled by rain. The fall in 10 days amounted to 3.07 inches. This occurred after the fruits commenced to colour. The dry weather in June caused attacks of green fly, which injured the leaves of the Currant bushes. The variety Boskoop Giant resisted well, and bids even now to give good returns. If the weather becomes warm we shall have good results from the needed rainfall. Our soil is a hungry, sandy loam on sandstone. *J. G. Wilson, Chevet Park Gardens, Wakefield.*

—The fruit crops in this district are fairly good, but the drought in the early part of the year caused Apples to drop, otherwise the crop would have been plentiful. Pears are a heavy crop, and Plums a fair crop. Small fruits are very good; but Black Currants were ruined by fly in the spring, otherwise they would have been good. *James E. Hathaway, Baldersby Park, Thirsk.*

—There was a good show of blossom on fruit trees in general, with the exception of those that fruited heavily in 1908. Apples of the choicer kinds have not set so well as could be wished, though there are good crops on the hardier varieties, such as Keswick Codlin and Cockpit. The same remarks apply to Pears and Plums on standard and bush-grown trees. Up to now the

loam, with a composition of gault. *T. W. Birkinshaw, Hatley Park Gardens, Gamlingay.*

—Our best crops of Apples are on standard trees. Tower of Glamis, Blenheim Pippin, Early Rivers, Dumelow's Seedling, and Flower of Kent are all carrying heavy crops. The profuse flowering of Pears has not been followed by good crops; in some cases the whole of the fruits fell, owing to the attack of the Pear midge. Peaches and Nectarines are abundant crops, and the trees are clean and healthy, but, owing to lack of sunshine, the fruits will be late in ripening; Early Alexander and Waterloo are about 10 days later than usual. Gooseberries and Red and Black Currants all set grand crops, but about a month ago the sparrows devoured the greater number of the Currants whilst still in a green state. Continuous rains have spoiled the flavour of the Strawberries, and a great many of the berries decayed on the plants. Our soil is a heavy loam overlying clay. *W. J. Snell, Wimpole Hall Gardens, near Royston.*

—The fruit crops generally are about the average. With the exception of small fruits, they are very clean and healthy. Currants are badly attacked with blight. The soil here is light, sandy loam with a subsoil of chalk. *B. Goodacre, Moulton Paddocks Gardens, Newmarket.*

ESSEX.—Up to within the last week in May the promise of abundant crops of Apples, Pears, and Plums was everything that could be desired, the trees being most profusely furnished

Beauty of Bath, Lord Grosvenor, and Bramley's Seedling are carrying heavy crops. Pears are only scarce, Louise Bonne of Jersey being the only variety carrying a good crop. The season is a fortnight late. *F. J. Fleming, Weelsby Old Hall Gardens, Grimsby.*

—With regard to Strawberries, the only variety we can depend upon here is Royal Sovereign. By growing this sort in various aspects, we have out-door fruit from the beginning of June to the first week in August. It is the only reliable one for forcing. Waterloo is appreciated during August, and is grown on a north border. We were greatly troubled with the Apple blossom weevil and Pear midge in the early part of the season, and were only able to keep these pests in check by frequent sprayings of quassia and Nico soap, finding the latter the more effective remedy. The Black Currant crop was practically destroyed by blight and aphid, which no sprayings would seem to hold in check. Our soil is strong loam; but for the cultivation of Pears, and stone fruits the borders are specially prepared. *F. C. Stainsby, Brocklesby Park Gardens, Bracklesby.*

(To be continued.)

PINUS PUMILA REGEL.

THE curious pigmy Conifer represented in fig. 41 has been recently reintroduced into cultivation at Bayfordbury, Hertfordshire, by Mr. H. Clinton-Baker, who obtained native specimens from the summit of Nyoho-san, near Nikko, through his brother, Capt. L. Clinton Baker, R.N.

Its nearest ally seems to be the common Pinus Cembra, of which many botanists consider it a variety, and Pallas, as long ago as 1784, called it Pinus Cembra var. pumila. It is probably the representative of the Swiss Stone Pine in north-eastern Asia. In eastern Siberia and Kamtschatka it occupies large tracts of barren country, always maintaining its prostrate, shrubby habit and never exceeding 10 feet in height. The leaves, which are five in a bundle, resemble those of Pinus Cembra, but they are much shorter, and have often entire and not serrate margins. The cones are much smaller than in P. Cembra, about 1½ inch long, orange-brown when ripe, the scales few, with a dark-coloured terminal umbo, which has a minute reflexed tip.

Dr. Regel, who was the first to describe this creeping Pine as a distinct species, says that it may always be distinguished from P. Cembra by its smooth-margined leaves, but this character breaks down in Japanese specimens which have the leaves distinctly toothed.

Pinus pumila also occurs in Amurland, Saghalien, and the Kurile Isles, growing in the coldest situations. In south and central Japan it is only known on mountain peaks at 7,000 feet to 8,000 feet elevation. Further north it is often spread as a dense scrub over a large area of wind-swept plateaux.

This Pine is remarkable for its slow growth. There used to be a single specimen in cultivation at Dropmore, and Loudon, in alluding to this, states that when he saw it in 1837 it had been 20 years planted and was only 6 inches high. In 1866 the same plant was 8½ inches in height. Mr. Frost, the then gardener, is said to have known the plant for 40 years, and during that time noticed very little increase in its stature. Unfortunately, there is now no trace of this remarkable specimen at Dropmore.

Pinus pumila was mentioned by the Abbé Chappe d'Anteroche, who, in the *Voyage in Sibirie*, vol. i., p. 360, published in 1768, says that "little Cedars, creeping on the ground and never growing upright are found on the mountains and moss-covered plains of Kamtschatka. The inhabitants gather large quantities of the seed for food, and make a drink something like kwas by boiling and fermenting the young shoots—considered to be a cure for scurvy."

The Japanese name for this species is "Haimatzu." The photograph kindly sent me by Mr. Clinton-Baker is from a negative by Mr. A. E. Bladen, of Hertford. It represents one of the trees sent home by Capt. Clinton-Baker from Japan.

Pinus pumila was elaborately described by Mr. A. Murray in Ravenscroft's *Pinctum Britannicum* under the name Pinus mandshurica. *A. Bruce Jackson.*

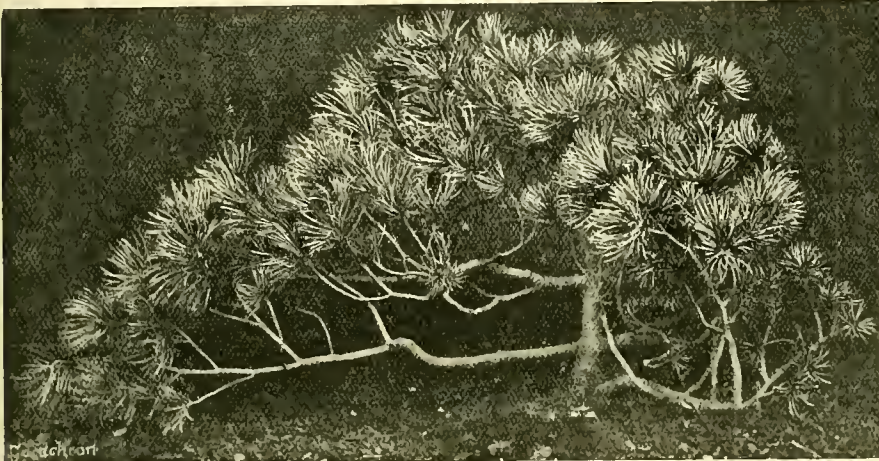


FIG. 41.—PINUS PUMILA AT BAYFORDBURY, HERTFORDSHIRE.

season has been an ungenial one, yet vegetation is fairly healthy. Given more sunshine from now onwards, a good foundation for next year's crops will be laid. Raspberries promise well. Black Currants in particular have been infested with fly and are very scarce. The variety Boskoop Giant promises well for the future. Gooseberries are an abundant crop. We are situated on the southern side of the great plain of York, hence the soil is mostly of an alluvial character. *Henry J. Clayton, Wharfe Bank, Ulleskelf, York.*

—Apples are promising, but Pears are only moderate. Apricots, Plums, Peaches, and Cherries are heavy crops. All bush fruits, with the exception of Black Currants, are good. Strawberries were a heavy crop, but, owing to the cold rains, were deficient in flavour, and a large quantity of the best fruits rotted on the ground. *A. E. Sutton, Castle Howard Gardens, Welburn, Yorks.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—Apple, Pear, Peach, Nectarine, and Cherry trees were covered with bloom, but severe frosts in May caused many fruits of Apple and Pear to drop. Caterpillars were very troublesome on Apple trees, and thus caused extra labour in hand picking, this being the best remedy for the pest. Black fly has been prevalent on Cherry trees this season, but spraying with paraffin soap soon eradicated the pest. The soil here is strong

with strong, healthy blossoms, which, owing to the dry weather experienced up to the time indicated, escaped injury from the frosts which were registered every night pretty well in the month of May. In the last week of the same month (May) the much-needed rains experienced in the daytime were followed by frosts at night, and these reduced the promise of a bountiful, good all-round fruit year. However, there will be a fair crop of some varieties of Apples, Pears, and Plums. Some trees are heavily laden with fruit, whilst others of the same varieties are almost bare within a dozen or two yards of each other. The trees generally are suffering from blight. *H. W. Ward, Lime House Nurseries, Rayleigh.*

LINCOLNSHIRE.—Although I think there will be average crops of fruit, the quality will be only moderate, owing to dry and cold weather. Plums, for the third year in succession, have an average crop. Currants would have been a good crop but for blight. I have seen a quantity of Black Currant bushes almost denuded of leaves. A spraying of quassia partially saved the crop in these gardens. Gooseberries and Raspberries are good crops, and will benefit greatly by recent rains. Apples are slightly under an average crop. *H. Vinden, Harlaxton Manor, Grantham.*

—Some varieties of Apples give promise of good crops; others are scarce. Cox's Orange Pippin, King of the Pippins, Blenheim Pippin, Sturmer Pippin, Cellini, Ecklinville Seedling,

The Week's Work.

THE ORCHID HOUSES.

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

Calanthes.—The deciduous *Calanthes* of the *vestita* and *Veitchii* sections are now growing vigorously. Well-rooted plants require abundance of water at the root, but more care will be necessary as regards those of the *C. Regnieri* section, which have not yet filled their pots with roots, otherwise spot and disease will result. Where a number of these plants is cultivated, it is a good plan to arrange all the best-rooted plants together, so that they may be treated with alternate waterings of liquid cow manure, for when well rooted this stimulant is very beneficial to them. For the first fortnight, at least, one part manure water to three parts of water will be sufficient, but afterwards it need not be so much diluted. At this season many young roots will appear on the surface of the compost, and if a thin layer of good fibrous, yellow loam be laid lightly over them, they will quickly enter and appreciate it. These plants will now need plenty of heat, moisture, light and air, keeping them as near to the roof glass as convenient. The evergreen *Calanthes* as *C. veratrifolia*, *C. Masuca*, *C. Sanderiana*, &c., which are now making their growth, will need to be kept thoroughly moist at the root, and an occasional watering with liquid manure as advised for the deciduous kinds will do them good. They are intermediate house plants, and do not thrive so well with their foliage very near to the roof glass. The cooler-growing sorts such as *C. japonica*, *C. j. alba*, *C. Cecilæ*, *C. discolor*, and *C. citrina* require the same cultural treatment.

The cool house.—At this time of the year it is often a difficult matter, owing to the hot and dry atmosphere out-of-doors, to keep the temperature of this house as cool and moist as desirable, but with a little discretion and care it can be made suitable for the plants. With an outside temperature of from 55° to 65°, and heavy showers of rain such as we have lately experienced, little fear need be entertained of affording too much ventilation during periods when there are no high winds. At such times we have all the ventilators wide open and also the doors, if the air is mild. But when there is an external day temperature ranging from 70° to 80°, and a hot, bright sun drying the ground more and more every day, it is a mistake to open the windows, and thus admit more air than can be kept sufficiently moist. Should the grower endeavour to counteract the dry air thus admitted to the house by frequently damping the floors and syringing the plants overhead, the plants will soon show by loss of foliage that they do not appreciate such treatment. The best practice, therefore, is to admit only as much air as can be kept well charged with moisture. By day, no matter how hot the outside temperature may be, keep all the top ventilators closed, leaving the bottom ventilators always wide open, but at sunset the top lights should be raised 2 or 3 inches, and on mild, dewy nights they may be left wide open. Early in the morning, when the sun begins to shine on the roof of the house, the top ventilators must again be closed and the shading employed. Thoroughly damp down the house, syringing well between the pots and under the stages, and, if the sun is bright, slightly spray the plants overhead, but take care that the water does not run along the leaves and down into the axils. Under such treatment, it is possible to maintain a temperature several degrees lower than that of the outside air in the shade. Taking the cool-house plants as a whole, they are, at this particular season, more or less inactive. The young growths of many have only just started from the base of the last-made pseudo-bulb, so that for several weeks to come no more water must be afforded than is sufficient to keep the pseudo-bulbs in a fairly plump condition. Where the house is stippled, as recommended in a former Calendar, the blinds may be removed about half-an-hour before the sun ceases to shine on the roof, but in cases where the plants are under clear glass, the shading material should be kept down as long as the sun shines on the house. Yellow thrips are apt to make their appearance in the young growths at this season, causing disfigurement to the plants. In such circumstances, vaporise the house once,

or even twice, a week with a nicotine compound or other safe insecticide, continuing this treatment for two or three consecutive weeks. This operation should be carried out in the evening just before the usual time for removing the shading, but leave the blinds down for about an hour after the sun ceases to shine on the roof, and afford ventilation according to the condition of the weather outside.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Freesia.—To obtain early flowers it is necessary to pot a batch of bulbs in good time; it is only well-rooted plants that will bear even the mild forcing to which these bulbs may be subjected with safety. Whether imported or home-grown bulbs are used, they should be graded so as to ensure having plants of fairly even size in each pot. For general purposes 5-inch or 6-inch pots will be found the most convenient size. The potting soil should be of a rather light, sandy nature, containing a good proportion of sifted leaf-mould. About eight of the largest size bulbs should be placed in a 5-inch pot, covering them with an inch deep of soil. Place the pots in an unheated frame, and either cover them with ashes or shade the frames by day to keep the soil moist without watering, until growth commences. A good watch must be kept for mice and moles, which are very fond of *Freesia* bulbs.

Schizanthus.—Seeds should be sown now for raising plants to flower early in spring, sowing them in pans containing light, sandy soil. Place the pans in a warm house and shade them from bright sunshine. As soon as the seedlings appear, remove the shading and gradually inure them to exposure, light and air; this will prevent them becoming drawn and weakly. As the seedlings are somewhat brittle, care must be exercised in handling them. *Schizanthi* need a rich soil when they are being potted for the last time.

Rehmannia angulata.—If a small sowing of the "Pink Perfection" variety of this half-hardy perennial is made now it will furnish plants that may be expected to commence flowering at the beginning of May. When potting the plants into their flowering pots, do not use too rich a soil, but pot firmly so that the plants will produce compact flower-spikes.

Nerines.—The argument often advanced against the annual repotting of these bulbous plants is, that to do so tends to induce them to form foliage instead of flower-spikes, the latter being the outcome of restricted root room. But the amount of root space can be easily regulated when repotting the bulbs in fresh soil, and the free flowering, or otherwise, of most bulbous plants depends largely on the amount of growth made and its degree of ripening during the previous season. So that when we consider the condition of the soil that, since last May, has been baked, as it were, in small pots, there is something to be said for annual repotting. If this practice is followed the whole of the soil should now be shaken from the bulbs, carefully cutting away the dead roots but preserving those which are alive. A suitable potting soil is one composed of loam four parts and leaf-mould one part, adding a good sprinkling of sand. Proper attention should be paid to the drainage of the pots, as these plants require a plentiful supply of water during their growing season. As far as possible bulbs of similar size should be potted together, but unless the stock of each kind is fairly large this is difficult. Comparatively small pots should be used, and in each pot should be put as many bulbs as can be conveniently placed in it, potting as firmly as possible without injuring the roots. The soil will not require watering until the flower-spikes or the foliage appears, when they should be given a good soaking. Although the plants must not be subjected to more heat than is usual in a warm greenhouse, a mild bottom heat is often beneficial, and for this reason frame culture, at the present time, has much to recommend it.

Calceolaria, *Cineraria*, and *Primula*.—Where these spring-flowering plants are in great request it is well to make a last sowing of seed at the present time to provide plants for flowering late in spring.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Strawberries.—In some gardens a portion of the Strawberry plantation is reserved for the production of runners. In such cases the young plants that have been layered early will now be ready for severance. After cutting them off from the parent plants, let them be placed in a shady situation for a few days to recover from the check, and afterwards plant them in their permanent quarters without further delay. If a warm border can be given them, the plants will produce fine fruits a week or two in advance of the general batch planted in the open garden. Where much Strawberry forcing is done, there is usually great congestion in the houses in the spring-time. In order to relieve this, there is no better plan than to have a small plantation in a warm corner out-of-doors. The first outdoor fruit is always welcome. To obtain an extra early crop it is necessary to plant annually, and for two reasons: first, young plants always produce the earliest fruits; and, secondly, the useful warm borders are not monopolised by Strawberries, as would be the case in a large measure if a portion were planted up for succession each year. As the bed will only be required for one season, the plants may be placed much closer together than is usual in the main crop plantation. When the border has been prepared as advised in previous Calendars, the plants may be placed at from 12 to 15 inches apart; thus a considerable number can be planted on a small border. In the main plantation, however, it will be necessary to leave a space of 2½ feet between the rows, and 2 to 2½ feet from plant to plant (according to the variety). A capital place for Strawberries is a piece of ground which was trenched and manured last winter, and from which a crop of early Potatoes has been taken. After levelling the soil, the only preparation needed will be to work in a dressing of soot and wood-ashes, and to make the ground firm again. In the act of planting be careful to keep the crown of the plant just above the soil; spread out the roots evenly, and apply a thorough watering. The subsequent treatment will consist in cutting off all runners as they appear, and keeping the ground clean by constant hoeing. Plant early, and encourage the plants to continue growing until the end of the season; they will then be sure to make extra fine growth in the following season.

Old plantations.—Strawberry plants which it is intended to clear out should be burned immediately the fruits are gathered. If the nets which have been used for the Strawberry beds are not required for other crops, let them be labelled and stored away, choosing a day when they are thoroughly dry. Nets should never be allowed to remain in a heap on the floor, as mice are apt to greatly damage them during the winter months. They should be suspended by a strong cord to a beam in a dry loft or shed.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LOOER, Bart., Leonardslee, Sussex.

Water Lilies and other aquatics.—Remove any shabby leaves in order that the newer leaves and flowers may be the better displayed. The beautiful and fragrant *Aponogeton distachyon* is grand this season. For the purpose of increasing the stock of this plant as quickly as possible, take a few seeds and place them in a tank of warm water. They will soon germinate and supply plants in a short time. *Richardia africana* appears to good effect with its white flowers showing in dark water. Keep the banks free from weeds, and do not allow any plant to overgrow its neighbour. The species and varieties of *Carex* and *Cyperus* are very effective. *Batomus umbellatus*, with its pretty pink flowers, looks well growing along the margins of lakes, likewise the different forms of *Spiraea*. *Primula sikkimensis* succeeds very well around a pool or lake. Seeds of this *Primula* should be sown as soon as ripe, cultivating the plants through the autumn in pans or pots until they are large enough to plant out. *Zizania latifolia*, the Water Rice, grows 7 to 10 feet in height and is very effective at this season. *Menyanthes trifoliata* will now need cutting back to prevent its spreading. *Rumex hydrolopathum*, Giant Water Dock, is very effective throughout the autumn. Its large *Musa*-like leaves turn a

beautiful red colour. *Osmunda regalis*, the Royal Fern, grows about 6 feet in height here on the edge of the lake.

Pelargonium.—Zonal varieties of *Pelargonium* may now be propagated from cuttings selected from well-ripened shoots. It is a good plan to put out in spring some plants into a spare piece of ground merely for supplying cuttings in autumn. When this is done, a great quantity of cuttings can be obtained at one time, but in other cases it will be necessary to take them gradually from the flower-beds, selecting the shoots carefully so as not to disfigure the bedding arrangements more than necessary. The cuttings may either be planted in boxes or in open borders. In the latter case they should be taken up and potted into small pots directly they have formed roots. Or, again, the cuttings may be inserted around the sides of a 6-inch pot, putting 8 or 10 cuttings into each. The pots should be placed out-of-doors on a hard base, one composed of ashes being most suitable. A little later in the month other subjects may be propagated, as *Gazania*, *Mesembryanthemum*, *Lobelia*, and *Fesine*.

Begonia.—*Begonias* are doing well this season, being better wet-weather plants than the *Pelargonium*. Do not allow the seed pods to remain on the plants after the flowers have fallen, or any yellow or decaying leaves which would be likely to disfigure the beds. In the case of extra good varieties that appear amongst seedling *Begonias*, these should be marked, in order that they may be cultivated another season. A variety called *Dr. Farrant* is very free-blooming and more hardy than some others. It is just now a mass of flowers. The tubers keep well through the winter, and although they are cut into pieces for propagating purposes as one would cut a *Potato* tuber, each piece develops into a fine plant.

Gladiolus.—Plants of *Gladiolus* should be staked very carefully. They are now commencing to make a good show, associated with *Dahlias*, *Hollyhocks*, and *Phloxes*. If the *Gladioli* are grown in considerable quantities in rows, a strong stake may be placed at either end of the row and another in the centre. By stretching several strands of strong string from end to end, these will afford sufficient support. In the event of dry weather, an abundance of water should be given *Gladioli*, and a mulch of cow manure. An important matter in connection with the development of a long spike is the provision of shade from direct sunshine. The material used for effecting this shade must be secured in such a way that it will not rub the flowers. To have *Gladioli* at their best, they need to be as carefully tended as *Cattleyas*.

Agapanthus.—These plants, growing in tubs or boxes, will be much benefited by occasional waterings with liquid manure at this season.

Asiatic (*Spiraea*).—The *Spiraeas* have been extra good this season. A *palmata* is a glorious blaze by the side of the water and in the bog-garden. A *Davidii* should be supported with stakes if exposed to winds; the inflorescences of this species reach a height of 6 feet or 7 feet if the plants are cultivated in a moist situation by the side of water and the roots are provided with a liberal mulch.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

The orchard house.—When the trees growing in pots have been divested of all fruits, they should be removed to a site out-of-doors where they will be exposed to the sun during the greater part of the day. Plunge the pots in ashes. The trees must be given water at the roots as often as they become dry, and liquid manure should be afforded them twice a week until they are repotted. Keep the laterals pinched, and cut out any superfluous shoots which may be merely obstructing sunlight and air, as the fruiting wood needs full exposure to become thoroughly ripened by the end of autumn. Syringe the trees late in the afternoon on every day during hot weather, and occasionally they may be syringed with an insecticide. Later trees, now swelling their fruits, must be liberally fed with stimulants until the ripening has actually commenced, when clear water alone must be given. Let there be a free circulation of air in the house and a discontinuance of syringing during that period. In dull, wet weather, a

little heat should be allowed in the water-pipes to encourage a more buoyant atmosphere, or the flavour of the fruits will not be good.

Early Muscat Grapes.—Do not let the ripe bunches in the early house be exposed to the direct influence of the sun, or the berries will become brown. A piece of tissue paper should be placed over each bunch as a preventive. If only a few bunches are now hanging, it is better to cut these and place them in bottles in a cool room, where they will keep in good condition for several weeks. The house should then be thrown wide open and the borders soaked with water. Give the foliage a thorough spraying with a strong solution of soft soap and sulphur late in the afternoon to destroy red spider. Afterwards syringe the trees every day with clear water.

Late Muscat Grapes.—So far, the present season has not been favourable for *Muscat Grapes* in late houses, therefore, in some districts difficulty will be experienced in getting the berries well ripened by the end of the season. Where the roots are confined to the inside of the house the trouble will be greatly lessened, as in this case the roots will be under control. But some means must be taken to protect outside borders from heavy rains, especially if the subsoil is of a heavy and retentive nature. The bunches must be exposed fully to the light; therefore, if there is a thick covering of foliage, this should be drawn aside to allow the sun's rays to penetrate amongst the branches. Laterals also must be removed before they become large. Keep a brisk heat in the pipes, excepting when the weather is hot, and do not allow the temperature to drop below 70° until the *Grapes* are quite ripe.

Late Black Grapes.—Like the *Muscats*, these will need plenty of encouragement in order that they may ripen perfectly. *Lady Downe's* especially is very difficult to ripen unless the season is favourable. In regard to temperature, it needs almost as much heat as *Muscat of Alexandria*. If a house cannot wholly be devoted to its culture, this variety should be planted in the warmer end of the house. The remarks in regard to outside borders may also be applied in this case. Remove laterals regularly, and never allow the atmosphere to become stagnant through lack of artificial heat.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Herbs.—Where these are in large demand during the winter months, a good quantity of most of the varieties, such as *Mint*, *Sage*, *Marjoram*, and *Thyme*, should be cut and carefully laid out to dry in a sunny position, being afterwards tied in small bunches and suspended in an open shed or in one that is freely ventilated. Sow a good batch of *Chervil* on a south border.

Runner Beans.—These promise to be good, although like many other crops they are very late. See that the leading growths are kept trained to the supports, cutting away any surplus laterals. The roots must be well supplied with water. Syringe the growths early in the evening after a fine day.

Vegetable Marrows.—*Marrows* which were started early on hot-beds, as previously advised, and from which the lights were removed during June, have done well. Being on a high elevation, and the plants strong and vigorous, they have yielded a good return; but small plants put out in the beginning of June have scarcely made any growth. In many places foliage and growth are badly infested with black aphid, and it will be necessary to make strenuous efforts to rid them of this by using reliable insecticides. *Gourds* and *Pumpkins* are, in most cases, in the same condition. Every means should be taken to expose the young fruits to all the light and sun possible to ensure their ripening; especially does this refer to the large fruiting kinds. If the plants are growing on flat trellis, the fruit should be elevated above the foliage, and if on pergolas or screens, the large fruits should be exposed and some supports provided.

Celery.—*Celery* in its various stages is looking remarkably well. Continue to blanch the earlier plants as occasion demands. Keep the roots well supplied with moisture. Towards the end of the present month, when the *Celery* fly may be expected, frequent dustings of fresh soot

should be applied. Remove all side growths and decaying leaves.

General work.—At this season the principal work in connection with the vegetable garden will be to frequently hoe, mulch, and water the ground between the crops. Extreme tidiness should be observed in the kitchen garden, as in other departments. Above everything, weeds should not be tolerated. In late summer and autumn the refuse in any fairly sized garden will keep going a rubbish or smother fire. Weeds and all other rubbish should be burnt on such a fire. The ashes will be most useful material for placing on the land in winter.

The weather.—So far, the present season has been one of the most sunless experienced for some time past. In consequence of this, many of the crops are not nearly so satisfactory as they once promised to be, this being particularly noticeable in low-lying districts and on cold, retentive soils. Amongst those crops which have made but little progress since they were planted are *Runner* and *French Beans*, *Vegetable Marrows*, *Gourds*, *Pumpkins*, and *Tomatoes*. However, before long there may be a welcome change in the weather, and we may yet have a fine autumn.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Picnic parties in parks.—It can hardly be claimed that the general conduct of picnic parties is such that they are regarded with favour or treated with much consideration in either public or private parks. Unfortunately, from past experience, park officials invariably associate "picnickers" with an aftermath of broken bottles, paper and other rubbish, and numerous more or less damaged trees and shrubs. Hence the natural dislike to such parties which is to be found among those who have to deal with them. Many places which were at one time accessible to them have now been closed by their owners.

A necessary evil.—In spite, however, of all the annoyance and trouble given by these gatherings, it is quite as well for those in charge of public parks to realise that picnicking takes such an important place among the social institutions of this country that provision ought to be made for it, as far as possible, in the suitable portions of large parks. Needless to say, no part of the "kept" grounds could possibly be devoted to this purpose, but picnic gatherings can be relegated to the rougher portions of a large park, where a good deal of liberty can be given to visitors at a minimum of risk or expense in the upkeep of the ground. In one of the larger parks in this city we have recently introduced an American idea on this subject, which has become very popular among a certain section of the residents in and around the town. This is the provision of a large gas stove, having several burners, kettles, a water supply, and a number of rough tables and seats, placed under the shade of a plantation of trees. Here, by the aid of the gas stove, visitors can easily get boiling water, or even cook plain food, and this is served on the adjoining tables. Those desirous of using the stove may obtain the requisite amount of gas by inserting a penny into a slot meter (placed under cover close by), which will set free more than sufficient gas to boil a gallon of water. Since the introduction of this scheme numbers of families in the neighbourhood—many of whom could not afford to go into the country for a day—bring provisions and the necessary utensils to the park during holiday times, and spend the greater part of the day in the open air—no doubt to the improved health of all concerned. A scheme of this description is only possible where a gas main passes in close proximity to a park, and in this respect we are fortunate. Instead of allowing the gas company to reap the full benefit of this gas installation, we hire the penny-in-the-slot meter and take the pennies from it ourselves. We only pay for the actual amount of gas registered through an ordinary meter placed close to the main. It will be understood that this "American idea" is not carried out altogether on philanthropic lines when it is explained that we make a profit of from 38 to 40 per cent. on the amount of gas consumed by visitors.

EDITORIAL NOTICE.

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Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUGUST 7—
Soc. Franç. d'Hort. de Londres meet.

MONDAY, AUGUST 9—
United Hort. Ben. and Prov. Soc. Com. meet.

WEDNESDAY, AUGUST 11—
Taunton Fl. Sh. (2 days). Kingstown Fl. Sh.

THURSDAY, AUGUST 12—
Malmesbury Fl. Sh. Holport Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty years at Greenwich—62.3°.

ACTUAL TEMPERATURES.—
LONDON.—Wednesday, August 4 (6 P.M.): Max. 70°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, August 5 (10 A.M.): Bar. 30.3; Temp. 69°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 4: Max. 70° Guildford; Min. 66° Newcastle-on-Tyne.

Ants and Plants. In many parts of the world, especially in tropical and sub-tropical countries, plants suffer very considerably from the ravages of ants. Bates, for instance, has described in the fascinating accounts of his travels, the extraordinary foraging expeditions of the leaf-cutting ants of South America. How they mark down a tree for attack, swarm up it, and, cutting out sections of the leaves and falling therewith like parachutists to the ground, the enemy marches off, carrying its plunder of foliage with it. He gave long ago a description, which recent observation confirms, of the use to which the leaves, gathered by the leaf-cutter ants, is put.

Incredible as it sounds, there seems to be no doubt that the leaves are made by the ant community into a hot-bed for the cultivation of fungi; the fungi, grown on this intensive system, serving as fresh vegetables for the ants. Now, as Bates, Fritz Müller, Schimper, and other naturalists have observed, various of the trees in these ant-infested districts, both of the old world and the new, have other non-leaf cutting species of ants living regularly upon them. Among such myrmecophilous trees are *Cecropia peltata* and various species of *Acacia*, such as *A. caverna*. Trees such as these have been observed to escape the devastating attacks of the marauding leaf-cutters, and the suggestion has been made that the unattacked trees owe their security to the presence of a

standing army of ants, which they retain to repel the invasion of the leaf-cutters. Imaginative naturalists have gone even further and have suggested that a true symbiosis, or condition of mutual advantage, exists between the retainer-ants and the trees which retain them. On this hypothesis the trees in question offer certain facilities in the way of food and lodging to the ant army in return for its protection. In support of this hypothesis they point out, first, that the protected trees are immune from attack by leaf-cutter ants; second, that, in various species of *Acacias* shunned by the leaf-cutters, curious food bodies, much affected by ants, occur on the tips of the leaves or in other situations on the plants; third, that the plants, to ensure that the defending ants shall be thoroughly at home, prepare them places whereby their mercenaries may enter readily into the hollow stems—hollowed on this hypothesis to serve as lodgment or barracks for the ants.

The more sober-minded naturalists have been inclined to regard this interpretation as more romantic than real; though, as their sober-mindedness has generally also led them to stay at home, they have not been in a position to disprove this hypothesis of symbiosis or mutualism.

Recently Karl Fiebrig has published in the *Biologisches Centralblatt* an account of his investigations into the subject carried out in Paraguay. Fiebrig admits many of the facts advanced by Müller, Schimper and other naturalists, but finds that they can scarcely be used to establish the attractive hypothesis which we have just outlined. Thus the thin places in the stems of *Cecropia* are often used by the ants as places of entrance; but they are often *not* so used, the ants finding their way into the stems by biting through it elsewhere. Moreover, *Cecropias* occur frequently on marshy ground, where they are free from ant attacks. Again, though most trees of Paraguay are subject to attack by ants, these attacks are not sufficiently grievous to exterminate the non-protected trees, and thus the presence of retainer-ants does not make the fundamental difference between the survival of the trees which retain them and the destruction of those which do not. Further, though the retainer-ants give immunity from the attacks of leaf-cutters, they attract all sorts of other insects and birds, which do great damage to the trees.

Hence the conclusion is reached that the thin places in the stem, and the thin pits which occur between the nodal partitions within the stems of *Cecropia*, are not to be regarded as special adaptations on the part of the plant to make the retainer-ant "feel at home." Nevertheless, the romantic school of naturalists may still hold that till the extraordinary "food bodies" of the *Acacias* are explained, their fanciful hypothesis of myrmecophilous adaptations has not been discredited altogether.

A NURSERYMAN AS JUSTICE OF THE PEACE.

—We observe that in a list of new Justices for Renfrewshire there appears the name of Mr. ROBERT MACFEE. Mr. MACFEE is a member of the firm of JOHN MACFEE, nurseryman and seedsman, of Paisley. He acted as secretary for the Paisley Horticultural Society for many years.

FLOWERS IN SEASON.—Messrs. ROBERT VEITCH & SON send us from their Exeter Nursery a few sprays of *Notospartium Carmichaeliæ*, and *Ononis fruticosa*. The *Notospartium* succeeds well in the western counties. Messrs. VEITCH's bush is 8 feet in height, and possesses a stem 12 inches in circumference. It grows against a wall having a western aspect. The plant flowers profusely most seasons. The *Ononis* also flowers abundantly. Its neat habit of growth, together with the bright rosy flowers, make it a most attractive plant for the rock-garden.

HYBRID RASPBERRY.—Messrs. STUART LOW & Co. send us specimens of a new berry obtained from crossing the Loganberry with the Raspberry. The berry is known as Phenomenal, and is said to have the same habit of growth as the Loganberry. The fruits unfortunately were damaged upon receipt. They appear to be very like those of the Raspberry, and they certainly do not possess the hard core which is characteristic of the Loganberry.

GLASGOW'S FRUIT SUPPLY.—Remarking on the subject of the fruit supply to that city, the *Glasgow Evening Times* says: "Not so long ago the Clydesdale valley provided most of our supplies of soft fruits; nowadays, apart from the trade from overseas in refrigerator-fitted steamers, even most easily perishable varieties are brought from the South of England and the Continent within such a short space of time that they have not lost their original freshness when they are placed in the hands of the consumer. An illustration of this swiftness of transit and its importance as a revenue-producer to the railway companies is afforded by the inauguration by the London and North-Western Railway Company of an express service by which fruit grown in the north of France, and leaving Boulogne at eight o'clock in the morning, is conveyed by Folkestone and London, and is delivered in Glasgow on the following morning. This saves a day. At present this train brings Plums and Apricots; later on Pears will be the chief freight. Of course, the service has not been instituted for Glasgow alone; that would not pay in itself. Birmingham, Manchester, and the other large cities and towns in the Midlands and North of England get large quantities, and Edinburgh has also its share."

NOMENCLATURE OF ORCHID HYBRIDS.—

According to *Le Jardin*, the commission nominated by the National Society of Horticulture of France has suggested, in reply to the circular on nomenclature of Orchid hybrids, forwarded to the French Society by the Royal Horticultural Society (London):—1. Compound generic names employed currently for bigeneric hybrids should be retained (a list of such has been published). 2. For tri- or multigeneric hybrids the names should be the generic name of the seed parent and the name of the hybrid should be followed by those necessary to indicate its parentage. 3. Compound generic names should be written as single words, e.g., *Læliocattleya* and not *Lælio-Cattleya*. 4. Varietal names should be always commemorative or "dedicative" and should not be Latin names.

INTERNATIONAL EXHIBITION IN FLORENCE.—

In order to celebrate the 50th anniversary of the proclamation of the kingdom of Italy, it has been decided to hold in Florence during 1911 an international horticultural exhibition. No more beautiful setting for such an exhibition could be imagined than the great square with its marvels of antique and modern statuary and its stately palaces.

UNION OF GERMAN LANDSCAPE GARDENERS.

—The annual general meeting of German landscape gardeners is taking place at Görlitz from the 7th to 10th inst. The meeting is held in conjunction with an exhibition of shrubs, Roses, herbaceous perennial plants and summer flowers. Numerous papers will be read. The landscape at Görlitz is famed for its beauty.

PRUNUS TOMENTOSA.—Experiments made with *Prunus tomentosa*, sown in Ottawa, appear, according to a writer in *Le Jardin*, to indicate that this species, which bears Cherry-like fruits, is likely to succeed in cultivation in countries with cold winters. Trees raised from seeds and transplanted in 1900 in the Experimental Farm at Ottawa yielded fruit in July, 1903. The fruit is rounded or heart-shaped, half an inch in diameter, and borne on a short peduncle. It is brilliant crimson, smooth, the flesh being soft and juicy, flavour agreeable, but slightly acid.

COMPARATIVE PURITY OF SWEET PEA STOCKS.

—Messrs. E. W. KING & Co. inform us that in January last Mr. ROBERT SYDENHAM challenged any grower to send to Reading for trial 10 packets of 20 seeds each of 10 varieties of the Countess Spencer type. If there was not a single variety that had more than two regues, Mr. SYDENHAM would pay £10 to the gardening charities as well as all expenses. Messrs. E. W. KING & Co. sent 12 varieties of the Spencer type, some of which they had grown for several years (including Mrs. Wm. King, which they sent out two years ago with a guarantee of 90 per cent. fixity). The judges appointed were Messrs. C. FOSTER and H. H. THOMAS, and they have given an award in favour of Messrs. E. W. KING & Co., not one variety having given two regues. The six varieties Mrs. Wm. King, E. W. King & Co.'s White Spencer, Paradise Ivory, Princess Victoria, Malcolm's Waved Cream, and E. W. King and Co.'s Blush Spencer came true; Evelyn Hemus, Countess Spencer, Marjorie Willis, and Mrs. Henry Bell gave but one rogue each.

SALE OF DUTCH BULBS.—At the Norwich County Court on the 26th ult., Dr. OSBURN sued Mr. FRED. H. RAY, an auctioneer of that city, for the recovery of £3 16s. damages for the alleged fraudulent description by the defendant of certain flower-bulbs sold by him to plaintiff by auction in September, 1908, but which bulbs were entirely different to those described. Mr. JOHN CLAYTON, manager for Messrs. DANIELL BROS., Norwich, deposed to visiting plaintiff's garden at his request. The flowers he saw there were very much inferior to the flowers stated on the list from which Dr. OSBURN made his purchases. His Honour, in giving judgment, said that there had been a gross misrepresentation of fact contained in a document which was said to be, and he had no doubt was, sent to the auctioneer from the firm of growers in Holland. The catalogue contained very precise descriptions of certain flowers, and plaintiff sold the bulbs by auction as they were represented in the catalogue. It would be wrong for him (the Judge) to hold that an auctioneer who sold goods in this way without making any enquiry, should, upon complaint, turn round and say he was not responsible in any way. He accepted the evidence of the plaintiff that he knew nothing of the conditions, and that he was not bound by them. A good deal had been said about fraud, but he did not think Mr. RAY did anything except what was perhaps often done in such cases, that was to say, he did not make sufficient enquiry. There would be judgment for plaintiff for the amount claimed, with costs. Mr. KEEFE asked for leave to appeal, but his Honour declined to grant it.

BUDAPEST INTERNATIONAL HORTICULTURAL EXHIBITION, 1910.—Among the judges nominated to serve on the International Committee are the following representatives of this country: Messrs. FOSTER, SANDER, SUTTON, VEITCH, WATSON, and the Rev. W. WILKS.

THE CARDIFF SHOW.—In addition to the non-competitive exhibits at this show mentioned by our representative in the report published last week, we are informed that Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood, were awarded a Gold Medal for a fine exhibit of plants, and Mr. GEORGE REUTHE, Keston, Kent, obtained a Silver Medal for a rock-work exhibit planted with Alpine species. Messrs. WALLACE & Co., Colchester, were awarded two Gold Medals by the Cardiff Society.

PLANTING IN SAN FRANCISCO.—We are informed that the contract for planting the ground belonging to the Spring Valley Water Co. in San Francisco and district has been given to the McRorie-McLaren Co., of that city. Upwards of 5,000,000 trees will be required for this work, which is expected to extend over a number of years.



FIG. 42.—PLANTATION DENUED OF FOLIAGE BY CATERPILLARS.

MR. JOHN C. GOULD.—On the 6th inst., Mr. JOHN C. GOULD, a director in the firm of Messrs. CHARLES SHARPE & Co., Sleaford, completed 60 years association with the firm. During that time Mr. GOULD has assisted in the development of the business from a small local seed trade into one of the largest seed-growing and dealing establishments in the country. Mr. GOULD is still in good health, and continues to take an active part in the management.

PUBLICATIONS RECEIVED.—*Flora of Cornwall*, with six portraits and a map, by F. Hamilton Davey. (Penryn: F. Cbe gwidden.) Price 21s. net.—*The Young Naturalist*, by W. Percival Westell. (London: Methuen & Co.) Price 6s.—*Fruit Farming on the "Dry Belt" of British Columbia. The Why and Wherefore.* By J. S. Redmayne, M.A. (Illustrated) (London: The Times Book Club, 376-384, Oxford Street, W.) Price 1s. net.

PLAGUE OF CATERPILLARS.

In certain districts the forest trees have suffered this season from unusually large numbers of leaf-eating and leaf-rolling caterpillars. The Oak Leaf-roller moth (*Tortrix viridana*), in company with the Winter moth (*Cheimatobia brumata*), has caused much destruction to Oaks. In fig. 42 we have reproduced a photograph taken on Midsummer Day on the estate belonging to Sir William Cameron Gull, Bart., at Yattendon, in Berkshire. The plantation, extending for upwards of half an acre, had scarcely a leaf upon it. The Oak trees were just as bare of foliage as the undershrubs. The principal cause of this extraordinary devastation was the caterpillar of the Mottled Umber moth (*Hybernia defoliaria*). The only plants uninjured by the pest were the Rhododendron and common Bracken; even Conifers were attacked. Sir William Gull informs us that the portion of the wood most exposed to the north winds suffered most; trees and undergrowth on a southern slope being scarcely injured.

The appearance of the landscape is much improved now that the trees have made fresh shoots since the worst of the attack ceased.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ERLANGIA TOMENTOSA (see tab. S269, *Bot. Mag.*, August, 1909).—I am indebted for the possession of this most charming and free-blooming greenhouse shrub to the kindness of the Director of the Royal Gardens, Kew. It belongs to the Compositæ and is, I believe, a native of Africa. Its flowers are produced in loose branching bunches and are of a pretty shade of pale blue colour, with white centres exactly resembling those of *Ageratum Princess Pauline*, which is now also blooming in one of my borders. Seeds of *Erlangia tomentosa* were introduced into this country in 1907. W. B. Gumbleton, Belgrove, County Cork.

THE EFFECT OF SALTS UPON PIGMENTS.—Experiments made from time to time by Melisch and others have demonstrated that the colours of flowers are, in many cases, definitely changed in tone and, in some cases, even in hue by the addition of certain salts to the soil. The case of the *Hydrangea* is one in which this change is a matter of common knowledge and of horticultural practice. A paper recently read by Professor Henry Kraemer before the American Philosophical Society gives details of certain experiments which he has carried out, which are of interest to the horticulturist as well as the plant physiologist. In the experiments with *Hydrangeas*, the red-flowering variety, H. Otaksa, was used, and the following results obtained. Blue flowers were produced by plants growing both in sand and in garden soil when supplied with the following chemicals:—Potassium and aluminium sulphate (potash alum.), aluminium sulphate and calcium hydrate. Plants which were grown in sand, and to which nutrient solution as well as potassium carbonate was added, showed blue flowers also. Plants growing in sand or soil, and having ammonium sulphate or lead acetate added, showed no blue flowers; but the lead salt showed that it has the power of considerably intensifying the red pigment—a fact of some horticultural importance. Some experiments made with a white Rose, Kaiserine, gave interesting results. This variety was supplied with the following salts:—Potassium hydrate, potassium carbonate, calcium hydrate and lead acetate. A red pigment was produced at the base of the petals by the use of all these salts. In the present state of our knowledge, the reason for this production of new pigment is a matter of conjecture. It is, of course, well known that many white flowers have the power of forming a red pigment under certain circumstances, as, for example, the Rose Frau

Karl Druschki, of which the outermost petals are strongly carmine; the cold nights of this present summer have produced a noticeable amount of red pigment in the White Abbey Geranium, which colour does not appear in flowers produced in the higher temperatures of the greenhouse. *Freesia refracta alba* is another well-known case where low temperature will produce a red pigment. The addition of certain salts would, therefore, seem to stimulate the latent colours into activity, but the exact manner in which this is done being yet unknown, a promising field for research is thus presented. *E. A. Bunyard.*

CARROT FLY (see pp. 60, 80).—The appearance of this fly in West Norfolk has been widespread and disastrous, especially to the small growers, allotment holders, &c. In many instances half the crop has already been destroyed, whilst in others it will not be worth harvesting. The first appearance of the malady is the death of the crown or of some of the larger leaves. If the affected Carrot be pulled up it will be found to be covered by an abundant outgrowth of new rootlets. The track of the insect may be seen as it has burrowed into or along the surface. *C. B. P.*

THE PROPOSED INTERNATIONAL HORTICULTURAL EXHIBITION.—The suggestion put forward by the Council of the Royal Horticultural Society to hold a great International Exhibition in London in 1911 will arouse great enthusiasm. Now that it is the custom to pay international visits, it is not for horticulturists to be behindhand. It is not enough that our colleagues from beyond the seas should be invited to talk. We must be able to show them an exhibition of interest. The progress of horticulture in the British Isles during the past 43 years has been truly wonderful. No words can well describe it. Could we on the one side reproduce the exhibition of 1866, and on the other such an exhibition as is possible in 1911, then, indeed, would the growth and development of horticulture during that period of almost half a century be made fully manifest. It is given to few living to-day to recall the famous South Kensington Show, but in respect of material, those now held at the Temple Gardens and Holland Park are doubtless much superior. The 1866 show was very largely a display by the horticultural trade. To-day, horticulture is not merely a great commercial industry; it is the property of the people, and enters into every phase of life. To organise an exhibition that shall fully represent even British horticulture alone, presents a huge, but none the less a magnificent task, which it should be the joy and delight of our people to conquer. It is a task which will call forth great experience, wisdom, and judgment, involving some personal as well as pecuniary sacrifice. If the undertaking be embarked in in the proper spirit, it will be a brilliant success. The committee promoting the gathering should be widely representative and comprise the best intellects of the horticultural community. It should be chosen for that end regardless of social status or of wealth. Money may be easily secured, for a fund of some £10,000 to £15,000 is a mere nothing for wealthy Britain to subscribe, and rather than the welcome to foreign visitors be lacking in thoroughness it would be better to ask for £20,000 at the outset. At least £5,000 should be set apart for prizes. The committee should consist of 100 persons, and it should form itself into finance, show, reception, festival, entertaining, publication, and scientific sub-committees, but in relation to general business every member should take his or her share, and nothing be left to a select executive of a small inner circle to control. Their Majesties the King and Queen should be invited to become patrons, the Prince of Wales to become President, and the Princess of Wales to preside over a ladies' committee. The chairmanship of the general committee would probably be taken by the President of the R.H.S. Probably Mr. Leopold de Rothschild would accept the office of treasurer. The chief problems to solve would be the relationship of the Fellows of the Royal Horticultural Society to the exhibition, the most suitable place in which to hold the show, and the best dates to select for the event. Those are details which a thoroughly representative committee would soon be able to settle satisfactorily. *F.R.H.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 3.—This meeting, following as it did immediately upon Bank Holiday, was a small one. The exhibits were few in numbers, but, as a rule, the quality was excellent. The outstanding features were Messrs. J. VEITCH & SONS' Gooseberries, Messrs. KELWAY & SON'S Gladioli, and Messrs. R. HARKNESS & CO.'s Roses.

The Orchid Committee recommended one First-class Certificate, one Award of Merit, and two Botanical Certificates; the Floral Committee nine Awards of Merit, and the Fruit and Vegetable Committee one Award of Merit.

In the afternoon Mr. Fred. W. Moore delivered a lecture on "Water-gardens."

Steyne, Sunbeam, Professor Cooper, Mrs. W. Heriot, Ladybird and Chas. Henwood. Mr. CHARLES TURNER sent also a most interesting group of Spiræas, including those forms known as *Bumalda*, *sorbifolia*, *Nobleana*, *tomentosa*, *callosa alba*, and *callosa superba*. (Silver-gilt Banksian Medal.)

Messrs. J. VEITCH & SONS, LTD., Royal Exotic Nursery, Chelsea, sent a superb collection of Gloxinias arranged in blocks of distinct colours. The varieties were numerous, and showed to perfection the excellence of the strain. Self shades were the most striking, but many of the spotted blooms were very beautiful. All the plants showed much refinement. (Award of Merit for the strain.)

Sir D. GOOCH, Bart., Hylands Park, Chelmsford (gr. Mr. Wilkinson), contributed a group of cut



FIG. 43.—CARNATION "ELIZABETH SCHIFFNER": COLOUR RICH BUFF OR APRICOT.
(Awarded R.H.S. Award of Merit on Tuesday last.)

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, A. Kingsmill, T. W. Turner, W. Howe, J. Douglas, A. Turner, C. Dixon, J. T. Bennett-Poë, C. E. Pearson, C. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, G. Paul, J. G. Fowler, J. Hudson and R. Hooper Pearson.

Mr. CHARLES TURNER, Royal Nurseries, Slough, arranged a group of admirably-grown and flowered Carnations. Among the more conspicuous varieties were Merlin, Mrs. Wilson, Purple Emperor, Amphion, John Pope, Lord

Carnations. The blooms were clean, of good size and form, and the colours were effectively arranged. Notable varieties were H. J. Jones, Enchantress, Calypso, Floriana, Princess of Wales, Aurora, Lancelot, The Colonel, Lady Audley Neald, Lady Rose, and Mrs. H. Burnett. (Silver Banksian Medal.)

The display of Gladioli by Messrs. KELWAY & SON, Langport, was brilliant, and the quality of the spikes, in a wide variety of colours, made the exhibit especially interesting. Mrs. Lund, Lady Llangatock, Lord Milner, Lady Montague, Abercorn, Dovedale, Captain Bradford, King of Gladioli, Princess Victoria, Mrs. James Kelway,

Canon Smith, Valdora, Duke of Norfolk, Evelyn, Vanburgh, Irish Ivy, Mrs. Coddington and Earl Compton were particularly conspicuous. (Silver-gilt Flora Medal.)

Hardy herbaceous flowers in great variety were contributed by Messrs. G. BUNYARD & Co., LTD., Royal Nurseries, Maidstone. The collection of Phloxes brightened the exhibit, while Pentstemons, Heleniums, Achilleas, Potentillas, Geums and Spiræas added to the interest. The group also comprised an attractive mass of Gladioli. (Silver-gilt Banksian Medal.)

Messrs. G. & A. CLARK, Dover, sent a collection of border Carnations, none of which had been disbudded. There were Oliver Twist, Elaine, Vivid, W. Austin, Shannon, Mrs. Hayward, Alpha, Mrs. Bryant, Kenmore, Fire King, Mark Twain and many others.

Messrs. H. B. MAY & SONS, Upper Edmington, sent a large group of flowering and foliage plants, conspicuous for excellence of culture. The flowering plants comprised Campanulas, Lappagias, Abutilons and Ixoras, Ferns being interspersed. (Silver-gilt Banksian Medal.)

The collection of hardy flowers from Mr. G. REUTHE, Keston, was not large, but the quality was high and the variety excellent. There were Scabiosas, Heleniums, Coreopsis, Alstromerias, Gaillardias, Spiræas and others. (Silver Banksian Medal.)

Carnations were grandly exhibited by Mr. CHAS. BLICK, Hayes Nurseries, Kent. The colours were splendid, and the blooms beautifully clean and fresh. Amongst the varieties were King Arthur, Her Majesty, Mrs. Julian Orde, Agnes, Merlin, Linkman, Orby, Criterion, Goose Gibbie, Constantine, John Ruskin, Solfaterre, Silver Fox, Mandarin, Marjory Devas, Peter Temple and Mimosa. (Silver-gilt Banksian Medal.)

Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath, sent a bright exhibit of Carnations, the varieties including Twerton Clove, Constance, Volunteer, Richness, Fiery Furnace, Mrs. Nicholson, Brightness, Mrs. H. Chandler and Cantor.

A small collection of Carnations was arranged by Mr. JAMES DOUGLAS, Great Bookham. The flowers were exceptionally fine, and the varieties included Robert Burns, Lady Roscoe, Splendour, King Solomon, Mrs. George Marshall, Harlequin, Delicia, Brigadier, Daffodil, Elizabeth Schiffler and King of Spain. (Silver Banksian Medal.)

Out sprays of flowering shrubs and Rambler Roses were shown by Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley. Most kinds now in season were represented, and the exhibit was of special interest. (Silver Banksian Medal.)

Mr. AMOS PERRY, Enfield, had a splendid group of Spiræas in variety. Particularly noticeable were *S. venusta magnifica*, *S. venusta carnea*, *S. venusta gigantea*, and *S. gigantea delicata*. (Silver Flora Medal.)

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Jas Hudson, V.M.H.), arranged a most beautiful water-garden, which attracted the keen attention of all the visitors. The Water Lilies were superb, and all the best varieties were represented. The charm of the group was enhanced by the inclusion of many other water and water-side plants. (Silver Flora Medal.)

Messrs. R. HARKNESS & Co., Hitchin, exhibited a large collection of Roses. All the leading exhibition varieties were shown in the regulation boxes, and there were in addition handsome stands of Richmond, Mme. Ravary, Frau Karl Druschki, Hiawatha, Dean Hole, Eva Meyer, Dorothy Perkins, Duke of Edinburgh, and Mme. Abel Chateau. (Silver Banksian Medal.)

AWARDS OF MERIT.

Carnation Elizabeth Schiffner (see fig. 43).—A distinct and splendid self-coloured flower of the best form. The shade is rich buff or apricot. Shown by Mr. JAMES DOUGLAS.

Carnation King of Spain.—A grand fancy flower of the largest size. The basal colour is pale red and the outer edges blackish maroon. Shown by Mr. JAMES DOUGLAS.

Carnation Jupiter.—A magnificent yellow ground, the basal colour being almost wholly obscured by rich salmon-rose. Shown by Mr. CHARLES BLICK.

Carnation Fiery Furnace (see fig. 44).—A splendid "fancy" variety of crimson and scarlet shades. Shown by Messrs. BLACKMORE & LANGDON.

Galega Hartlandii.—A large and handsome

variety of the Goat's Rue. The colour is rosy-lilac. Shown from the R.H.S. GARDENS, Wisley.

Glaucinia (strain).—This strain was shown by Messrs. JAS. VEITCH & SONS. (See note printed above.)

Spiræa venusta magnifica.—This is a variety of decided merit, for the flowers are much larger than the type and the colour richer. Shown by Mr. AMOS PERRY.

Tunica saxifraga alba plena.—A double, white form of a well-known and useful plant. Shown by Messrs. BAKERS, Wolverhampton and Codsall.

Nymphæa "Countess of Warwick".—This is a very beautiful tropical variety, and distinct from others in cultivation. By those who grow varieties of this section it is thought to resemble the *N. zanzibarensis* form rather than the *N.*

Harry J. Veitch, de B. Crawshaw, Gurney Wilson, F. J. Hanbury, W. Boxall, H. A. Tracy, C. H. Curtis, H. G. Alexander, and F. W. Moore.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. Collier), staged a select group containing many rare plants. The centre was of the bright citron-yellow *Sobralia Colmanii*, a dwarf, compact plant, with several large flowers. With it were the pretty *Lelia Gattouensis* (anceps \times *cinnabrosa*); *Cattleya Gaskelliana cœrulescens*, white, with a slight lavender tint; the curious *Catasetum tabulare*, with an elevated tongue-like arrangement on the lip; *Cynoches chlorochilon*, with six creamy-yellow flowers on one spike; *Ancistrochilus Thomsonianus*, with seven spikes, having over 30 white and purple blooms; *Cryptophoranthus Dayanus*; *Cirrhopetalum picturatum*; a very fine *Bulbophyllum grandiflorum*; the ele-



[Photograph by J. Gregory.]

FIG. 44.—FANCY CARNATION "FIERY FURNACE."
(Awarded R.H.S. Award of Merit on Tuesday last.)

stellata group. The flower is the size of *N. zanzibarensis rosea*, which was awarded a First-class Certificate some few years ago, but the flowers are not so stellate as in that variety. They open in the same manner as *N. zanzibarensis rosea*, and have a width of some 9 inches when fully expanded. The outer petals are of a clouded pink shade, the inner ones are suffused with a faint tinge of purple on the pink ground. It is stated that this variety was raised from seeds obtained from America as *N. stellata*. Shown by the Countess of WARWICK, Easton Lodge, Dunmow, Essex (gr. Mr. Henry Lister).

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.),

gant, bearded *B. lemniscatoides*; and the rare *Phaius pauciflorus*. (See Awards.)

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an effective group, the principal novelty in which was the remarkably beautiful new white *Dendrobium Sanderae*. (See Awards.) At the back was a charming, bright blue *Vanda cœrulea*, with flowers almost circular in form; the new hybrid *Lycaste formosa*, with large, cream-white flowers having red spots at the bases of the petals; *Odontioda Devossiana*, with a branched spike of blood-red flowers; *Dendrobium longicornu*, *D. regium*, *D. bellatulum*; the fine rose-coloured *Bletia catenulata*; *Phaius Zollingeri*, with white flowers, the labellums marked with sepia-brown; a curious hybrid between *Lelia grandiflora* and *L. xanthina*,

with fleshy, cream-white flowers, marked with purple lines on the lip, an interesting but not showy hybrid; two strong specimens of *Brasso-Cattleya Plato*; *Cypripedium Martin Cahuzac superba*, with a fine, rose-tinted dorsal sepal; *Maxillaria venusta magnifica*; and a number of curious species of botanical interest.

Messrs. STUART LOW & Co., Royal Nurseries, Bush Hill Park, Enfield, were awarded a Silver Banksian Medal for a group containing the large, violet-coloured *Bollea Lalindei*; a fine specimen of *Dendrobium sanguinolentum*, with many spikes of buff and claret-coloured flowers; *Bulbophyllum miniatum*, having slender sprays of purple flowers with white feather-like labellums; *B. Dearei*, *B. Godseffianum*; *Cirrhopetalum maculosum*; *Masdevallia calura*, and other *Masdevallias*; a singular little *Notylia*, with racemes of small, whitish flowers; *Lycaste aromatica*; *Oncidium Kramerii*; *Dendrobium glomeratum*, with pretty, rose-coloured blooms; *D. macrostachya*, a rather rare, but not showy species; *Epidendrum trachybilum*, a pretty species, resembling *E. alatum* in general appearance; the singular little *Angraecum distichum*, &c.

Messrs. CHARLESWORTH & Co., Haywards Heath, showed a small group of rare Orchids, in which were a very fine and well-flowered example of *Chysis levis*, with many large, waxlike, yellow flowers, deeply tinged with red; a compact specimen of the dwarf *Oncidium uniflorum*, a near ally of *O. longipes*; a well-flowered *O. trulliferum*; *Ocotevia diaphana*, and *Catasetum Bungeorhithii*. Also in the group was a very pretty secondary cross of *Cattleya Mendelii*, having very handsome, silver-white flowers with deep, ruby-purple front to the crimped labellum.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed *Lælio-Cattleya Louisa Fowler* (*L.-C. callistoglossa* × *C. granulosa*), a large flower, with bright rose-coloured sepals and petals veined with a darker rose tint. The fine labellum gives strong indication of *C. granulosa* in the abruptly-expanded front lobe of the lip, which is rose-purple, darker at the base, where there are some yellow markings.

FREDERICK J. HANBURY, Esq., F.L.S., Brockhurst, East Grinstead, sent a fine plant of *Cattleya Euphrasia Brockhurst* variety, with five flowers; *Cattleya Maron* var. *aurea* (*Maronii* × *Dowiana aurea*) with buff-coloured sepals and petals and rose-veined lip; and two plants of *Brasso-Cattleya Joan* (*B. Perrinii* × *C. Warscewiczii*). The form of the flowers resembled the *Brassavola* and there was little trace of the *Cattleya*. Flowers whitish the labellums spotted with purple in different degree.

Mons. MAURICE, Mertens, Ghent, showed a selection of hybrid *Odontoglossums*.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), sent *Cattleya Wavriniana* and *Odontoglossum crispum* Primrose, the latter of a pale, whitish-yellow tint.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), showed several plants of his *Odontioda Thwaitesii*, which has developed into a remarkably beautiful and distinct hybrid. It was obtained between *Cochlioda vulcanica* and *Odontoglossum Harryanum*, and has flowers of good size, which last in perfection a very long time. The sepals and petals are claret-red, the labellums mottled with violet of different shades, the variety *superba* being the best and darkest.

Messrs. J. & A. A. McBEAN, Cocksbridge, showed a selection of their fine type of *Odontoglossum crispum*, the small central plant having a model flower, with all the segments very broad and flat in arrangement, like the variety *Magnum Bonum*; white, with clusters of red spots on the sepals.

AWARDS.

FIRST-CLASS CERTIFICATE.

Dendrobium Sanderæ, from Messrs. SANDER & Sons, St. Albans. This beautiful new species was described by Mr. R. A. Rolfe in the *Gardeners' Chronicle*, June 12, 1909, p. 374, where an illustration of it is also given. It is one of the finest of recent introductions, a most floriferous plant, and evidently a strong grower. The large, pure white flowers have the side lobes of the lip striped with purple, and the base tinged with emerald-green, from which to the centre rim there are feathered deep rose-purple lines. It is quite distinct from *D. Dearei*, for

it has larger flowers, bearing well-marked botanical features. The old pseudo-bulbs bore evidence of several racemes on each, and when so flowered it must be a very handsome object.

AWARD OF MERIT.

Cattleya Warscewiczii var. *W. Waters Butler*, from W. WATERS BUTLER, Esq., Southfield, Norfolk Road, Edgbaston. One of the highest examples of typical *C. Warscewiczii* *Sanderiana*, having in the intense ruby-crimson colouring of the lip a suggestion of *C. Hardyana*, but the light yellow blotches on each side of the tube are of true *C. Warscewiczii*. The plant bore a spike of four very large, broad-petalled flowers, the sepals and petals being deep carmine-rose, with a delicate darker veining.

BOTANICAL CERTIFICATES.

Phaius pauciflorus, from Sir JEREMIAH COLMAN, Bart. (gr. Mr. Collier). A rare and distinct species, with tall, slender stems, furnished on the upper part with broadly-ovate,



[Photograph by J. Gregory.]
FIG. 45.—GOOSEBERRY "LANGLEY BEAUTY," AS SHOWN BY MESSRS. JAMES VEITCH & SONS ON TUESDAY LAST.

plicate green leaves. The flowers, which are borne in pairs close to the stem, are pure white, with reddish markings on the lip.

Eria ornata, from Messrs. STUART LOW & Co., Bush Hill Park. A remarkable species, figured in the *Botanical Register*, 1841, t. 42, as *Eria armeniaca*. It is of the *E. flava* section, with fleshy, green leaves, and an erect inflorescence of brownish flowers, downy on the exterior, and with a peculiar narrow, red labellum.

CULTURAL COMMENDATION

to R. K. FOLEY, Esq., Packham, Fordingbridge, Hants., for a grand specimen of *Angraecum caudatum*, with four spikes, each bearing from 10 to 12 of its singular, long-spurred flowers.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. W. Bates, J. Davis, A. Dean, H. Parr, G. Reynolds, C. Foster, G. Hobday, G. Wythes and J. Cheal.

One of the most remarkable exhibits in the Hall was the collection of Gooseberries contributed by Messrs. JAS. VEITCH & SONS, LTD., Chelsea. No fewer than 100 distinct varieties were represented by fruits contained in baskets of considerable size. There were also plants in pots, the stems of which were literally roped with fine fruits. Some of the finest varieties were *Langley Beauty*, *Langley Gage*, *Golden Gem*, *Queen of Trumps*, *Careless Pet*, *Dan's Mistake*, *Marlborough*, *Monarch*, *Early Green Hairy*, *Keepsake*, *Levellor*, *Fearless*, *Transparent*, *Talfourd*, *Matchless*, *Tiger*, *Leader*, *Lion*, *Shiner*, *Whitesmith*, *Gunner*, *Gretna Green*, *Surprise*, *Pretty Boy*, *King John*, *May Duke*, *High Sheriff*, *Crown Bob* and *Speedwell*. (Gold Medal.)

Messrs. SPOONER & SONS, Hounslow, sent splendid examples of *Mr. Gladstone*, *Early Red Margaret* and *Red Astrachan Apples*, with *Morello Cherries*.

Messrs. J. K. KING & SONS, Coggeshall, Essex, arranged an interesting collection of culinary Peas, comprising no fewer than 70 varieties.

COMPETITIVE CLASSES.

Messrs. JAS. SALSBUARY & SON, The Shaw, Melbourne, Derby, were awarded the 1st prize for 18 dishes of Gooseberries. The fruits were large and clean, especially *Lord Leigh*, *Lady Houghton*, *Transparent*, *Lord Derby*, *Surprise*, *Norden Hero*, *Dan's Mistake*, *Princess Royal* and *Mount Pleasant*.

E. J. PRESTON, Esq., Kelsey Park, Beckenham (gr. Mr. Mark Webster), deservedly received the premier prize in the class for six Gooseberries, distinct. The varieties were *Pobby*, *Fearless*, *Lancashire Lad*, *High Sheriff*, *Dan's Mistake* and *Whinham's Industry*.

AWARD OF MERIT.

Melon Barnet Hill Favourite.—The fruit of this variety much resembles *Blenheim Orange*. It has a rich yellow and handsomely netted rind, but white flesh. When the variety was first sent to the Committee last year for opinion, it was decided to try it at Wisley. Plants have been cultivated there this year, and a fruit was tasted at Wisley by a deputation from the Committee on the 27th ult. The fruit then proved to be so good it was unanimously recommended for an Award of Merit. This was granted at the full meeting of the Committee. The sender of the seed was Mr. A. MITCHELSON, Womersley, Guildford.

LECTURE ON WATER PLANTS.

At the 3 o'clock meeting in the lecture-room a discourse on water plants was given by Mr. F. W. Moore, V.M.H. The chair was occupied by Mr. Jas. Hudson, V.M.H. The speaker's remarks were illustrated by lantern slides taken from plants and groups of plants grown at the Royal Botanic Gardens, Glasnevin. Mr. Moore impressed upon his audience the fact that the watering of plants is a scientific operation, even in the case of applying water to water plants. The plants of the *Nymphaea* or *Water Lily* family were brought under review, as also were the *Nelumbiums* and the *Nuphars*. Many of the plants shown upon the screen could be easily recognised, notably *Nymphaea Gladstoniana* and *N. Marliacea albida*, both white forms, but having different form. Others, such as *N. atropurpurea*, *N. collosa*, and even *N. pygmaea* were given well-merited recognition. So also was *N. stellata*, of which a beautiful picture was presented. Mr. Moore pointed out the great beauty of the leaves of *Nelumbium speciosum*, with the dewdrops moving about like quicksilver upon them. He advocated the formation of ponds of informal character, chosen for their natural beauty, and for the opportunity afforded of giving suitable shade, or, if needful, shelter to varieties that require these conditions. The lecturer strongly recommended the planting of robust-growing forms, such as those of the *N. Marliacea* section, as represented by *albida*, *rosea* and *chromatella*, likewise of *N. collosa*, *N. Ellisiana* and *N. gloriosa*. He also alluded to artificial brick, or cement-made ponds, and stated that a depth of 2 feet was ample, with a provision made for a lesser depth in the case of

weaker-growing kinds. He drew the attention of his audience to the important fact that in the present race of hardy Nymphaeas we have a much more extended period of flowering, as they commence to bloom in May and continue until October. Other water plants and their culture were treated upon. In speaking of these Mr. Moore advocated the claims of the native aquatic plants, such as *Myosotis palustris*, *Mimulus luteus* and others. Plants of semi-aquatic growth, such as *Lobelia fulgens* and its forms, and various *Primulas*, the *Droseras* and the *Pinguiculas* were treated upon. Of the latter a splendid cultural example was illustrated by means of the lantern. Water plants, and particularly Nymphaeas, are benefited by liberal applications of cow manure in the early spring. Amongst the many slides shown by Mr. Moore were several which illustrated the culture of the Victoria regia, from the seedling, to the flowering plant.

Scientific Committee.

JULY 20.—Present: E. A. Bowles, Esq., M.A., F.L.S., F.E.S. (in the Chair), Sir J. T. D. LEWELYN, Messrs. W. E. Ledger, J. T. Bennett-Poë, J. Fraser, C. E. Shea, and F. J. Chittenden (hon. secretary).

Water Lilies dying.—Mr. G. S. SAUNDERS reported that he had examined the Water Lily rhizome sent to the last meeting, and had failed to find any organism present which would account for the death of the plants. He considered the water in which they were growing very foul. Some further material was referred to Mr. SAUNDERS.

Galls on Rhododendron.—Galls similar to those frequently seen on *R. ferrugineum*, caused by the fungus *Exobasidium rhododendri*, were exhibited on behalf of Mr. VEITCH on *Rhododendron Wilsonianum*. The occurrence of these galls in succeeding years may be materially lessened by their removal before they acquire the white bloom which marks the time of spore formation.

Late-flowering Rhododendron.—Sir J. T. D. LEWELYN made some remarks upon a *Rhododendron* now flowering at Wisley, which he considered to be a hybrid of *R. Aucklandii* or *R. Fortunei*. The bush always flowers at this season, and bears bunches of white flowers on long viscous peduncles subtended by deciduous bracts.

Malformed flower in Liliun auratum.—Mr. C. E. SHEA showed a flower of this species which for the third year in succession produced very narrow perianth segments, which were green. The plant was very strong, but all the flowers were of this type.

Sweet Pea stripe.—Mr. SHEA also showed specimens of Sweet Peas with the "stripe" disease, the cause of which is unknown.

Sweet Pea double.—Mr. CHITTENDEN showed a flower of Sweet Pea with three standards, the only one of the kind on the plant.

Agapanthus umbellatus branched.—Mr. WORTHINGTON SMITH, F.L.S., sent one of two samples of a branched scape in *Agapanthus*. Originally there were two branches, but the upper branch was accidentally knocked off; the remains of this were, however, quite distinct. In the umbel will be seen two buds on one pedicel. The growth is caused by the fasciation of scapes, one major and two minor. Whether the character will remain permanent or not is uncertain, as this is the first season of branching.

Sweet Pea with foliar tendrils.—Mr. BOWLES drew attention to an exhibit of Sweet Peas in which all the tendrils were replaced by leaflets, a condition which was said to be fixed.

Ceropegia.—Mr. W. LEDGER showed specimens of *Ceropegias* from his garden. *Ceropegia Rendallii*, N. E. Brown (*Kew. Bull.*, 1894, p. 100, and revised in *Flora Capensis*, vol. iv., 1903, p. 814). Belongs to the section having an umbrella-like canopy surmounting the corolla, as in *C. Sandersonii*, *C. Montei-roae*, and the not-yet-introduced *C. fimbriata*. The tuber of the plant exhibited was sent without specific name by Mr. THORNCROFT, of Barberton, to Mr. W. E. GUMBLETON, who presented it to Mr. LEDGER. A small twining species with a remarkable flower, originally sent to Kew by Dr. P. RENDALL, of Barberton, after whom it was named, in 1894, and since lost. *C. Barbertonensis*, N. E. Brown, n.sp. (*Flora Capensis*, vol. iv.,

1903, Addenda and Corrigenda, p. 1,132). The flowers resemble in shape those of *C. Woodii* and of *C. debilis*. Plants were raised by Mr. W. E. GUMBLETON, from seed received from Mr. THORNCROFT. A certain number of the seedling plants produced leaves variegated with pale green along the veins. Both forms were exhibited. *C. hybrida*, N. E. Brown (*Gard. Chron.*, December 8, 1906, p. 383, with figs.). A distinct and large-flowered hybrid (*C. Sandersonii* ♀ × *C. similis* ♂) raised in the Botanic Garden at Leiden from accidental insect fertilisation, and the first and only recorded hybrid. The pollen parent was sent to Leiden by Mr. LEDGER, who received it from Kew, where it had long been grown as *C. Thwaitesii*, a Ceylon species, not at present in cultivation. The habit of this hybrid is that of a very attenuated *C. stapeliaeformis*.

Malformation in Honeysuckle.—Mr. J. FRASER showed specimens of *Lonicera Periclymenum*, Linn., as follows:—Specimen A showed (1) chloranthy of the corolla; (2) chloranthy of the stamens; (3) anthers shortened, fleshy, basifixed instead of versatile, and do not open, filaments hirsute instead of being glabrous; (4) chloranthy of the pistil. Specimen B showed (1) chloranthy of the corolla; (2) petalody of three stamens, phylloidy of the other two stamens, two and three-lobed and glandular on both surfaces, like the back of the normal corolla; (3) phylloidy of the pistil, the style and three carpels being separated nearly to the base. Specimen C showed a double Honeysuckle; (1) chloranthy and shortening of the corolla; (2) petalody of the five stamens; (3) petalody of the pistil and duplication of the three carpels, the style of the three carpels being separated nearly to the base and then duplicated, hose-in-hose fashion; thus there were 11 supernumerary petals. In each case the malformation occurred on plants attacked by aphides.

TRURO HORTICULTURAL.

JULY 21.—The first exhibition of this newly-formed society was held on this date. The number of entries was satisfactory, although a few classes were weak. Sweet Peas made the keenest competition. Roses and annual and perennial flowers also made good displays. The table decorations were an interesting feature, the 1st prize being awarded to an arrangement of Grasses and Poppies. Exhibits of vegetables were creditable, both in the amateur and professional classes, Onions being especially good. There were not many entries in the open classes for pot plants, but the quality fully made up for the lack of numbers. The entries totalled about 470. The attendance was fairly large, notwithstanding that other attractions were held in the city on the same day. There was a very fine display of non-competitive exhibits staged by nurserymen, including THE DEVON ROSARY COMPANY; Messrs. THESSEDER, Truro; Messrs. W. TUPLIN & SONS, Newton Abbot; Messrs. HELLAND & PHILLIPS, Penryn; and Messrs. HALL & SONS, Truro.

The principal prize-winners in the classes for pot plants were Mr. M. STOCKER, St. Anstell; Col. the Hon. H. FORBES TREFUSIS; Messrs. HELLAND & PHILLIPS, Penryn; and Mr. G. H. CHILCOTT, Truro.

The best exhibit of Sweet Peas was shown by Mr. JAMES ELLIS, Tresillian, whilst in the Rose classes the principal exhibitors were THE DEVON ROSARY COMPANY and Mr. S. CLIMAS, Redruth.

In the fruit section prominent prize-winners were Mr. F. DYER, Mr. JOHN NORTH, jun., Mr. R. B. CHELLEW, Col. the Hon. H. FORBES TREFUSIS and T. R. POLWHELE, Esq.

Rev. A. PENDARVES HOCKIN, Hayle, met with great success in the vegetable competitions.

BATH GARDENERS'.

JULY 26.—A meeting of this society was held in the Foresters' Hall, Bath, on the above date. The Chairman (Mr. T. Parrott) presided over a large attendance of the members. The night was set apart for under-gardeners, prizes being offered for the best essays on "Tomato Culture." Four good papers were sent in, these being read by the Secretary. The 1st prize was awarded to Mr. G. RUSS and the 2nd to Mr. C. POSTER. A. B.

BISHOP'S WALTHAM HORTICULTURAL.

JULY 28.—The 35th show was held on this date in Swanmore Park, and was a distinct success. The gardens and grounds are each year thrown open to the public on the occasion of these shows. Swanmore Park is situated on a hill, from which distant views of the Isle of Wight, with the intervening Solent, are obtained. Prizes of £5, £3, and £2 were offered in a class for a decorated dinner table measuring 6 feet by 3 feet. In this and the other classes for table decorations 22 exhibits were staged, and all were of commendable taste. In the open class for a decorated table 11 competed. Mrs. A. BIDE, Alma Nurseries, Farnham, was awarded the first prize, her display consisting of Mme. Abel Chatenay Roses arranged in a central silver bowl and small silver trumpet-shaped vases with Rose foliage; 2nd, Mr. N. H. JEFFERY, Nursing, Southampton, with *Gloriosa superba*, Lily of the Valley and *Franca ramosa*.

A class was provided for a decorated dinner table of wild flowers, which produced seven contestants. The premier award was made in favour of Miss MOLYNEUX, Swanmore Farm, Bishop's Waltham, who arranged an effective display with Scarlet Poppies, single Camomile flowers, Hornbeam, Brambles, Grasses, &c.; 2nd, Miss E. G. MACLEAN, Jervis Lodge, Swanmore, with Blue Chicory, a very attractive exhibit. In the class open only to lady members of the society, Miss M. LUTTRELL, Curdridge, Botley, won with a pale blue *Delphinium* tastefully arranged with suitable greenery.

In a class for 12 distinct vases of cut flowers H. A. FRANKLYN, Esq., New Place, Shedfield, Botley (gr. Mr. C. English), was awarded the 1st prize for a pleasing exhibit. Mr. FRANKLYN was also successful in a class for 18 varieties of flowers grown out-of-doors; 2nd, Mrs. MACRAE, Meonstoke House, Bishop's Waltham (gr. Mr. H. Childs). W. H. MYERS, Esq., Swanmore House (gr. Mr. G. Ellwood), easily led in the class for 12 varieties, the prizes in this class being given by Messrs. Ladhams & Son, Shirley.

Roses were an attractive feature. For six bunches of rambling varieties and for six of dwarf-growing sorts Mr. MYERS was placed 1st in each case with representative exhibits.

Sweet Peas were numerous and good. In the class for 12 bunches of distinct varieties Dr. E. C. PERU, Droxford, was awarded the 1st prize. For 12 bunches (the prizes offered by Mr. Eckford), Miss GLADSTONE, Hampton Hill, Swanmore (gr. Mr. W. Cooper), was placed 1st with a commendable exhibit, and she also showed best in the class provided by Messrs. J. Carter & Co. for six bunches.

Cactus Dahlias were well shown, Mrs. MACRAE winning the 1st prize in the class for six distinct kinds.

Fruit was good in quality, but not very plentiful. Mr. MYERS showed the best collection of six dishes, having good Grapes, a Melon, Peaches, Nectarine, and Cherries. In a class for four varieties, Grapes excluded, Mrs. MACRAE secured the leading award. Exhibits of hardy fruit were numerous and good. For four dishes T. C. WILSON, Esq., the Thickets, Bishop's Waltham (gr. Mr. G. Barnes), was placed 1st with capital Peaches, Gooseberries, and Cherries.

Vegetables were shown well. Mr. MYERS won the premier award for eight dishes (Toogood's class), six varieties (Messrs. Sutton's class), and for a like number in which Messrs. Webb & Sons provided the awards. Miss GLADSTONE won Messrs. J. Carter & Co.'s 1st prize for six dishes.

SCOTTISH HORTICULTURAL.

JULY 31.—The members of this association paid a visit to Messrs. Downie's nurseries at Corstorphine on the above date. The company, which numbered almost 100, were welcomed by Mr. J. D. Adair, principal of the firm, who conducted the party over the nurseries. Propitious weather favoured the outing. The main object of interest were the Roses. The visitors also inspected the Scotch Firs, *Rhododendrons*, miniature Beech trees, and the fruit trees.

LEAMINGTON AND COUNTY HORTICULTURAL. INAUGURAL SHOW.

JULY 28, 29.—Notwithstanding the heavy rainfall, low temperature, and sunless weather which prevailed during July, those responsible for this newly-formed society are to be congratulated upon the all-round excellence of the show held in the Victoria Park, Leamington, on the above dates.

The day preceding the opening was one of the wettest days experienced in the Midlands during the present summer, and the exhibitors were severely handicapped in their work; nevertheless, the morning of the 28th was fine and the sun shone practically all the day long. The schedule consisted of 141 classes, many of them being well filled, and the exhibits—except two—were contained in six marquees. The honorary exhibits were numerous, and added considerably to the variety, quality, and interest of the show.

The Mayor of Leamington, who is president and chairman of the committee, is ably supported by a good number of vice-presidents and a thorough-going, energetic committee. Being the first show, the inexperienced committee may, perhaps, be excused for the lack of courtesy shown by their action in excluding the representatives of the Press from the tents during the time the awards were being made. This was particularly inconvenient to them, as the judges were so long after the scheduled time in commencing their duties.

PLANTS.

There were two exhibits in the leading group class arranged on a ground space of 240 super feet. The 1st prize was won by Messrs. J. CYPHER & SONS, Cheltenham, with a well-proportioned, bright, and artistically-arranged group.

In the centre a tall mound, clothed principally with well-coloured *Codiaeums*, *Alocasias*, *Begonias*, handsome *Liliums*, and surmounted by a bold *Kentia*, was very effective. The groundwork between the centre and corner mounds consisted of choice foliage and flowering plants. The 2nd award went to Mr. W. VAUSE, Leamington, whose group was fashioned on similar lines to the 1st prize exhibit, but the colour scheme was not so well carried out.

In a similar but smaller group, restricted to amateurs and gentlemen's gardeners residing in the county of Warwick, two very creditable displays were made. 1st, the Misses ROBINSON, The Newlands, Leamington (gr. Mr. A. F. Friend); 2nd, R. M. GRIFFITH, Esq., Quorn House, Leamington (gr. Mr. E. M. Garlick).

Mrs. RAYSON, Newstead House, Leamington (gr. Mr. W. G. Jones), won the 1st prize in a class for three *Fuchsias*, dissimilar varieties. The plants were of good size, but below the standard of excellence one expects to find at important shows. The same exhibitor also had the best six *Gloxinias*.

There were four exhibits in a class for three varieties of *Coleus*. The 1st prize was won by ALFRED HOLT, Esq., Kenilworth Road, Leamington (gr. Mr. C. Finch), with large, well-shaped, bright-foliaged specimens. 2nd, G. H. BURLEY, Esq., The Grange, Leamington (gr. Mr. H. J. Finch).

The 1st prize for six tuberous-rooted *Begonias* was gained by Mr. W. ELLIS MASTERS, Warwick, whose plants were very vigorous and carried large, handsome, double flowers. 2nd, the Misses ROBINSON (gr. Mr. A. T. Friend).

The brightest and most useful collection of six table plants growing in pots not exceeding 6 inches inside measurement came from the gardens of F. E. MUNTZ, Esq., Umberslade Hall, Birmingham (gr. Mr. H. Foster), who showed five elegant *Codiaeums* and one *Pandanus Veitchii*. 2nd, Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry), who had nicely-coloured, rather broad-leaved *Codiaeums*. The last-named exhibitor led in a class for three specimen Ferns, G. H. BURLEY, Esq. (gr. Mr. H. J. Finch), being 2nd.

The Misses ROBINSON (gr. Mr. A. T. Friend) showed the best three Zonal *Pelargoniums*, as well as the best foliage plant in *Cycas revoluta*.

Mr. W. VAUSE, Leamington, was the only competitor in a class provided for one flowering plant. His specimen was a small, well-flowered *Ixora*.

CUT FLOWERS.

In the cut flower section Roses and Sweet Peas were well shown. Mr. GEORGE PRINCE, Kingston Bagpuzze, won three 1st and one 2nd prizes in the four classes in which he competed.

Of the seven exhibits in the class for 24 Roses, distinct, the 1st prize was won by Mr. GEORGE PRINCE with superb blooms, amongst which Alfred Colomb, Captain Hayward, C. J. Grahame, Dean Hole, Suzanne Marie Rodocanachi, Mrs. Myles Kennedy, Horace Vernet and Earl of Warwick were unusually good. 2nd, Mr. ERNEST HICKS, Wallingford, Berks., whose best flowers were General Jacqueminot, C. J. Grahame, Horace Vernet and Comte de Raimbaud. 3rd, THE KING'S ACRE NURSERIES, LTD., Hereford.

In the next class, which was for 6 H.P. Roses of any one variety, Mr. G. PRINCE led with exquisite blooms of Frau Karl Druschki. 2nd, Mr. HENRY DREW, Longworth, Faringdon.

For 12 Tea Roses, dissimilar, Mr. G. PRINCE was again successful. Included in this stand were fine examples of Ernest Metz, Mrs. Edward Mawley, Comtesse de Nadailac and Mme. Jean Dupuy. The 2nd prize exhibit came from Mr. HENRY DREW, whose flowers appeared to have suffered badly in transit. The varieties Mrs. Edward Mawley and Muriel Grahame were, however, good.

In a smaller class for six Tea Roses the order was reversed, Mr. HENRY DREW being 1st and Mr. G. PRINCE 2nd.

In a class for 12 Roses, dissimilar, reserved for amateurs residing within the county of Warwick, Mr. FRANK DENNISON, Cranford, Leamington, beat his only competitor, Mr. W. NASH, of Coventry. Mr. DENNISON'S flowers were large, thick-petaled and of great substance. The best varieties were White Maman Cochet, Captain Hayward, William Shean, Earl of Dufferin, Earl of Warwick, Horace Vernet, Her Majesty and Alfred Colomb.

In another class for six Roses (one variety), CHARLES E. BLYTHE, Esq., Siddington (gr. Mr. F. Faulks), was the only exhibitor, and his flowers were of poor quality.

Messrs. A. R. BROWN, Wychall Lane, King's Norton, and Mr. C. H. HERBERT, Hazelwood Road, Acocks Green, were the only contestants in classes for (1) 12 self Carnations, dissimilar, and (2) 12 Carnations, dissimilar. The 1st and 2nd prizes in both classes were awarded in the order named above. The flowers in Mr. BROWN'S stand of selfs were large, shapely and of good colours. The best varieties were Crystal, Ajax, John Hughes, Snowdrop, Ariadne, Helen Gottwalb and Mrs. Harry Skeels.

In the next class Mr. BROWN had beautiful examples of Lord Steyne, Billy Barlow, Sam Weller, Sir Olaf, The Nizam, Percy Radcliffe and Pasquin.

Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry), was the only exhibitor in a class provided for 12 bunches of annuals. This exhibit contained a beautifully fresh, well-arranged set of flowers, the *Rhodanthes*, Sweet Peas and *Coreopsis* being particularly good.

Of the three exhibitors of 12 bunches of hardy herbaceous flowers, Mr. C. H. HERBERT, Acocks Green, was an easy 1st. He showed a handsome lot of flowers, beautifully arranged. 2nd, Mr. D. CURTIS, Oxford.

In a class for 12 varieties of Sweet Peas there were four first-class exhibits. 1st, Sir THOS. G. F. HESKETH, Bart., Easton Neston (gr. Mr. G. F. Jallett), with very large, substantial flowers of the following varieties:—Lord Nelson, George Herbert, Frank Dolby, Paradise, Mrs. Routzahn, Jeannie Gordon, Evelyn Hemus, Mrs. Hardcastle Sykes, Nora Unwin, Queen Alexandra and two unnamed varieties. 2nd, Capt. W. H. STARKEY, Bericote House, Leamington (gr. Mr. G. L. Blackburn), whose flowers were rather small, but of good quality.

For six varieties of Sweet Peas Mrs. CHAPPELL (gr. Mr. T. Parry) was 1st, and the Marquis of EXETER, Burghley House, Stamford (gr. Mr. T. Grant), 2nd.

Classes were provided for (1) 12 Cactus Dahlias, dissimilar, and (2) 12 show Dahlias, dissimilar. The 1st prize in each class was won by

H. MITCHELL, Esq. (gr. Mr. T. Batchelor), whose flowers of the Cactus varieties were very good, but the show blooms were below average quality.

In classes for (1) bouquet for the hand, (2) bridal bouquet, (3) three sprays suitable for a lady, and (4) three buttonhole bouquets, Messrs. PERKINS & SONS, Coventry, were awarded 1st prize in each class. Mr. W. HARPER, Leamington, was 2nd in the first three, and THE LEAMINGTON NURSERIES Co. 2nd in the last class. The bouquets staged by Messrs. PERKINS & SONS were light and graceful, and much admired. Competition was very keen in a class provided for decorated dinner tables, each 8 feet by 4 feet, and notwithstanding Sweet Peas are so popular for this form of decoration, they did not figure on the tables which gained the first three prizes. The 1st prize was won by Miss ADA TOWNSEND, Lower Broadheath, Worcester, who used Allister Stella Gray and Laurette Messimy Roses, relieved with *Francoa ramosa*, sprays of *Selaginella* and Grasses. 2nd, Mr. D. CURTIS, Ifley Road, Oxford.

In another class for decorated dinner tables, open to ladies resident in the county of Warwick, nine pretty exhibits were placed before the judges, who awarded the premier position to Miss ALCOCK, Leamington, for a pleasing arrangement of Iceland Poppies, *Statice* and Grasses. The 2nd prize was gained by Mrs. GARLICK, Leamington Spa, who also depended principally upon Iceland Poppy flowers. The prettiest basket of flowers (same conditions as in last-named class) was also arranged by Mrs. GARLICK. It consisted of Roses and Asparagus.

SPECIAL PRIZES FOR SWEET PEAS.

Messrs. Webb & Sons offered prizes for six varieties. Two exhibits were made, but in neither case were the flowers of very good quality. 1st, the Marquis of EXETER (gr. Mr. T. Grant); 2nd, Mr. R. SUMMERS, Warwick.

Messrs. Robert Sydenham, Ltd., offered prizes for nine varieties, and six splendid exhibits were brought forward. 1st, Mrs. CHAPPELL (gr. Mr. T. Parry), with a superb set of flowers nicely arranged. The best varieties were Saint George, Clara Curtis, The King, The Marquis, Etta Dyke, and Apple Blossom. Capt. W. H. STARKEY (gr. Mr. G. L. Blackburn) was 2nd with a handsome lot of flowers, but indifferently arranged.

Mr. Henry Eckford's prizes were for nine varieties. 1st, The Marquis of EXETER (gr. Mr. T. Grant), with splendid flowers of Annie B. Gilroy, Nora Unwin, Helen Pierce, John Ingram, Evelyn Hemus, Countess Spencer, Frank Dolby, Menie Christie, and Primrose Waved. 2nd, Mr. H. MARRIOTT, Leamington Spa.

FRUIT.

Although fruit was not very plentiful, several good exhibits were noted. The most successful exhibitor was the Marquis of EXETER, who was awarded 1st prizes in classes provided for (1) eight dishes of fruit to include two bunches each of black and white Grapes (vines excluded); (2) four dishes of fruit to include two bunches of one variety of Grape; (3) two bunches of white Grapes; (4) one dish of Peaches; (5) one dish of Nectarines; (6) one dish of kitchen Apples; (7) three dishes of dessert Apples, distinct varieties; (8) three dishes of kitchen Apples, distinct varieties; (9) one dish of Black Currants; and (10) one dish of Cherries. With the exception of Apples, all the fruit was of good quality. Other 1st prize-winners included ALFRED HOLT, Esq., Kenilworth Road, Leamington (gr. Mr. C. Finch), with shapely, well-finished bunches of Black Hamburg Grape; Sir THOS. G. F. HESKETH, Bart., Easton Neston, Towcester (gr. Mr. G. E. Hallett), for one Melon; M. P. LUCAS, Esq., The Oaks, Leamington (gr. Mr. W. Wright), for 1) Apricots, 2) dessert Apples, and 3) Gooseberries; Lord WILLOUGHBY DE BROKE, Compton Verney, Warwick (gr. Mr. John Lloyd), for Red Currants; and Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry), for White Currants.

VEGETABLES.

Vegetables were very well shown. The principal class was for a collection of 10 distinct kinds, and five exhibits were placed before the judges, who awarded the 1st prize to the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), for a handsome collection nicely

set up, consisting of Stourbridge Marrow Pea, New Volunteer Beet, White Fripoli Onions, Emperor Tomatos, Bountiful Cucumbers, Giant White Celery, Selected Canadian Wonder Bean, Prizewinner Carrot, Early Mammoth Cauliflower, and Bountiful Potato; 2nd, Mr. JOHN HUDSON, Leicester; 3rd, Sir THOS. G. F. HESKETH (gr. Mr. G. E. Hallett).

Upwards of a dozen small classes were provided for special kinds of vegetables, in which 1st prizes were won by the Hon. VICARY GIBBS (gr. Mr. E. Beckett) for Cucumbers; Mr. JOHN HUDSON for (1) Kidney and Round Potatos, (2) Peas, (3) Dwarf French Beans, (4) Turnips, and (5) Cauliflowers; Lord WILLOUGHBY DE BROKE (gr. Mr. John Lloyd) (1) for Carrots, (2) for Onions, and (3) for Tomatos; G. H. BURLEY, Esq. (gr. Mr. H. J. Finch) for Vegetable Marrows; Mr. E. DEAKIN, Hay Mills, Birmingham, for Scarlet Runner Beans; and the Marquis of EXETER (gr. Mr. T. Grant) for Long-pod Beans.

Prizes were offered by Messrs. Sutton & Sons for six kinds of vegetables. 1st, Mr. E. DEAKIN, with a splendid lot of Best of All Tomatos, Century Peas, Duke of York Potato, New Red Intermediate Carrot, Magnum Bonum Cauliflower, and White Leviathan Onion; 2nd, Sir THOS. G. F. HESKETH, Bart. (gr. Mr. G. E. Hallett); 3rd, F. E. MUNTZ, Esq. (gr. Mr. H. Foster). There were five exhibits.

Messrs. Webb & Sons' prizes were also offered for six kinds of vegetables. Of the seven exhibits in this class the one from the Hon. VICARY GIBBS (gr. Mr. E. Beckett) was placed 1st; Mr. JOHN HUDSON was 2nd with a very good, heavy lot, but indifferently set up; 3rd, Sir THOS. G. F. HESKETH, Bart. (gr. Mr. G. E. Hallett).

HONORARY EXHIBITS.

Messrs. BLACKMORE & LANGDON, Twerton-on-Avon, Bath, showed about 150 double and single Begonias on boards, together with a small collection of Carnations in Bamboo stands and vases. Many of the single Begonias were beautifully frilled and crested. (Silver Medal.)

Mr. H. N. ELLISON, West Bromwich, had a collection of small plants of greenhouse Ferns.

Messrs. GUNN & SONS, Olton, Birmingham, sent a large group of Roses of excellent quality. Tall stands filled with blooms of Frau Karl Druschki, Hiawatha, Crimson Rambler, &c., formed a pleasing background, with masses of Hybrid Perpetuals, Hybrid Teas, Teas, and other sections pleasingly arranged in the front. In another part of the same tent an unusually fine group of hardy herbaceous flowers was displayed on a ground space of 35 feet by 8 feet. The flowers were placed at different heights in vases secured to strong canes driven into the ground. Each kind was represented by a bold mass, and the disposition of them showed artistic taste of a high order of merit. The collection contained good examples of Gaillardias, Iceland Poppies, Irises, Campanulas, Enocheras, Veronicas, Delphiniums, and a magnificent collection of Phloxes, amongst which were noted Sheriff Ivory, Regulus, Josephine Gerbeaux, Frau von Lassberg, Marie Corelli, and Le Mahdi. A pretty margin to the group was formed of the dwarf variety Tapis Blanc. (Gold Medal.)

Mr. W. HARPER, Leamington, showed a nice collection of cut flowers and plants of Liliiums, Hydrangeas, and Campanulas. (Silver Medal.)

Messrs. PERKINS & SONS, Coventry, had some very beautiful floral designs, comprising baskets and bouquets of Orchids, Carnations, Roses, and Gloriosa superba. Messrs. PERKINS also exhibited flowers of White Dorothy Perkins and Lyon Rose. (Silver Medal.)

THE LEAMINGTON NURSERIES CO., Leamington, showed a good variety of floral designs. (Silver Medal.)

Mr. FRANK DENNISON, Cranford, Leamington, exhibited 36 beautifully fresh and shapely Roses. The best varieties were Avoca, J. B. Clark, Captain Hayward, and Horace Vernet.

THE KING'S ACRE NURSERIES, LTD., Hereford, had a good collection of Roses and a quantity of herbaceous flowers, consisting principally of Phloxes. The herbaceous flowers were not set off to the best advantage. (Gold Medal.)

Messrs. HINTON BROS., Warwick, sent a collection of hardy herbaceous flowers, Sweet Peas, and Roses.

The most representative group of water, bog, and similar plants came from Messrs. BAKERS, Wolverhampton. Clumps of Bamboos, Typha latifolia, and Delphiniums were placed at the back

of the group which was about 15 feet deep, and masses of Galega Hartlandii, Heleniums, Alstromerias, Campanulas, Spireas, and other plants were placed in suitable positions. In the centre of the group a lakelet was formed, on the surface of which Nymphaea flowers could be seen in full beauty, and along the margin Sarracenas, Primulas, and Cyripediums were used with good effect. (Gold Medal.)

Mr. W. N. PATTISON, Shrewsbury, had a collection of Violas in sprays arranged on sloping boards covered with black cloth.

Messrs. W. CUTBUSH & SONS, Highgate, London, contributed a collection of Carnations as pot plants and cut flowers representative of the various sections of this useful all-the-year-round flower. The cut flowers were arranged in big vases over a groundwork of dwarf pot Roses, comprising White Pet, Mrs. W. H. Cutbush, and Mme. N. Levavasseur. The centre of the group was relieved by tall Rambler Roses. (Gold Medal.)

Messrs. ISAAC HOUSE & SON, Westbury-on-Trym, brought a bright group of upwards of 40 vases of Sweet Peas and miscellaneous border flowers.

Messrs. ROBERT SYDENHAM, LTD., Birmingham, had an extensive display of Sweet Peas of superior quality beautifully arranged in rustic silver stands. King Edward, Sycra Lee, and Marjorie Willis were of outstanding merit.

Mr. J. P. PERRY, Banbury, exhibited hardy herbaceous flowers, Roses, Sweet Peas, and sprays of ornamental-foliaged shrubs.

Messrs. WEBB & SONS, Stourbridge, exhibited a quantity of Sweet Peas and a group of miscellaneous plants in flower on a large circular stand, the upper portion having arches decorated with Sweet Peas; also a collection of vegetables, in which Beet, Cauliflower, Tomatos, Turnips, Onions, Carrots, Cucumbers, Kohl Rabi, and a number of Melons were also included in this striking exhibit. (Gold Medal.)

Mr. C. H. HENBERT, Acocks Green, Birmingham, showed flowers of his new Pink "Progress" in wonderfully good condition.

Messrs. HEWITT & CO., Solihull, Birmingham, made an extensive exhibit of hardy herbaceous flowers and Roses. In the first-named, Phloxes, Delphiniums, Irises, Gaillardias, Campanulas, Violas, annuals, and other subjects were well shown. (Silver Medal.)

Mr. E. CRUMP, Leamington, showed a group of miscellaneous plants and cut flowers, together with a number of dishes of ripe fruit.

In the open air Messrs. JOHN WATERER & SONS, Bagshot, Surrey, had a group of specimen Conifers, silver-leaved Acers, Yuccas, and Portugal Laurels. (Silver Medal.)

Another out-of-door exhibit came from Messrs. TOM B. DOBBS, Wolverhampton, who showed rustic work in a variety of designs. Miscellaneous flowering plants were also included in this exhibit. (Silver Medal.)

Exhibits of horticultural sundries were made by Messrs. W. WOOD & SON, Wood Green, London, and Mr. J. DON, Park Row, Nottingham.

NORTHUMBERLAND, DURHAM, AND NEWCASTLE-ON-TYNE HORTICULTURAL AND BOTANICAL.

JULY 28, 29, 30.—The annual summer show of this society was held in the recreation ground, Newcastle-on-Tyne, on the above dates. The show opened under the most favourable conditions, and there was a large attendance of visitors on the first day. The exhibits generally were above the standard of the last few years, especially so in the groups arranged for effect. In the fruit classes upwards of 70 bunches of Grapes were exhibited. The competition in the classes for cut flowers was also keen, especially in those for Roses and Sweet Peas.

In the class for a group of plants arranged for effect on a space 25 feet by 12 feet, the 1st prize was won by Mr. J. S. SHARP, Valley Nursery, Almondbury, Huddersfield; 2nd, Mr. H. HILLIAR, Green Park Gardens, Darlington, whose group was somewhat crowded, but the plants were of good quality; 3rd, W. C. GREY, Esq., West Hartlepool (gr. Mr. T. Pattison).

In the class for a collection of six plants in bloom, the pitmen, as usual, were well to the fore. Mr. JOSEPH ELLISON, Cramlington, won the 1st prize, having fine plants of Allamanda Hendersonii, Clerodendron fallax, C. Balfourii,

Stephanotis grandiflora, Dipladenia amabilis, and Anthurium Scherzerianum. 2nd, Mr. R. ARTHUR, West Wylam, who had finely-flowered Ixoras, Rondeletia speciosa (5 feet through), Allamanda, Bougainvillea glabra, and a large specimen of Oncidium flexuosum with 15 spikes of flowers. Mr. J. HUNTER, Hexham, was 3rd.

The best collection of four specimen plants in bloom was shown by Mr. ELLISON, and Mr. ARTHUR was 2nd. Statiche profusa was especially noteworthy in Mr. ARTHUR's exhibit.

In the class for 48 Roses in 24 distinct varieties, Messrs. R. HARKNESS & Co., Hitchin, were placed 1st for a collection of finely-finished flowers, Earl of Warwick and J. B. Clark being the best blooms. 2nd, Mr. HUGH DIXON, Belfast, with smaller flowers; 3rd, Messrs. GIBSON & Co., Bedale, Yorks.

For 24 Roses in 12 distinct varieties, Mr. HUGH DIXON was 1st with finely-finished flowers, Lyon Rose, Earl Dufferin, J. B. Clark, and Hugh Dixon being excellent blooms. 2nd, Messrs. R. HARKNESS & Co.; 3rd, Messrs. GIBSON & Co.

For 36 Rose blooms in 12 distinct varieties, Messrs. R. HARKNESS & Co. were 1st and Mr. HUGH DIXON 2nd.

Messrs. R. HARKNESS & Co. had the best dozen blooms of a hybrid perpetual, showing the variety Hugh Dixon. 2nd, Mr. HUGH DIXON, with Her Majesty.

In Class 10, for any Tea-scented variety, Mr. T. PARK was 1st with Mme. Jules Gravereaux. 2nd, Mr. G. FINLAY, East Layton Hall, Darlington.

In the restricted classes the Roses were of satisfactory quality and a keen competition resulted. In the class for 24 blooms, Mr. T. PARK was 1st and Mr. G. FINLAY 2nd.

SWEET PEAS.

For 24 bunches of Sweet Peas in variety, Sir G. O. TREVELYAN, Wallington (gr. Mr. E. Keith), was 1st. He showed the varieties Etta Dyke, Prince of Asturias, H. Bell, Minnie Christie, James Grove, Jet, Herbert Smith, St. George, Evelyn Humus, The King, and Mrs. Masters in exceptionally good quality. 2nd, Mr. F. J. BELL, Whitley Bay.

For a collection of six distinct varieties there was a large entry. Mr. W. S. HESLINGTON, Ripon, was 1st and Mr. E. KEITH 2nd.

OTHER CUT FLOWERS.

For 18 bunches of herbaceous and border flowers Messrs. GIBSON & Co. were 1st, Messrs. R. HARKNESS & Co., Bedale, 2nd, and Mr. G. FINLAY 3rd. For 12 bunches Mr. G. CHARLTON, Dunston-on-Tyne, was 1st and Mr. G. FINLAY 2nd.

The best collection of Carnations set up in vases on a space of 15 feet by 5 feet came from Mr. W. LAWRENSON, Gallowgate, Newcastle. Mr. A. F. DUTTON, Iver, Bucks., was 2nd, and the Earl of DURHAM (gr. Mr. W. Smith) 3rd.

For a dinner table arranged with flowers and fruit, Mr. EDMONDSON, Newcastle, was 1st, and Mr. RICHARDSON, Wickham Lodge, Wickham, 2nd. For floral decorations, Mr. E. EDMONDSON won the 1st prize in each class.

VEGETABLES AND FRUIT.

For a collection of vegetables in nine distinct kinds, the Rt. Hon. Lady BEAUMONT, Carlton Towers (gr. Mr. W. Nicholls), won the 1st prize, Mr. E. KEITH the 2nd prize, and the Earl of DEVON, Powderham Castle, Exeter (gr. Mr. T. H. Bolton), the 3rd prize.

For six distinct kinds Mr. T. H. BOLTON was 1st and Mr. ED. KEITH 2nd.

For Messrs. Webb & Son's prizes for six varieties of vegetables Mr. E. KEITH was 1st and Mr. W. NICHOLLS 2nd.

In the class for eight dishes of fruit, distinct kinds, white and black Grapes included, the Earl of LONDREBOROUGH, Market Weighton (gr. Mr. J. C. McPherson), won the 1st prize, showing Muscat of Alexandria and Black Hamburgh Grapes, Smooth-leaved Cayenne Pine, Royal George Peach, Brown Turkey Pear, Lady Sudeley Apple, Dr. Jules Guyot Pear, and Jordan's Seedling Melon. Mr. W. NICHOLLS was 2nd.

For four dishes of fruit, Mr. McPHERSON also won the 1st prize, Mr. NICHOLLS being 2nd.

The best exhibit of four bunches of Grapes came from Mr. McPHERSON. He had Muscat of Alexandria and Gros Guillaume. 2nd, Mr. J.

R. GARDINER, Clifton Castle, Bedale, Yorks., who showed finely-finished bunches of Madresfield Court and Black Hamburg.

Mr. MCPHERSON had the best exhibit of two bunches of White Muscats, and he won the 1st prize in the class for any other variety of white Grape, showing Buckland Sweetwater.

For two bunches of Black Hamburg, Mr. SHOTTON was 1st and Mr. J. R. GARDINER 2nd.

Mr. KEITH had the best Melon, and S. D. SHAFTOE, Esq., Beamish Park (gr. Mr. A. Wood), the best dish of Peaches; whilst Mr. NICHOLLS had the best Nectarines, and Mr. G. F. BROTHERSTON the best exhibit of 12 Tomato fruits.

TRADE EXHIBITS.

Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, showed a collection of Carnations; Messrs. CLIBRAN'S, Manchester, a very fine group of stove foliage plants; Messrs. LAING & MATHER, Kelso, a miscellaneous group of Carnations, Roses, &c.; Mr. W. A. WELSH, Sunderland, some finely-flowered *Lilium longifolium*; Mr. W. LAWRENSON a miscellaneous exhibit of Nephrolepis and other Ferns, Orchids, stove and greenhouse flowering plants and Roses; Messrs. DICKSON'S, Chester, a large exhibit of herbaceous cut flowers and Roses; Messrs. STORRIE & STORRIE, Glencarse, Perthshire, a collection of fruit trees in pots, and a collection of Gooseberries; Messrs. SUTTON & SONS, Reading, a miscellaneous collection of fruit and vegetables arranged with herbaceous and hardy flowers; Messrs. ORD BROS., North Shields, a fine group of tuberous-rooted Begonias, *Lilium longifolium*, Caladiums and stove and greenhouse plants in variety; Mr. J. FORBES, Hawick, a fine exhibit of Delphiniums, Phloxes, Pentstemons, border Carnations, Violas and greenhouse plants; Messrs. DOBBIE & Co., Rothesay, a group of Sweet Peas, Violas, Dahlias and Pelargoniums; Messrs. J. THOMPSON & SONS, Forest Hall, a miscellaneous group of Carnations, Ferns, Tomatos and vines in pots; and Messrs. S. FINNEY & Co., Newcastle-on-Tyne, a collection of Sweet Peas.

Mr. J. DOUGLAS received Certificates of Merit for three new Carnations—Lady Roscoe, Elizabeth Shifner and Robert Bruce.

SOUTHPORT HORTICULTURAL.

JULY 29-AUGUST 2.—This fine show was held under the auspices of the Royal Lancashire Agricultural Society in a pavilion covering an area of 18,000 feet. The arrangements and artistic staging reflected credit on Mr. Peter Blair, the superintendent.

The weather on the Thursday and Saturday was very bad, portions of the tent being under water.

COMPETITIVE CLASSES.

This section comprised 66 classes. For a group of plants arranged on a space of 300 square feet (open), Messrs. J. CYPHER & SONS, Cheltenham, won the 1st prize, showing an excellent group, comprising Palms, Crotons, Ferns, Cattleyas, Oncidiums, Odontoglossums, &c. Mr. W. A. HOLMES, Chesterfield, was 2nd. In this exhibit some good single-stemmed Crotons were a feature.

In a class for a group of 12 stove or greenhouse plants, Messrs. CYPHER had well-flowered specimens of moderate size. These included *Ixora Pilgrimii*, *I. Shawii*, *I. Williamsii*, *Chironia xifera*, *Statices Gilbertii*, *S. intermedia*, *Clerodendron nobilis*, and *Bougainvillea Cypheri*.

For 12 stove or greenhouse plants in pots not exceeding 10 inches in diameter the same exhibitors won the 1st prize.

Mr. J. H. ANDERSON, Southport, had the best collection of six exotic Ferns, and Mr. J. HOWARTH, Tottington, was 1st for six tuberous Begonias.

Twelve table plants were shown best by Mr. W. J. GARNER, and six Orchids by Messrs. CYPHER & SONS, who showed *Epidendrum prismatocarpum*, *Laelio-Cattleya Purple Empress*, *L.-C. callistoglossa*, *L.-C. c. magnifica*, *Odontoglossum amabilis*, and *Cypripedium Curtisii*.

SWEET PEAS.

For 18 distinct varieties, Mr. THOMAS JONES, Raubon, was well to the fore with a fine collection, including Black Knight, John Ingman, Henry Eckford, Queen Alexandra, Zepha, &c. This successful exhibitor won the 1st prize in seven other classes.

Mr. T. PROCTER, Carnforth; Mr. S. SALISBURY, Wallasey; Mr. W. SHUTTLEWORTH, Southport; and Mr. E. MALLEN secured one leading award each for Sweet Peas.

The best collection of cut Carnations was shown by Mr. C. A. YOUNG, West Derby, who had very charming blooms, and the best collection of cut "tree" Carnations came from Mr. J. C. WATERS, Balcome.

Messrs. GIBSON & Co., Bedale, had an excellent collection of hardy perennials, for which the 1st prize was awarded. For 12 bunches Mr. J. HOWARTH was placed 1st.

ROSES.

In the class for 34 blooms in not fewer than 18 varieties Messrs. A. DICKSON & SONS, Newtownards, had the premier stand with finely-coloured blooms of J. S. Mill, Lady Ursula, Capt. Hayward, Prince Arthur, &c. The KING'S ACRE NURSERY Co., Hereford, were 2nd.

Messrs. DICKSON & SONS secured 1st honours in the remaining open class, and Mr. T. COULTHWAIT, Hednesford, in the amateur class.

FRUIT AND VEGETABLES.

For 12 dishes in not fewer than nine kinds, the Duke of PORTLAND (gr. Mr. J. Gibson) was awarded the 1st prize, staging Buckland Sweetwater, Black Hamburg, Muscat of Alexandria, and Gros Maroc Grapes, Hero of Lockinge and a seedling Melon, good Crimson Galande Peaches, Lord Napier Nectarines, Brown Turkey Figs, &c. The Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. Goodacre), was 2nd; and the Earl of DERBY, Knowsley, Liverpool (gr. Mr. E. F. Hazleton), 3rd.

The best two bunches of Black Hamburg Grapes came from J. BEECHAM, Esq., Huyton (gr. Mr. W. Oldham), and the best exhibit of any other black variety from J. BRENNARD, Esq., Thirsk (gr. Mr. J. E. Hathaway), who showed well-coloured fruit of Madresfield Court.

For two bunches of Muscat of Alexandria, Mr. E. F. HAZLETON obtained the 1st prize for large bunches, and for any other white Mr. W. OLDHAM, who showed Buckland Sweetwater.

Mrs. PARRINGTON, Huyton (gr. Mr. T. Eaton), had the best scarlet-fleshed Melon, and Mr. J. GOODACRE the best white-fleshed fruit.

For six Peaches Mr. HAZLETON was 1st, showing well-finished fruits of Dymond. Humboldt Nectarines from the same exhibitor were also awarded the 1st prize.

Mr. BEN ASHTON secured the leading award in five classes for vegetables, in each case staging fine examples of almost every seasonable kind. In the single dishes, Mr. J. E. HATHAWAY won in five classes; Mr. JOHN CARROLL, Birkdale, the remaining class.

NON-COMPETITIVE EXHIBITS.

There were many fine exhibits of a non-competitive nature. In addition to the following, which were awarded Medals, others were granted Awards of Merit.

GOLD MEDALS.—Messrs. STUART LOW & Co., Bush Hill Park, for Orchids, Sweet Peas, and Roses; Mr. R. BOLTON, Carnforth, for Sweet Peas arranged in pillars, baskets, and vases; Messrs. ALEX. DICKSON & SONS, Newtownards, for Roses; THE KING'S ACRE NURSERY Co., for fruit-bearing trees; Messrs. DICKSON, BROWN, & TAIT, Manchester, for 100 dishes of vegetables, and Melons and Tomatos in pots; the Rt. Hon. Earl of LATHOM (gr. Mr. B. Ashton), for a group of stove and greenhouse plants.

SILVER MEDALS.—Mr. H. ECKFORD, Wem, for Sweet Peas; Messrs. YOUNG, West Derby, for Carnations; Mr. H. MIDDLEHURST, Liverpool, for Sweet Peas; Mr. T. W. DARLINGTON, Carnforth, for Sweet Peas; Messrs. BOLTON BROS., Carnforth, for British Ferns; Mr. H. N. ELLINSON, West Bromwich, for Ferns; Messrs. W. SHAND & Co., Lancaster, for herbaceous cut flowers.

WEST DERBY HORTICULTURAL.

AUGUST 2.—The eighteenth annual show was held in the Rectory grounds. The entries were satisfactory both in numbers and quality.

The Silver Rose Bowl presented by the chairman, Mr. C. A. Young, was well won by the Rev. P. STEWART (gr. Mr. T. J. Edgar) with good flowers well arranged.

Dr. COOKE (gr. Mr. G. Osborne) led in the class for a collection of half-hardy and hardy annuals. This exhibitor also won the 1st prize for 12

bunches of hardy herbaceous cut flowers and for six Tea Roses. Mr. T. J. EDGAR showed best in the class for six hybrid perpetual Roses. Mr. H. OGDEN excelled in the classes for 12 Carnations distinct and for a bouquet of flowers. Mr. EDGAR was placed 1st in the class for 12 vases of Sweet Peas.

In the classes for vegetables, Mr. G. OSBORNE won the 1st prize for nine distinct kinds, having good Tomatos, Peas, French Beans, and Onions. W. McCUBBIN, Esq. (gr. Mr. R. Cleaton) was placed 1st for six distinct kinds, the same exhibitor having the best Peas. Mr. H. OGDEN showed the finest Cucumbers, and Mr. G. OSBORNE the best Tomatos.

White Grapes were best shown by Mr. R. CLEATON, the variety being Foster's Seedling. The best two bunches of black Grapes were exhibited by Mr. T. J. EDGAR, who had Black Hamburg.

In the class for a group of plants arranged for effect, Mr. G. OSBORNE won the 1st prize with a pleasing combination, having Palms, Crotons, and Ferns, with a judicious addition of flowering plants. 2nd, Mr. H. SPENCER.

Mr. C. A. YOUNG, West Derby, contributed some pots of *Lilium Harrisii*.

Mr. W. ROWLANDS, Childwall Nurseries, showed Roses.

BASINGSTOKE FLOWER SHOW.

AUGUST 2.—The annual summer show was held in Golding's Park on this date. The entries were fewer than in past years, especially in the plant section.

PLANTS.

In the class for a group of miscellaneous plants occupying a space of 10 feet by 7 feet there were four competitors. H. WELCH THORNTON, Esq., Beaurepaire Park (gr. Mr. J. Keen), showed much the finest group, having a bright arrangement of Crotons, *Ixoras*, Palms, and *Humea elegans*. 2nd, S. E. BATES, Esq., Manydown Park, Basingstoke (gr. Mr. W. Green).

The best specimen flowering plant was shown by Mr. WELCH THORNTON in a good example of *Stephanotis floribunda*. This exhibitor also excelled in the class for a specimen foliage plant with *Cycas revoluta* in perfect condition. Exotic Ferns made a fine display, Mr. WELCH THORNTON winning the premier prize offered for them with *Asplenium Nidus*, *Dicksonia antarctica*, *Nephrolepis elegantissima*, and *Adiantum cuneatum*.

Tuberous Begonias were well shown by the Rev. A. H. GAY, Worthing (gr. Mr. W. E. Parris), who easily won the premier award. Exhibits of plants suitable for table decoration were much better than are commonly seen, the subjects chosen being light, bright, of even size, and not too large. The best 12 were displayed by Mr. WELCH THORNTON.

CUT FLOWERS.

In the class for two dozen Roses, distinct, Mr. F. W. FLIGHT, Cornstiles, Twyford, Winchester (gr. Mr. W. Neville), won the 1st prize with clean, well-coloured examples of Miss A. M. Kirker, John Cuff, Lady Ursula, G. Laing Paul, A. K. Williams, Mrs. Theodore Roosevelt, and Lyon Rose. Mr. FLIGHT also excelled in the class for 12 Tea varieties.

Carnations, as grown with their own foliage and undressed, in 12 varieties, three blooms of each kind, made an interesting display. Mr. FLIGHT won the premier position with highly-coloured blossoms neatly arranged.

The Hon. Mrs. F. BARING BROWN, Candover (gr. Mr. A. Childs), was first for 12 bunches of Sweet Peas and for 12 Cactus Dahlias.

Mr. WELCH THORNTON staged a choice collection of stove flowers in the class for 12 varieties. The exhibit embraced *Ixoras*, *Cypripediums*, *Clerodendron fallax*, and *Stephanotis*.

For a collection of flowers grown out-of-doors to occupy a space of 6 feet run of tabling, L. DE L. SIMONDS, Esq., Audleys Wood (gr. Mr. T. W. Dean), was placed 1st with an interesting exhibit of Roses, Delphiniums, &c.

In the class for a collection of six varieties of fruits, Lord CURZON, Hackwood Park, Basingstoke (gr. Mr. Bowerman), was the only competitor. He was awarded the 1st prize for Black Hamburg and Muscat of Alexandria Grape, Violette Hatve Peaches, Humboldt Nectarines, Sutton's Scarlet Melon, and Oullin's Early Apricot. The best two bunches of Black Hamburg

Grapes were shown by Dr. MAPLES, Kingsclere (gr. Mr. H. Tomalin).

Lord CURZON was first in the class for any other black Grape with Madresfield Court. Muscat of Alexandria was best shown by Mr. BATES, the bunches being long and tapering and with well-finished berries.

In the vegetable classes Lord CURZON was successful with a collection of Potatoes, a collection of eight varieties of vegetables, and also in the classes for Messrs. Sutton and Sons' and Messrs. J. Carter & Co.'s prizes.

Trade exhibits were not numerous. Messrs. B. LADHAMS & SONS, Shirley, had a fine display of hardy flowers, in which Gaillardias figured prominently. Charles Ladhams, a new seedling variety with a deep crimson zone and gold edge, was conspicuous.

Messrs. E. HILLIER & SON, Winchester, showed cut shrubs and Roses.

Messrs. W. H. ROGERS & SONS, Southampton, had an extensive collection of cut Roses of new and old varieties.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 31, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The temperature was below the average, the deficit ranging from a little more than 1° in the English Channel district to slightly above 3° in Scotland E. The highest readings occurred, as a rule, on Friday or Saturday, when the thermometer rose a trifle above 70° in many parts of England, as well as in the west of Scotland and the north of Ireland.

The rainfall was considerably in excess of the average over the United Kingdom generally, but agreed very closely with the normal in Ireland S. and the English Channel, and was rather deficient in Scotland N. The heaviest rainstorms of the week occurred respectively in the south and east of Scotland on Sunday, and over England and Wales on Tuesday; amounts exceeding an inch being recorded on each day at a large number of stations.

The bright sunshine amounted to less than the average in all districts excepting Scotland N. and Ireland N., where there was a slight excess. The percentage of the possible duration ranged from 46 in the English Channel and 33 in England E. and S.W. to 25 in Ireland and 21 in Scotland E.

THE WEATHER IN WEST HERTS.

Week ending August 4.

Another cold and wet week.—Until to-day there had not occurred a single unseasonably warm day for more than a fortnight, while the nights during the same period have been on the whole about average in temperature. On the coldest night, however, the thermometer exposed on the lawn fell to within 1° of the freezing point, a very low reading for the time of year. Both at 1 and 2 feet deep the ground is now 3° colder than is seasonable. Rain fell on five days of the week to the total depth of 1/2 of an inch. About two gallons of rainwater has passed through each of the percolation gauges during the week. The sun shone on an average for only 4 hours a day, or for as much as 2 1/2 hours a day less than is usual at the beginning of August.

JULY.

Exceptionally cold and wet.—This proved with one exception the coldest July recorded here for 17 years. As was the case in June the days were, as a rule, much more unseasonably cold than the nights. In fact there occurred only five days during the month when the temperature in the thermometer screen exceeded the average, and on the warmest of those days the highest reading was 76°, which is the lowest maximum in July for 19 years. On the other hand, on the coldest night the exposed thermometer fell only to 34°, which is a high extreme minimum for the month. Rain fell on as many as 19 days, to the aggregate depth of two and three quarter inches, or about half an inch in excess of the July mean. The sun shone on an average for six hours a day, which is half an hour a day short of the usual duration in July. The winds proved on the whole moderately high for the time of year, but in no hour did the mean velocity exceed 16 miles—direction W.S.W. For as many as 510 hours, or 21 days, the direction of the wind was some point of the compass between south and west. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 7 per cent.—E. M., Berkhamstead, August 4, 1909.

MARKETS.

COVENT GARDEN, August 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.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

Table of Cut Flowers prices including Aster, Carnation, American, Odonto-glossum, Pelargonium, Zonal, Poppies, Coreopsis, Eucharis, Gaillardia, Gladiolus, Gypsophila, Iris, Lilium auratum, Lily of the Valley, Marguerite, Mignonette.

Mosses, per doz. s.d. s.d.

Table of Mosses prices including Myosotis, Odonto-glossum, Pelargonium, Zonal, Poppies, Pyrethrum, Richardia, Roses, Niphetos, Bridesmaid, C. Testout, Kaiserin A., Victoria, C. Mernet, Liberty, Mme. Chateaux, Mrs. J. Laing, Richmond, The Bride, Ulrich Brunner, Spiraea, Statice, Stocks, Sweet Peas, Tuberoses.

Cut Foliage, &c.: Average Wholesale Prices.

Table of Cut Foliage prices including Adiantum, Agrostis, Asparagus, Berberis, Croton, Cycas, Ferns, Smilax, Grasses, Hardy foliage, Ivy-leaves, Moss, Myrtle, Fuchsias, Greivilleas, Heliotropium, Hydrangea, Isoretis, Kenia, Campanula, Clematis, Cocos, Coleus, Coreopsis, Crassula, Crotons, Cyperus, Dracenas, Eucalyptus, Euonymus, Ferns, Oak leaved.

Plants in Pots, &c.: Average Wholesale Prices (Cont'd.).

Table of Plants in Pots prices including Pelargonium, Rose, Zonal, Rosa, Polyantha, Apricots, Bananas, Currants, Cherries, Turkey Heart, Figs, Gooseberries, Grape Fruit, Grapes, Artichokes, Beans, Beetroot, Cabbages, Cardoons, Carrots, Cauliflowers, Celery, Chicory, Cucumbers, Endive, Horseradish, Lettuces, Mint, Mushrooms.

Fruit: Average Wholesale Prices.

Table of Fruit prices including Apples, Grapes, Lemons, Nectarines, Nuts, Peaches, Pineapples, Plums, Raspberries, Strawberries.

Vegetables: Average Wholesale Prices.

Table of Vegetables prices including Artichokes, Beans, Beetroot, Cabbages, Cardoons, Carrots, Cauliflowers, Celery, Chicory, Cucumbers, Endive, Horseradish, Lettuces, Mint, Mushrooms, Onions, Parsnips, Peas, Potatoes, Radishes, Salsify, Spinach, Stachys, Turnips, Tomatoes, Watercress.

REMARKS.—English Cherries are not so badly damaged as last week, but the trade in them has been very quiet, and consequently their prices are low. Turkey Heart and Bigarreau Napoleon are the varieties chiefly in demand. Plums are arriving from Kent; the variety Morocco is very unripe, but there have been some good samples of the variety Early Rivers. Tomatoes are a little cheaper, and there is a ready sale for well-coloured fruits, French Plums and selected Gages continue to sell freely. There is no improvement in the Grape trade. E. H. R., Covent Garden, Wednesday, August 4, 1909.

Potatoes.

Table of Potato prices including Bedforde, Early Puritan, Epicure, Eclipse, Sharpe's Express, Kent, Sharpe's Express.

REMARKS.—Trade is quiet and prices are very low.

Edward J. Newborn, Covent Garden and St. Pancras, August 4, 1909.

COVENT GARDEN FLOWER MARKET.

Holidays always interfere with the London trade in flowers, and this season the effect has been worse than usual. Carnations, Roses, and Sweet Peas cause the greatest trouble to the salesmen. The American Carnations are over abundant, and in addition to these there are large supplies of border varieties. Of these, one of the most popular is the yellow variety Raby Castle. Very few buyers favour the flaked or fancy flowers. This morning blooms of Eucharis were selling at about the price of ordinary border sorts. The long-stemmed Roses, for which good prices were obtained a year or two ago, are now so cheap that they are offered in the streets at about 1d. each. The variety Mrs. J. Laing, is one which may be instanced in this connection, and supplies of Mme. Abel Chateaux are equally overdone. Sweet Peas can hardly pay for the expense of marketing, as very many are left over after all orders are supplied. Lilioms sustain fairly good prices. Blooms of *L. auratum* are very good; but *L. longiflorum* is frequently seen in very moderate condition. Those of *L. speciosum rubrum* are bright, but there are many pale blooms of *L. roseum*, and the white Lilies are rather small. Asters are over plentiful with little demand. Sweet Sultan sells slowly. It is one of the most easily damaged flowers in wet weather. There are still persons who damp their flowers, which is the worst thing that can be done. They will keep better fully exposed to the sun than when damped and placed in the shade. The white-flowered variety sent out by Messrs. Jarman and Co., should also be kept quite dry. Gaillardias, Coreopsis, Poppies, and other hardy flowers are abundant. *Gypsophila paniculata* now takes the place of *G. elegans*. I have seen very little now of the double-flowered variety up to the present. It would pay to cultivate this flower under glass, for the blooms are a clear white when protected. Saponarias in pink and white colours are extensively grown, but with *Gypsophila* and Statice so plentiful, they are not greatly wanted. Large quantities of hardy Grasses are seen, also Fern fronds and hardy foliage.

POT PLANTS.

Trade is practically over for the season, and many stands are empty. There will be very little business until the middle of September. Most growers have some of their stocks unsold, and even at the end of last week there were large quantities of ordinary bedding plants in the market. Zonal and Ivy-leaved Pelargoniums are still plentiful; also Fuchsias, Marguerites, Hydrangeas, Crassulas, and Lilioms. Campanulas are good. There is little that is new in foliage plants. *A. H., Covent Garden, August 4, 1909.*

LAW NOTES.

THE USE OF THE WORD "PATENT."

At the Bow Street Police Court recently Messrs. Carter & Co., seedsmen, were summoned for selling an article to which the word "patent" was falsely applied, contrary to the Patents and Designs Acts of 1907.

Mr. Clement Edwards appeared in support of the summons, and Mr. Charles Rowe Sawyer for the defendants.

Mr. Edwards, in opening the case, said the article in respect of which the summons was issued was known as "Raffiatape," which was used for tying plants and flowers. It was first manufactured in this country in 1899 by Mr. S. H. Wheatcroft, of Derbyshire, but it had been sold here prior to that period. Mr. Wheatcroft supplied, amongst others, a man named West, a dealer in gardeners' sundries. West eventually claimed Raffiatape as his own invention, and obtained a patent for it. He threatened a number of persons with actions for infringing his patent, but Mr. Wheatcroft took proceedings in the High Court, and West's patent was revoked by Mr. Justice Parker. Mr. Wheatcroft sent a notice of the revocation to people in the trade, but in spite of that the defendants sold Raffiatape in a wrapper describing it as a patent.

Mr. Sawyer said that his clients would plead guilty to a technical offence. They had only sold a small quantity of Raffiatape since the patent was revoked, and had no idea they were doing wrong. The Act under which these proceedings were taken was a comparatively new one, and created a new offence, which was unknown to many tradesmen and some lawyers.

Sir Albert de Rutzen said that, as the defendants had pleaded guilty, they would only be fined £1 and £3 costs.

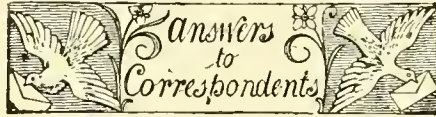
A similar penalty was imposed in the case of Messrs. Barr & Sons, who were summoned for a like offence.

DEBATING SOCIETY.

BRISTOL AND DISTRICT GARDENERS'— Exhibits of Sweet Peas were a special feature at the meeting held on July 28. Mr. Arnold, gardener to Lord Bathurst, Cirencester, gave a lecture upon *Souvenir de la Malmaison* Carnations. The lecturer said this type of Carnation originated in the garden of the Empress Josephine, and derived its name from the chalet to which she retired. Various details of culture were given, including propagation. Mr. Arnold said French growers do not layer their plants in the soil, but after making the layer fill the several portions with chopped moss, and wrap this part with tinfoil. The layers should be potted about the beginning of September and housed not later than mid-October, in a house having a temperature not higher than 45°. *H. W.*

ENQUIRIES AND REPLIES.

PRIMULAS.—In answer to the enquiry by *B. L.* on p. 86, we may say that Primulas *Bulleynana*, *Muscarioides*, *Forrestii*, *malacoides*, and *Littoniana* having been collected for us by Mr. Forrest on the high Alps of Yunnan, are quite hardy and will seed themselves in the open. Respecting *P. sikkimensis*, we find it does exceedingly well in the wood at our Sealand nursery, and we have not experienced the trouble in replanting this species described by *B. L.'s* friend.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ASPHALT. *J. P.* Generally speaking, the appearance of vegetation on an asphalt path is an indication that its surface has commenced to deteriorate, and is absorbing some moisture instead of passing off all that falls upon it. Asphalt paths should be brushed over with a thin coating of tar every year. Paths treated in this manner are made impervious to moisture, wear the better, do not show unsightly cracks, and rarely, if ever, get any moss on them. We would advise you to have the moss scraped off your path, and allow it to get perfectly dry, then thoroughly cleanse it by the aid of a hard whalebone brush. When this has been done give the surface a thin coating of boiling coal tar. After the surface has been treated in this way it should be dusted over with fine limestone grit, so as to prevent the tar adhering to the boots. Applications of salt made during dry weather are often successfully employed to destroy moss on paths, but, as this does not get rid of the cause of the trouble, this method is unsatisfactory, for the moss soon reappears.

BEGONIA. *H. Wood.* The leaves show traces of what is termed Begonia mite. These microscopic bodies infest the under side of the leaves and eat the epidermis, which, on becoming brown, is often called Begonia "rust." The best remedy for this is to dip them in tobacco water. The leaves also show on their edges that they have suffered from unsuitable atmospheric conditions, which occasionally cause the plants to suffer a slight check, the effect being exhibited first in the margins of the leaves.

BROAD BEAN. *Mark Zebra.* For some reason or another the seeds have not developed. There is nothing to show why they have not done so. Probably it is a shy-bearing variety. In any case, you can do nothing to remedy the state of things. Obtain fresh stock for another year.

CARNATION. *C. F. A. van D. S.* The excrescence on the roots denotes the presence of eel-worm. It is an exceedingly bad case, and we should not, therefore, advise you to have the plants potted. It will be better to consign them to the fire heap.

CARROTS. *C. S. & Co.* The trouble appears to have been caused by the Carrot fly (see p. 98).

COMPETITIVE SHOW. *T. S.* The exhibitor clearly committed an infringement of the schedule. The schedule stated that no more than six varieties were to be shown. The exhibitor staged Cauliflowers, Onions, Carrots, Potatoes, Peas and two varieties of Vegetable Marrow. There were, therefore, at the least, seven varieties. It is possible that the exhibitor read the word "variety" as meaning "kind," in which case he would consider the two varieties of Vegetable Marrow to be of one kind. But the Royal Horticultural Society's *Code of Judging* clearly limits the word "variety" to variations of a particular kind, such as varieties of Peas, or Carrots, or Cauliflowers. Had the schedule said six kinds of vegetables, the exhibitor would have been justified in showing the produce he actually staged.

CUCUMBER. *A. J.* The leaves received appear to owe their disfigurement to scorching. We have not been able to find any trace of the Cucumber blotch (*Cercospora melonis*). If the plants continue to be unsatisfactory, send fresh material for examination.

CYANIDISING A PLANT HOUSE. *H. B.* The quantity of the cyanide salt and sulphuric acid necessary for each 1,000 cubic feet of space is given in the issue for April 23, 1904, p. 271.

DWARF TREES. *J. T. H.* If you will send samples of the injured trees, we will endeavour to assist you.

FIG. *J. L.* The Fig leaf is badly attacked with the Fig leaf disease (*Cercospora Boleana*). All diseased leaves and fruits should be collected and burned. If the trees are sprayed with diluted Bordeaux mixture it will help to check the disease, but in very bad cases the best thing to do is to root up and burn the trees, intending afterwards to plant clean stock in fresh soil.

GRAPES DISEASED. *G. D.* The berries are affected with the spot disease, so often described in these columns. Cut out and burn all diseased Grapes, and spray the bunches with liver of sulphur, using ½ ounce in two gallons of water.

GRAPES SPLITTING. *L. A. K.* See reply to *W. C.*, p. 86, in the last issue. As you suggest, the cold rainy weather has doubtless accentuated the trouble. The sulphur will be valuable should mildew put in an appearance, but it will not prevent the berries cracking.

MORELLO CHERRIES. *J. P.* Your letter leaves us in doubt as to the general health of the trees, but if they have only been planted eight years, and are healthy trees in full vigour, the fact that a large proportion of the fruit falls when of the size of Peas points to some error in their cultivation. Young Cherry trees on a fertile soil are usually very vigorous in growth, and, unless good crops of fruit are taken off the trees, artificial manuring is not only unnecessary but harmful. Excess of manuring would be likely to cause the trees to make gross wood. It is wood of this character that usually casts its fruit. Do Cherries thrive in any other part of the garden? Is there any harmful substance that can reach the roots, or can the roots get into any such thing as sewage? There is the possibility of a deficiency of lime in the soil, this being necessary for all stone fruits. Next autumn lift the trees carefully, cutting off any tap-roots; and see that the drainage is put into a good condition. For replanting mix a proportion of old mortar rubble with some good sweet loam, placing this carefully about the roots, making the soil thoroughly firm. A good dressing of lime applied in the winter on the top soil round fruit trees, is beneficial. After being exposed for some time it should be lightly forked in.

NAMES OF PLANTS. *J. M. & Sons.* The flowers received are those of what is known as The Mummy or Bunch Pea. It has been known in gardens as *Pisum sativum umbellatum*, but the botanists now consider it to be a variety of *P. elatius*.

NETTLES. *D. P. H.* The best thing you can do in the circumstances is to keep cutting the Nettles with a scythe, never allowing them to make much growth. You will soon find that if this treatment is persistently carried out, the plants will become weaker. It is not possible for you to apply weed-killers to exterminate the Nettles, as these would at least destroy the Grass, and possibly some of the shrubs also.

RAINFALL. *Penzance.* You will find all particulars in *British Rainfall*, edited by Hugh Robert Mill. This work can be obtained from our publishing department, price 10s. 4d. free by post.

ROSE BUDS DROPPING. *Cole-Green.* We can only suggest injury by cold as the cause of the trouble.

Communications Received.—*C. E. P.* (Thanks for 3s. which has been placed in the R.G.O.F. box.)—*Nemo*—*Ed. B.*—*E. T.*—*W. Peters*—*J. G. W.*—*J. F.*—*J. C. & Sons*—*J. D. G.*—*F. M.*—*E. H. J.*—*Wynham*—*F.*—*E. M.*—*A. B.*—*Le Mortola*—*W. H. L.*—*S. A.*—*W. G. S.*—*F. W. P.*—*H. A. B.*—*A. R. F.*—*W. F. H.*—*W. E. B.*—*A. D.*—*H. J. W.*—*J. O. B.*—*J. G.*—*F. K.*—*G. H.*—*A. J. W.*—*C. C.*—*W. F.*—*S. W.*—*W. T. N.*—*W. C. S.*—*F. A. C.*—*Reliable Seed Co.*—*J. C.*—*R. A. H.*



ELISENA LONGIPETALA, AS CULTIVATED BY MISS WILLMOTT, V.M.H.
FLOWERS WHITE.



THE

Gardeners' Chronicle

No. 1,181.—SATURDAY, August 14, 1909.

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EVERGREEN HEDGES.

PROBABLY no feature imparts such a finished appearance to a garden as a well-kept hedge enclosing the site. It is essential that a hedge, whatever plant is employed in its making, should be given regular attention every year. It may even be necessary to cut it twice each year, to ensure its being kept in proper condition. There are not many trees and shrubs suitable for forming hedges, more especially when we consider the large number of ligneous subjects hardy in this country. The best in their order of merit are Holly, Yew, Box, *Thuja plicata* (T. Lob-bii), *Cupressus Lawsoniana*, *C. nootkatensis* (*Thuja borealis*), *C. macrocarpa*, *Thuja occidentalis*, *Osmanthus Aquifolium* var. *ilicifolius*, Common and Portugal Laurels, *Rhododendron ponticum*, *Berberis Darwinii*, and Privet.

THE HOLLY.

The premier position as a hedge plant is held easily by the Holly. Under proper treatment it forms a dense, impenetrable screen, and presents a good appearance at all seasons of the year. Before planting a Holly hedge, the ground should be worked 3 feet wide and 3 feet deep.

A good proportion of well-rotted manure should be incorporated in the soil at a depth of about 2 feet. If the ground is poor, a little fresh, rich loam, together with some extra manure, may be placed around the Hollies at the time of planting. The ground should be prepared some time before it is planted, to allow of its settling down properly. The size of the plants must depend upon the expense to be incurred, but Hollies 3 feet to 4 feet in height can be obtained at fairly reasonable rates, and they will soon form a good-sized hedge. Smaller sizes are cheaper, but they are not to be equally recommended for the purpose under consideration. The month of May is always said to be the proper time to plant Hollies, but from my own experience (and I have had to do with the planting of thousands of these plants of all sizes) the early autumn is far better. As soon as the young growths are ripened sufficiently to prick the hand when gently squeezed, which is usually from September 20 to October 10, Hollies are in a fit condition for transplanting, and if the weather is showery success may be regarded as certain. It is not, however, the weather conditions at the time of planting that matter most, but the state of the atmosphere during the ensuing three weeks. In the autumn the atmosphere is usually moist, the ground is warm, and the roots of the Hollies become active again almost immediately. In May the weather is usually dry and there are hot sunshine and easterly winds. These conditions are the worst possible for transplanting anything, more especially such a capricious subject as the Holly. A Holly hedge requires no attention during the first season after planting, beyond keeping it clear of weeds, and supplying a thorough soaking of clean water if the weather is very dry. The second year the hedge may be clipped lightly in somewhat the shape it is to assume ultimately. This pruning should be done in May, and perhaps again in October, where the hedge is young and vigorous, but with old-established hedges an annual clipping in late September or October is sufficient. Old hedges that have been neglected may be brought into shape again by severely cutting the sides, going right back into the old wood, and reducing the height by one-fourth or even one-half. If the top is not reduced the sides will never regain a perfect condition. It is advisable to look into the interior of a good hedge occasionally for the purpose of removing any accumulation of dead leaves at the bottom. In some cases I have known these to reach 2 feet or more up the centre of the hedge, and, if left, they cause the base to become thin and weak. The ultimate height of a Holly hedge is a matter of taste. A hedge of this character may be kept perfect up to a height of 40 feet. If allowed to grow more than 8 feet high, the upper halves of the sides should be sloped inwards instead of being cut square throughout, so that the top will not grow vigorously at the expense of the base.

THE YEW.

The common Yew is a rival to the Holly as a hedge plant, more particularly within the garden, as, for example, around a Rose garden, on the edges of terraces, or to shut out some unsightly spot, since it can be kept to any height from 3 feet to 15 feet. In the matter of preparing the ground and planting, the

same procedure should be followed as advised for the Holly, the Yew being a gross feeder. It will not, however, thrive in ground that is inclined to be wet, a point that should be borne in mind before selecting Yew for the purpose. Ground that is on the dry side and well drained suits Yews admirably once they are established, provided they have plenty of root room and are well fed. The best time to clip Yew hedges is in May, but young, vigorous hedges may also require a second trimming in the autumn. The Yew will stand any degree of clipping, and in course of time may be cut into any desired shape, as is proved by the grotesque monstrosities in Yew known as "topiary work." Old hedges that have been neglected and become ragged may be cut hard like the Holly, but they take rather longer to regain their good condition.

THE BOX.

The Box is not so much used for the making of hedges as it might be, though its dwarf form is fairly common as Box edging. On heavy soils or in limestone districts the Box makes a splendid hedge up to 8 feet or so in height. The ground should be well prepared in the first instance, using plenty of manure, with an addition of old mortar rubble, assuming there is only a little lime in the soil. Box is not capable of making a good boundary hedge, where persons or cattle are likely to push through, but in other situations it forms a capital hedge which is always attractive if kept in good condition. It should be clipped in April or early in May just as growth is commencing, and, unless growing very strongly, need not be pruned again until the following year. Box hedges sometimes turn yellow from lack of nourishment, but this can be soon rectified by affording a good top-dressing of well-rotted manure and soot, with an addition of lime in some form or other. An old-Box hedge that has been neglected cannot be cut back hard, as the Box does not break readily from the old wood, though much can be done by cutting it in harder each spring for a few years.

THUYA PLICATA, CUPRESSUS LAWSONIANA, AND C. NOOTKATENSIS.

These three plants may be treated together in the matter of their suitability for hedge plants, as their manner of growth and method of treatment are identical. All three make capital hedges 10 feet in height and upwards, but they are not suitable for low hedges. In point of appearance there is not much to choose between them, this being more a question of individual taste than anything else. All three are strong, rapid growing plants and soon attain a good size when once established. The ground should be well trenched for them, but no manure need be used; in fact, it is injurious to them if used in any considerable quantity. If the soil is rather poor, so much the better, as the rate of growth will be slower, and therefore less heading back will be needed. These plants should be clipped in May, and, until the hedge has reached its required height the leading shoots should be cut to 6 inches or a foot each year. This prevents them becoming thin in any part, and a new leading growth is soon developed. They can be cut into square-topped hedges, but I think they look better and keep better when they are cut into their natural shape—an elongated pyramid.

CUPRESSUS MACROCARPA.

This plant can only be recommended for the warmer parts of this country. In other districts it may thrive for a few years, but a sharp frost or two afterwards will be sufficient to ruin its appearance, even if it does not kill it outright. The tender green foliage and graceful, feathery appearance make it a handsome hedge plant where it can be used with safety. It is a tall, quick-growing Conifer, and should be used for hedges of not less than 10 feet in height. An open, well-drained soil suits it best, and no manure is necessary at any time, as the plants grow quite fast enough without any stimulant. It should be clipped towards the end of May, shortening the leading shoots if necessary at the same time. The hedge may be cut in any desired shape, as the natural growth of this plant is upright and columnar, but for high hedges the top should be kept narrower than the base. *J. Clark, Bagshot, Surrey.*

(To be continued.)

THE ROSARY.

ROSES AT FARNHAM.

In the nursery trade, especially the wholesale trade, Mr. S. Bide, the proprietor of the Alma Nursery, Farnham, is well known. He cultivates every year 200,000 Rose plants, 14,000 of these being standards. In addition to the Roses, there may be seen in the nursery collections of fruit trees, forest trees, and general nursery stock, including 50 acres of Seakale. There are also extensive ranges of glasshouses, in which Tomatos, Cucumbers, Melons, and Roses are grown in large numbers.

In addition, Mr. Bide farms well, is a noted Hop grower, and has a dairy of 70 cows. He has two sons, who assist in the business—Arthur manages the general nursery department, whilst Herbert is the florist, with a strong penchant for Sweet Peas, of which he has four acres under his control.

To return to the Roses, Mr. Bide produces large stocks of new or popular varieties. Grafting therefore commences in January and continues for several months. Mr. Bide is also a raiser of new sorts, having at the present time many promising varieties under trial. Of his new variety Queen of Spain, a handsome, pale pink H.T. Rose, no fewer than 8,000 plants are now growing in the nursery quarters. So full and solid are the blooms of this variety that some blossoms contain as many as 200 petals.

The rich sandy loam of this nursery is well suited for Roses; the plants grow strongly and flower freely. Of the newer varieties that arrested my attention was a fine batch of Lyon Rose, Mme. Melanie Soupert, Mme. Constant Soupert, and John Cuff, with its extra large shell-like petals of deep rose. Rhea Reid, as seen here, exhibits more cherry colour than Richmond; it is sure to become a popular Rose. Comtesse Cecelia Lurani has delicate pink flowers of most shapely form, whilst Joseph Lowe is intensely rich in its salmon hue. A large stock of Mrs. Sophia Neate, Mr. Bide's new pink Tea Rose, was noticed; its parents are Anna Ollivier and Mme. Lambard. Mrs. Aaron Ward, of an Indian yellow shade, is shapely and attractive. Yeluvezoom, the new famous Gold Medal variety, is rich in rose colour, with an edging of silver. It has a slight tendency to split its petals at the edge. Lady Rossmore has crimson and claret shading. H. Armytage Moore promises to be a fine bedding Rose, so free and showy is it in its delicate shade of silvery-pink.

Of older varieties in the H.T. section excellent blossoms of Mrs. Theodore Roosevelt were plentiful; this Rose has closely imbricated petals of delicate pink colour. William Sheau, with its veining of pink, was abundant. The brilliant scarlet Earlate showed as a good bedding Rose. John Ruskin, with its immense rose-

coloured petals, was attractive by its rich perfume and freedom of flower.

Rev. David R. Williamson, in its velvety crimson hue, was glorious beside Killarney, Marjorie, Prince de Bulgarie, Pharisae, Oberhofgartner Terks, Mrs. D. McKie (creamy yellow), and Mme. Ravary. The variety mentioned last vied with the newer Le Progrès in its intensity of orange-yellow. La Tosca, Lady Ashtown, Mildred Grant, Mrs. E. Mawley, Mamie, Jakob's Perle (with its dainty buds), Duchess of Portland (creamy white), Dr. J. Campbell Hall (rose-pink), David Harum, Goldelse, Dean Hole, C. J. Grahame, and Betty (which is undoubtedly one of the finest of garden Roses) go to make up a capital display.

Although not so popular as the Tea and H.T. sections, the H.P. varieties are largely grown; such standard varieties as Captain Hayward, General Jacqueminot, A. K. Williams, Hugh Dickson, Hugh Watson, Duke of Edinburgh, Her Majesty, Marchioness of Londonderry were prominent, not forgetting huge batches of that ever-popular variety Frau Karl Druschki.

Single-flowered varieties included Mrs. O. G. Orpen, Irish Harmony, Irish Brightness, and Sarah Bernhardt. Sarah Bernhardt is especially brilliant in colour, with a deep flush of crimson. A new copper-tinted variety, Mrs. W. H. Massey, especially noteworthy in the bud, is deserving of attention.

Of Rambler Roses the new Stella was flowering freely in the open, and so was the "blue" variety Veilchenblau. Flower of Fairfield, the new Crimson Rambler seedling, White Dorothy, and that popular variety, Blush Rambler, are grown in immense quantities. *E. Molyneux.*

CULTURAL NOTES FOR AUGUST.

AFTER the showery weather generally experienced, the remaining Rose stocks can now be budded with every chance of success. The sap being very active, as large a number of buds as possible should be got in. Some failures have been reported amongst the early-budded Standard Briars. These can now be made good by applying fresh buds, inserting them as near to the first as possible or on subsequent growths that have matured since. This is the best month for budding on the Manetti and dwarf De la Griffere stocks. If a sufficient number of matured scions is available, the buds should be got in without delay. Where a stock of strong-growing climbers of Teas and Noisettes is desired, it should be remembered these do admirably on the climbing Rugosa and Crimson Boursault, which are late growers of vigorous habit and can be budded at any time until early in September. I had almost forgotten the seedling Briar. This will do for all classes of Roses of moderate growth.

Continue the pruning back of the Rambler and Cluster varieties as soon as they have done blooming, for if the old flower-stems are left on for a time they check the development of the new growths. These fresh growths should be tied in to secure them from the wind, whether they are growing on trellis, pillar, or pergola. The early-flowered varieties of Hybrid Perpetual, Tea and China Roses, can also be pruned to two or three eyes, which will induce a strong secondary growth and bloom, especially, if after being well mulched, an occasional dose of weak liquid manure is given them, or spruikings of some good fertiliser.

The present time is a good opportunity for improving old and worthless varieties by inserting buds of rare, choice, or new varieties in the young wood, and gradually eliminating all useless growths after the bud has taken. The heavy rains lately experienced will cause the early buds to swell, and as the tying material if left unloosened is apt to cut into the bark, this must be remedied from time to time. The hoe should now be used frequently on the beds and borders, not only to prevent the surface getting baked hard, but also to admit air and destroy small

weeds. Green fly is very prevalent, and frequent syringings with a solution of soft soap, quassia, and tobacco are necessary.

August is the best month for layering bush Roses and thus increasing the stock of any desirable kind. Straggling or worn-out plants that have lost their bottom growths can be converted into bushy specimens. Cut out a sloping trench 1 foot deep some distance from the stem, according to the length of the shoot, and fill the trench with burnt earth, sharp sand or grit, and turf. Then bend the shoot carefully down in the trench, make an incision or tongue about an inch long under the shoot or branch about half-way through, leaving the head 9 inches or a foot above the ground. The layer must be secured by a stone or firmly-fixed hooked peg, and the growth tied into a position nearly upright.

Market growers propagate General Jacqueminot and other varieties by this method, which enables them to get good strong plants on their own roots in a reasonable time.

After the buds on the Standard Briars have commenced to grow, they can be shortened to within 8 inches of the bud. This should be done towards the end of the present month. Prepare some good turfy loam, decayed manure, and sharp sand in readiness for potting in autumn. It is usual to stack the loam and manure in a heap for six or more months before using.

Roses in pots plunged out-of-doors will now be growing vigorously. If they are stopped for the last time in July and all flower-buds pinched off, they will make handsome specimens for flowering under glass in autumn and winter. In the meantime they must be kept perfectly clean from insect pests. Indoor Roses growing in borders will need frequent syringings. If the roof of the house can be removed during the hot weather, so much the better. A description and illustration of an inexpensive span-roof Rose house, with removable roof, were given in the issue of the *Gardeners' Chronicle* for September 19, 1908. The kind of house then illustrated affords ample ventilation, and is suitable in every respect for the purpose it is intended. *J. D. G.*

VEGETABLES.

CULTURE OF CULINARY PEAS.

My practice is to dig trenches during the month of November, about 1 foot wide and 2 feet deep, extending north and south. As soon as these are ready, sewage water is run into them. This is continued until about January, when the sediment obtained from catchpits is emptied into the bottom of each trench to the depth of about 6 inches. A 6-inch layer of well-rotted manure mixed with wood-ashes is next placed in the trench, and afterwards soil is added to within 4 inches of the surface. This is left undisturbed until March, when the sides of the trench are drawn in so as to leave a trench about 6 inches wide. The seeds are sown at about 1 inch apart over the whole width of the trench. The remainder of the soil is then filled in and made firm. Wood-ashes, if obtainable, should always be used for the cultivation of culinary Peas, as the potash they contain imparts a firmness to the haulm, so that it is less subject to an attack of mildew. But wood-ashes should not be employed later than January. Peas require supporting early, and the shoots cling most readily to twiggy sticks. I have tried using wire Pea trainers, but I found during very hot summers that the wire becomes heated and burns the vines. The variety Supremacy is a very quick Pea in furnishing a crop. From plants sown on March 14 I commenced picking on June 9. Other good varieties are Gradus, Alderman, Telephone, Telegraph, and Ne Plus Ultra. I have also planted Colossal, a new Pea sent out last spring. If it crops as freely as it grows I shall add it to my permanent list. By the method of culture I adopt mildew is unknown, mulching is unnecessary, and the plants withstand drought to a wonderful degree. *Thos. Francis.*

BOWKERIA GERARDIANA.

THIS rare South African shrub was formerly known as *B. triphylla* (see *Gard. Chron.*, December 10, 1904), owing to its leaves being borne in threes, and this name is such a descriptive one that it is a pity that it has been superseded by that of *B. Gerardiana*. The flowers are pure satin-white and shaped somewhat like those of a *Calceolaria*, with a hood and lip. They measure an inch across and the same from the top of the hood to the base of the lip. The flower is flattened in shape and is barely half-an-inch in depth. In the south-western counties its growth is very rapid, an example here having increased from a height of 18 inches to 7 feet in four years. The species is a very free flowerer, and in August is smothered with blossom. It will also bloom in a very small state, little plants scarcely more than a foot in height bearing flowers. On a spray 18 inches in length cut from the big plant two years ago, there were 30 fully-expanded flowers and 21 buds. The blossoms are borne at the axils of the leaves on the old wood sometimes singly, but often with as many as seven on a branching raceme. The lower lip of the flower is three-lobed, these three lobes being closely folded over the tube of the corolla, thus effectually preventing the ingress of insects. The pollen is shed while the flower is still in bud. This *Bowkeria* is not in commerce at the present time, though about 17 years ago it was cultivated at Messrs. Bulls' nursery at Chelsea. It is a handsome shrub that succeeds admirably in Devon and Cornwall. The plants are fairly hardy, as they have experienced 12 degrees of frost totally unprotected, and, beyond the browning of the leaves, are uninjured, starting into growth again in the spring. The species is a native of Natal, where it is said to flower in the month of December. *Wyndham Fitzherbert, South Devon.*

THE FERNERY.**THE COMMON POLYPODY.**

ALTHOUGH we have headed our notes "The Common Polypody," *Polypodium vulgare*, it will soon be seen that it is the uncommon Polypodies which we have most in our mind, since, though they are the direct outcome of the sportive common one, they are far more beautiful, while equally hardy and easy of culture. The common type should be familiar to everyone who keeps his eyes open in Ferny districts, since its once-divided fronds, like double, broad-toothed combs, may be seen peeping out from the hedgerows, forming clusters in the forks of old trees, especially pollarded ones, or forming fringes near and on the tops of old walls or in the chinks of rocks and ancient ruins. As it is evergreen, it easily holds its own, and only drops its old fronds when the new ones are well in evidence. Occasionally, but fortunately nowadays rarely, we may see the peripatetic Fern-vandal hawking it about in clumps embedded in moss as a basket plant, and for such purpose it is admirably adapted, since, if bedded in loose, leafy compost retained by a lining of moss in a wire basket, it soon pushes its way through the sides, and makes a very pretty object. It does this by virtue of a stout, fleshy, travelling root-stock somewhat on the lines of the Haresfoot Ferns or *Davallias*. The root-stock travels on or near the surface of the soil, but, as we have implied, does not fail to descend if it can find an opening laterally for the expansion of its fronds. The fronds, when healthy, and grown in a well-lighted position, bear on their undersides rows of very beautiful golden spore heaps, much larger—as are the orange-yellow spores themselves—than Ferns

usually produce, so that they constitute a distinct addition to the beauty of the Polypody. So much for the common or hedge type, against which, as regards prettiness, we have not a word to say. The Fern connoisseur, however, never dreams of devoting space to it as an ornamental plant, since Nature, having endowed it with great variability, produces far more beautiful sports which are equally amenable to culture, fully as evergreen and hardy, and, therefore, more deserving of places of honour than their comparatively humble progenitor. The Welsh Polypody, or *P. v. cambricum*, is one of the best-known varieties, so old, indeed, that it is figured in Gerard's *Herbal*. It is doubtless so named as being first found in

a frond or two and a growing point, can be made into a specimen by proper culture. This remark applies to all varieties, whether fertile or not. The superior varieties of *cambricum* are *P. v. cambricum Earrowii*, a bolder, broader form; *P. v. c. Prestonii*, a denser grower; and *P. v. c. Hadwinii*, a distinct, erect variety. All of these were found wild in the Lake District; they make fine specimens, either in shallow, well-drained pans filled mainly with leaf-mould, or in suspended baskets. Then there are fertile varieties, in which the comb teeth are divided and redivided into smaller ones, greatly enriching the appearance of the Fern, such as *P. v. pulcherrimum*, a very robust form; *P. v. semilacerum*; *P. v. omnilacerum*, which, however,



[Photograph by Wyndham Fitzherbert.]

FIG. 46.—BOWKERIA GERARDIANA: FLOWERS WHITE.

Wales, but since then it has turned up in several other places as wild sports among the type-form, and, as we shall presently see, some of these sports are decidedly distinct and improved types. In this section, which constitutes the plumose or extra feathery type of the species, the teeth of the comb are greatly broadened and lengthened, and also divided again into sharply-pointed broad divisions, the frond thus being roughly a pointed oval, very much wider than the common one. The fronds are also of thinner texture and are invariably devoid of spores, so that the Fern can only be propagated by division of its root-stock, every piece of which, provided with

rarely assumes its full character; and, last, but by no means least, *P. v. cornubiense* or *elegantissimum*, found in a pollard Willow in Cornwall. This last is indeed an extraordinary Fern, since it bears three kinds of fronds, some normal, some twice divided, and some thrice divided on very fine lines indeed while all three types may appear piecemeal in one and the same frond, as if the Fern were constantly altering its mind as to what it should do. One form of this, obtained by selection, *P. v. trichomanoides*, is of the best type throughout, save for the very rare production of normal bits, which are best removed when they appear. It was the crossing of this with the

big-growing tropical *P. glaucum* which gave us *P. Schneideri*, a huge edition of *cornubiense*, with all its eccentricities, with only a touch of *glaucum*, and nearly hardy. Then we have fine tasselled varieties: *P. v. cristatum*, with all tips splayed out into several points; *P. v. bifido mul-*

ker has often a great bunch crest, several inches across on an almost bare stalk. *P. v. glomeratum* Mullens is an eccentric, no two fronds being alike, though all are divided and crested after a fashion. All these were found wild, but as the fertile *Polypodiums* are avail-

or seven types, the normal, normal crested, and the two different types of fine and finer division, also crested or non-crested, appearing generally as entire fronds or parts of one and the same frond. There are numerous other varieties, but these are the best, and we think we have said



FIG. 47.—EXHIBIT OF SWEET PEAS, LILIES, MELONS, VEGETABLES, ETC., AT THE LEAMINGTON SHOW, FOR WHICH MESSRS. E. WEBB AND SONS, WORDSLEY, WERE AWARDED A GOLD MEDAL.

(For report of show see last issue *Gardeners' Chronicle*, page 102.)

tifidum, a long, narrow variant of this, quite distinct; *P. v. grandiceps* Fox and *P. v. g. Forster*, two varieties with fine bunch crests at all tips, the terminal one being very heavy, especially in the latter, while *P. v. grandiceps* Par-

able for propagation by the spores, a successful cross has been made between *P. v. bifido multifidum* and *P. v. cornubiense*, the result being an exaggeration of the capabilities of that versatile Fern, since the joint offspring may display six

enough to show that however pretty the hedge *Polypodium* may be, it is surpassed in interest by its offspring, in which Nature, in some subtle fashion, has shown so many very varied forms. *Chas. T. Druery, V.M.H., F.L.S.*

REMARKS ON THE CONDITION OF THE
FRUIT CROPS.

(See Tables and Summaries, ante, pp. 70-76.)

(Continued from page 93.)

3, ENGLAND, E.

SUFFOLK.—The fruit crops generally in this district are looking remarkably well, taking into consideration the trying season. In May we registered frost on nine mornings, and a very severe frost of 10° on May 16. All early Strawberry blossoms were destroyed, therefore the crop was a fortnight late. The Apple blossom was fully out when the frosts occurred; but only in exposed gardens was it damaged. Had there been moisture on the trees the result would have been disastrous. The winter moth has been very prevalent in this district for some years past, and, where nothing has been done to combat this pest, the trees are nearly bare of leaves and fruit. Where grease banding and spraying have been practised, the trees and crops are very healthy. Plums, Peaches, Pears and practically all fruit trees and bushes have been badly attacked with green and black aphid; but with continual spraying it has been checked. What all fruit crops require now is sunshine. *Thos. Simpson, Henham Hall Gardens, Wangford.*

—All fruit trees here set good crops, but the late frost (9° on May 16) thinned them severely, especially Plums and the blossom on young Pear trees on trellises. Wall trees did not suffer so much. Red Currants, Raspberries and Gooseberries are good. Black Currants are half a crop. Strawberries have been much damaged with the wet weather and lack of sunshine. *F. Smith, Oakley Park Gardens, Eye.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—Fruit trees in this district passed the flowering period entirely uninjured by frost, and there was good promise of very heavy crops, no doubt due to a thorough ripening of wood last autumn. Cold winds in May and June, however, caused green fly to be very prevalent. Wall fruit is a good and full crop. Bush fruits set splendid crops. Gooseberries were the finest crop I ever remember to have seen. The soil here is a very heavy clay. *F. J. Foster, Cranfield Court Gardens, Woburn Sands, R.S.O.*

BUCKINGHAMSHIRE.—Owing to the remarkable amount of sunshine experienced in the autumn of 1908, fruit trees of all kinds promised well for this season, and an exceptionally late spring aided in retarding the blossoming period until the danger of late frosts was past. Fruits of all kinds set well, but cold, sunless weather during May and early June brought insect pests of all kinds, entailing a vast amount of labour in keeping the trees clean. Where proper attention has been paid to spraying and hand-picking, the crop is a good one, and, in the event of a good autumn, some fine samples of Apples and Pears should be harvested. Of culinary Apples here the best are Bramley's Seedling, Lane's Prince Albert, Norfolk Beauty, Newton Wonder, Ecklinville Seedling, Lord Grosvenor, and Peasgood's Nonesuch. Of dessert sorts Cox's Orange Pippin, American Mother, Lady Sudeley, Langley Pippin, Wealthy, St. Edmund's Pippin, Adam's Pearmain, and Worcester Pearmain. Pears on walls promise to be excellent, the trees are clean and the fruit free from blemishes. *Chas. Page, Dropmore Gardens, Maidenhead.*

CHESHIRE.—The fruit crops for 1909 promised at one time to be very heavy. The genial weather towards the end of April was followed in May by a long spell of dry weather, with bright sunshine and north-east winds, accompanied by frost at night. The result was that blight and caterpillars did much harm to small fruits. *Peter Wilkinson, The Gardens, Walton Lea, near Warrington.*

HERTFORDSHIRE.—On the whole the fruit crops are good, for the lateness of the season retarded the blossoming of the trees until the frosts were over. Apples are an exceptionally heavy crop, and the fruit good up to the present. Gooseberries and Currants are good, but the latter trees are somewhat blighted. Our soil is very cold and heavy, and not favourable

for Strawberry and Raspberry cultivation, but even these crops are better with us this year than for some time past. Pears are almost a failure. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

—The fruit crops in this district gave every prospect at one time of being very heavy. There was an abundance of blossom, but owing to late spring frosts many of the blossoms were destroyed on Apples, Pears and Plums. Still, in some gardens near here the Apples and Pears are average crops. Such sorts as Blenheim Pippin, Bramley's Seedling, Peasgood's Nonesuch, and Lane's Prince Albert are the best. Among Pears carrying good crops are Duroondeau, Doyenné du Comice, Pitmaston Duchess, Brockworth Park, and Conference. Gooseberries are a remarkable crop. Red and Black Currants are good. The early blooms of Strawberries were destroyed by frost. On May 16 we had 8° of frost. The soil is a medium loam, and the subsoil, gravel. *C. E. Martin, The Hoo Gardens, Welwyn.*

—Generally, the crops in this district are good especially when allowance is made for the attacks of insect pests and the cold, wet weather. *H. Prime, Hatfield House Gardens, Hatfield.*

—Fruit trees of all kinds flowered well, but a succession of late frosts destroyed most of the blossom on all Plum, Pear and Apple trees which had not the shelter of a wall or the protection of the walled-in kitchen garden. Pyramid Apples and Pears in the kitchen garden and Plums on walls are carrying good crops of fruit. Peaches, Nectarines and Cherries on walls are all good. Some of the blossom of the small fruits was killed by the frosts, but the crops are not seriously affected, with the exception of Strawberries, which lost all the early flowers. Apples and Pears suffered the most severe attack of caterpillar that I remember. *C. R. Fielder, The Gardens, North Mymms Park, Hatfield.*

—What promised early in the season to be a good crop of Apples is now a very poor one. More than two-thirds have fallen off, those that remain being small. Peaches, Nectarines and Plums are good crops and look well. Strawberries were a very heavy crop, but the rains caused a large number to decay before they were ripe. Black, Red and White Currants, also Raspberries and Gooseberries, are clean average crops. Our soil here is very stiff, with a light-coloured clay subsoil. *Wm. Poole, Hadham Hall Gardens.*

LEICESTERSHIRE.—The condition of the Apple and Plum crops in this district is very disappointing, after the abundance of bloom displayed on the trees. The crop of early Strawberries was much damaged by the May frosts. Later varieties are producing satisfactory crops. Gooseberries, Red Currants, and Raspberries are over-average crops. Black Currants are scarce and the bushes are affected by blight. Aphid and caterpillars have been unusually numerous. The late abundant supply of rain has been beneficial to trees on the Paradise stock. *D. Roberts, Prestwold Gardens, Loughborough.*

—Apples, Pears, and Cherries are healthy, but Plums are much blighted; so also are Currants, especially Black Currants. Gooseberries are very healthy, and carry abundant crops of fine fruit. The soil is red marl, the situation only 400 feet above the sea level, and near to the River Soar. The season is cold and late, with very little sunshine. February, March, April, May and June were very dry months, but there has been frequent, though not heavy, rains during July. The temperature has been low throughout. *John Harrison, Aylestone, Leicester.*

—We had very cold weather in May when the Apples and Pears were in bloom. The thermometer on the grass registered frost 13 times between April 30 and May 21, the lowest being 20° on the grass and 27° 4 feet above the surface on May 19. During the first 21 days of May we had only 0.31 inch of rain and 195 hours of sunshine; the sun heat and maximum shade temperatures were very high during that time. Flowering was profuse on Apples, Plums, and Cherries, but less so on Pears. The best crops of Apples are on the tall standard trees; bush trees have very few fruits, and have suffered much from caterpillars. The winter wash is of no use in this respect. Pears have the best crops on west walls where they were sheltered from cold winds. Plums on standards are a thin crop, but are

heavy on the walls. Damsons are a good crop, following a very heavy one of last year. Aphides have been very troublesome. The increase of sparrows has driven away the swallows, which formerly caught them. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NORTHAMPTONSHIRE.—Considering the season, the fruit crops in these gardens are very good. Gooseberries are an abundant crop. Everything is very late. I cannot speak too highly of Lane's Prince Albert Apple; this variety does well on our heavy soil, whilst many other sorts growing by the side of it are complete failures. Blight and caterpillars have been very troublesome on all fruit trees here. Had the trees not been given constant attention, most fruit crops must have failed completely. *W. Batchelor, The Garden, Stoke Bruerne Park, Towcester.*

NOTTINGHAMSHIRE.—The crops in these gardens are satisfactory. All fruit trees and bushes produced much blossom, and they set pretty well. Apples and Pears are very good crops. Plums not so good. White Heart and Black Tartarian Cherries are plentiful, and Morellos promise well. Peaches and Nectarines are average crops and of good quality. When the Apricots were in flower there occurred 10° of frost, consequently the crop is not more than average. Small fruits generally are very good, Strawberries being a heavy crop. Foliage this year is vigorous, but in many cases it has been badly attacked by fly. *James B. Allen, Osberton Gardens, Worksop.*

—Apples and Plums suffered from cold winds, and where the trees are in exposed situations the crop is bad. In sheltered positions we have rather more than an average crop of these fruits: frequently one side of a tree is bare of fruits, whilst the other side is laden with them. Frost destroyed all the first blooms of Strawberries, but later trusses gave a plentiful crop. *J. R. Pearson & Sons, Lowdham.*

OXFORDSHIRE.—There is a great quantity of blight this year, and its presence has retarded growth, Cherries, Apples, Plums and Black Currants being the worst sufferers. Gooseberries, Black Currants, and Raspberries are enormous crops. Pears are very clean, but fruit is scarce. The soil is a light sandy loam resting on gravel. *John A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

—There never were better prospects of heavy crops of Apples, Plums, and Pears than this spring. The bloom on the trees was a grand sight, but although these latter were late in flowering, the bitter cold weather for such a long time crippled nearly all the flowers. To make matters worse, about the end of May many of our trees, especially Apples, were attacked by thousands of small green caterpillars, causing some of the trees to look as they do in mid-winter. Gardens and orchards exposed to the east have suffered the worst. Currants, Gooseberries and Strawberries just managed to have crops set before the cold weather set in. The soil here is poor and stony, and the subsoil, clay. *A. J. Long, Wyfold Court Gardens, near Reading.*

SHROPSHIRE.—The Apple crop cannot be said to be heavy; although there are some trees loaded with fruits, there are many exceptions. After two fruitful seasons, Plums and Damsons are very few. Cherries were a fair crop, but have suffered from wet. Strawberries were unsatisfactory. *A. S. Kemp, Broadway, Shifnal.*

—We have good average crops if all are considered collectively. Black Currants showed very good prospects in the spring, but turned out a failure, blight being very prevalent. Trees generally have suffered badly from fungi and insect pests. We are continually fighting pests with insecticides, but meet with little success; some of the remedies do more harm than good. All fruit trees are making very good growth; with a dry autumn a good fruit harvest may be expected. *John Taylor, Hardwick Grange, near Shrewsbury.*

—Fruit trees of all kinds have been badly infested with fungal diseases and insect pests. Where such trees have been left to themselves further trouble will be experienced later. Now that the warm rains have come, things are improving, and there will be an abundance of fruit in this district of all kinds excepting Apricots. *Chas. Roberts, Halston Gardens, Oswestry.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

CATLEYA ELDORADO.

In the gardens of Leopold de Rothschild, Esq., Gunnersbury Park, Acton (gr. Mr. Reynolds), a batch of this pretty and delightfully fragrant *Cattleya* has been giving a display of bloom for some time past, scarcely two of the specimens having flowers exactly alike. The sepals and petals of most of the forms are pale rose pink, but some have blush-white flowers, all being furnished with a deep orange-coloured tube to the labellums, some of which have dark, purplish-crimson blotches at the apex. One very beautiful form has a four-flowered inflorescence, the blooms being silver-white with a purple spot in front of the greenish-orange tube of the lip, which is crimped and fringed. The plants were forwarded to Mr. Rothschild from Manaus, on the Rio Negro, South America.

Cattleya Eldorado is easily recognised by its rounded, smooth pseudo-bulbs, bearing erect, leathery, grey-green leaves. Although it has been included under *C. labiata*, it is one of the most widely separated of the large-flowered group.

Inhabiting the low country between the rivers Amazon and the Negro, it requires to be grown in a warmer and more moist house than *C. labiata*, *C. Mendelii*, and other large-flowered *Cattleyas*, but during its season of rest the *Cattleya* or intermediate house is sufficiently warm. The species dislikes a long, dry resting period, for if the pseudo-bulbs are allowed to shrivel the plant so declines in vigour it rarely recovers.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Bulbophyllum and *Cirrhopetalum*.—These so-called "botanical curiosities" have characteristics, both in the pseudo-bulbs and flowers, that commend them to an increasing number of cultivators. It is undesirable to name here all the species and varieties of *Bulbophyllum* and *Cirrhopetalum*, or to attempt to give an adequate idea of their beauties, peculiarities, and varied charms, which, in such a collection as we have at Burford, are present in a more or less degree throughout the year. For the benefit of intending cultivators, however, a few of the more interesting and pretty species, which would form a good collection for the beginner, may be enumerated. These are *Bulbophyllum barbigerrum*, *B. Lobbii*, *B. Ericssonii*, *B. virescens*, *B. Reinwardtii*, *B. grandiflorum*, *B. fusco-purpureum*, *B. longisepalum*, *B. comosum*, *B. Saluatorium*, *B. umbellatum*, and *B. tremulum*. Amongst the best of the *Cirrhopetalums* are *C. Rothschildianum*, *C. Meduse*, *C. Cumingii*, *C. Colletii*, *C. ornatisimum*, *C. Masterianum*, *C. robustum*, *C. Thouarsii*, *C. elegantulum*, *C. appendiculatum*, *C. nutans*, *C. pulchrum*, *C. Roxburghii*, *C. Wendlandianum*, *C. gracillimum*, *C. Amesianum*, *C. retusinsculum*, *C. Andersonii*, and *C. chinense*. As regards cultivation, special provision must be made for the rambling habit of such species as *B. Ericssonii*, *B. virescens*, and others that have long creeping rhizomes. A long, flat, teak raft will be found very suitable for this purpose, upon which should be placed a layer of rough, freshly-gathered Sphagnum-moss, about half an inch thick, after which fix the plants to the raft by means of small copper wire. For those of less vigorous habit, such as *B. Reinwardtii*, *B. grandiflorum*, *C. Meduse*, and *C. Cumingii*, large shallow pans or shallow teak wood baskets are the most suitable receptacles. The baskets or pans should be filled to nearly three parts their depth with drainage materials, over which place a layer of coarse Sphagnum-moss, which in its turn should be covered with a layer of the compost, firmly pressed upon the moss. On this place the plants, carefully spreading the roots over the surface. Afterwards fill up to the rhizome (which should be on a level with the rim of the pan or basket) with a compost consisting of Osmunda fibre, Polypodium fibre,

and Sphagnum-moss in equal proportions, with plenty of small crocks intermixed. Cut up the potting materials moderately fine to facilitate mixing together, and pot each plant with moderate firmness. For several weeks after this operation only very slight sprayings of water over the surface of the compost will be necessary until after the roots and growths have fairly started, when the quantity of water should be gradually increased, until they are fully established, when they will require an almost unlimited supply of water. As regards the plants placed on rafts, they should be sprayed over often enough to induce the moss to grow vigorously. When in full growth most of these species require a certain amount of training so as to confine the rhizomes to within the limits of the receptacle in which they are planted. If not carefully attended to in this respect, they soon became unmanageable. Therefore, when the growths are an inch or two in length and likely to grow over the edge of the pan, gently and gradually train the rhizome round towards the centre, using, for this purpose, small sticks about the size of a match. This should be done before the new roots make their appearance, otherwise many will be injured. All these plants grow well in a shady part of the *Cattleya* house, or they can also be cultivated in the warm plant stove. They may either be suspended near to the roof glass, or arranged together on elevated stages so as to bring them well up to the light. Insect pests rarely trouble them, but nevertheless an occasional spraying is beneficial.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Shrubs.—*Stuartia grandiflora* has been very beautiful this season. Its white Camellia-like flowers, with yellow anthers, are produced alike on quite small bushes and on trees nearly 30 feet in height. *Eucryphia pinnatifolia* is showing grandly for flower. These shrubs, which flower in August are the more valuable because few shrubs bloom at this period. Shrubby *Spireas*, including *S. canescens*, *bullata*, and *ariefolia*, should be pruned after flowering as much as is necessary to bring the trees into proper shape.

The Alpine garden.—Proceed with the propagation of any species it is necessary to increase or perpetuate the stock. Such, for instance, as *Campanula Allionii*, *C. garganica*, *C. muralis*, and *C. pulla*. Take good strong cuttings and place them round the margins of the pot, putting the pot under a bell-glass, which will require to be shaded from the sun's rays. Take care that Alpine plants are not neglected during dry, hot, or windy weather. Many of the species require considerable shade and moisture, and, in the absence of these conditions, they may shrivel. *Gypsophila repens* is just now very beautiful, its flowers falling down over the rocks or stones. *Cytisus schipkensis* is a mass of bloom; grown as a standard it makes a very imposing display.

Narcissus.—The present month is a good time for lifting *Narcissus* bulbs, especially those that are growing in masses amongst shrubs or in beds surrounded with grass. The bulbs should be lifted by means of a fork, and the ground should be thoroughly broken up and trenched, clearing out any roots or rubbish that may be found. A little fresh soil, bonemeal and sand, or well-decomposed cow manure may advantageously be added before replanting the bulbs. As soon as the ground has been prepared in this manner the bulbs should be replanted without delay, selecting the largest of them for planting together, so that the beds will appear uniform when in flower. The smaller bulbs should be put into beds in the nursery or in some out-of-the-way piece of ground. *Narcissi* need to be lifted and replanted at least every three years, the result being very much superior when this treatment is practised.

General bulbs.—Orders for bulbs should be prepared as soon as possible for transmission to the seed merchant, and arrangements made for the usual autumn planting. Tulips, Ranunculi and Hyacinths should now be taken from the nursery ground where they have been ripening, in order that they may be cleaned and afterwards stored in boxes or bags in a cool shed to await the planting season. All bulbs that have to be lifted should be lifted during dry weather.

Brompton Stocks.—Seeds of this type of stock should be sown at once in pans or boxes or even on a warm border. It is a good plan to thoroughly dig a good piece of land and prick out the seedlings into this prepared soil, putting them 6 to 9 inches apart. They should be shaded for a day or two by bending sticks over the bed and covering these with tiffany or similar material. The great point is to get the plants as hardy as possible in order that they will stand the winter out-of-doors. In some localities they are not capable of this, and in such cases it is better to pot them up at once and place them in a cool frame, or under a south wall.

Pentstemon.—The *Pentstemons* are growing freely, and they need to have small twiggy stakes applied to them. Cuttings may be prepared at the earliest opportunity, it being unwise to rely on the old plants passing safely through the winter.

Amaryllis Belladonna.—As soon as the foliage of this plant has ripened, it should be cleared away and the soil about the bulbs should be lightly pricked over. A little liquid manure may afterwards be given. The flower-spikes will soon be showing above ground.

General work.—Apply stakes to any plants in the herbaceous borders needing them. Lawns and tennis grounds which have been much used during the season will be benefited if a little grass manure is sown upon them. They should be rolled and watered frequently. Push on with the budding of *Roses* and the layering of *Carnations*. Stir the soil between *Violets* and other growing plants and cut away the old flowering shoots from shrubs and dead flowers from bedding plants.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. King, Esq., Eastwell Park, Kent.

Outdoor vines.—The growths upon outdoor vines must be kept thinned out so that the air may circulate freely through the foliage, thus encouraging the plants to become firm and healthy, and less liable to attacks of both insect and fungal pests. Pinch out all laterals as soon as they appear, and stop the leading shoots immediately the allotted space has been filled. Mildew is likely to be more than usually troublesome this year. A sharp look-out must therefore be kept, and on the first appearance of the disease, the plants should be sprayed with a reliable fungicide.

Pears.—These fruits, having been thinned out, are now swelling freely, and at present both the growth and fruit are very clean. If the summer pruning is not already completed, give every attention to this work. Afterwards it will only be necessary to stop the later growths at a point one or two leaves above where the shoot was previously stopped. Any shoot growing unduly strong should be pruned to maintain the proper balance of the tree. Earlier varieties, such as *Citron des Carmes*, *Jargonelle*, and *Williams' Bon Chrétien* will soon be ripening in warm situations. With the approach of this stage, give strict attention to the trees and see that the fruits are gathered just before they are fully ripe. Early varieties of both *Pears* and *Apples* should be used almost direct from the trees. In some cases the fruits become mealy and are scarcely worth eating only a few days after being picked. Trees of later varieties bearing good crops should be given dressings with artificial manures. The grower, however, must study the requirements of individual trees, and by no means treat them as collections. Established trees bearing heavy crops derive great benefit from occasional dressings of manure, but in the case of young vigorous trees this treatment would result in an abundance of unfruitful growth. Owing to the many damp and sunless days, waterings have not been so necessary as usual, but now that hot, dry weather has set in, attention will have to be given to this matter, water being required more abundantly on light, thin soils. Expose the fruits to the sun as much as possible. It should be borne in mind that high colour in *Pears* is much admired, and it is a strong point at exhibitions. According to the fruit returns just published, the present appears to be a favourable season for *Pears* as compared with the previous year, but do not allow the trees to mature too heavy a crop, otherwise they will fail in the following season.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Early Peaches and Nectarines.—Continue to give attention to the ripening of the young shoots on trees which will be required to supply the earliest crops next season. If the old fruiting wood has not already been cut out this should be done without delay, so that the young shoots may receive the full benefit of sunshine and air. So far the present season has been unusually sunless, and this, combined with a moist atmosphere, has greatly delayed the maturing of fruit trees. Keep the foliage clean, but do not syringe the trees except in the afternoon on hot days.

Mid-season trees.—Directly after gathering all the fruits from the trees, give the roots a thorough soaking with clear water. Trees affected with insect pests must be syringed with an insecticide two or three times at intervals of a few days, afterwards washing them with clear water late in the afternoon on fine days. Cut out the old fruiting wood, with the exception of what is required for extension, and loosen the young growths from the trellis. As the shoots, especially on young trees, swell considerably during the autumn months, attention must be given to see that the ties do not become too tight, otherwise irreparable damage may be caused, as canker is a direct result of neglect in this matter.

Late trees.—Old-established trees maturing full crops of fruit require copious supplies of water at the roots, and, until the fruits commence to ripen, stimulants should be given at every alternate watering. Syringe the trees with rain-water twice daily and encourage a moist atmosphere in the house by frequently spraying the borders and paths, but as soon as the fruits begin to ripen syringing must be discontinued and the surface of the borders allowed to become quite dry. Varieties of Peaches and Nectarines liable to scalding should be shaded, or many of the fruits will be spoilt. A double thickness of fish-netting is useful, or, if this is not available, a little limewash syringed over the glass will answer the purpose.

Early trees in pots.—Repot the earliest trees, for it is important that the roots should be firmly established in the new soil before bringing the trees into the forcing house. Young trees growing in small pots may be given a shift into a slightly larger size, but old-established ones should be taken out and repotted into pots of the same size. A suitable compost is one consisting of rich loam, with a fair quantity of old lime rubble, crushed bones, soot, and a sprinkling of some approved fertiliser mixed thoroughly together. Pot firmly and place the trees where they will be sheltered from the fierce rays of the sun till they recover from the check. Water very carefully until the roots again become active, but use the syringe freely during fine weather.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Succulents.—Plants of such genera as *Cereus*, *Echinocactus*, *Mammillaria* and *Opuntia*, which have thick, fleshy stems, should now have their supply of water gradually reduced, until, after three or four weeks have elapsed, they may be kept quite dry until next spring. Let the plants be exposed to as much sun as possible, and admit air freely whenever outside conditions will permit. This treatment is necessary in order to thoroughly ripen the growths and enable them to pass safely through the winter. Cacti, may, in some cases, be kept alive and of healthy appearance, notwithstanding water is given them throughout the year; but growth is then always more or less active, and the shoots remaining comparatively soft, they produce few, if any, flowers. Plants of *Epiphyllum*, *Rhipsalis* and *Phyllocactus*, the stems of which are not so thick, and therefore not such reservoirs of moisture as the members of the genera previously mentioned, do not require to be kept so strictly dry. They must, however, be kept decidedly on the dry side during the winter months. At the present time, they should be moved to a cooler and more airy house than that in which they have been growing. If the base of a Cactus plant shows signs of decay at any time of the year, the decayed portion should be cut away. The healthy part, after having been exposed to the air for three or four days, should be treated

as a cutting, inserting it in a comparatively small pot of sandy soil, and placing it on the shelf of a warm house.

Achimenes and Caladium.—As these plants cease to be ornamental, let them be moved to brick pits and exposed to full sunshine, gradually reducing the amount of water until the foliage fades away, when the pots containing the corms and tubers should be stored in their winter quarters.

Chrysanthemums.—The plants, being now thoroughly well rooted, they require feeding with manure water. Let this be very weak to commence with, but increase the strength gradually, changing the nature of the manure from time to time. Continue to remove surplus side shoots, and, if blooms are required for exhibition, three of the strongest growths will be sufficient, each of which will bear one large bloom. For ordinary purposes, however, five or six growths may be retained. When the plants are sufficiently advanced, commence disbudding on the large blooming varieties, choosing the early morning for the operation, at which time the growths are more brittle. In determining the degree of disbudding, and whether to select the crown or terminal bud, the grower should be guided by the particular variety, the purpose for which it is cultivated, and the peculiar circumstances of locality. As a rule, the crown bud produces the finest bloom, but when "taken" early, the crown buds of many varieties develop badly, and produce coarse flowers. During hot days the plants must be frequently examined and watered if necessary. The damping of the surrounding ground will do much to check excessive evaporation. Syringe the plants morning and evening on fine days, directing the water underneath the leaves. In cases where space was left at the time of potting for a later top-dressing, let this be applied at the time of disbudding. A daily search should be made for earwigs.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Cucumbers.—Plants which have been grown in frames on hot-beds should have their growths well thinned out and be given surface dressings over the roots. Close the lights early in the afternoon, and spray the growths with tepid water. Should the weather continue wet and cold, Cucumbers will derive much benefit if a good lining of sweet stable manure is placed around them; the lights should be thoroughly covered at night. Make another sowing of a free fruiting variety in pots, and raise the seedlings in heat. These should be ready for planting in the houses towards the end of the present month, and should produce a good crop through the autumn. Outdoor or ridge Cucumbers have done badly this year, but, providing the growths are kept thoroughly clean and the plants relieved of their fruits immediately they are ready for cutting, there is yet time for them to yield an abundant crop.

Spinach.—This crop is perhaps in greater demand throughout the year than any other vegetable, but in many localities it is an uncertain one during the autumn and winter. Particularly is this the case as regards early sowings in the autumn, for a large percentage of the plants, and frequently the whole crop, dies off with very little warning. Consequently, it is advisable to make frequent small sowings in various parts of the garden at intervals of a week or ten days until the middle of October. That known as the prickly seeded variety is generally recommended for sowing for winter, but after many years' experience, I have found the best of the round-seeded varieties equally as hardy and very much more prolific. The ground should be deeply dug, and if it has been well manured for the previous crop, no more manure need be added. Break the ground up finely and apply a good dressing of fresh soot and burnt garden refuse. The surface should be broken down to a fine tilth and made very firm. Sow the seeds thinly in rows from 12 to 15 inches apart. Hoe the surface soil frequently, and, when well above the ground, thin out the plants to 6 inches apart. Little further will be required after this, beyond occasionally dusting over the foliage with soot.

New Zealand Spinach.—This plant makes a capital substitute for the true Spinach during autumn. It is scarcely equal to Spinach in flavour, but few can detect the difference when

it is cooked and served. The plants require abundant sunshine. Keep the crop closely cut, as it will be found that a few plants will yield a considerable supply. The variety known as Perpetual Spinach is very hardy and generally serviceable during the winter months. Late sowings should be thinned until the plants are 9 inches apart.

Onions.—Preparations should be made for this important crop. Select an open position in the garden, which will not require manuring, but let the ground be deeply dug and exposed to the weather if possible, afterwards turning it over and applying a good dressing of wood-ashes and soot. Leave it in this condition until just before sowing the seed. Do not place the seed in the ground before the 15th inst, as if sown too early many of the plants will undoubtedly run to flower in the spring. The 25th inst. may be regarded as the latest date for sowing. The ground must be finely broken down, neatly raked, and made very firm. Draw the drills 9 or 10 inches apart. Some excellent varieties for successional planting are White Emperor, White Leviathan (two of the best early varieties I know), Blood Red, and Lemon Rocca.

Turnips.—Owing to the wet and cool weather, Turnips have given great satisfaction all through the summer. Thin out successional sowings immediately the rough leaf is made and keep the surface soil frequently moved with the Dutch hoe. Make frequent small sowings of Snowball, Jersey Lily, and Red Globe. Red Globe is especially good for late sowing. It is a green-topped variety, and the flesh is white and excellent. This Turnip is good for any purpose, but perhaps its chief merit lies in its extreme hardiness.

THE APIARY.

By CHLORIS.

How to get bees out of awkward places.—Swarms often find a home in hollow walls, roofs and other difficult places, and people are at a loss how to remove them without either taking out a portion of the wall or stopping up every inlet. The following method is tedious, but not difficult:—Make up every entrance, save one, and over this entrance place a Porter bee escape by fixing the escape on a piece of wood, with a hole bored through it. Nail the wood to the wall, or whatever the bees are in, taking care that the hole in the wood and escape fit over the entrance. It will be well to perform this operation at night. Take a skep containing a queen and about a pint or more of workers, securing the hive on a board with rope, so that it may hang on a nail just above the bee escape. Another method is to take two frames of bees and a queen, and place them in a nucleus hive, or other small hive, and fix them in a similar position. The bees will be able to get out of their undesirable home, but unable to return, and will join the bees in the hive about their old entrance. While this operation is in progress it will be well to watch if the bees have found other outlets, for these, of course, become inlets, and must be plugged up with putty or other suitable material. If the bees have occupied the cavity for a few days only, then the whole of them may be captured in the hive in about two or three days.

Taking bees to the Heather.—Great care must be taken when bees are packed for transit by rail, as they often are when the owner desires to take full advantage of the Heather honeyflow. It is a good and safe plan to screw down the frames at the projecting ends, the whole being then quite firm, and the frames immovable. Under these conditions bees are easily suffocated, unless good ventilation is provided. Above the brood chamber tack on some perforated zinc, and nail similar zinc over the entrances. The roof should have a good ventilator in it, especially when the weather is hot. It will also be necessary to secure the floor-board to the hive, and this is easily performed with the aid of about six screws. When the whole is securely roped together, all will be ready for the journey. It should be added that hives intended for transit in the manner described should always be fitted with wired foundation for new comb; unwired foundation will not bear the jarring. The hives should be carefully unpacked directly they are placed on the stands after arriving at their destination.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 17—

Roy, Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Walter F. Reed, on "Bees in relation to Gardening").

WEDNESDAY, AUGUST 18—

Shropshire Hort. Soc. Sh. at Shrewsbury (2 days). Hemel Hempstead Fl. Sh.

THURSDAY, AUGUST 19—

Roy, Hort. Soc. of Aberdeen Exh. in Duthie Park (3 days). Abingdon Fl. Show.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—62°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 11 (6 P.M.): Max. 78.4°; Min. 57.2°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 12 (10 A.M.): Bar. 30.3; Temp. 75°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 11: Max. 78° Guildford; Min. 68° N.E. Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, AND THURSDAY—
Trade sale of large quantities Dutch Bulbs in variety, at 67 & 68, Cheap-side, by Protheroe & Morris, at 10.

MONDAY—

15,000 Liliun Harrisii, 50,000 Tulips, 75,100 Roman Hyacinths, 150,000 Narcissus, &c., at 67 & 68, Cheap-side, by Protheroe & Morris, at 5.

FRIDAY—

Imported and Established Orchids, at 67 & 68, Cheap-side, by Protheroe & Morris, at 12.45.

The proposal of the Royal Horticultural Society to hold an International Exhibition in London in 1911, on the lines of the Exhibition and Congress of 1866, has reawakened interest in that historic event. The two illustrations of that Exhibition we now publish are from photographs which were found to afford quite sufficient detail for reproduction, notwithstanding their considerable age—44 years. We are indebted for these to Mr. W. P. Wright, who obtained them from Mr. E. Easton, a surviving member of the Executive Committee. The official Report of the proceedings (p. 300) gives the following information respecting Class 103, in which Mr. Turner's plants, illustrated in fig. 49, were exhibited. The class was one for eight greenhouse Azaleas exhibited by nurserymen, and the prizes were awarded to Mr. Charles Turner, Slough; Messrs. James Veitch & Sons, Chelsea; and Mr. O. Rhodes, Sydenham, in this order. The following varieties were shown by Mr. Turner:—Perryana, illustris nova, variegata, Sir Charles Napier, Criterion, Barclayana, Iveryana and Chelsonii. Messrs. Veitch's plants were Criterion, Magnificent, Extrani, Juliana, Trotteriana, carnea superba, Chelsonii and Cedo Nulli.

A similar class for eight Azaleas was reserved for amateurs, and it is interesting to recall the names of the winners, for several

were well known in horticulture for many years after the exhibition. They were W. R. G. Farmer, Esq., Nonsuch Park, Cheam (gr. S. M. Carson); Thos. Canning, Esq., Westbury-on-Trym, Bristol (gr. A. Morse); H. H. Gibbs, Esq., St. Dunstan's, Regent's Park (gr. C. Penny); Mrs. Tredwell, St. John's Lodge, Norwood (gr. B. Peed); and Madame C. Legrelle d'Ilanis, Berchem, Antwerp (gr. F. Vervoort). The four prizes were awarded to the English exhibits in the order the names are now given. The value of the awards were the same in the amateurs' as the nurserymen's class, namely, £12, £10, £7 and £5.

We are not able to describe the details concerning the fine foliage plants illustrated in fig. 48, for the photograph bears no indication of the class in which the group was exhibited. Altogether there were 238 classes.

Regarding the prospects of the proposal that has been made, we believe that it is becoming more and more recognised that the advantages which would result from an adequate display of the horticultural resources of the nation are clear and considerable. The chief characteristic of science is that it grows. Like the growth of things in general, that of such a science as horticulture is slow, and often imperceptible to those occupied in tending it. Therefore, it is well that from time to time we should pause in this latter work, and take stock of the progress which our science has made in recent time.

For the same reason, the proposed Genetic Conference will be welcomed. The progress which has been made in the science of plant-breeding during the last decade is little short of wonderful. Now that the less difficult things in hybridisation have been accomplished, and accomplished by none to a greater extent than by horticulturists of this country, it is necessary that the new methods should become more widely known and practised. By no means can this desired end be brought about better than by such a conference as that contemplated. In the direct exchange of views between men who perforce look at problems of hybridisation from widely different standpoints, new paths become outlined, old prejudices removed, and undue sanguineness curbed.

If such an exhibition be held, it is to be hoped that not only these islands, but all parts of the Empire, may be represented, and worthily represented. We would go so far as to suggest that, besides the independent exhibits, there should be one which displays the horticulture of the Empire. We should also like to see well-organised exhibits illustrative of—and also conferences on—the various departments of science which bear on horticulture, and which ought more than is the case at present to render important service to the horticulturist. Among such departments of science axillary to horticulture we may mention those dealing with plant diseases and with the new and rapidly-growing soil-science. The art of horticulture has reached such perfection in this country that we can be sure that in an international exhibition it will render a good and imposing account of itself. We should like to see the scientific aspect of horticulture represented so adequately as to form a worthy complement to the main and essential display of the art and craft of horticulture.

The State has indicated that it does not propose in the future to leave all the burdens incident to an enterprise so great as that of an international exhibition to be borne by societies and individuals. May we not look to the State, therefore, through the Board of Agriculture, for sympathy and support? We hope that a powerful and thoroughly representative committee will be formed, in order that the plans for the organisation of the exhibition may be well and truly laid.

In another column we reproduce a summary of the general proceedings at the 1866 Exhibition, as printed in the official Report, in the hope that the details may afford some help to those who may be called upon to prepare plans for 1911.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, the 17th inst., in the Society's Hall, Vincent Square, Westminster. At the afternoon meeting of Fellows a lecture on "Bees in Relation to Gardening" will be delivered by Mr. WALTER F. REED, F.I.S., F.C.S.

"THE BOTANICAL MAGAZINE."—In the issue for August there are illustrations and descriptions of the following plants:—

CARALLUMA NEBROWNII, tab. 8267.—This species, named by BERGER, was discovered by Mr. DINTER near Barmen, in German South-west Africa. Living plants were sent by him to the late Sir THOMAS HANBURY at La Mortola, where they flowered in July, 1907, and again in November, 1908. C. Nebrownii is one of the largest-flowered species and is most nearly related to C. lateritia, from which the plant now figured in the Magazine differs in having longer pedicels, a more rugose corolla of a blackish-crimson colour flaked with very small yellowish spots on the disc and at the base of the lobe instead of a uniform brick-red. The corona in the present plant is also larger than that of C. lateritia. The plant requires very dry treatment, especially in winter, when little or no water should be given.

CYNOCHES DENSIFLORUM, tab. 8268 (see fig. 19 in Gardeners' Chronicle, January 9, 1909).—Mr. R. A. ROLFE states that this remarkable Colombian Orchid flowered in the collection of the Rev. J. C. B. FLETCHER, Mundham Vicarage, Chichester, in November, 1908, shortly after having been obtained from Messrs. HUGH Low & Co. The new species appeared unexpectedly among some Mormodes collected at Simacota, near the River Opon, Colombia, by Mr. J. BIRCHENALL. It is interesting on account of the great diversity between the sexes. Male and female flowers are occasionally borne together upon the same pseudo-bulb, the females being many times larger and heavier than the males, and different not only in the shape of the sexual organ but also in the shape, texture and colour of the perianth. The column of the male is long and slender, bearing the anther at the summit, while in the female it is very short and stout, with a pair of triangular fleshy wings at the sides of the stigma. The lip in the female is a large, ovate, fleshy body, but in the male it is reduced to a small circular disc, surrounded by a number of clavate, marginal appendages. The sepals and petals are membranous in the males and very fleshy in the females.

ERLANGEA TOMENTOSA, tab. 8269.—This greenhouse plant was referred to in these pages last week by Mr. W. E. GUMBLETON, a specimen having recently flowered in his greenhouse at Belgrove. E. tomentosa is a member of the Composite, and is widely distributed in

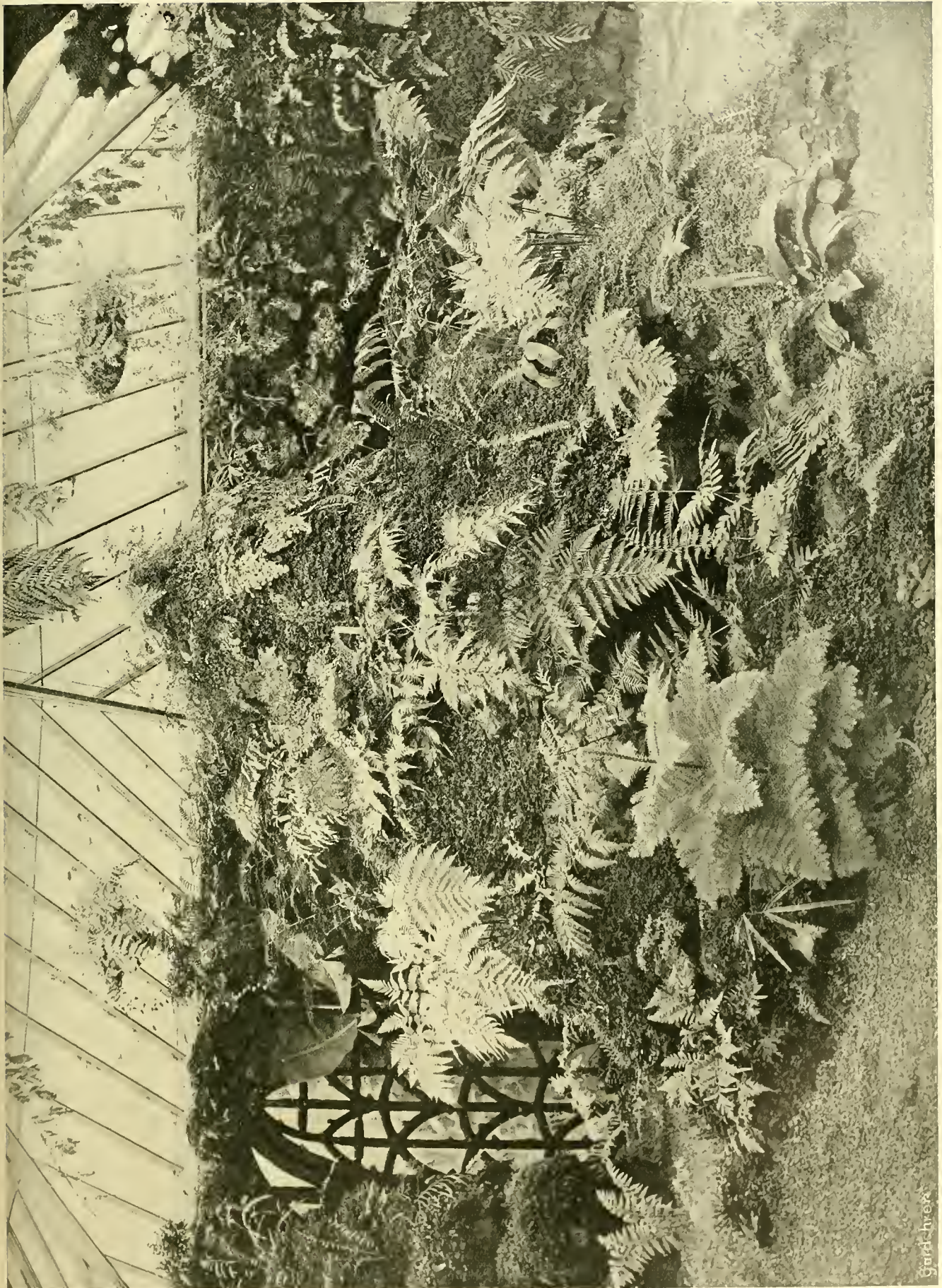


FIG. 48.—GROUP OF FINE FOLIAGE PLANTS IN THE INTERNATIONAL EXHIBITION OF 1866.
(From a photograph supplied by Mr. Easton.)

Gardener's

tropical Africa, from British East Africa to the Zambesi. The genus *Erlangea* differs from the genus *Vernonia* only in respect of its reduced achenes and in having the pappus reduced to very short caducous hairs. Until a few years ago it was deemed a monotypic group, but now it is believed to consist of at least 32 species, several of which, however, had formerly been included in *Vernonia*. Mr. HUTCHINSON points out that the nearest ally of *E. tomentosa* is *E. fusca*, from which it is readily distinguishable by the bright green leaves and the scariously-edged involucre bracts. *E. tomentosa* is a shrub which in habit much resembles some of the *Eupatoriums*, and it attains a height of 5 feet. It flowers freely and continuously during winter and spring. It admits of easy cultivation in a greenhouse, treated in the same manner as the winter-flowering species of *Eupatorium*. The campanulate flower-heads are of a shade of lilac, and the leaves oblong or oblong-lanceolate, pubescent above and villous-tomentose beneath.

SPIRÆA HENRYI, tab. 8270.—This species of *Spiræa*, belonging to the section *Chamedryon*, was discovered by Mr. A. HENRY in Hupeh, near Ichang, in 1885, and later in Szechuen. It was not introduced to cultivation, however, until Mr. E. H. WILSON found it in 1900, also in Hupeh. Mr. W. J. BEAN now states that amongst older species it is most closely related to *S. canescens*, and its flowers, as in that species, are arranged in rounded corymbs on the upper side of the long, arching branches. Its nearest ally is, however, *S. Wilsonii*, which is also described as having the peduncles and pedicels covered with silky hairs, but is in reality almost glabrous. *S. Henryi* is a lax, spreading shrub, 7 to 8 feet in height. It has long oblanceolate leaves and the white flowers are produced in compound corymbs 2 inches across, which are terminal on short twigs springing from the branches of the previous year.

AGAVE WRIGHTII, tab. 8271.—This is a new species, described by Mr. J. R. DRUMMOND. The plant figured was acquired for Kew from the collection of Mr. T. H. KELLOCK in 1903 under the name of *A. Taylori*. It was at once recognised that it was not the true *A. Taylori*, but for some time it was treated as a variant of *A. geminiflora*. Upon its flowering in the Mexican house at Kew in November, 1908, Mr. C. H. WRIGHT found it to differ from *A. geminiflora* in the colour of its flowers as well as in its leaves, which are smooth and subulate in place of being narrowly loriform and striate. Mr. DRUMMOND points out that his new species approached most closely to the plant figured as *A. geminiflora*, *Botanical Register*, tab. 1145, in 1828, which, however, was not the true *A. geminiflora*.

NATIONAL CHRYSANTHEMUM.—The members of this Society held their annual outing on Monday last, visiting Friar Park, Henley, the residence of Sir FRANK CRISP. The party, which numbered 116, entrained at Paddington for Taplow, and from thence the journey to Henley was by steam launch. After luncheon the garden at Friar Park was inspected under the guidance of Sir FRANK CRISP and his gardener, Mr. KNOWLES.

HORTICULTURAL TRADES' ASSOCIATION.—The annual meeting of the Horticultural Trades' Association of Great Britain and Ireland has taken place this year in Belfast. The members arrived in that city on Monday last. On Tuesday visits were made to the nurseries of Messrs. HUGH DICKSON and Messrs. ALEX. DICKSON & SONS. At 7 p.m. on the same day the members met at dinner in the Grand Central Hotel, and, following the dinner, the officers for the ensuing year were elected and other business transacted.

On Wednesday the party visited Castlewellan, and on Thursday the Portadown Nurseries, belonging to Messrs. MCGREEDY & SONS, and the Newry Nurseries, belonging to Mr. T. SMITH.

"THE SCOTS GARDNER."—Mr. BROTHERSTON, Tynninghame, Prestonkirk, writes that he will be glad to hear from anyone who has a copy of *The Scots Gard'ner* (1683) and is willing to dispose of it.

CEYLON BOTANIC GARDENS.—From the Administration Report of the Royal Botanic Gardens, Ceylon, for 1908, it appears that much interesting material in the form of fungus plant disease has found its way to the Peradeniya Government Laboratory. This included some 20 diseases new to the island, comprising such an *Olla podrida* as a "witches' broom" on Cinnamon, stem and root disease of Camphor, a canker of the Indiarubber-yielding Hevea, a root disease of Nutmegs, a smut disease of Citronella grass, leaf and pod disease of Vanilla, &c. Special mention is made of a root disease of Tea caused by a species of *Diplodia*, which usually produces the death of the bushes after pruning. As it is spread by the spores, the Government mycologist, Mr. T. PETCH, urges the importance not only of burning the dead bushes, but also all the prunings, as the fungus lives upon these as a saprophyte when they are left upon the surface of the ground or buried. The practice of using the prunings for manure is much to be deprecated.

THE OAT CROP OF AMERICA.—Among the recent publications of the Bureau of Plant Industry of the U.S. Department of Agriculture is one on the *Improvement of the Oat Crop* (circular No. 30, 1909), by Mr. C. W. WARBURTON. The author, in the introduction, states that no less than 32,000,000 acres were devoted to the production of Oats in the United States in 1907, and that not only was this acreage larger than that of any previous year, but also that the yield—about 25 bushels to the acre—was the lowest since 1893. Mr. WARBURTON therefore considers that there is ample room for improvement. He points out that the possible lines along which this amelioration may be effected are: Mechanical selection; introduction of new seed; use of the seed plot; individual plant selection and hybridisation. The several methods are discussed in the order named. Mechanical selection, e.g., the separation of the heavier and so presumably better seeds by mechanical means—wind power or gravity—though it may be of service in removing weed seed and shrivelled grains, will not effect any permanent improvement in the variety. For, as has been shown to be the case with Wheat, &c., the ordinary field crop of Oats is a mixture of several varieties, some of which are necessarily inferior. The introduction of new seed, e.g., from Europe, has been beneficial in the past, but the available new varieties are not numerous. Exchange of seed from one locality of the United States to another does not in the case of Oats lead to better results than are obtained by home-raised seeds. Therefore, since hybridisation requires considerable skill and time, the most promising method for the improvement of the crop is that offered by the seed plot—in other words, the raising of seed from grains selected from individual plants. The circular contains useful advice as to the way in which the variety testing, i.e., the raising of seed from individual heads, should be carried out and the manner in which records of such testing should be kept. Inasmuch as there is a wide field for the application of these methods to all kinds of other crops, we commend the excellently clear account of improvement by individual selection to all interested in the amelioration of plants.

ANGRÆCUM CAUDATUM.—We are asked to state that the specimen of *Angræcum caudatum* mentioned in our report of the Royal Horticultural Society's meeting last week was exhibited by the Hon. Mrs. FOLEY (gr. Mr. Newman), and not by R. G. FOLEY, Esq. The specimen was a very fine one and received a Cultural Commendation.

TILE FOR EDGING PATHS.—*The Weekly Florists' Review* (Chicago and New York) inserts (July 22) the following letter and note: "Kindly give me the name and address of a firm handling the blue-fluted tile used extensively in the vicinity of London for edging paths. The *Review* will be pleased to hear from any reader who can give the desired information.—Ed."

EDELWEISS AND ALPINE DISASTERS.—In the *Times* for the 6th inst. appeared the following letter from Sir FRANK CRISP:—"In your impression of yesterday you record further deaths of tourists in the Alps. One through 'making a detour in order to gather Edelweiss,' and others as 'due to attempts to gather Edelweiss.' Perhaps you would allow me the same space as you did a few years back to again call attention to the fact that Edelweiss is not an Alpine prodigy. It will grow on the roof of the Bank of England and in an ordinary London back garden. Whatever may be said of the fertility—financial and otherwise—of the area which the Bank's roof covers, the roof itself is as infertile a place as could well be selected, whilst a London back garden has always been the ideal of abomination as regards the growth of floral rarities. Assuming that anything can be said in favour of the wisdom and foresight of risking one's life to gather a unique and remarkable flower, nothing can surely be said in support of taking such a risk for a flower that will readily grow in the waste places of civilisation."

HORTICULTURAL EXHIBITS AT BRUSSELS.—It is now evident that the Brussels exhibition will be of special interest to horticulturists, and even to fruit-growers and market-gardeners. The centenary of the Royal Agricultural and Botanical Society of Gand was celebrated last year by the quinquennial exhibition, but it will be further emphasised on the occasion of the Brussels show. In one form or another, this great society has existed since 1622, but its present basis was only created 100 years ago, when it started an annual public show in the Frascati Gardens. Its members now export from Belgium flowers to the value of £600,000 a year. It is therefore strong enough to have arranged that there shall be permanent flower shows throughout the exhibition from May to October, and that the grounds shall be beautified with gardens. The special centenary show will begin on April 24 and extend to May 5, and on the second day it will be visited officially by the KING OF BELGIUM. In the course of this celebration there will be an international flower show from April 30 to May 3, in which it is hoped that British gardeners will participate. A similar show for Chrysanthemums and other autumn flowers will be held from October 29 to November 2; while an international show of fruit and vegetables will take place from September 24 to 27. These are the dates desired by the meeting at the Royal Horticultural Hall that Lord LYTON and Sir ALBERT ROLLIT attended, when the exceptional facilities for showing which are offered by the Board of Trade were explained. No fewer than 250 foreign experts will serve on the juries. It should be understood also that British gardeners, or groups of gardeners, may take space in the grounds with a view to their permanent decoration during the exhibition. The special regulations under which this kind of advertisement is possible are to be issued shortly.

DEATH OF AN AGED GARDENER.—We are informed of the death of Mr. JAMES HARLOCK, late gardener to Lord LILFORD, Barnwell, Oundle, in his 96th year. For 32 years he had charge of Lilford gardens, but retired from this position with a pension 13 years ago. He removed to Peterborough, where he remained for two years. His death occurred at Stamford. The late Mr. HARLOCK was, in the 'fifties, a frequent exhibitor of Cape Heaths, New Holland plants, Pelargoniums, and Cinerarias at the Stoke Newington, South Kensington, and Botanic Garden shows. Under his charge, the gardens at Lilford were enlarged and improved. For 64 years he was a member of the Stepney Lodge of Oddfellows, and for 50 years had no occasion to demand sick benefit. The funeral took place at Stamford Cemetery on the 28th ult.

FORESTRY IN ABERDEENSHIRE.—A scheme in connection with the afforestation movement in Scotland was outlined at a recent meeting of the Governors of the Aberdeen and North of Scotland College of Agriculture. It was decided to make immediate application to Government for a sufficient grant to acquire from 3,000 to 4,000 acres as a demonstration area, the management of which might be undertaken by the Governors as part of the ordinary scheme of administration. In a report on the subject, a sub-committee which had been considering the matter pointed out that the district embraced by the College included considerably more than half of the total forest area of Scotland, while the counties of Kincardine, Aberdeen, Banff, and Elgin themselves contained over 200,000 acres of wood. But there were great possibilities for development, as these four counties contained over half-a-million acres of bare land from which plantable ground could be selected. Although classes were conducted in the College and lectures given to actual forest workers, the teaching facilities were insufficient. Therefore, to meet present needs it was necessary to have absolute control of an area of forest and plantable ground to provide for the training of working foresters. An area of from 3,000 to 4,000 acres with a certain amount of standing timber would best meet the case. A certain number of apprentices would be engaged each year, and would form part of the working staff of the forest, whilst in addition to being a training ground for foresters, the area would also serve as a demonstration area. Experiments would be carried out, but, on the whole, the forest would be worked on commercial lines, and would form part of any scheme of afforestation that might subsequently be started by the State. Districts were known where land-owners were ready to start planting schemes, but, as the labour available was unskilled, it was essential that a supply of properly-trained foremen should be provided. The proposed scheme, it was emphasised, involved no financial risk, and would in time be not only self-supporting, but profit-earning. Commenting on the report, Mr. R. H. N. SELLAR, vice-convenor of the county of Aberdeen, explained that they hoped to get the support of the various town and county councils within the College area, and he trusted that with this influence they might get £30,000 or £40,000 from the Government. The report was adopted, and the Governors approved of the action of the committee in memorialising the Chancellor of the Exchequer on the subject.

PUBLICATIONS RECEIVED.—*Manihot Dichotoma, ulé, et sapii species Americanae*, A. W. Potting Hemsley, Descriptæ. (Kew: Royal Gardens.)—*Platanthera True Peloria*, by W. Botting Hemsley. Extracted from the Linnean Society's Journal, *Botany*, vol. xxxviii., October, 1908. (*The Journal of the County Laboratories*, Chelmsford: Vol. 1, Nos. 1 and 2.) Price 2d.

A MARKET FRUIT-GROWER'S YEAR.

JULY, like June, was a month not at all propitious to fruit-growers. In these first two months of what should have been summer there was not a single day of genuine summer heat, according to the Meteorological Office records, while the hours of sunshine were greatly below the average number. The period was the coldest and most gloomy for the time of year that has been experienced since I was old enough to make observations. In most parts of the country the excessive rainfall of June was repeated in July; but in my own district there was not any excess in either month. Indeed, double the quantity that fell here would have been welcome for tree fruit crops.

DAMAGE TO FRUIT.

Where the rainfall was excessive great damage was done to the Strawberry crop, while Cherries split badly, and Plums to some extent. But the injury to the interests of fruit-growers was not confined to the damage to fruit; for a much greater disadvantage was the reduction in the demand for fruit due to the coldness of the weather.

GOOSEBERRIES AND CURRANTS.

Owing to the unusually plentiful crop of Gooseberries, together with the poor demand, there was a disastrous glut in the market. Hundreds of tons were sold at 1s. to 1s. 6d. per half-sieve of 28 lbs., and many tons at even less than 1s. Only fine berries, after the time of maturity, made as much as 2s. per half-bushel. In many cases where sales were at 1s., the return was less than the costs of picking, rail carriage, and market expenses. At this place (Hailsham) part of a crop of ripe berries, the remnants left after the best had been picked when green, were given away to the pickers, because they were not worth marketing, one lot of small fruit having been sold at 6d. per half-bushel in London. Black Currants sold better, fine fruits of Boskoop Giant having made from 6s. to 7s. 6d. per half-sieve of 24 lbs. Here may be noted the curious fact that one half-sieve of Black Currants at the highest price made as much as 15 half-sieves of the cheapest Gooseberries. But during the latter part of the season the price of Black Currants fell, in spite of the shortness of the crop. Red Currants did not sell particularly well in any part of the season.

FOREIGN FRUIT PULP.

In connection with this poor demand for fruit, it is worth while to notice a cause other than the coldness of the weather in July. Common report declares that the jam makers were very poor buyers of British fruit, because they increased their consumption of foreign fruit pulp. This is a system of foreign "dumping" that the country could do very well without. Home-grown fruit for jam is cheap enough surely, and it is a question whether half the foreign pulp that we import arrives in a wholesome condition.

PLUMS AND APPLES.

Where Plums escaped damage from frost when they were in blossom, the crop is a good one; but in the most important Plum districts reports state that the yield is small as a rule, though fair on some varieties. The Apple crop is certainly a very poor one in Kent, and in districts of Sussex, Essex, and Suffolk that I have visited. Not only are Apples thin on the trees of most varieties, but they are also below the usual size, and large quantities have been rendered unmarketable by the damage done to the trusses of fruit by aphides.

SUMMER PRUNING.

When time allowed in July, progress was made in the summer pruning of young Apple trees. In the course of the work a difficulty occurred as to what should be done to main shoots covered with a mass of curled leaves, and twisted in many cases, through the persistent attacks of the aphids, which lasted up to the end of the

month, in spite of repeated sprayings. To leave them till the autumn or winter pruning was not desirable, unsightly objects as they were, and yet, to cut them back to where it would be advisable to cut them in the winter seemed a hazardous experiment, because new shoots would grow from a point just below the cuts, and these might not mature sufficiently to live through the winter. One thing was certain—it could not be of any advantage to leave the whole of a deformed shoot to use up the nourishment of a tree, and in most cases a portion of the malformation was cut off, but not as much as will be cut later. In a few cases, however, the experiment of cutting aphid-ridden shoots back below the point of injury was tried, and the results will be awaited with interest.

THE WOOLLY APHIS.

The so-called "American blight" was not as troublesome as usual during the period of cold weather, though it was bad enough in a plantation of young trees and stocks grafted in the spring, where the pest was introduced with a consignment of Apple stocks. Beyond all comparison, so far as my experience goes, the best remedy is methylated spirit, used neat. In penetrative action, this fluid surpasses any other that I have tried, and it is immediately fatal to every aphid that it touches. An objector to the use of this remedy once declared that undiluted methylated spirit was injurious to trees; but I have tested it thoroughly and found it quite harmless. It has been used repeatedly to destroy colonies of woolly aphid in the huddled portions of Apple stocks, the spirit having run all over the buds. The stocks so treated have been labelled, and examination afterwards has proved that the buds wetted with the spirit grew as well as others not so treated. Similarly, young shoots have been treated when the aphid was found in the axils of the leaves, without any apparent harm.

OUT-DOOR STANDARD PEACHES.

Eight or nine years ago an account was given of good crops of Peaches, and, I think, Nectarines also, having been grown on standard trees in the open by Messrs. Veitch and Mr. Turner at Slough. This induced me to plant a few trees on one side of my home orchard, as it seemed likely that my locality would be more favourable than Slough. The Nectarines have been a failure, never bearing more than a slight sprinkling of fruit, and the Peach trees have borne a fair crop only once before the present season, in which they are fairly covered with fruits. The experiment is not recommended for imitation. *A Southern Grower.*

INTERNATIONAL EXHIBITION OF 1866.

SUMMARY OF GENERAL PROCEEDINGS.

The International Horticultural Exhibition and Botanical Congress of London was originated amongst a few representatives of British horticulture and botany, who had accepted the invitation to attend the first of these international meetings, held in 1864, at Brussels, under the auspices of the Federation of the Horticultural Societies of Belgium, and under the immediate patronage of the Belgian Royal Family. The action then taken was followed up by those who attended the Exhibition and Congress at Amsterdam in 1865, when a pledge was given or implied that a similar meeting should, if possible, take place in London in 1866.

With the object of carrying out these views, a preliminary meeting was held in St. James's Hall on May 18, 1865. Present: J. J. Blandy, Esq., chairman; Messrs. J. Fraser, J. Gibson, Dr. R. Hogg, C. Lee, Dr. M. T. Masters, T. Moore, G. U. Skinner, J. Standish, C. Turner, and H. J. Veitch. At this meeting a Provisional Committee was formed (Mr. Thomas Moore acting as secretary) for the purpose of preparing a scheme for carrying out the proposed Exhibition and Congress. One of the first steps taken by the Provisional Committee was to confer with the Council of the Royal Horticultural Society,

with a view to secure its co-operation in carrying out the scheme. Somewhat later the Linnean Society and the Society of Arts were invited to take part in the movement, and the Council of the latter body accepted the invitation, and set apart the sum of £50 to be offered as prizes for implements.

The general preliminaries having been arranged by the Provisional Committee, a meeting of supporters took place on July 1, 1865, when a prize schedule was agreed to, and it was announced that subscriptions in aid of the undertaking to the amount of £1,001 6s. had already been promised, while the further sum of £2,296 5s. had been guaranteed.

The following gentlemen were, at this meeting, delegated to act as an Executive Committee to carry out the Exhibition and Congress, namely:—

- Chairman.*
 Sir C. WENTWORTH DILKE, Bart., M.P.
Deputy Chairman.
 JOHN J. BLANDY, Esq., V.P.R.H.S.
Treasurer.
 Sir DANIEL COOPER, Bart.

and several interviews with these gentlemen were held, in the course of which, so many difficulties in the way of framing a guarantee deed were pointed out, and it was found that the expenses connected therewith would be so heavy, and the delay occasioned so considerable, that the Executive Committee decided on dispensing with a guarantee deed, which was therefore never executed. Cards of admission, and other privileges, were nevertheless forwarded to all those who had expressed their willingness to join in the execution of such a deed.

By the month of September the Executive Committee was enabled to decide finally as to its course of action. It had been felt from the first that the exhibition should be held in connection with the garden of the Royal Horticultural Society; and upon negotiation with the Council, it was agreed that a sum of £300 should be paid to the Society as a consideration for the use of its garden during the Exhibition week, the Committee providing the necessary music for the week (£194 16s. 8d.), and that the Fellows of the Society, the holders of their transferable tickets, and the debenture holders should have

charges on account of glass sashes for lighting the Orchid tent, and for iron gutters and other fittings; and these, with the necessary outlay for ground-work, raised the cost of the Exhibition tent and ground to £3,946. Since the close, the Committee has been called on to restore the ground to its original level, which will cost about £130. When it was proposed to prolong the Exhibition for five additional days, it was agreed that Mr. Unite should take 20 per cent. of the receipts, after payment of the expenses consequent upon the extension of the duration of the show, and this percentage amounted to £700. The Orchid tent was, with great liberality, heated by Mr. Ormson, of Chelsea, free of charge.

The plan for laying out the interior of the tent was designed by Mr. Gibson, and was carried out under his superintendence. The area covered with canvas was 3 acres 2 roods and 38 poles. Of this space, 55,000 feet were allotted for plants, 50,000 feet for promenades, and 20,000 feet for single specimens and decoration, exclusive of the compartments devoted to Orchids, to fruit, and to vegetables. The pathways, in-



FIG. 49.—SOME OF MR. C. TURNER'S AZALEAS IN THE INTERNATIONAL EXHIBITION OF 1866. (See p. 114).

- Committee.*
 Professor BENTLEY, F.L.S. Dr. M. T. MASTERS, F.L.S.
 Mr. W. BULL, F.L.S. Mr. T. OSBORN.
 Mr. E. EASTON. Mr. W. PAUL.
 Mr. C. EDMONDS. Mr. J. STANDISH.
 Mr. JOHN FLEMING. Mr. C. TURNER.
 Mr. R. FORTUNE. Mr. J. VEITCH, F.L.S.
 Mr. J. GIBSON. Mr. B. S. WILLIAMS.
 Mr. J. LEE.

- Secretaries.*
 Mr. THOMAS MOORE, F.L.S. (Exhibition).
 Dr. BERTHOLD SEEMANN, F.L.S. (Congress).
 Dr. R. HOGG, F.L.S. (General Business)

Messrs. Coutts & Co., and Messrs. Barclay, Bevan & Co. were nominated bankers to the undertaking; and Messrs. Fladgate, Clarke & Finch were named as solicitors. At a later period Mr. Richard Dean was appointed assistant secretary.

As it was early seen that the expenses would be very considerable, it was deemed advisable to invite subscriptions, in return for which certain privileges and tickets were assured, as explained in the Regulations as to admission.

With reference to the Guarantee Fund, a Sub-Committee was appointed to consult the solicitors,

the privilege of free entry to the Exhibition on the day after the opening, the garden being open to them on every day. It was at first intended to have had the main portion of the show in the western annexe of the Royal Horticultural Gardens; but, at a later period, the permission of the Government, and of the first Commissioner of her Majesty's Works, that it might be held on the adjoining and more convenient site of the Exhibition of 1862, was obtained. Subsequently, when it was found desirable to extend the period of the show beyond the four days originally contemplated, a fresh arrangement was made with the Council of the Royal Horticultural Society, by which the Committee, on granting the Fellows another free day at the show, and on providing music in the gardens of the Society for the five additional days (£100), was permitted to have the use of the garden up to the close of the Exhibition.

The Exhibition building, erected after plans recommended by the Building Committee (Messrs. C. Lee, J. Gibson, H. J. Veitch, and J. Standish), was contracted for by Mr. Unite, of Paddington, the amount of the contract being £2,000. To this sum, however, have to be added further

including those of the Orchid tent, occupied 60,000 feet—sufficient to accommodate 15,000 persons within the tent, allowing 4 feet for each person. Several van loads of large plants, upwards of 100 in number, were kindly lent from the Royal Gardens at Kew for the purpose of being placed in certain prominent positions in the tent. Some Palms and other fine specimen plants were also lent by the Royal Horticultural Society.

As regards railway transit, all the principal companies (the Great Eastern only excepted) agreed to convey truck loads of plants to and from London at a single fare; but no reduction could be obtained for smaller quantities, and the several companies declined to grant special concessions as to passengers, in consequence of the show being held in the Whitsun week, during which unusual facilities for travelling, of which visitors to the Exhibition could avail themselves, were, it was pointed out, always granted to the public.

(To be continued.)

†These glass sashes, adopted as a precaution against injuring the plants, proved to be unnecessary. The tent without them was found to be light enough, and where the glass was used, it had to be painted over.

*Succeeded by Dr. Masters.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE RAINFALL AT ROTHAMSTED.—The total rainfall at the Rothamsted Experimental Station for the month of July amounts to a little over 3 inches, which is rather more than half an inch in excess of the average of the past 56 years. The rainfall for the first seven months of the year (January to July) amounts to 15½ inches, which is also half an inch in excess of the average for the corresponding period of the previous 56 years. March gave 1.88 inches over the average fall, June 1.70 inches over, and July 0.58 inch in excess. The total excess of rain for these three months amounts, therefore, to 4.16 inches, equal to 420 tons of water per acre above the average. The other four months, January, February, April and May, each showed a considerable deficiency compared with the average, which more than balanced the excess of March, June and July. The greatest fall in 24 hours occurred on June 1, when 1¼ inches of rain were recorded. So far, the present season, in this district, has not suffered from an excessive rainfall, but from a continuance of dull, gloomy and sunless weather, which has had a bad influence on the satisfactory ripening of the grain crops. The majority of the Wheat and Barley crops are quite three weeks later than usual in this neighbourhood. *J. J. Willis, Harpenden.*

SPOTTED FUCHSIAS.—I have contributed occasionally to the *Gardeners' Chronicle* for a period of over 50 years, being now nearly 80 years of age. It is gratifying to me to see that lately the Fuchsia is more often mentioned than for many years past. It has occurred to me, therefore, that raisers of the present time may be interested in the following notes. In 1881 I discovered four seedlings in a shady border with flowers, the white corollas of which were spotted like *Odontoglossums*. No. 1 had large white corollas with black spots; No. 2 had brown spots, No. 3 small spots, No. 4 tiny spots. I lifted them to pot up, but just at the moment my attention was required to another matter, and I laid them in the border for the time. It was two or three days before I went for them again, and I was sorry to find the sun had parched them up. I have never heard of such things as spotted Fuchsias since. I have at the present time a batch of seedling Fuchsias. The foliage is as handsome as some varieties of *Coleus*, but none is in flower yet. *Edmund Bland, Belmont, Fordham, Cambs.*

A PEOPLE'S ARBOUR DAY.—Anyone who has travelled along the country roads in Germany cannot have failed to observe that they are planted on both sides with fruit trees. To see them in early summer, when they are avenues of Apple, Pear and Cherry trees in full bloom, or in the late summer and autumn, when the branches are laden with fruit, is a sight not easily equalled or forgotten. From a report before me, issued by the Minister of Agriculture of Saxony, I notice that, after providing employment for a large number of "tree-wardens," and occasional work for a larger number of persons engaged in picking and marketing the fruit, after providing all who choose to have them with free meals of fruit throughout the autumn, and after beautifying a countryside corresponding in parts to our own Black Country, this department made, during 1908, a profit of £12,000. I am prompted to suggest that a similar system of roadside fruit-tree planting be instituted here, and, by way of making its realisation practicable in the near future, I would further suggest that we take also a leaf out of the book of the Colonies, and establish a people's Arbour Day. An additional holiday seems greatly needed to break the long spell of work from now until Christmas. Such a day would most naturally fall in the first part of October, the most suitable time for fruit-tree planting. If an influential society were formed—I suggest Lord Avebury as its natural president—to lead the agitation, to make the necessary arrangements with the public bodies controlling the roads, and collect funds and trees, there is little doubt that, in a few years, it would literally "change the face of the country," and provide an enormous amount of productive employment for capable and willing

hands. To give details of the organisation as it presents itself to my mind would take up too much of your valuable space; but I venture to submit that, since there are the roads and the un- and under-employed, and thousands of public-spirited people desirous of helping the unemployed as long as their donations are spent usefully, the task of organising this scheme of roadside fruit-tree planting as a rational investment of money and surplus labour does not seem to present extraordinary difficulties. *W. R. Boelter, 83-91, Great Titchfield Street, London, W.*

THE 1866 EXHIBITION.—Your correspondent in last week's issue (see p. 98) states it is given to few living to recall the famous South Kensington Show of 1866. I for one can recall the most striking exhibits of that show, and I have missed very few exhibitions and meetings of the R.H.S. since that time. May the 1911 exhibition be a great success! The progress in horticulture since 1866 is indeed marvellous. *John Carvill.*

THE POTATO DISEASE.—Phytophthora infestans has at last made its appearance in this district. A week ago merely scattered specimens were met with, but now it is widely distributed. Considering we had 4.52 inches of rain in July and 1.99 inches the first three days of August, we must be thankful the disease did not come sooner. *C. B. P., North Wootton, King's Lynn.*

UNANSWERED APPLICATIONS FOR EMPLOYMENT.—Being out of employment through no fault of my own, I have advertised several times for a situation, and I have replied to numerous advertisements of situations I am qualified to fill. Some employers have been kind enough to reply, but the majority have not done so. Being out of work, I have to look at the penny before buying the stamp to post the letter, and I think that anyone who is in a position to employ a gardener might reasonably be expected to reply to a letter which is merely an answer to an advertisement published by himself, and this even though the vacancy has been filled. *Nemo.*

RAFFIATAPE.—The actions against two of our leading firms of seed merchants compel me to make the following explanation:—In the *Inventors' Manual* may be seen the following: "Letters patent may be obtained for: 'The application of a known substance to a new purpose, when some inventive power is evidently necessary to make the application available for the new purpose.'" Raffiatape was never used for tying up plants before I applied my inventive power and patented the stuff for the perfectly new purpose of tying up plants, because it stretches to enable the plants to grow. The patent was fully granted me, but in 1906 it was revoked, causing me much loss, through no fault of my own. Due notice of this revocation was given to the trade, yet some firms still marked raffiatape, pure and simple, as "West's Patent Raffiatape." Prior to this patent being annulled, I applied for the registration of the word Raffiatape, and a second patent for the improved mode of coiling tape, to prevent it entangling had been secured. This second patent, being granted under the new Act, is a valid one, and cannot be set aside like the first patent, which was under the old Act; therefore it comes about, that although it is wrong to mark Raffiatape as "West's Patent," yet it is quite correct to style the improved raffiatape coils as "West's Patent Coils," as was done before the revocation of the first patent and ever since. *C. E. West.*

PRINCIPLES OF MENDELISM.—I have been disappointed in not seeing any comment regarding the leading article on Prof. Bateson's work, published in the issue for July 24. It would be interesting to many to know if anyone else has attempted the crossing of the two white Sweet Peas Emily Henderson and Blanch Burpee. If so, have the results obtained by them been identical with those of Prof. Bateson? What is the parentage of these two Peas? As Mendelism is a subject of great importance to horticulturists, it would be advantageous to have the opinions of hybridists, particularly those who have worked with Sweet Peas. *P. S. Follwell, Drumpellier, Coatbridge.*

A CURIOUS SPRAY OF SWEET PEAS.—At a village show held near Reigate recently there was shown an extraordinary spray of Etta Dyke Sweet Pea. The stem was fasciated and flattened, and at its upper part divided into two separate spikes. At the base of the fork or division was a twin flower having two standards, four wings, two keels, and two styles, with many stamens. On either of the divided points were four normal flowers but all close together. Thus there were on this spray no fewer than nine flowers, and when first brought to me I regarded it as a truss or spike from the large, white *Lathyrus latifolius*, but a closer inspection revealed its singular nature. It gave one an idea of a race of Sweet Peas which, in a normal state, would produce twin points or sprays on ordinary stems that some day perhaps may become common. To obtain new colours or finer flowers on the existing race seems difficult. Raisers may well seek for newer qualities. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL
Scientific Committee.

AUGUST 3.—Present: E. A. Bowles, Esq., M.A., F.L.S. (in the Chair); Messrs. A. W. Sutton, J. T. Bennett-Poë, J. Douglas, W. Hales, G. S. Saunders, and F. J. Chittenden (hon. secretary).

Diseased Water Lilies.—Mr. G. S. SAUNDERS reported that he had been unable to discover any insect or fungus pest upon the Water Lilies sent to the last meeting, and he considered it probable that the condition of the water, which smelt very unpleasant, was the cause of the death of the plants.

Sparrows and Water Lilies.—Mr. W. HALES showed leaves of Water Lilies with a large number of scratches upon them, caused by sparrows' feet. The sparrows stand upon the leaves in order to reach the water, and scratch the leaves in their endeavour to retain their balance.

Poinciana regia.—Mr. S. P. LANCASTER, of Alipur, Calcutta, sent drawings illustrating the variation in the gorgeous flowers of this beautiful plant.

Green Sweet Pea.—Rev. W. WILKS exhibited flowers of a Sweet Pea of a yellowish-green colour. The plants had come true from seed.

Malformed Pea.—Mr. E. E. TURNER, Coggeshall, sent a flower of the culinary Pea showing axial proliferation and various malformations, particularly in producing free stamens and regular petals in some of the small flowers. Mr. SAUNDERS took the specimen for further examination.

Cones of Pinus sabiniana.—Mrs. HADLEY, of Parkside, Reigate, sent two huge cones of this Pine from a tree grown in her garden which had carried five cones.

DERBY GARDENERS'.

The first annual show in connection with the Derbyshire Gardeners' Association was held recently in the Albert Hall. The Mayoress of Derby performed the opening ceremony and judged the table decorations.

Trade exhibits were of high quality. Mr. SYDENHAM, of Melbourne, showed a fine display of herbaceous perennials; Mr. LOWE, of Beeston, and Mr. SIMS, of Borrowash, splendid collections of Roses. Mr. COLE, Ashbourne, contributed Sweet Peas of excellent quality.

Competitive classes were numerous, the most important being those for Sweet Peas and Roses. A Silver Challenge Cup was offered by Messrs. Haywood, Ltd., for six vases of Sweet Peas, and this brought 15 competitors, Mr. SIMS winning with the varieties Evelyn Hemus, Princess Beatrice, Dorothy Tennant, Etta Dyke, Helen Lewis, and J. Ingman. A Silver Cup was also offered by Councillor Johnson for the best exhibit in the three classes for Roses. This was secured by Mr. J. BEARDSLEY, Ilkeston.

By the kind permission of Sir Peter Walker, Bart., a large party of members of the Derbyshire Gardeners' Association recently visited Osmaston Manor gardens. *F. M.*

PRESCOT HORTICULTURAL.

AUGUST 2.—The 25th annual exhibition was held in Knowsley Park. The entries were fully up to the average in number and the quality of the exhibits, especially plants, was superior to those of former years. There was only one exhibit in the class for a group of plants measuring 11 feet in diameter. This was shown by F. D. NUTTALL, Esq. (gr. Mr. W. H. Roberts), and was awarded the 1st prize.

Mrs. HARDING (gr. Mr. J. McFALL) won the 1st prize in the class for two Palms or Cycads. Four stove or greenhouse plants were best shown by T. HENSHAW, Esq. (gr. Mr. J. George). He had *Clerodendron Balfourianum* and *Allamanda Hendersonii* in good condition.

Mr. H. McFALL led in the class for four greenhouse plants in flower, and he was the most successful exhibitor in most of the classes for plants.

The best Begonias were shown by Mr. D. McKELVIE.

In the classes for three Zonal Pelargoniums, three Fuchsias, three Coleus and six table plants respectively, Mr. W. H. ROBERTS won the 1st prize in each case.

In the classes for Roses Mr. J. GEORGE, Mr. H. McFALL, and Capt. YOUNG (gr. Mr. T. Kilshaw) were prominent prize-winners.

Fruits were generally well shown. In the class for four dishes of distinct kinds, JOHN STONE, Esq. (gr. Mr. D. McKelvie) secured the leading place, staging Black Hamburgh Grapes, Melon, Crimson Galande Peach, and Elruge Nectarine. 2nd, Mrs. PARRINGTON (gr. Mr. Thomas Eaton).

The best two bunches of Black Hamburgh Grapes were shown by JOSEPH BEECHAM, Esq. (gr. Mr. W. Oldham).

Mr. H. McFALL was 1st for two bunches of Muscat of Alexandria.

In the class for two bunches of any other black Grape, JOHN STONE, Esq. (gr. Mr. D. McKelvie), won the 1st prize with Gros Maroc; whilst for two bunches of any other white Grape Mr. W. OLDHAM won with well-coloured examples of Buckland Sweetwater.

F. STAPLETON BRETHERTON, Esq. (gr. Mr. T. Nelson), showed the best Peaches; and Mr. D. McKELVIE the best Nectarines.

In classes for vegetables the 1st prize for eight varieties was won by Mr. J. GEORGE with a capital collection, including Intermediate Carrots, Magnum Bonum French Beans, Early Gem Peas, Ailsa Craig Onions and Al Tomatos.

In the classes for single dishes the following exhibitors secured 1st prizes:—Messrs. W. J. ROBERTS, H. McFALL, and D. McKELVIE.

RAMSEY HORTICULTURAL.

AUGUST 2.—The annual exhibition of this society was held on the above date in the beautiful grounds of the Abbey. The entries were not quite up to the average, and the decrease was emphasised owing to the inclement weather of the morning, which prevented exhibitors from a distance taking their produce to the show.

In the open classes for Roses some delightful varieties were shown. Lord DE RAMSEY won the 1st prize in the class for a group of plants with a fine collection skilfully arranged.

Exhibits of Sweet Peas were the finest that have been seen at Ramsey. Pot plants were, on the whole, good, but there was a slight falling off in the number of exhibits in the class for Coleus.

The fruit shown in the open classes was well up to the average. Lord DE RAMSEY won the 1st prize for Nectarines.

Quite up to the usual high standard of the Ramsey show were the cut flowers, the display of Carnations being praiseworthy. The vegetables were also of a high order, Potatos being the outstanding feature. In the special classes for which the prizes were presented by Lord DE Ramsey, some exquisite Roses and Sweet Peas were seen. Lady DE Ramsey presented the prizes for the table decorations, and although there were only four entries, the exhibits were very charming.

Lord DE RAMSEY won the cup in the open section for the greatest number of points, and Mr. G. D. DAY secured that for the amateurs' classes for the second time, whilst Mr. H. HARRISON won the Royal Horticultural Society's bronze medal in the cottagers' section. Messrs. W. & J. BROWN, of Peterborough, had an ex-

cellent exhibit of Roses and Sweet Peas, which were greatly admired. Messrs. WOOD & INGRAM also had an interesting exhibit.

SCOTISH HORTICULTURAL.

AUGUST 3.—The monthly meeting of the above association was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, presided over an audience of about 70 members. A paper on "The Flora of Tannahill" was read by Mr. Alex. Johnstone, Hay Lodge, Trinity, Edinburgh.

The exhibits were as follow:—A plant of *Nicotiana glauca* variegata and flower-spikes of *Eriogonon macranthus* (Aster mesa), from Mr. THOS. HAY, Hopetoun Gardens, South Queensferry, were each awarded a Certificate of Merit. Other awards were as follow: Nectarine "Lord Napier," 9½ inches in circumference, from Mr. THOS. McPHAIL, Archerfield Gardens, Dirleton (Cultural Certificate); 12 varieties of Cherry from Mr. CHAS. WEBSTER, Gordon Castle, Fochabars (Cultural Certificate). Further exhibits included a collection of Roses from Messrs. DICKSONS & Co., Royal Nurseries, Craigmillar, Edinburgh; 12 varieties of Sweet Peas from Mr. LITTLE, Laughton House, Edinburgh; double Begonias, fancy Pansies and plant of *Nephrolepis Smithii* from Messrs. JAMES GRIEVE & SONS, Redbraes Nursery, Edinburgh; Gooseberry and Strawberry fruits from the DISTRESS COMMITTEE's farm at Murieston (per Mr. R. Cairnes, superintendent); double Paris Daisy and a variety of Ox Eye Daisy from Mr. HAY; varieties of Iris *Kämpferi* and *Lilium superbum* from Messrs. DICKSONS & Co.; vases of Roses from Messrs. TODD & Co., Edinburgh; and a plant of *Oncidium Wentworthianum* from Mr. R. McANDIE, Inveresk Gate, Musselburgh.

Three new members were admitted.

On July 22 about 70 members of the association, including the President, visited Tulliallan, the Scottish seat of Sir James Sivewright. They returned to Dunfermline shortly after midday, and spent the afternoon inspecting the summer flower show held by the Carnegie Trust and in exploring the fine public park at Pittencrieff Glen, in the grounds of which the show is held. The party was afterwards conducted over the baths and gymnasium, where tea was provided by the Carnegie Trustees.

A second excursion took place on July 31, when, on the invitation of Mr. Adair, upwards of 70 members paid a visit to the nurseries of Mr. John Downie. Before leaving, the party were provided with tea and other refreshments by Mr. Adair.

NORTHAMPTON MUNICIPAL HORTICULTURAL SHOW.

AUGUST 4, 5.—Northampton held its first municipal horticultural show on the above dates in the Abington Park, it being eight years since the lapse of the old horticultural society. Judging from the large number of exhibits and their high quality, it is likely this event will be the first of a very successful series.

The arrangements were carried out splendidly, and reflected great credit on the efforts of the Advisory Committee to the Council, which consisted of the leading gardeners in the county.

Great praise is also due to the Mayor of Northampton (Councillor John Brown), who has taken a keen interest in the movement. Immediately after the first meeting he set to work and made himself responsible for raising a guarantee fund of nearly £1,000. It is satisfactory to state that it will not be necessary to call on the guarantors for any portion of this sum, as the receipts have not only equalled the expenses, but there is also a balance in hand.

The schedule was a good one for a new society. It gave plenty of scope in the 145 classes for all exhibitors, and prizes to the value of nearly £400 were offered.

The awards in the principal classes were as follow:—

For a group of plants (open).—1st, Sir G. KENDRICK, Edgbaston (gr. Mr. J. Macdonald); 2nd, Mr. WM. VAUSE, Leamington; 3rd, Marquis of NORTHAMPTON, K.G., Castle Ashby (gr. Mr. A. R. Searle).

For 2½ Roses.—1st, Mr. HENRY DREW, Longworth, Berks; 2nd, Messrs. W. & J. BROWN, Stamford.

Carnations, 12 bunches.—1st, Marquis of NORTHAMPTON.

Sweet Peas, 2½ bunches.—1st, Earl SPENCER, K.G., Althorp (gr. Mr. Silas Cole); 2nd, J. MANSFIELD, Esq., Weston Favell (gr. Mr. E. Bull).

Collection of hardy herbaceous flowers.—1st, Marquis of NORTHAMPTON; 2nd, Messrs. THOMAS PERKINS, Northampton.

Decorated dinner table.—1st, Mr. W. MATTOCK (with a superb table, using Irish Elegance Rose); 2nd, Miss JAMES, York Road.

FRUIT.

Collection of nine kinds.—1st, Marquis of NORTHAMPTON, who had good Muscat of Alexandria and Madresfield Court Grapes, Downton Nectarines, Royal George Peaches, Brown Turkey Figs, Moor Park Apricots, Oullin's Golden Plums, Bigarreau Cherries, and a large seedling Melon; 2nd, Earl SPENCER.

The 1st and 2nd prizes in the classes for both Black and White Grapes were won by H. A. ATTENBOROUGH, Esq., Catesby House, and the Marquis of NORTHAMPTON in the order named.

The best Peaches and Nectarines were shown by the Marquis of NORTHAMPTON; 2nd, Col. E. D. LEE, Hartwell House, Aylesbury.

The Marquis of NORTHAMPTON also showed the best Apricots, Plums, Cherries, and green and scarlet-fleshed Melons.

The best collection of nine kinds of vegetables was shown by the Marquis of NORTHAMPTON; 2nd, Mr. JAS. MANSFIELD.

The Marquis of NORTHAMPTON won 1st prizes for Tomatos, Peas, Beans, Carrots and Onions.

In the classes for collections of vegetables in which special prizes were offered by Messrs. YARDE & Co., Northampton, and Messrs. Sutton & Sons, Reading, the prizes were won by the Marquis of NORTHAMPTON and Earl SPENCER.

NON-COMPETITIVE EXHIBITS.

Medals were awarded to Messrs. JAMES VEITCH & SONS, Chelsea, for a grand exhibit of choice vegetables (Gold Medal); Messrs. STUTTON & SONS, Reading, for a miscellaneous exhibit of fruit, flowers and vegetables, nicely arranged (Gold Medal); Messrs. YARDE & Co. for a choice and varied collection of hardy flowers, Sweet Peas, Roses and Pansies (Silver-gilt Medal); Messrs. JOHN PERKINS for collection of hardy flowers, shrubs and fruit (Silver-gilt Medal); Messrs. THOMAS PERKINS for miscellaneous exhibits (Silver-gilt Medal); and Messrs. BARRY & BROWN, London (Silver-gilt Medal.)

MIDLAND CARNATION & PICOTEE.

AUGUST 5, 6.—In consequence of the late season, this Society's 19th annual show, arranged for July 28 and 29, was postponed until the above dates. Both Carnations and Picotees were extensively shown, and the quality of the flowers surpassed expectations. The most successful all-round exhibitor was Mr. A. R. BROWN, of King's Norton, who won 12 1st and 15 2nd prizes, as well as two silver medals. Mr. HAYWARD MATHIAS, of Medstead, succeeded best amongst the southern growers.

DRESSED FLOWERS ON STANDS.

In the class for 12 self Carnations, Mr. A. R. BROWN, Wychall Lane, King's Norton, won the 1st prize with exquisite flowers of Cecilia, W. H. Parton, Alba, Alma, Mrs. Eric Hambro, Southwell, Helen Gottwalt, Crystal, Cardinal Newman, Helen, Cardinal and Mrs. Howard Green; 2nd, Mr. HAYWARD MATHIAS, Medstead, whose best flowers were Daffodil, Carabas, Mrs. Cherrington, Beta, Miss Willmott and Eva; 3rd, Mr. C. F. THURSTAN, Wolverhampton.

In the next class, which was for six selfs, the Rev. C. A. GOTTWALTZ, Hadzor Presbytery, Droitwich, took the lead with large, well-formed flowers of Mrs. Howard Green, Cambria, Mrs. Eric Hambro, Helen Gottwalt, Theodora Galton and Connie Humphreys. Mr. HARRY SKEELS, of Walsall, who won 2nd prize, had beautiful flowers of W. H. Parton, Sir Galahad and Miss Willmott.

In a class for 12 yellow-ground Picotees, Mr. HAYWARD MATHIAS had superb examples of Libra, Styx, Mayflower, Exquisite, Togo, Verena, Goblin, Leonora, Coquelin, Astrophel,

Mrs. Heriot and Ariel; 2nd, Mr. A. R. BROWN, whose best flowers were Ida Pope, Lady Gascoigne, Peregrine and Morgiana; 3rd, Mr. W. SYDENHAM, Melbourne.

In a smaller class for six yellow-ground Picotees, Mr. HARRY SKEELS was awarded the 1st prize for very good flowers of Isolt, Ida, Lady Freemantle, Leonora, Goblin and Togo; 2nd, the Rev. C. A. GOTTWALTZ.

The stand of 12 fancy Carnations which gained 1st prize for Mr. A. R. BROWN was a wonderfully good one, every flower being large, shapely and of rich colour. The varieties exhibited were Lord Steyne, Highland Lass, Elaine, Becky Sharp, Erl King, Pluto, Billy Barlow, Pasquin, Westfield Seedling, Mandarin, Clement and Margaret Thurstan. Mr. A. W. JONES, Stechford, was a good 2nd. His best flowers were Sam Weller, Hengist, Robin Hood and Linkman. 3rd, Mr. W. SYDENHAM.

For 12 white-ground Picotees, Mr. C. F. THURSTAN won the 1st prize with shapely specimens of Mrs. H. Hoskier, Amy Robsart, Excelsior, Ganymede, Fair Maiden, Thomas William, Carrie Goodfellow, Molly, Myra, Brunette, Elaine and Mrs. Holden. 2nd, Mr. A. R. BROWN; 3rd, Mr. HAYWARD MATHIAS.

For 12 Flakes or Bizarres, Mr. C. F. THURSTAN was 1st with splendid flowers of Master Fred, Gordon Lewis, Mrs. Rowan, J. D. Hextall, Wm. Skirving, Sportsman, J. S. Hedderley, John Herbert, Admiral Curzon, Merton, George Rudd and Arthur. 2nd, Mr. C. H. HERBERT, Acock's Green; 3rd, Mr. A. R. BROWN.

SINGLE BLOOMS—CARNATIONS AND PICOTEES.

There was good competition in nearly all the classes provided for single blooms, in which 1st prizes were won by Mr. A. R. BROWN for (1) scarlet Bizarres, (2) light red-edge, (3) heavy scarlet-edge, (4) light rose or scarlet-edge, (5) yellow-ground Picotee, (6) buff or terra-cotta, (7) dark crimson or maroon, and (8) purple; Mr. C. F. THURSTAN for (1) pink and purple Bizarres, (2) purple Flakes and (3) heavy red-edge; Mr. W. SYDENHAM for (1) crimson Bizarres and (2) yellow selfs; Mr. F. W. GOODFELLOW for (1) heavy red-edge and (2) white selfs. Other 1st prize-winners included Messrs. HERBERT, FORD, MATHIAS, SKEELS, JONES, R. SYDENHAM, CHATWIN, WILLIAMS, BOYS, ALCOCK and the Rev. C. A. GOTTWALTZ.

UNDRESSED FLOWERS.

Undressed flowers were extensively and well shown, and much admired by visitors. There were seven excellent exhibits in a class for 12 self Carnations, staged on a space of 24 inches by 20 inches. 1st, Mr. W. H. PARTON, Hollywood, Birmingham, with a splendid set of moderate-sized flowers. The varieties were W. H. Parton, Helen Gottwaltz, Daffodil, Mrs. Flight, Hildegard, The Sirdar, Sir Bevsy, Miss Willmott, Sappho, Much the Miller, Britannia and Bridegroom. 2nd, Mr. A. R. BROWN; 3rd, Mr. W. SYDENHAM.

Competition was also keen in the next class, which was for six self Carnations. 1st, Mr. G. D. FORD, with exquisite flowers of Ann Hathaway, W. H. Parton, Guy Sebright, Miss Willmott, Mrs. McRae and Sir Galahad. The Rev. C. A. GOTTWALTZ and Mr. F. W. GOODFELLOW were 2nd and 3rd respectively with flowers of high quality.

In a class for 12 Fancies or yellow grounds, Mr. W. H. PARTON beat eight contestants. He showed superb flowers of Voltaire, Mr. Thurstan, Cavalier, Sam Weller, Lord Steyne, R. A. Rowberry, Mandarin, Gibron, The Seer, W. F. Seedling, Merlin and King Solomon. 2nd, Mr. A. W. JONES, with well-set-up flowers of good quality; 3rd, Mr. A. R. BROWN.

FLOWERS STAGED IN THREES.

Eight classes were provided for trebles, namely, one for 12 varieties of selfs, yellow-ground Picotees or Fancies, one for six varieties as above, and six for single vases. The 1st prize in the first-named class was won by Mr. W. SYDENHAM, Melbourne, who showed magnificent flowers of Captain Dobbin, Mandarin, Celestial, Douce Davie, Lord Steyne, Ronny Buchanan, Sir Galahad, Claude Egerton, Exquisite, Mrs. W. Sydenham, R. A. Rowberry and Coquelin. 2nd, Mr. A. R. BROWN; 3rd, Mr. C. ALCOCK, Blundell-sands. In the smaller class, Mr. J. D. WILLIAMS, Smethwick, and Mr. G. D. FORD were awarded the 1st and 2nd prizes respectively.

Competition was spirited in the single vase classes; 1st prizes were won by Mr. W. H. PARTON for (1) yellow, buff or terra-cotta self Carnations, with Britannia, (2) dark self, with W. H. Parton, and (3) yellow or buff-ground Fancy, with Lord Steyne; Mr. A. R. BROWN for (1) white, bluish or pale pink self Carnations, with Crystal, and (2) yellow-ground Picotee, with Ida Pope; Mr. C. WALL, Bath, had the best rose, salmon, or scarlet self Carnations with Enid.

AMATEUR CLASSES.

Although the number of exhibits in the classes reserved for amateurs were fewer than in 1908, the quality of the flowers was exceedingly good. Mr. J. HANCOCK, Bearwood, Birmingham, won 1st prizes in classes for (1) six self Carnations (dressed), (2) six Fancy or yellow-ground Carnations or Picotees (dressed), and (3) six self Carnations (undressed). Mr. E. KENWRIGHT, Smethwick, took the lead in a class for six white-ground Carnations or Picotees (dressed); and Mr. J. B. WILLETTTS, Yardley, had the best half-dozen Fancies or yellow-grounds (undressed).

AWARDS TO NOVELTIES.

First-class Certificates were awarded to:—

Self Carnation Mrs. Howard Green, a refined flower of a warm, rose-pink colour, quite one of the best of its class, shown by the Rev. C. A. GOTTWALTZ, Hadzor, Presbytery, Droitwich; *Fancy Carnation Linkman*, a beautiful yellow-ground Fancy, heavily marked with scarlet, shown by Mr. A. W. JONES, Stechford; *Mrs. H. W. Twist*, a heavy rose-edged white-ground Picotee, of medium size and perfect form, shown by Mr. F. W. GOODFELLOW, Walsall; *Libra*, a medium, rose-edged, yellow-ground Picotee, of great size and substance, shown by Mr. HAYWARD MATHIAS, Medstead; and *Tota*, a light or wire-edged, white-ground Picotee, of medium size and good form, shown by Mr. HAYWARD MATHIAS.

PREMIER FLOWERS (DRESSED).

Bizarre Carnation Master Fred, shown by Mr. C. F. THURSTAN; *Flake Carnation Gordon Lewis*, shown by Mr. C. F. THURSTAN; *heavy-edged, white-ground Picotee Mrs. W. H. Twist*, shown by Mr. F. W. GOODFELLOW; *light or wire-edged, white-ground Picotee Mrs. Gorton*, shown by Mr. G. D. FORD; *heavy-edged, yellow-ground Picotee Santa Claus*, shown by Mr. C. F. THURSTAN; *light-edged, yellow-ground Picotee Astrophel*, shown by Mr. A. W. JONES; *yellow-ground Fancy Carnation Lord Steyne*, shown by Mr. A. R. BROWN; *self Carnation Sir Galahad*, shown by Mr. F. W. GOODFELLOW.

PREMIER FLOWERS (UNDRESSED).

Self Carnation Sir Galahad, shown by Mr. F. W. GOODFELLOW; *Fancy Carnation Lord Steyne*, shown by Mr. A. R. BROWN; *yellow-ground Picotee Mrs. W. H. Heriot*, shown by Mr. C. H. HERBERT.

SPECIAL MEDALS AND PRIZES.

The Birmingham Botanical and Horticultural Society offered two medals to the exhibitors gaining the greatest number of points in the large classes, and two medals to the most successful exhibitors in the smaller classes. The Silver Medal in the larger classes was won by Mr. A. R. BROWN, with 154 points; and the Bronze Medal by Mr. C. F. THURSTAN, with 87 points.

Mr. G. D. FORD won the Silver Medal offered to the most successful exhibitor in the smaller classes with 105 points. The Rev. C. A. GOTTWALTZ and Mr. HARRY SKEELS tied for the Bronze Medal, each winning one 1st prize, but as the Rev. C. A. GOTTWALTZ won the greatest number of 2nd prizes he became entitled to the medal.

The Carnation Society's Silver Medal offered to the most successful exhibitor in the single bloom classes (dressed flowers) was won by Mr. A. R. BROWN, with 65 points, and the Bronze Medal offered to the most successful exhibitor in the amateur classes was won by Mr. J. HANCOCK, with 60 points.

SWEET PEAS.

Special prizes were offered by Robert Sydenham, Ltd., in three classes. The quality of the flowers exhibited was excellent.

HONORARY EXHIBITS.

Mr. C. H. HERBERT, Hazelwood Road, Acocks Green, had a large bank of hardy cut flowers at

the end of the exhibition ball, consisting principally of Delphiniums, Galegas, Campanulas and Gaillardias pleasingly arranged. (Silver Medal.)

Messrs. B. R. DAVIS & SONS, Yeovil, contributed an extensive and meritorious display of double and single flowers of tuberous-rooted Begonias. (Silver-gilt Medal.)

Messrs. PHILLIPS & TAYLOR, Bracknell, sent Carnations. (Bronze Medal.)

Messrs. W. H. SIMPSON & SONS, Birmingham, exhibited a large collection of Sweet Peas effectively arranged. The best varieties were The King, John Ingman, Henry Eckford, Saint George, The Marquis, Nora Unwin, Helen Lewis and Evelyn Hemus. (Silver-gilt Medal.)

Messrs. GUNN & SONS, Olton, had a splendid group of Roses, in which Princess Marie Merchertsky, La Tosca, Mme. Abel Chatenay, Lady Roberts, Liberty, Killarney, Frau Karl Druschki and Her Majesty were of outstanding merit. (Silver-gilt Medal.)

Messrs. YOUNG & Co., Cheltenham, showed cut flowers of tree Carnations artistically arranged in tall bamboo stands and earthenware vases of different sizes. White Enchantress, White Perfection, Aristocrat and Beacon were noteworthy varieties. (Silver Medal.)

READING GARDENERS.

AUGUST 6.—The members visited Mr. Leonard Sutton's gardens at "Hillside." Reading, on the above date. The party numbered nearly 200. After partaking of tea, a tour of the gardens was made under the leadership of Mr. Sutton and Mr. Townsend, the gardener. Annuals, together with certain perennials grown as annuals, formed delightful colour effects in the beds on the lawn. In the houses were to be seen splendidly-grown specimens of Gloxinia, Gesnera, Coleus, Schizanthus, Celsia arcturus, &c. After spending an hour and a half in the gardens, the party visited the private recreation ground at "Cintra" provided by Messrs. Sutton & Sons for their employees.

CATALOGUES RECEIVED.

CHARLES TURNER, The Royal Nurseries, Slough—Strawberries.

CLIBRANS, Altrincham and Manchester.—Strawberries.

BULBS.

FISHER, SON & SIBBAY, Ltd., Handsworth, Sheffield.

DICKSON, BROWN & TAIT, Corporation Street, Manchester.

STEWART & Co., 6, Melbourn Place, Edinburgh.

T. METHVEN & SONS, 15, Princes Street, Edinburgh.

CARTWRIGHT & GOODWIN, Kidderminster.

THOMAS DAVIES & Co., 250, Picton Road, Wavertree, Liverpool.

J. R. PEARSON & SONS, The Nurseries, Lowdham, Notts.

COOPER, TABER & Co., 90 and 92, Southwark Street, London, S.E. (wholesale).

WILLIAM BULL & SONS, King Street, Chelsea.

DAVID W. THOMSON, 113, George Street, Edinburgh.

JOHN PEED & SON, West Norwood, London, S.E.

CLIBRANS, Manchester and Altrincham.

W. BAYLOR HARTLAND, Ard Cairn, co. Cork.

FOREIGN.

WILLY MULLER, Nocera Inferiore, near Naples, Italy.—

3rd and 4th list of plants.

W. ATLEE BURPE & Co., Philadelphia, U.S.A.

E. H. KRELAG & Zoon, Haarlem, Holland.—Bulbs.

WALTER BLOM & SON, Overveen, near Haarlem, Holland.—Bulbs.

HAAGE & SCHMIDT, Erfurt.—Bulbs, &c.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 11.

Hot sunny days, and cool nights.—On each day of the past week the temperature in the thermometer screen rose to or exceeded 77°, and on the two warmest days reached 81°—or a higher reading than at any previous time during the present year. The nights, on the other hand, proved cool for the time of year. Consequently the differences between the lowest and highest readings in the thermometer screen have been very great—on one day amounting to as much as 34°. The ground temperatures have risen rapidly during the week, the reading at 2 feet deep being at the present time 2°, and at 1 foot deep as much as 5° warmer than is seasonable. No rain at all has now fallen for eight days, and no measurable quantity of rainwater has come through either of the percolation gauges since the first day of the week. The record of bright sunshine proved unusually good—averaging as much as 11½ hours a day, or nearly twice the usual quantity in August. Calms and light airs have alone prevailed during the week, the direction being principally some point of the compass between north and east. The atmosphere remained singularly dry in the afternoon, the mean amount of moisture in the air at 3 p.m. being as much as 15 per cent. less than a seasonable quantity for that hour. E. M., Berkhamsted, August 11, 1909.

NOTES FROM A "FRENCH" GARDEN.

THE crop of Melons for this year is practically over, it having been impossible on account of the unfavourable weather to obtain a second batch of fruits. In ordinary seasons, in cases where the plants are growing healthily, it is possible for the cultivator by carefully thinning out the shoots to obtain another "set." The fruits of the second crop are rarely so big as the earlier ones, but they usually have a good flavour. The financial results from the Melon crop have been fairly good. It has again been proved, what was already known well to Parisian growers, that it is absolutely necessary to so manage the Melon crop that the main batch of fruits will ripen not later than the end of July. For this reason Melon plants should be planted early in May at the latest, and in order to have the frames and lights at liberty at that time, the hot-beds for spring forcing must be finished by the end of January. The old Melon beds have now been cleaned and hoed for the Cauliflowers. This crop will require ample waterings.

The Endive planted early in July in the old manure beds are now being marketed. These Endives were blanched by tying the leaves up for four or five days previous to cutting them. Celery requires heavy waterings. We shall commence to blanch the plants next week by spreading mats over them. This treatment will be continued for a fortnight.

Plants of Celeriac have had all the side shoots taken away from them. Carrots have been thinned out and the ground cleaned. The crop is doing well. At the time of sowing we covered the seed with 1 inch of well-decayed manure to save mulching them later on as is generally done. Such a mulch prevents the collar or top of the Carrot turning green.

We are now sowing the silver-skinned Onion Little Parisian on a well-prepared bed. To induce the seeds to germinate quickly we apply light but frequent waterings until the seedlings appear above ground. After this stage watering has to be done but moderately, or damping off would set in. This crop has been very profitable this year.

At the end of the month we shall sow the Oxheart Cabbage and Little Black Gott Lettuce. The Lettuces will be marketed in November, and the cloches will then be used for pricking off for the second time the Cos Lettuces raised in October. Endives La Ruffec and Batavian Green are now being planted in their final quarters. The plants are being put 11 inches apart each way. In the heavy ground here Batavian Green does better than La Ruffec, as this latter variety becomes spotted on the leaves, especially if the autumn is wet. P. Aquatics.

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. JOSEPH SMITH, as Gardener to H. W. WORSLEY-TAYLOR, Esq., Moreton Hall, Whalley, Lancashire.

Mr. A. H. EDWARDS, for 3 years General Foreman and Decorator at Beechy Lees Gardens, Sevenoaks, Kent, as Gardener to CLAUDE E. STANLEY BISHOP, Esq., Norton Priory, Selsey-on-Sea, near Chichester, Sussex.

Mr. G. HYDE, for 2 years Gardener to Mrs. BLAKE, the Rookery, New Malden, as Gardener to H. T. DANIELS, Esq., Warren House, Cobham, Surrey. (Thanks for 1s. received for R.G.O.F. Box.—E.O.S.)

Mr. R. O. JONES, for the past 17 months Foreman in Thirkley Park Gardens, Thirsk, as Gardener to J. M. KITSON, Esq., Highfield, Bramley, Leeds.

Mr. W. H. WORLEY, for nearly 5 years Gardener at Forest Mere, Liphook, Hants., as Gardener to the Right Hon. the Dowager Countess of KENMARE, the Red House, Sevenoaks, Kent.

Mr. JAMES STEPHENS, for the past 9 years Gardener to the late W. H. TYSER, Esq., as Gardener to W. H. BARDER, Esq., Culham Court, Henley-on-Thames.

Mr. J. CHAPMAN, late Foreman of Mill House, as Gardener to ROBERT HARDY, Esq., Northbrook, West Hartlepool, Durham.

MARKETS.

COVENT GARDEN, August 11.

[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.—E.O.S.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Asters, Carnations, Gladioli, and others.

Table listing various cut flowers and their prices, including Myosotis, Odontoglossum, Pelargoniums, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Agrostis, Asparagus, and others.

Table listing various cut foliage and their prices, including Grasses, Haydock foliage, Ivy-leaves, and others.

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

Table listing various plants in pots and their prices, including Ampelopsis, Aralia, Aspidistra, and others.

Table listing various plants in pots and their prices, including Ferns, Ficus, Hydrangea, and others.

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

Table listing various plants in pots and their prices, including Pelargoniums, Rhodanthus, and Roses.

Table listing various plants in pots and their prices, including Roses, Selaginella, and Spiraea.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Bananas, Cherries, and others.

Table listing various fruits and their prices, including Grapes, Lemons, Limes, and others.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Beetroot, and others.

Table listing various vegetables and their prices, including Mushrooms, Mustard, Onions, and others.

REMARKS.—English Cherries are getting scarce; the last samples are meeting with a ready sale. Plums at the commencement of the week were short, but will now be received in increased quantities. Tomatoes remain at the same price, but the supplies are shorter. The Grape trade is extremely quiet. French Plums are cheaper, but there has been a good demand for Gages. A shipment of Californian Pears will be sold this week. Lemons are dearer on account of the warm weather. E. H. R., Covent Garden, Wednesday, August 11, 1909.

Potatoes.

Table listing various potato varieties and their prices, including Bedfords, Epicure, and others.

Table listing various potato varieties and their prices, including Lincolns, British Queen, and others.

REMARKS.—Trade very bad. Heavy supplies from Kent, Bedfordshire, Middlesex, Cambridgeshire, and Lincolnshire, and prices are extremely low. Edward J. Newborn, Covent Garden and St. Pauls, August 12, 1909.

COVENT GARDEN FLOWER MARKET.

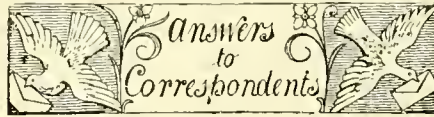
The approach of autumn is seen on all sides, and Chrysanthemums in pots are already available, but up to the time of writing I have seen only those of the Masse varieties, and these are not very good. Although the plants would be of little use for florists' purposes they would be serviceable to take the place of annuals or other flowering plants that have done flowering. *Campanula isophylla* alba and *C. i.* Mayi are well flowered; for market purposes the shoots are trained erect, in which form they are better for transit than when falling over the pots. They soon drop into shape when the growths are untied. Many who frequent the market will regret to hear of the sudden death of Mr. W. Fairhead, which occurred on Monday, the 9th inst. It is some time since he frequented the market himself, his son, Mr. H. Fairhead, acting as salesman in his place.

CUT FLOWERS.

There has been no improvement in trade during the past week. This morning large consignments of Carnations failed to find a purchaser. Carnations of all colours are abundant, but I have never before seen such large quantities of beautiful white blooms in the market. The border varieties are passed over when those of the American type are so cheap. Roses were sold at very low prices. Fine blooms of Mme. A. Chatenay went for 6d. per dozen, and very good flowers of General Jacqueminot were sold at half that price. It is difficult to quote the prices of Lilliums. At the end of last week I bought good blooms at 1s. per bunch, and they could have been purchased for even less this morning. Tuberoses, Gardenias and Stephanotis are all well supplied. A. H., Covent Garden, August 11, 1909.

ENQUIRIES AND REPLIES.

PRIMULAS FOR THE WILD GARDEN.—On p. 86 *B. L.* enquired for Primulas other than *P. denticulata* and *P. japonica* that, being of easy growth, would reproduce themselves from seed in the damper portions of the wild garden. There are many species that are capable of doing this. The chief difficulty is that in such circumstances the seeds fall too closely to the parent plant. The seedlings appear in such numbers that their transplanting becomes an absolute necessity. The species best suited for getting a wide distribution of their seeds are those whose flowers are arranged in whorls; the pedicels and ovaries being horizontally disposed shoot out their seeds to greater distances when the seed vessels are ripe enough to burst. Of the new species recently brought to notice I consider *P. Bulleyana* to be by far the best for the purpose under consideration, but it is necessary to know what kind of soil there is in the position which these plants are desired to occupy and what herbage grows there. The well-known *P. japonica* will seed freely within a foot or two of the parent plant, and hundreds of seedlings may appear in a space only large enough for the full development of a very small number. I have seen hundreds of plants where there was not sufficient room for half a dozen to develop fully. In these circumstances the seeds are best gathered and thinly distributed to save the trouble of replanting. Large-growing species like *P. japonica* and *P. Bulleyana*—the first named will produce rosettes of leaves more than 2½ feet across—require ample space when growing in permanent shade and moisture. Curiously enough, *P. sikkimensis*, *P. Munroii*, *P. rosea*, and others, whilst producing quantities of good seeds, do not appear to germinate so freely in the immediate vicinity of the original specimens. For garden purposes these are best raised in pans or boxes. Even the common Primrose is not a free-seeding plant if we are to judge by the seedlings that appear naturally, although there are notable instances to the contrary. At Gravetye, for example, there are some acres in the wood which in spring is covered with fine plants in bloom. In this instance, as Mr. Robinson has informed me, Nature has been the only gardener, and doubtless the work of carpeting such an area took much time. At one period this same spot had a good deal of brushwood as an undergrowth to the Oaks, and the clearing of this probably effected a freer distribution of the Primrose seeds. At Clendon Park, Lord Onslow's Surrey seat, such Primulas as *P. capitata*, *P. rosea*, *P. japonica*, *P. denticulata*, and others are to be seen in thousands in damp positions in the woodland, but all of them give the impression of having been raised by hand and transplanted. Many of the seeds of those species of Primula whose capsules are held erect perish, I fear, as a result of the moisture they collect, the stems remaining sound for a considerable time. A difficulty to be overcome in our attempts to naturalise such things in the garden is the flatness of the ground. In their native homes the same species may be assisted in their distribution by the inequality of the soil, by melting snows or the constantly moving debris of a mountain slope. *E. H. Jenkins.*



BERLIN BOTANICAL GARDEN: *G. N. & P. N.* Apply to M. Ledien, the Curator of the Imperial Botanical Garden, Dahlem, near Berlin, explaining your wish.

CARNATION SOUVENIR DE LA MALMAISON: *H. J. W.* It is a usual occurrence for flowers of this type of Carnation to split the calices during the process of opening. This is caused by the excessive development of petals, and may be considered the price the cultivator pays for his selection of an unnatural production. It may, however, be said that certain varieties are less troublesome in this respect than others. If you apply to the sundriesmen you can obtain thin wire supports, which are used for placing round the calyx, to act as collars, and thus hold the petals in a natural position. These appliances serve their purposes much better than the old indiarubber rings.

CONIFER: *R. A. H.* The specimen appears to be nothing but the common Spruce. Cattle are not likely to eat this plant, but if they should eat a considerable quantity, they will, at the least, suffer injury.

CORRECTION.—In the note on Freesias (p. 94), for *moles* read *voles*.

CUCUMBER: *J. G.* You have adopted the best means of preventing a spread of the disease. Continue to cut off any leaves which give unmistakable signs of attack, and destroy them by burning. In cases where the whole plant appears to be attacked, we should unhesitatingly remove it to the fire heap.

EXAMINATION OF ROYAL HORTICULTURAL SOCIETY: *M. W. J.* Write to the Secretary, Royal Horticultural Hall, Vincent Square, Westminster.

GARDEN REFUSE: *Thomas A. B.* If you burn the materials described in your letter the ashes will be valuable as manure for the land. Fellows of the Royal Horticultural Society may have samples of soil analysed by Dr. Voelcker on payment of a small fee. Write to the Secretary, Vincent Square, Westminster. We are unable to recommend you a book that would enable you to carry out such an analysis yourself.

IMPROVED HOE: *W. H.* Apply to the Patent Office, 25, Southampton Buildings, London, W.C.

NAMES OF PLANTS: *W. H. S.* *Deutzia crenata plena purpurea.*—*D. M.* 1, *Galium verum*; 2, *Matricaria Chamomilla.*—*J. C. S.* *Poa Chaixii.*—*W. M.,* *Caithness.* These are the fruits of *Populus nigra*. The downy coating is often called vegetable down, and is sometimes used for stuffing cushions.—*A. J. W.* *Dendrobium Gibsonii.*—*F. L. T.* *Asplenium feniunculaceum.*—*W. C. S.* The yellow-flowered species is *Polystachya* (*Epiphora*) *pubescens*. The other slender little species is quite dried up and beyond recovery even after immersion in water. It is probably *Disperis capensis.*—*K. & B.* *Millium effusum.*—*F. King.* 1, *Elaeagnus angustifolia* (*syn. hortensis*); 2, *Kalanchoë* sp., probably *K. somaliensis.*—*W. S. N.* 1, *Carex riparia variegata*; 2, *C. acutifolia*; 3, *Adiantum Pacottii*; 4, *Davallia Mooreana*; 5, *Aconitum Napellus bicolor.*—*W. Fulford.* *Echium vulgare.*—*C. C.* Both specimens are seedling forms of *Cupressus Lawsoniana.*—*Jet.* *Olearia macrodonta.*—*Erceles.* *Hyoscyamus niger* (*Henbane*).

ONIONS: *J. J. C.* The growths are covered with a superficial fungus, which has spread owing to the continued wet weather. You might syringe them with a weak solution of liver of sulphur or sulphide of potassium.—*Oignon.* We cannot hazard an opinion without seeing specimens. Send some of the bulbs affected by disease.

PEAR SHOOTS: *G. H.* The worm-like creatures which you state have been found upon the leaves of your Pear tree for the first time are the larvae of the Pear slug-worm and Cherry sawfly (*Selandria atra*). The perfect insect lays its eggs just under the upper surface of the leaves of the Cherry and Pear in June, or even earlier. The slug-worms, which are covered

with a greenish secretion when about six weeks old, cast their green or blackish-looking coats, and appear as buff caterpillars, free from slime, being smooth and transversely wrinkled. These caterpillars go down into the ground, spin a cocoon, and from these the sawflies emerge in the following summer. The larvæ, or slug-worms, feed upon the upper surface of the leaves, which in some instances they remove entirely. The best remedy is to dust the slug-worms over with quicklime or gaslime. The first application they will throw off by exuding a coating of slime, but they cannot continue doing this; therefore, if a second application is made soon after the first, it will destroy them. The trees may be syringed with strong soapsuds or tobacco water, or with water containing 2 lbs. of soft soap and a peck of lime to each 30 gallons of water. Following a severe attack, the surface soil should be removed during winter to the depth of 3 or 4 inches. This soil will contain cocoons, and should be burned or buried deeply with some quicklime or gaslime. If for some reason it is impracticable to remove the soil during autumn, then some Vaporite should be inserted in it. In June some of the sawflies may be caught by shaking the trees in the evening over a freshly-tarred board or cloth.

PEAS: *W. F. H.* As you state that all the main crop varieties have succeeded well, it is probable that the very early sowing suffered from unsuitable climatic conditions prevalent at the time they were sown. If seeds of any kind are sown either in autumn or very early in spring, and, for this reason, remain a considerable time in the ground before germinating, there is always more or less loss due either to rotting of the seed, or to the presence of rodents such as rats or field mice. There is nothing on the scraps of roots received that would lead us to attribute your failure to other circumstances. *Subscriber.* You might apply one ton of gas tar to the acre, but it will be necessary to allow four or five weeks to elapse before digging the ground and planting or sowing a crop.

SWEET PEAS: *Rayner H.* There is no known disease present on the shoots received, but, like many other specimens from different gardens, they exhibit an abnormal condition, which may be due to some obscure disease at present unknown to science. Although nothing is known of the science of this malady, it is certain that the best means a cultivator can take to prevent its occurrence is to plant his Peas in rich, loamy soil that does not require large additions of fresh or artificial manure at the time of sowing, or during the growth of the Peas.

TOMATO: *R. S. & B. C.* The flowers fall from Tomato plants for various reasons, but the trouble is usually due to excessive vigour in the plants themselves, or unsuitable climatic conditions. You may have noticed that early in spring, when the plants are making growth of extra vigour, more flower-buds are cast than at any other time. Later when the resources of the plants are called upon to develop fruits, growth being less rapid, fewer flowers fail to set. As your plants are cultivated in boxes indoors, it is more than likely the soil has been made richer than was desirable.—*C. S., Wrotham.* The plants are attacked by a fungal disease. Employ rather more ventilation, and keep the conditions of the house drier for a time. As soon as a plant exhibits signs of an attack, remove it to the fire heap and plant afresh.

VINE LEAVES: *W. F. H.* There appears to be no fungal disease in your leaves, they have developed the brilliant tints prematurely, owing either to the operation of climatic or cultural agencies. It is well known that vine leaves lose their green colouring sooner in certain districts and soils than in others. It is probably due more to the chemical composition of the border than to any atmospheric influence. At the same time, if you wish to keep the green colouring, it would be advisable to employ a slight shading from the rays of the sun.

Communications Received.—*R. H. C.*—*H. A.*—*R. N.*—*J. M.*—*W. M.*—*L. S.*—*F. M.*—*A. L. E.*—*W. H. Y.*—*J. P.*—*B. C. T.*—*W.*—*W. P.*—*E. H. J.*—*W. H. L.*—*Chloris*—*A. R.*—*D. G.*—*A. R. S.*—*F. M.*—*T. H.*—*W. H.*—*W. B. H.*—*W. A. E.*—*W. P.*—*W. J. B.*—*A. R. E.*—*W. E. B.*—*C. H.*, Darmstadt—*Annual*—*J. C. G.*—*E. E. R.*



THE

Gardeners' Chronicle

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ALTHORP PARK, NORTH-AMPTON.

(See figs. 50 and 51, and Supplementary Illustration.)

ALTHORP Park, the seat of Earl Spencer, K.G., is situated at about eight miles from Northampton, on the Rugby route of the London and North-Western Railway. The park gates are not far from the local station, but a long drive through a delightful park intervenes between the gates and the mansion. The policies around, with the beautiful old timber and herds of deer and cattle, form a suitable setting.

The building (see Supplementary Illustration) has the form of a rectangle. It is a plain, but substantial edifice, and contains a rich collection of artistic treasures, including a gallery of rare pictures. The building was erected by Sir John Spencer early in the 16th century, and represents a good example of the architecture of the Tudor period. Surrounding it are broad, closely-cut lawns, with numerous flower-beds and coniferous trees, some of these latter being clipped in columnar shape. A dwarf, stone wall encloses a terrace around the house, the balustrading being entwined with Roses of the Crimson Rambler variety. In the lower picture of the Supplementary Illustration the dwarf, Rose-clad wall is seen at the very bottom, and this

overlooks a parterre forming the garden-front on the south. The illustration shows but one half of this formal garden, there being a corresponding portion on the right-hand side. It will be noticed that two of the beds are planted to represent butterflies, the body and head being worked in *Coleus Verschaffeltii*, and the wings in blue *Lobelia*, with spots of the yellow-leaved *Pelargonium* known as Crystal Palace Gem. The circular bed in the centre is furnished with *Pelargonium Raspaill* and edged with *Coleus Verschaffeltii*. The columnar trees are specimens of *Cupressus Lawsoniana erecto viridis*. Besides these Cypresses there are half-circular trained Yews, green and golden varieties alternating.

The sundial is on a plateau known as the Octagon. Looking towards the house from this spot, both the north and the west fronts are seen, also the flower-beds and lawns. There are beds of *Rhododendrons*, closely clipped Golden Yews, and several columnar Cypresses. The bedding plants have made but little growth this season, and the effect is not so good as usual. Fuchsias, *Pelargoniums*, *Begonias*, *Heliotropes*, *Pentstemons*, *Zinnias*, *Salvia splendens*, and similar flowers are utilised largely, with *Santolina*, *Stachys*, *Lobelia*, and other plants as edgings. *Calceolarias* appear to have been suited by the dull, showery weather of the early summer, for here and in other places *Calceolaria amplexicaulis* is unusually effective this season. *Antirrhinums* were flowering abundantly. The view shown in fig. 50 was taken from a point near the north-east corner of the mansion. It may be interesting to refer in detail to the coniferous trees seen on the right-hand side of the illustration, but before we reach them from the portion of the pleasure grounds already described, we pass some borders presenting a definite colour scheme. These are planted with flowers, some of them with white kinds exclusively, and others with blue, red, yellow, purple, and scarlet flowers respectively. The blue border is planted with *Delphiniums*, *Lupins*, *Salvia patens*, *Asters*, *Lobelia*, *Heliotrope*, &c. The white combination is made of *Nicotiana affinis*, *Chrysanthemum maximum*, *Phlox deussata*, *Asters*, *Matricaria*, *Antirrhinum*, and *Galtonia candidans*. Various species of Composite furnish most of the subjects in the yellow border.

Passing along a broad path proceeding westwards, we notice oblong beds furnished with Indian *Rhododendrons*, raised from seeds sown in these gardens. Alternating with these are Golden Yews backed with taller pyramidal plants of the common Yew. Clumps of *Honeysuckle* are disposed between these beds. Facing these are the Conifers to which we have already alluded. They are very large trees, but several are already past their best condition. The most notable examples are *Pinus Strobus*, *Abies Douglasii* and its golden form, *Cedrus Deodara*, a very large and well-balanced specimen of *Picea orientalis*, *Cryptomeria japonica*, *Cedrus Libanii*, *Taxodium distichum*—one of the finest specimens of this tree in the country—*Abies canadensis*, *Thuja borealis*, and the variegated form of *Sequoia sempervirens*. Other notable trees included a magnificent specimen of the Tulip tree (*Liriodendron tulipifera*), with hundreds of its handsome flowers expanded, several large Cedars, *Quercus Suber*, *Q. serris*, an exceptionally large and well-balanced tree of the common Oak, large Copper Beeches, and some very big Elms. There are large Elms overhanging a piece of ornamental water which is known as the Oval.

This artificial lake is of sufficient size to permit of boating. In the centre is an island planted with trees.

SWEET PEAS.

The name of Mr. Silas Cole, the gardener at Althorp Park, will always be connected with the development of the Sweet Pea, for at Althorp Park originated the Countess Spencer variety, the forerunner of the race having a waved, instead of an erect, smooth standard. This is still one of the best of this type of Sweet Pea, but in addition Mr. Cole has raised several others of sterling merit, some of which are in commerce and others have yet to be distributed. Mr. Cole regards as one of his finest novelties the variety named after Earl Spencer. It is a self-coloured flower of a deep orange shade, the inflorescences bearing three and four flowers on strong stems. Other notable seedlings are Mabel Cole, a yellow-ground colour with a deep Picotee edge of pink; Lord Althorp, with orange standard and rose-coloured wings, a very large flower; a maroon-coloured, unnamed seedling, so dark in colour as to appear almost black; Sea Foam, creamy-yellow; Miss Lavinia Spencer, having a pink standard and pure white wings; G. C. Wand, a shade of red approaching scarlet—the wings are waved so as to almost make the flower appear double; and Althorp White.

Mr. Cole described the parentage of the Countess Spencer Sweet Pea as follows:—The varieties *Lovely* and *Triumph* were crossed in 1898, and in the following year a variety obtained from that cross was crossed with *Prima Donna*. From this latter cross was obtained Countess Spencer.

Mr. Cole, who may be seen amongst his Sweet Peas at fig. 51, prepares the land for their planting by trenching it to a depth of 3 feet. The seeds are sown indoors in pots, and the seedlings are planted 1 foot apart in trenches. Farmyard manure is freely incorporated with the soil, but soot is Mr. Cole's favourite manure for Sweet Peas. The plants exhibit remarkable vigour and attain a height of about 12 feet. With regard to "fixity," Mr. Cole holds that varieties will come true in their fifth year if proper attention is paid to "rogueing."

FRUIT AND VEGETABLES.

The fruit and vegetable gardens, with the glasshouses, are reached by a long, narrow path that winds through rising ground. There are several vineries, and in these there were fine crops of *Muscat of Alexandria*, *Lady Downe's Seedling*, *Gros Maroc*, and *Apley Towers Grapes*, the berries being remarkably well finished and the bunches of a desirable size. There were also seen abundant crops of *Melons*, *Peaches*, *Nectarines*, *Figs*, *Tomatos*, and *Cucumbers*.

The vegetable garden alone covers an area of 14 acres, and it is divided by high walls into three main portions. The walls provide warm sheltered borders for the cultivation of stone fruits and the raising of early crops of vegetables. The main quarter devoted to vegetable culture is intersected by two broad paths running through the centre either way, and dividing it into four quarters. The path on either side is bordered with a broad band of *Stocks*, which were in splendid flower. In addition to dwarf fruit trees in the kitchen garden, there is a large orchard. The *Peach*, *Apricot*, *Nectarine*, and *Cherry* trees, trained against the walls, have all borne abundant crops of fruits this season, but the most bountiful of

all are Apricots, large, healthy trees having exceptionally choice fruits, and principally of the variety known as Ormskirk. Standard bushes of Gooseberries were seen with their branches borne down with the crop, whilst Raspberries, Strawberries, and Currants have been almost equally plentiful.

The vegetable crops looked promising, especially Celery, Onions and Leeks.

Mr. Cole is in his 18th year of service at Althorp Park, having succeeded his father, who was gardener to Earl Spencer for 14½ years. In all departments of the garden are to be seen the satisfactory results of his care and skill.

former Lily, I presume, the bulb eventually dies, and apparently does not throw off any off-sets. In their natural condition such Lilies must, I suppose, increase by seeding themselves. We have here every facility for Lily cultivation, and every kind of soil, and only one serious difficulty. Most of my Lilies have to be grown in a Fir wood, where the soil, a sandy loam, is full of wood mice. Out of 30 kinds, only about nine succeed really well. These are *L. pardalinum*, *L. testaceum*, *L. tigrinum*, *L. Washingtonianum*, *L. giganteum*, *L. superbum*, *L. candidum*, *L. Martagon album* and *L. umbellatum erectum*. Such species as *L. speciosum*, *L. pomponium verum*, *L. Henryi*, *L. auratum*, *L. Szovitzianum* and *L. canadense* manage to

not grow here quite so vigorously as *L. superbum*, which has attained to a height of nearly 6 feet in this wet season."

In my reply to Mr. Basil Levett, I told him that, according to my experience, *L. Humboldtii* flowers comparatively well in fibrous soil for one or two seasons, and then entirely disappears. It is quite possible that it might prove more enduring if planted in peat or leaf-mould. This material, I imagine, would also be suited to the requirements of *L. superbum* and *L. Washingtonianum*. In this garden *L. Henryi* and *L. Szovitzianum* have been grown for years amongst Roses, in loam occasionally fertilised with liquid manure. I have had them flowering in the same position for at least 10 years. *L. Henryi* has a habit of



FIG. 50.—VIEW IN THE PLEASURE GROUNDS AT ALTHORP PARK. (See p. 123.)

[Photograph by H. N. King.]

THE CULTURE OF LILIES.

MR. BASIL LEVETT, of Wychnor Park, Burton-on-Trent, has addressed to me a communication, extracts from which he has kindly permitted me to publish in this journal, regarding his experience with the culture of Oriental and Occidental Lilies. "I have," he says, "been wondering whether a question which I asked in the *Gardeners' Chronicle* was the cause of a remark of yours in the issue of June 12? It was so curious that you should have answered the very question I had asked, namely, if there was any chance of *Lilium Washingtonianum* or *Lilium rubellum* ever becoming permanently established? In both cases your answer is, No. In the

exist, and that is all. *L. Brownii*, *L. Humboldtii* and *L. rubellum* die out. *L. Szovitzianum* is frequently attacked by mice, and even when it escapes their attentions it only grows 4 feet high, and bears from three to four flowers. I have been told that, in order to grow this great Lily successfully, very young bulbs must be obtained and allowed to get established. *L. Humboldtii*, you say, does fairly well with you, and yet I have been told it is one of the Lilies almost impossible to grow. Here it died even before flowering. For years I had the Californian form of the beautiful Washington Lily, which, it is generally supposed, will not flower in England after the first year. The ordinary form of this Lily does

bending forward, which is sometimes so emphatic as to be very reprehensible. Mr. A. Grove, of Kentons, Henley-on-Thames, who is, like Mr. Levett, an ardent Lily cultivator, tells me that Dr. Henry told him in a recent conversation that this was quite a characteristic of *L. Henryi* in its native regions.

I may add that *L. Kramerii* and *L. rubellum*—both natives of the mountainous regions of Japan—do not, at least in my own garden, last very long. Under the influence of our persistently wet Scottish winter seasons the somewhat miniature bulbs of those fine Lilies decay prematurely. *L. longiflorum*, in all its forms, soon renders itself quite impotent for floral effect by the production of a crowd of exceedingly

minute bulbs that never seem to attain to flowering size. *L. giganteum*, which, when grown from an offset, usually takes about four years for its perfect maturation, has occasionally reached here, in fertilised soil enriched with leaf-mould, a height of 10 feet. *L. monadelphum* var. *Szovitzianum* has this season aspired to an almost equal height. *David R. Williamson.*

INTERNATIONAL EXHIBITION OF 1886.
SUMMARY OF GENERAL PROCEEDINGS.

(Concluded from page 117.)

THE disposition of the several subjects of exhibition throughout the tent was delegated to

which preceded the show, and to various accidental causes. The respective numbers in the various departments of the show were as follow:—In the plant sections, 655 entries, of which 66 failed; in the fruit section, 285 entries, of which 136 failed; in the vegetable section, 302, of which 123 failed; and in the miscellaneous sections, 244, of which four failed. These numbers do not include duplicate exhibitions by the same exhibitor in the classes for seedlings, implements, and miscellaneous objects. The aggregate number of entries, including those withdrawn before the opening day, was 1,751. The number of exhibitors was 361. The amount of prize-money offered was £2,550, inclusive of the £50 offered for implements by the Society of Arts. Of this sum, £2,007 9s. was actually awarded, and a further sum of £219 16s. was

respective localities amounted altogether to £859 13s. 6d., and is included in the total before-mentioned.

The amount of the receipts from subscriptions, sale of tickets, and other sources was £16,018 4s. 7d., distributed as follows:—

Subscriptions paid	£	s.	d.
Cash taken at doors—			
Tuesday, May 22	5,604	0	0
(21s.)			
Wednesday, May 23	£292	6	0
(10s. 6d.)			
Thursday, May 24	945	10	0
(2s. 6d.)			
Friday, May 25 (1s.)	1,693	8	0
	1,043	0	0
	3,974	4	0
Saturday, May 26			
(2s. 6d.)	932	10	0
Monday, May 28 (1s.)	754	17	6
Tuesday, May 29 (1s.)	1,103	7	6
Wednesday, May 30			
(1s.)	1,018	0	0
Thursday, May 31			
(1s.)	566	11	0
	4,375	6	0
	8,349	10	0

Sale of admission tickets, less commission*—			
553 £1 1s. tickets	529	5	6
1,062 10s. tickets	478	9	7
3,223 2s. 6d. tickets	309	16	8
2,061 1s. tickets	102	6	6
	1,419	18	3

Sale of gardeners' tickets—			
1,120 2s. 6d. tickets	140	0	0
1,029 1s. tickets	51	9	0
	191	9	0
	1,611	7	3

Percentages on refreshment receipts (five last days) and sundry			
small items	151	9	10
Sale of catalogues	225	6	6
Advertisements in catalogue	76	11	0
	453	7	4

*Which, however, the nursery trade, most liberally, did not charge.

To the numbers admitted by money payments at the doors must be added those to whom admission was granted in virtue of some of the following considerations:—The tickets issued to subscribers; the tickets presented to guarantors; the free admissions accorded to the Fellows and debenture holders, as well as to the holders of the transferable tickets of the Royal Horticultural Society; the passes given to jurors, and to exhibitors and their assistants; and the invitations sent to foreign guests, to members of the Press, &c.

The principal items of expenditure, including the levelling and readjustment of the Exhibition Ground, were the following:—

	£	s.	d.
Test, including fittings	2,956	3	0
Groundwork, materials, &c.	987	17	4
Band stand	10	16	0
Percentage to Mr. Unite for continuance	700	0	0
Prizes awarded	2,607	9	0
Expenses allowed to certain exhibitors for renewal and continuance	219	16	0
Advertising	98	0	0
Rent of offices	38	15	0
Stationery, Postages, &c.	230	0	0
Working expenses, salaries, gratuities, &c.	1,641	14	0
Police	74	13	0
Printing circulars, schedules, cards, catalogues, &c.	983	9	6
Printing report of proceedings	637	10	0
Law expenses	39	19	2
Banquet expenses (including music)	970	12	6
Congress and conversazione expenses (including music)	64	10	0
Music in the gardens	294	16	8
Local committee expenses	38	9	8
Judges' luncheon, exhibitors' breakfasts, &c.	212	19	0
Royal Horticultural Society	300	0	0
Readjustment and levelling of exhibition ground (about)	130	0	0

The printing of the catalogue of the Exhibition, of the report of the proceedings, of the admission tickets, and of the cards used for marking the various objects of exhibition, was executed by Messrs. Truscott Son & Simmons, of Suffolk Lane, Cannon Street.

At the close of the Exhibition an auction sale of such plants as the exhibitors did not wish to remove took place, and in many instances good prices were realised by the vendors, while the purchasers were gratified by thus being able to secure some tangible memento of the Exhibition.

The Councils of the Royal Botanic Society and of the Zoological Society, as well as the directors of the Crystal Palace, offered every facility to the foreign guests to visit their respective establishments. Dr. Hooker also, in his capacity of Director of the Royal Gardens at Kew, allowed special privileges to foreign visitors desirous of having access to the gardens and museums.



FIG. 51.—COUNTESS SPENCER SWEET PEA AND THE RAISER OF THIS VARIETY AT ALTHORP PARK. (See p. 123.)

an Arrangement Committee, consisting of Messrs. Gibson, Eyles, and Moore, and Dr. Hogg.

It was at first proposed to open the Exhibition on May 22, and to close it on May 25, but the success of the Exhibition as a show, and the uncertainty whether the extraordinary expenses, which it was necessary to incur, would be reimbursed in that period, determined the Executive Committee to keep it open until May 31, the consent and active support of the principal exhibitors having been willing granted.

The schedule for the exhibition embraced 238 classes, distributed in 10 sections. The aggregate number of entries in these classes on the morning of May 22, after allowing for withdrawals, was 1,486, of which number 329 were not sent in, owing to the unfavourable weather

paid in liquidation of extra expenses incurred, in accordance with claims sent in, to those exhibitors who allowed their plants to remain during the additional days to which the show was extended.

The amount of paid subscriptions (for which equivalent privileges were offered and given) was £5,604, and the sum guaranteed (for which stipulated privileges were also given) was £4,739 4s., although, as before stated, the guarantors were not asked to incur any liability. Further subscriptions to the amount of £161 14s. were promised, but not paid.

Considerable assistance was rendered to the Executive Committee by the various local committees established throughout the country. The amount of subscriptions thus obtained in the

EVERGREEN HEDGES.

(Concluded from page 108.)

THUYA OCCIDENTALIS.

THE American Arbor-vitæ makes a capital hedge plant, and is also a quick grower, but it has the one drawback of turning to a rusty-brown tint in winter, which is sufficient to condemn it in the eyes of many planters. For places where a fairly high hedge is necessary, but where it will not be too conspicuous, as in the kitchen garden, this is a capital plant to use, as it can be procured fairly cheaply, and soon forms a good screen. It should be clipped in May or early in June, shortening the leaders if necessary at the same time.

OSMANTHUS AQUIFOLIUM VAR. ILICIFOLIUS.

In general appearance this plant has a strong resemblance to the Holly. It makes a capital low hedge, up to 4 feet or 5 feet in height, for

without much labour. The chief item is the clipping, which should be done in June, after the first growth is made. By cutting away this growth, the tendency to become ragged-looking is checked, and a second short shoot is soon made, which keeps the hedge in good condition for the remainder of the year. Where there is time for the purpose, Laurel hedges should be trimmed with a knife instead of shears, as the latter cuts many of the leaves in half, and makes the hedge look rather shorn for a time. This appearance is, however, soon hidden by the new growth.

RHODODENDRON PONTICUM.

In those districts where Rhododendrons grow freely, a hedge of the common *R. ponticum* can be quickly made, and will be found satisfactory in every way. The ground should be well trenched, working in some leaf-mould, peat, or good fibrous turf if the soil is poor, as all Rhododendrons like a certain amount of decaying vege-

height. It is rather a difficult subject to transplant, but I have invariably found it do well if moved about the middle or end of April, especially if the weather is showery at the time. A fair proportion of manure should be added when planting, but it must not be put too near the roots. When the hedge is established it will produce its short racemes of orange-yellow flowers profusely every year, to be followed later by the shining blue-black berries. The hedge should be trimmed with a knife as soon as the flowers are past, removing any misplaced shoots and shortening the long ones to about half their length. Some of the side-shoots may be tied in if necessary, especially if there are any bare places in the hedge.

PRIVET.

The kind of Privet most commonly used for hedges is the Japanese species *Ligustrum ovalifolium* (Oval-leaved Privet), which makes a fair hedge up to 6 feet in height. It is cheap to buy and is also a quick grower, but, in my opinion, is the very last plant to use for a hedge, as it is not at all handsome, and its roots rob everything else near it. In cold localities and on light soils it is very apt to lose most of its leaves in the winter. It may be clipped at almost any time, but May is the best month. If the plants are at all bare at the base at the time of planting, they should be cut down the second spring, when strong growths will be made low down that will form a good foundation for the hedge.

In addition to the plants mentioned above, there are the Black Spruce (*Picea nigra*), White Spruce (*Picea alba*), and the Hemlock Spruce (*Tsuga canadensis*), which are largely used in America for hedges, though I have no knowledge of their use in this country. The first two species would not be of any use, here, but *Tsuga canadensis* might easily be made into a very neat and effective hedge. *J. Clark, Bagshot, Surrey.*



FIG. 52.—HEDYCHIMUM GARDNERIANUM FLOWERING IN THE OPEN.

the interior of a garden. It is not stout enough for a boundary hedge if there is any likelihood of its being pushed through. Its growth is strong and bushy, but not stiff like the Holly, and it bears clipping extremely well. The latter operation can be done at almost any time from April to September, but a strong-growing hedge may require clipping both in spring and autumn. A section we have here has to be cut three times in two years, missing the second spring. The preparations for planting and manuring require to be the same as those for the Holly.

COMMON AND PORTUGAL LAURELS.

Laurels make good hedges if well treated in the first instance and properly looked after when once established. The ground should be well broken and a fair proportion of manure added at the start. Good hedges from 3 feet to 10 feet in height can be obtained and kept in good order

table fibre in some form or other in the rooting medium. Manure may be added sparingly, taking care to keep it well away from the roots. Bushy plants about 2 feet high are the best for a start, and if kept clear of weeds they will soon grow into a good-sized hedge. Trimming should be done with a knife in April. It consists chiefly in keeping the sides cut in, leaving the top alone until the required height is obtained. It is better, however, if possible, not to cut the top of the plant, as by leaving it uncut a fair proportion of flower may be expected every year.

BERBERIS DARWINII.

Though not often seen, this species makes a capital low hedge of 3 feet or less in height for the inner portion of a garden. The growth is usually short and prickly, though long shoots are sometimes made from the lower part of the plant which will reach upwards of 4 feet in

HEDYCHIMUM GARDNERIANUM.

WHEN this plant was first introduced into this country it was thought to require a high temperature, one writer going as far as to recommend its culture in a moist stove. As a matter of fact, it is almost hardy, being a native of the temperate regions of the Himalayas. Over 70 years ago, Wallich, the great Indian botanist, described it as "the queen of the genus," which it may still be considered. It was introduced into England in 1819, having been discovered by Wallich in Nepal. Sir J. Hooker afterwards found it on the Khasia Mountains, and also on the Sikkim Himalayas, in both instances at elevations of from 4,000 to 5,000 feet. The specific name was given to it in honour of Mr. Edward Gardner, an official in the service of the East India Company, and one of the pioneers of Indian botany. *H. Gardnerianum* throws up annual growths, which attain a height of about 5 feet, and are furnished with large, Canna-like leaves, 18 inches in length and 6 inches in breadth, which clasp the stem. The growths are crowned with large flower-spikes from 1 foot to 18 inches in length and 6 inches in width. The blossoms are pale lemon-yellow in colour, with crimson styles, and are most deliciously scented. In Devon and Cornwall the plant is perfectly hardy in the open, and in Mr. Howard Fox's garden at Rosehill, Falmouth, there is a large bed of this *Hedychium*, which, in September, shows over 50 flower-spikes, making a grand display and filling the air with their fragrance. In the open the shoots are invariably cut to the ground in the winter, but this does not appear to harm the plants, as they push up strongly again in the spring. It is, however, advisable to surface the bed with rough manure to mitigate the effect of the frost. The species should be planted out in rich loam, and it delights in a liberal supply of water during its growing season. Indeed, it is often a difficult matter to keep it adequately supplied with moisture

in dry weather when permanently planted in the open, especially if the bed in which it is growing be a sloping one. In districts where the winters are too severe for it to be allowed to remain out-of-doors, it may be lifted, potted, and kept under glass until the early summer, and then replanted in the open. Plants also succeed well in pots plunged beneath the water level. Where room can be found for the species in the conservatory it should always be grown. It is also extremely useful for associating with sub-tropical plants in the garden. It never fruits in the open, but by artificial fertilisation it may be induced to set seed under glass. Each fruit springs from the axils of the bracts, and splits up into three orange-yellow valves with a seed attached to the middle of each. These seeds are of a brilliant crimson colour, and, along with the orange-yellow of the valves and the bright green of the bracts, form an exquisite study in colour, while they remain in beauty for a long period. *Wyndham Fitzherbert, South Devon.*

FLORISTS' FLOWERS.

SWEET PEAS AT ADDLESTONE.

WHEN a grower of Sweet Peas becomes literally a champion exhibitor, it is no matter for surprise if his great success then leads to some desire for information as to his cultural methods. Not merely in the present, but in preceding years, Mr. T. Stevenson, Mr. Mocatta's able gardener at Woburn Place, Addlestone, has won the highest honours in Sweet Pea competitions. His flowers have shown great size, singularly beautiful colouring, and length of sturdy stem, such as few others have been able to emulate. Yet the Woburn Place soil, so very hard and tenacious, so disposed to become mossy on the surface, so liable to crack and contract in dry weather, is probably the last which ordinary growers would select for their purpose. Mr. Stevenson has to use the soil there for all purposes alike, and as he cultivates it as deep as he well can, although it has a base of solid, impervious clay, for all descriptions of crops, he varies his Sweet Peas with Celery or other vegetable crops, annually working into it a large quantity of tree leaves, as well as giving liberal straw manure dressings. Although many years of this working, together with liberal dressings of lime, have ameliorated its natural harshness somewhat, yet the old Adam in the soil still remains. Whilst several long, double rows of plants are devoted specially to the production of exhibition blooms, there is all the same a wealth of superb flowers for ordinary uses. To keep these cut is imperative if good blooms over a long season are to be maintained. There are other rows elsewhere grown for garden decoration, the plants growing to a great height and flowering abundantly. In the case of the exhibition rows, sowings are made in pots, both early in October (the plants being housed in frames) and again in February and March. In both cases the growth, as seen recently, is wonderfully strong, the stems resembling Bean rods almost in stoutness, and the height of the plants ranges from 8 to 9 feet. Autumn-sown plants in rows had been cut back and were making new and very strong growths 6 feet in height, and would flower right into November, weather permitting. In many rows the stems were so long that they had been brought low down, then tied with their points upwards, yet were still higher than a man's head. With all this splendid growth and vigour the plants were full of health, hence it does not do to say that, in this case, rich, deep soil and luxuriant growth lead to disease. Mr. Stevenson plants in twin rows, of from 12 inches to 15 inches apart, and the plants are from 10 inches to 12 inches apart in the rows. The main twin rows are from centre to centre, 5 feet apart, yet by no means is this too much space. Whilst some of the rows are supported by ordi-

nary Hazel sticks, others are held up by lengthy, soft, stout strings suspended from long rods held above by stout uprights, the strings being loosely attached to the Pea stems. The grower's impression is that the Peas like the string supports best. Still, that liking may be largely due to the absence of crowding caused by the presence of the Hazel branches. Side shoots are rigidly suppressed, as the points of the stems, up in ample air and light, are chiefly looked upon as the finest flower producers. Just recently a mulch of animal manure has been given to the rows. None the less, the soil was exceedingly hard and tenacious. Mr. Stevenson is far from being a mere Sweet Pea gardener. Woburn Place is indeed a lovely spot, and it is admirably kept. The Rose garden is a feature, the great sloping lawn and flower gardens are glorious, fruits and vegetables are first-rate, and the assumption that a great exhibitor must be in other directions negligent is emphatically disproved. Gardening has good reason to be proud of its numerous Stevensons. *A. D.*

BEST BEDDING VIOLAS.

ON the invitation of Messrs. Dobbie & Co., a party of some 27 members of the Scottish Pansy and Viola Association visited the nurseries of this firm at Rothesay on Saturday, July 31, for the purpose of inspecting a trial of 80 varieties of bedding Violas. The trial consisted of practically the same varieties as were tested last year at Messrs. Dobbie and Co.'s seed grounds in Essex, and the object was to ascertain whether the Scottish experts might come to any conclusions different from the southern growers. Instead of being planted in autumn, as were last year's trials, the Violas in this instance were not, owing to weather conditions, got into their quarters till the end of April. The soil of the border selected for the trial was somewhat heavy in character, and the abnormal rainfall during July was rather against some of the varieties, consequently the trial lines were not so regular as might have been expected under more favourable conditions. Each member, on entering the grounds, was handed a typewritten sheet with the names of the varieties on trial classified into colours, with the request that XX might be put against the best variety in each shade and X for the next best. They were further requested to name what, in their opinion, were the three best whites, yellows, and certain other shades, irrespective of the flowers being rayed or rayless. The results, which are given below, will show that, on the whole, the decisions in the English trials are pretty well borne out by the Scottish jurors.

White, rayless: 1st, Cygnet; 2nd, Mrs. H. Pearce. *White, slightly rayed:* 1st, Countess of Hopetoun; 2nd, White Empress. *White, rayed:* 1st, Bethea; 2nd, Alexandra. *Cream shades:* 1st, Iliffe; 2nd, Sylvia. *Primrose shades:* 1st, Primrose Dame; 2nd, Maggie Clunas. *Yellow, rayless:* 1st, A. J. Rowberry; 2nd, Wm. Lockwood. *Yellow, slightly rayed:* 1st, Redbraes Yellow; 2nd, Kingcup. *Yellow, rayed:* 1st, Canary; 2nd, Grievie. *Dark blue:* 1st, Archie Grant; 2nd, Edina. *Light blue:* 1st, Lady Marjory; 2nd, Ithuriel. *Lilac and lavender:* equal 1st, Favourite and Kitty Bell; 2nd, Florizel. *Mauve:* 1st, Mauve Queen; 2nd, Lady Warwick. *Dark mauve:* 1st, Jubilee; 2nd, Councillor Waters. *Bronze:* 1st, Redbraes Bronze; 2nd, Bronze Kintore. *Edged varieties:* 1st, Lady Grant; 2nd, White Duchess. *Crimson and rose:* 1st, Wm. Niel; 2nd, Mrs. J. H. Rowland. *Three best whites in above classes:* 1st, Cygnet; 2nd, Bethea; 3rd, Mrs. Pearce. *Three best yellows in above classes:* 1st, Canary; 2nd, Primrose Dame; 3rd, Grievie. *Three best mauves and lilacs in above classes:* 1st, Mauve Queen; 2nd, Favourite; 3rd, Kitty Bell. *Two best bedders in other fancy types:* 1st, Mrs. Chichester; 2nd, Agnes Kay.

On the conclusion of the inspection the party made a round of the nursery grounds, and found much to interest them in the large breadths of

Roses, Dahlias, Pansies, Violas, and Sweet Peas grown by the firm. Messrs. Dobbie & Co. afterwards entertained the visitors in the Hotel Madeira, and the usual compliments were exchanged. The weather was splendid, and everyone enjoyed the day's outing. Many had come long distances, and the company included Major Milne (president of the Scottish Pansy and Viola Association), and Mr. John Smellie (secretary).

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 70-76.)

(Continued from page 111).

4. MIDLAND COUNTIES.

SHROPSHIRE.—The Apple trees in some instances suffered from the winter moth, although grease bands were applied as usual. A hailstorm of unusual severity on June 25 damaged all exposed fruits, otherwise the trees look healthy and promise to finish the fruit well. The same may be said of Pears, Plums, and Damsons. Cherries were an extra fine crop, but black and green fly injured them badly. Gooseberries are a tremendous crop; Strawberries and Black and Red Currants are also grand crops. Raspberries look well. Apricots suffered when in flower from early morning frosts, which thinned the crops considerably. *Alex. Haggart, Moor Park Gardens, Ludlow.*

STAFFORDSHIRE.—The fruit prospects for this year were very good, for there was a profusion of blossom. The Apple crop, which is now very thin, suffered from continued frosts; one or two of the severest were experienced when the flowers were damp after rain. Pears, with few exceptions, are a good crop. The atmosphere was dry, and only slight frosts were registered whilst the trees were in bloom. Plums suffered badly from frost, but the Damsons escaped, and there is a good crop. The early flowers on Strawberries were damaged by frost, but the remainder set well. Bush fruits are a good crop, but the severe wintry weather damaged the Raspberry canes, hence the crop will not be so good as in previous years. Walnuts are a failure; but Filberts and Cob Nuts promise well. The soil is a stiff loam on a cold, clayey subsoil. *Geo. Woodgate, Rollleston Hall Gardens, Burton-on-Trent.*

WARWICKSHIRE.—Apples and Pears are average crops. Plums are not so plentiful as last year, but Damsons are plentiful, though the trees are badly blighted, owing to cold winds. Apricots are unsatisfactory. Bush fruits are all carrying heavy crops, especially Gooseberries and Red Currants. Strawberries were good both in quantity and quality. The soil in these gardens is of a light nature, and the subsoil gravel. *Chas. Harding, Ragley Hall Gardens.*

—The Apple crop is very irregular in this neighbourhood owing to pests, chiefly the Apple sucker (*Psylla Mali*). Espalier trees being frequently sprayed are well cropped. *Jno. Master-son, Weston House Gardens, Shipston-on-Stour.*

—The hardy fruit crops in this district appear to be, on the whole, above the average. There was an abundance of bloom on both Apples and Pears; but owing to east winds and cold nights, many did not set, especially on Pears. Bush fruits—Gooseberries in particular—are very plentiful. Strawberries, in spite of frequent rains, were very good, both in quantity and flavour. Apricots, Peaches and Nectarines are more plentiful than for several years past. Cherries have done well, but are badly attacked with blight. The soil here is sandy and the subsoil gravel. *H. P. Smale, Warwick Castle Gardens.*

5. SOUTHERN COUNTIES.

BERKSHIRE.—The crops on wall trees are exceptionally good and plentiful, if we except Apricots. Bush and small fruits are unusually plentiful. Apples have suffered from the high winds, especially standards in the orchards. During the month of June Apples and Pears made the least headway that I ever remember at that season. The soil is clayey loam, and the subsoil solid clay. *W. Barnet, Bear Wood, Woking Lane.*

DORSETSHIRE.—Apple, Pear, Plum and Cherry trees, with small fruit bushes, have all suffered

from aphid, which has greatly affected the quality of the fruit. Peach, Nectarine and Apricot trees, on the contrary, are very healthy, and are bearing abundant crops. Strawberries rotted a little owing to the continuous rains, which, however, suited the Raspberry crop. Both Cobs and Walnuts are plentiful and the trees healthy. *T. Turton, Castle Gardens, Sherborne.*

HAMPSHIRE.—The market growers have had a record crop of Strawberries. The sorts mostly grown are Royal Sovereign, The Leader, The Laxton, Bedford Champion and Sir Joseph Paxton. *A. J., Botley.*

—The Apple crop is an exceptionally heavy one, but the recent wet and sunless weather has greatly injured the foliage on some sorts, retarding the progress of the fruit. Cox's Orange Pippin is an exception; never have I seen the trees having a healthier appearance. A similar remark applies to Warner's King. Gooseberries are an extraordinary crop, especially Golden Drop and Whinham's Industry. Strawberries were a record crop, and, owing to the continued dull weather, lasted a long time; but the flavour was inferior. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

—Taking Apples as the most important outdoor fruit crop, they are disappointing. Although the trees were as a sheet with blossom, the crop is, with a few exceptions, very light indeed, and the trees are much devastated with caterpillar. Pears may be described in the same terms. Plums are a good average crop and clean, and Cherries of the Morello variety also. Apricots are the best crop I have had for the past nine seasons. Black and Red Currants are heavy crops. Some of the Black Currant bushes were infested with aphid, and, consequently, lost a quantity of foliage, while others in another part of the garden remained clean and healthy. Raspberries are a good crop, and Gooseberries abundant. Strawberries have been plentiful, but owing to the wet and sunless season, although attaining a goodly size, they have been inferior. *A. G. Nichols, Strathfieldsaye Gardens.*

—Apples and Pears set very well, but owing to cold winds, drought and caterpillar, most of the fruits have fallen. We have a few Apple trees which are more sheltered and away from the Oak trees; these are looking very well. The soil is light and gravelly, resting on clay. *R. Learmouth, Manor Gardens, Basingstoke.*

KENT.—All kinds flowered well, but, owing to weather conditions, Apples, Pears and Plums are almost failures in this district. *George Woodward, Barham Court Gardens, Maidstone.*

—Strawberries were soft and flavourless owing to wet and cold weather. Black Currants suffered from frost and were scarce. Apple trees have been infested with caterpillars; the crop is below the average. Common sorts of Pears are plentiful, but on choice varieties the fruits are scarce. *George Bunyard, Royal Nurseries, Maidstone.*

—The effect of the winter frosts on the different varieties of Apples was very marked. Gascoyne's Scarlet Seedling and Cox's Orange Pippin are absolute failures; there is not one Apple for each tree. Baumann's Red Winter Reinette and Dumelow's Seedling have very small crops. On Peasgood's Nonesuch there is a fair crop, and the same may be said of Warner's King. Smart's Prince Arthur is good, and Annie Elizabeth bears a fair crop. *Charles E. Shea, The Elms, Foot's Cray.*

—The fruit crops vary much. Apples in some orchards are light; in others they are good. Those that had heavy crops last year are light this year, particularly Apples and Plums. Apples have suffered with blight very much in these gardens. Pears and Plums are more satisfactory. Raspberries, Strawberries, Peaches and Nectarines are good. The soil here is chalk. *J. T. Shann, Betteshanger Park Gardens, Eastry, near Dover.*

—Apples set freely, and, after having been well thinned, are now swelling rapidly. Young trees are clean, with strong and healthy foliage. Pears are clean and healthy. Strawberries were a very heavy crop, but, owing to the extremely bad weather just at the ripening period, a large percentage were damaged, flavour being also very deficient. Small fruits generally were very heavy crops, especially Gooseberries. The soil in these

gardens is a heavy retentive loam, with a subsoil of chalk. *J. G. Weston, Eastwell Park Gardens, Ashford.*

MIDDLESEX.—We have an average crop of Apples, some trees bearing freely and others less so. The foliage was attacked by a quantity of caterpillars. The soil here is light and sandy, resting on gravel. Strawberries were a good crop, but the rain has spoiled a large number of the best fruits. Peaches are one of the heaviest crops which have been experienced here. Pears and Cherries are about average crops. Many of the Cherries split owing to excessive wet and cold nights. The season is late. We require a good amount of sunshine to hasten the fruits and ripen the wood. *H. Markham, Wrotham Park, Barnet.*

—Speaking generally, our fruit crops this season are most satisfactory, probably never more so for some years past. The rains of June and the first half of July have done an immense amount of good to us in the case of Apples, Pears, and Plums. To Cherries it has been somewhat destructive, causing some kinds to split, for instance, Governor Wood, Black Circassian and Bigarreau de Schreken. Early Strawberries, too, have suffered, but as we use Strawberry supports, and thus keep the fruits well off the ground, we have saved many more berries than we should otherwise have done. Aphides have been somewhat troublesome. Our soil is light loam resting on gravel. *James Hudson, Gunnersbury House Gardens, Acton.*

—Fruit, on the whole, is a fair crop; better than was expected, considering the cold, sunless spring. There has been a plague of insect pests, but the trees are now making clean, healthy growth, and they only want warmer weather. Most of the soils about here are of a heavy nature, though in places there are patches of a lighter soil, and on this fruit trees of all sorts do well. Apples and Pears seem to be freer from the scab fungus this season than usual; but there is a good deal of a black, burning-like malady. It seems as though the leaves and shoots were scalded; eventually they die back. *W. Watson, Harefield Place Gardens.*

—There was an abundance of blossom on Apples and Pears, but after the fruits were set many fell from the Pear trees. Peaches set an immense crop, and were thinned heavily. Gooseberries are the heaviest crop for years. The best fruits of Strawberries were entirely spoiled by the continuous rain, otherwise they would have been a record crop. Currants are good; Raspberries poor. The extraordinary cold weather experienced during June and part of July, with absence of sunshine, has considerably retarded the fruit crops this season. Aphid on the trees has been very troublesome; also caterpillar. *J. Hawkes, Osterley Park Gardens, Isleworth.*

SURREY.—Our soil is of a poor sandy nature, requiring liberal feeding. With this, fruit trees do very well. The prospects generally were very good, all kinds blossoming freely, but frost, cold winds and insect attacks injured Apples, Pears and Plums, reducing the crop to under the average. *S. T. Wright, R.H.S. Gardens, Wisley, Ripley.*

—But for the chilling effects of long-continued low temperatures, with an excessive early summer rainfall, it would have been my duty to report one of the heaviest hardy fruit crops of recent years. But whilst such fruits as Strawberries have been singularly fine and abundant, great quantities of the fruit have been spoiled by continuous rains or robbed of flavour by absence of sunshine. Raspberries have greatly suffered in the same way. Apples, Pears and Plums will be exceptionally fine. Cherries have been a huge crop, but to save them from cracking vast quantities have been gathered for market before ripening. In spite of alarms as to Gooseberry-mildew and Black Currant mite, there is an immense crop of both fruits, and they are very plentiful and cheap in the markets. In spite of drawbacks, the season should give a strong impetus to fruit culture. *A. Dean, Kingston-on-Thames.*

—Fruits in general here are very satisfactory crops, but the growth of the trees is somewhat crippled by the unusual quantity of aphid. *George Kent, Norbury Park Gardens, Dorking.*

—Apples and Pears in this neighbourhood were thickly set with bloom, and made a mag-

nificent display; particularly was this the case on old orchard trees attached to small holdings and cottage gardens. Although the crops appeared to set successfully, the actual result is a poor one, for which continual cold rains, wind and caterpillars appear to be responsible. The close proximity of numerous forest trees such as Oaks, on which the caterpillars were first noticed, make it difficult to destroy them. The soil being a heavy clay, the trees are not making much growth. *W. H. Honess, Hopdene Gardens, Holmbury St. Mary, Dorking.*

SUSSEX.—Apple, Pear, Plum, and Cherry trees were badly infested with caterpillars, which did great damage to the trees and fruit crop. Arsenate of lead paste soon cleared off all the caterpillars, and the trees are making good growth. *J. Muddell, Sedgwick Park Gardens, Horsham.*

—This report refers to the district near Hailsham, and not to my own farm alone. For example, I have a good crop of Plums, which is exceptional. With respect to Apples, the quality is fair, rather than good, and this remark applies to some other fruits. I think Apples will be smaller than usual. They are very backward. Small fruits together cannot be estimated in one verdict. Gooseberries were a great crop, and Red Currants are fair, while Black Currants are under average generally, though I have just picked a good crop of Boskoop Giant of very fine quality. I do not grow Strawberries for market, and I have only one variety for private use. *William E. Bear, Magham Down, Hailsham.*

—The trees in orchards have been almost stripped of foliage by caterpillars. All fruit trees are much infested with aphid. *T. H. Slade, South Lodge Gardens, Horsham.*

—The Apple crop is very good indeed, and most varieties have had to be severely thinned. The trees have had to be sprayed several times owing to a terrible attack of aphid. The Pear crop is very good and promises well. Cherries are the largest crop I have seen. Early Rivers, Frogmore Bigarreau, Bigarreau de Schreken, B. Napoleon, Elton, and Geant d'Heldefingen have been excellent. Peaches are good, and the trees are clean. Gooseberries, Currants, Medlars and Quinces are wonderful crops. Raspberries and Figs are doing well. *W. A. Cook, Leonard'slee Gardens, Horsham.*

WILTSHIRE.—The fruit crops in this part of Wiltshire have suffered seriously from the inclement weather. The trees and bushes are in many cases covered with aphid. Strawberries were an abundant crop, and Gooseberries and Currants are unusually abundant, especially Gooseberries. *W. Tinley, Malmesbury.*

—The condition of the fruit crops, generally, is bad, blight being very prevalent, especially on small fruits and Apples, caused, in my opinion, by the exceedingly low temperatures. The ground temperature at 12 inches deep, during June and July, being 10° below the average, and the daily atmospheric temperature 8° below the average. The surface soil is a marly loam, rather light, resting on a subsoil of chalk and gravel. *Thomas Challis, Wilton House Gardens, Salisbury.*

7, ENGLAND, N.W.

LANCASHIRE.—The fruit crops are, upon the whole, satisfactory; most of the early bloom of Strawberries was destroyed by late frosts, but succeeding ones were sufficient. Green and black fly and caterpillars have been very prevalent on fruit trees. Apples and Pears are perhaps the most satisfactory crops, especially on bush and pyramid trees worked on the Quince and Paradise stocks. The soil is a retentive loam on heavy marly subsoil. The aspect is north-west. *E. F. Hazelton, Knowsley Gardens, Prescott.*

—There is a very heavy crop of Apples in this garden, but in consequence of the leaves having been destroyed by caterpillars, the fruit is poor. Pears have fared a little better, and there is a heavy crop on those that usually bear well in this garden. Many of the forest trees have their leaves riddled by caterpillars. The leaves of Black Currants are curled and look crippled, in spite of repeated sprayings. *Wm. P. Roberts, The Gardens, Cuerdon Hall, Prescott.*

(To be continued.)

CORDYLINAE AUSTRALIS.

THIS *Cordylina*, better known as *Dracæna australis*, is an extremely handsome object in the early summer when bearing its great, white flower-panicles. It is a very common plant in the south-west, and in every town in south Devon and Cornwall fine plants are to be seen on every side. In Torquay alone there must be some thousands, for in the public gardens there are fully 150 fine specimens, and they are also to

A short distance above the soil the plant divides into four main branches, which are subdivided into some 30 branchlets, about 10 of which usually flower annually. This plant is 49 years old, and was raised from seed sent home from Australia. It was illustrated in *Gardeners' Chronicle* for February 23, 1907. I have lately seen in the south of Ireland a specimen 25 feet in height, but it could not compare with that at Enys, as its girth was small, and it had but one head. This year almost every plant in the gar-

being far handsomer than the type. *Cordylina australis* is considered perfectly hardy in Devon and Cornwall. Exceptionally severe frosts, followed by a sunny day, sometimes kill the heads of the plants, but generally a number of suckers are, later on, thrown up from the base.

Like *Cordylina australis*, *Banksii* is a native of New Zealand, but they are easily distinguished. *C. Banksii* rarely attains a greater height than 6 feet, and is usually clothed to the ground-level with drooping leaves about 4 inches in breadth. The flower-panicles are lighter in appearance than those of *C. australis*, having fewer branchlets, and the blossoms are white. An excellent supplementary illustration of *C. Banksii* appeared in *Gardeners' Chronicle*, vol. xxix., p. 44, and a representation of a specimen at Castlewellan on October 6, 1906. *Cordylina Banksii erythroracis* is a variety having bright red midribs to the leaves, and is a very ornamental plant. In a certain garden in the south of Ireland there is a colony of 20 plants of this *Cordylina*, which furnishes a charming picture, and it is also to be met with in a few Cornish gardens, but it is still a comparatively rare variety.

Cordylina indivisa is often confounded with *C. australis*, though perfectly distinct from that species. Illustrations of *C. australis* have repeatedly appeared with the name of *C. indivisa*, and in many gardens *C. australis* is still grown as *C. indivisa*. *Cordylina indivisa* is an extremely handsome foliage plant, the arching leaves being about 5 feet in length and 5 inches in breadth, while in colour they are blue-grey, with a midrib of bright red. It flowered in the Tresco Abbey gardens, Isles of Scilly, in 1895, but until last year had never bloomed on the mainland. It then flowered at Enys, and the plant that bore the blossoms is shown in the illustration which appeared in *Gardeners' Chronicle* on February 23, 1907. The flower-panicle hangs down by the side of the stem, and, being composed of countless, minute blooms, yellow and blue-black in colour, is more curious than beautiful. A quantity of seed was secured from the Enys specimen, and the seedlings are already good-sized plants. *C. Hookeri*, *C. Doncettii*, and *C. Prince Albert* appear to be forms of *C. indivisa*. *C. lentiginosa* is similar in habit to *C. indivisa*. Its leaves, when young, are yellow, but they eventually turn to a deep bronze-brown. *Wyndham Fitzherbert, South Devon.*



[Photograph by Wyndham Fitzherbert.]

FIG. 53.—CORDYLINAE AUSTRALIS FLOWERING IN THE PUBLIC GARDENS AT TORQUAY.

be found in almost every private garden. The illustration in fig. 53 shows a remarkably fine example in the public gardens of Torquay bearing no fewer than 17 huge flower-heads, a number almost unprecedented on a single plant. This specimen had a stem about 12 feet in height. The largest example growing in this country is probably one in the gardens at Enys, in Cornwall, and is 20 feet in height, with a trunk circumference of 6 feet at a foot from the ground.

dens has flowered, and they presented a beautiful sight, the great, branching flower-sprays, 3 feet or more in length, crowded with white blossoms, resembling giant plumes. They are very sweetly scented, and are all day haunted by insects innumerable. In the type the leaves are narrow, but the seedlings, which are raised in great numbers in the south-west, vary considerably in their foliage, the leaves of some being fully 3 inches in breadth, these wide-leaved forms

TREES AND SHRUBS.**CUPRESSUS MACROCARPA AS A HEDGE PLANT.**

My former note (see p. 196, March 27, 1909) respecting this Cypress did not bring any answer to my enquiry, but I noted with interest the remarks of Mr. Lucas, Mr. Gooden and *E. M.* As *E. M.* says, the frost injures *Cupressus macrocarpa* badly, but what I wanted some of our scientific men to tell me is why does this beautiful hedge plant die off so mysteriously? I have not heard of a single case of it dying when grown in its natural form as a tree, but several instances when used as a hedge. Can it be the result of clipping, or is it because we disturb its roots by digging and manuring? In these gardens the portion of hedge bordering the herbaceous border is less healthy than that which enclosed the tennis court, which is turfed on both sides.

Mr. Lucas advocates the claim of *Griselinia litoralis*, and although I have not seen an instance, I am sure it would make a bright and uncommon hedge. There is another plant which might be used in favoured localities, namely, *Pittosporum Buchananianum*, the crimped foliage would, I am sure, make it a very distinctive hedge. The following is a list of some of the shrubs and trees used as hedge plants in these gardens:—*Escallonia macrantha*, a grand, bright-looking hedge; *Viburnum Tinus*, fairly good, but it sometimes resents cutting; *The Bay (Laurus nobilis)*,

a well-known and very trim-looking hedge; the English Yew (*Taxus baccata*) and the golden variety, which is lovely if the young growths are not cut in the summer-time; Portugal Laurel; Sweet Briar; *Cupressus Lawsoniana* (which gets very ragged at the base, and is not a suitable subject for a hedge); Hornbeam, a fine subject for forming a high wind-breaking hedge, and *Cryptomeria elegans*. The *Cryptomeria* is in a bad position, but if given an open situation it would prove a good subject. *A. J. Elgar, Killarney House Gardens, Co. Kerry.*

A FINE OLD APPLE TREE.

The specimen Apple tree illustrated in fig. 54 is growing in the kitchen garden at Preston Place, near Worthing, the residence of R. A. Warren, Esq. Mr. R. Herriott, the gardener at Preston Place, informs us that the tree is 70 years old. It bears a bountiful crop every alternate year. This season it has a good crop, and it had every prospect of bearing well when our photograph was taken, for it was literally covered with flowers. The spread of the branches covers a distance of 36 feet. The variety is described as Dewson or Dewtson, but this is unknown to us. Perhaps it is an old Sussex variety, and may be known to some of our readers living in the locality.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Catasetum.—Particular attention should now be given to such Orchids as *Catasetum*, *Cynoches* and *Mormodes*, especially to those plants which have bloomed or completed their growth. Such plants should be removed from the hot atmosphere of the growing quarters to a much cooler house, where the atmosphere is comparatively dry, and air can be admitted during the hottest hours of the day. It is often found that under our artificial cultivation plants of these species do not retain the vigour they have in their native habitat. The chief cause of this is usually traceable to the fact that the pseudo-bulbs fail to mature perfectly. Therefore, everything should be done to induce the plants to finish their growths as early in the season as possible, so that there will be a sufficient amount of sunlight to ripen the bulbs. During the time the plants are under resting conditions they may be fully exposed to the sunlight. The roots should be supplied with water as long as the leaves remain fresh. When growth is matured, and the leaves have fallen away naturally, the plants will remain perfectly safe for a long period without any waterings whatever. During the whole period of rest no water need be given unless there are signs of shrivelling.

Chysis.—Plants of *Chysis bractescens*, *C. aurea*, *C. Limminghii*, *C. levis*, *C. Chelsonii* and *C. Sedenii* that are half-way through their growing period may now be taken from the Cattleya house and placed in an atmosphere a few degrees hotter; they will still require plenty of water at the root, and a spraying overhead several times a day. The space afforded by the removal of the *Catasetums*, &c., will suit them perfectly. When growth is completed return them to their old position in the Cattleya house.

Pleiones.—In the last-named house the *Pleiones* will now be completing their new pseudo-bulbs, and will need exposure to light, with more liberal ventilation. Give them sufficient water to keep the compost just moist, there being no necessity to dry them up to induce them to flower. The cool-growing varieties as *P. humilis*, *P. Hookeriana*, *P. Yunnanense*, &c., will require liberal and frequent supplies of water till growth is completed. The best position for them is near to the roof ventilators in the cool house.

Miltonia vexillaria.—The present is a good time to report this well-known Orchid, but previous to the operation, it is advisable to eradicate any small yellow thrips, which are apt to get low down in the young growths. The most effectual method is to dip the plants in some safe insecticide, and immediately afterwards to rinse the

foliage with clean, tepid soft water. Employ clean pots and make them two-thirds full of drainage material, over which place a thin layer of Sphagnum-moss; keep the base of each plant just on a level with the rim, and pot with moderate firmness. A suitable compost consists of *Osmunda* fibre, *Polypodium* fibre and Sphagnum-moss in equal parts, which should be cut up and be well mixed together, adding plenty of crocks broken up into small pieces. Until the new growths begin to root freely, merely damp the surface of the compost with a fine sprayer, the object being to induce the Sphagnum-moss to grow over the surface. The cool house will suit these plants for the present, but after a few weeks they should be removed to the intermediate house.

Cochlioda.—Plants of *Cochlioda Noezliana*, *C. vulcanica*, and *C. sanguinea* may also be repotted in the same kind of compost as that used for *Miltonia vexillaria*. A light position in the Odonoglossum house will suit them at all seasons.

Oncidium ampliatum.—Plants that have been at rest in a cool temperature, being now starting to grow, should be removed to the warmer atmosphere of the East Indian house, where they will have the benefit of conditions favourable to growth. Owing to the present hot weather, the

placed out-of-doors in a sunny position to ripen their shoots; they must be syringed frequently, otherwise the foliage will become infested with thrips. Fuchsias which are still blooming will derive great benefit from frequent waterings with manure water.

Calceolaria.—Prick off seedling *Calceolarias* as soon as they can be handled. For their potting use equal quantities of sifted loam and leaf-soil, adding plenty of silver sand to keep the compost open. In potting, press the soil firmly, but take care not to bruise the tiny plants. Afterwards place them in a cool frame or pit where they may enjoy plenty of sunlight without being directly exposed to the sun's rays. Keep the frame closed for a short time after potting, but when they have recovered from the disturbance at the roots afford them an abundance of ventilation. Slugs are very fond of these plants, and must be guarded against.

Bulbs.—It is advisable to secure a stock of bulbs early, as those who order first obtain the best of the nurseryman's stock. The earliest bulbous plants to be potted are *Hyacinths*, *Polyanthus Narcissi*, and *Gladiolus Colvillei* and its varieties. These bulbs can be potted in two ways, either in 5-inch pots or closely together in



FIG. 54.—APPLE TREE AT WORTHING, SUSSEX: SPREAD OF BRANCHES 36 FEET.

Cattleya and intermediate houses will require plenty of air through the day, and the bottom ventilators should be kept wide open at night. Admit plenty of air to the East Indian house during the middle hours of the day, but in every case prevent draughts.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Fuchsia.—Cuttings should now be inserted for the purpose of raising young plants for flowering early next summer. The cuttings should be selected from those plants which have nearly finished blooming, those with the wood half ripened being most suitable for the purpose. Insert the cuttings rather thickly around the sides of small pots, and place them in a gentle bottom heat; or, failing this, they can be placed under hand-lights in a cold frame, although by this method they are slower in forming roots. As soon as roots have formed, stand the plants on a shelf close to the roof glass in a cool house, and a few weeks later pot them singly into 3-inch pots, after which they must be kept steadily growing throughout the winter. Older plants which have finished flowering should be

boxes, according to the purposes for which they are required. In either case, the receptacles should be covered with a 3-inch layer of ashes after they are stood in a suitable spot in the open.

Richardia africana.—Plants with their root-stocks quite dry and hard after resting should now be turned out of their receptacles and repotted. Shake away all the old soil from the roots, and grade the rhizomes into their respective sizes. Select the largest pieces for placing in 8-inch or 10-inch pots, potting those of second size into 5-inch or 6-inch pots. If it is desired to increase the stock of these plants, the best pieces that are left may be planted moderately closely together in boxes and wintered in cold frames. A suitable compost is composed of three parts loam and one of decayed cow manure. This plant is semi-aquatic in its habits, and as it requires a very large amount of water when it is actively growing, special attention must be directed to see that the pots are amply provided with material for drainage. After potting place the plants in a cool pit. For the first few weeks little water will be required at the roots, a syringing both morning and evening being sufficient, but afterwards copious waterings should be given.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Figs.—Trees that are developing a second crop of fruits should not only be supplied liberally with water, but also with liquid manure and some approved chemical fertiliser alternately. Syringe the trees early in the morning and late in the afternoon, and frequently damp the walls and other available surfaces in the house. Even trees that are ripening their crops must not be allowed to become dry at the roots, notwithstanding that in this house the conditions should be kept rather drier than those in an earlier stage of development. When water is needed it should be applied on a fine morning when the ventilators can be opened wide. No stimulants must be applied to these trees until the crop has been gathered.

Fig trees in pots.—Trees which will be required for supplying the earliest crops next season may now be repotted if this is necessary, but it is not desirable to repot every year specimens which are already growing in pots or tubs of sufficient size. Such trees will remain in a satisfactory condition in the same receptacles for several years together, provided the drainage is kept good. In cases where repotting is not done, the roots must be given a good surface dressing of some good rich compost, and, in order to provide space for this top-dressing, as much of the old soil as can be conveniently loosened may be removed. The fresh compost may consist of good fibrous loam, decomposed horse manure and crushed bones, with the addition of a liberal sprinkling of old mortar rubble and wood-ashes. Young healthy trees needing repotting may be given pots of a slightly larger size. These pots should be perfectly cleaned and well drained. The potting compost should be similar to that already described. The potting should be done firmly, and every care taken to see that the whole of the space between the roots and the side of the pot is perfectly filled with soil. This end can be best secured by using a thin, rather than a thick, rammer. When the trees have been potted they may be placed in a shady position for a few days, and frequently syringed. Water must be afforded with extreme moderation until the roots have again become active.

Pot vines.—If these have been grown with a view to supplying ripe Grapes early next season, the first consideration is that they shall have thoroughly matured canes. Although the plants will still need a liberal amount of moisture at the roots, after this date the atmosphere may be kept drier than hitherto, therefore, if the weather is not very hot, syringing may be discontinued. Let there be a free circulation of air both by day and night, and when it is considered that the canes have become sufficiently hardened, let them be removed to a sunny position out-of-doors. In such conditions the ripening process will be greatly accelerated. Should there be any sign of red spider on the leaves, syringe them at once with a strong solution of soft soap and sulphur. It is desirable that the foliage should be retained in a healthy condition for as long a time as possible.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Early-flowering Chrysanthemums.—A certain amount of disbudding should be practised if flowers of moderately good size are desired, but the treatment should not be so severe as to spoil, or even alter, the character of the plant. Now that the weather has become hot, such plants as Chrysanthemums will need liberal waterings, and at every alternate watering liquid manure may be given with advantage. It is a good plan to occasionally substitute soot water and chemical manures for the liquid manure.

Propagation.—Continue to propagate bedding plants as quickly as possible, remembering that the better rooted the cuttings become before winter, the more likely are they to stand through that period without suffering injury. The cuttings may be inserted in pots or boxes. Pots are to be preferred, as these can be handled more conveniently during winter. In order to obtain the best plants, it is necessary to put each Pelargonium cutting into a separate pot, but if such a system is adopted considerable space is re-

quired for storing them. Iresine, Kleinias, and other plants of a similar nature may be put into 5 or 6-inch pots, inserting several cuttings in each pot. Place the pots in a frame, and shade the cuttings from hot sunshine. The Pelargonium cuttings should be placed in the open on a hard bed of ashes.

Romneya Coulteri.—See that this plant is not allowed to get dry at the roots. A specimen growing against a wall or fence, or even in the open garden, needs a liberal supply of water, and a little weak manure water occasionally is beneficial. The manure water, however, will not be so necessary in cases where a top-dressing was applied in spring. Notwithstanding the fact that the shoots of this plant were cut back by frost last winter, it is flowering most satisfactorily this season.

Climbing plants.—All plants of a climbing nature should be examined in order to see that the roots are sufficiently moistened, especially those which are growing against walls or buildings much exposed to the sun, for these become exceedingly hot. Syringe them occasionally by means of the garden engine, in order to prevent red spider. A liberal mulch will be of the greatest advantage in checking excessive evaporation, and a spraying with clear water, applied through the garden engine or hose, late in the afternoon is to be recommended. Aбуtilons, Ceanothus, Leptospermum, Solanums, Myrtles and Loniceras are some of the plants concerning which these remarks are written.

Hard-wooded plants.—Camellias, Azaleas, Rhododendrons, Ericas and all similar plants are amongst the first that need to be examined in regard to root moisture. Take every means to prevent them suffering from excessive drought.

Pruning.—Azaleas and Rhododendrons may still be pruned. Hedges formed of either of these plants soon get out of bounds if not given regular attention. Vistas and avenues that have been formed principally for affording attractive views will also need attention in the matter of pruning.

General work.—The season has been a very difficult one for keeping the ground clear of weeds. An opportunity to destroy weeds, however, presents itself in the present hot weather. Keep the hoe constantly at work, and go over the ground several times in quick succession. Collect all dead and decaying materials from the beds and borders. Keep the plants neatly secured to the stakes. Peg down any plants that are cultivated in this manner in the flower-beds, and endeavour to obtain an appearance of neatness and good order through the grounds.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Spring-sown Onions.—Onions that are specially cultivated for producing large bulbs, have made good progress since the welcome change in the weather, therefore fine specimens may be expected late in the autumn. Decaying foliage and any rough outside skins should be removed so that each bulb will ripen down to one skin. This greatly improves the appearance of an Onion, besides adding to its keeping properties. Continue to water the plants during the present month, but do not apply any moisture to the tops. Onions sown in the open during March have never looked better than they do this season. The Onion fly has given little trouble in this district up to the present time. The tops should now be carefully bent down, turning them all one way, and leaving the bulbs as much exposed as possible. It should be remembered that bulbs which ripen early and are harvested early generally keep good for the longest period.

Peas.—Up to the present time Peas have been exceptionally good. Successional and late varieties should be kept mulched and thoroughly watered, occasionally giving them good drenchings of properly-diluted farmyard manure water. Should the hot weather continue, the plants must be thoroughly syringed early every morning. In order to hasten the development of the Peas, pinch out the points of the shoots, remove all lateral growths, and, if exceptionally fine Peas are required, let the pods also be thinned. Special varieties which may have been reserved for seed purposes should be examined in the hottest hours of the day, and any which are sufficiently advanced may be picked and laid out

thinly on trays or boxes fully exposed to the sun. Do not select any but the very finest pods for this purpose.

Endive.—Continue to plant out successional plants of this important crop on good ground. These and earlier batches must be supplied well with water. Make one or two more sowings in a warm situation.

French Beans.—The present is a capital time, especially in cold districts, for the sowing of French Beans in either frames or pots. A brick pit with just enough heat to keep out frost is the most convenient means of cultivation, but it must be one that provides sufficient head room for the plants. The foliage is the better for being moderately near to the glass. Ne Plus Ultra is an excellent variety for sowing at this season.

Globe Artichokes.—This crop will require abundant moisture at the roots, including liquid manure. Cut off the "heads" before they are too old for consumption, and store them in a cool place, where, if the stems are placed in a little water, they will keep in good condition for at least 10 days or a fortnight.

Tomatos.—The prospects of this crop have greatly improved since the advent of fine weather, especially in the case of those trained on walls or buildings. Let all surplus growth be removed so that the fruit will be exposed as much as possible.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Plums.—All varieties of Plums are later in ripening than usual. Some of the finest of the early varieties of Plums and Gages are Denniston's Superb, Brandy Gage, Early Transparent, Greengage, Angelina Burdett, Oullin's Golden and McLaughlin. These varieties provide a good succession of fruit from the end of July until the end of August or later, according to the season. Among the best early culinary varieties are Belgian Purple, Early Orleans, Early Prolific, The Czar, Gisborne's, and The Sultan. As the trees of any of these varieties become cleared of their fruits an opportunity will be presented for further thinning the wood according to the necessity in each case. Remember always that it is undesirable to crowd the wood in such a manner that it will obstruct the free circulation of air and sunlight amongst the branches. If the trees are not perfectly free from insects and fungus pests, now is the time to combat these, there being no fruits to consider. After spraying the trees with an insecticide, apply a good washing of clear water from the garden engine. Afford water to the roots if this is necessary. Varieties that will ripen in succession to the dessert Plums I have mentioned include Bryanston Gage, Kirke's, Washington, Jefferson, and Late Transparent, and later still Reine Claude de Bavay, Golden Transparent, Coe's Golden Drop and late Orange. These are the very best of the late varieties. Later culinary Plums than these I have mentioned are Victoria, Goliath, Red Magnum Bonum, Pershore, Pond's Seedling, Monarch, Grand Duke, Primate and President. In order to get the best dessert fruits possible it is necessary to thin them as soon after the stoning period as possible, for at that time it can be determined what crop the trees will bear. If the matter of thinning has been overlooked hitherto, late varieties may still be thinned, and the quality of the Plums will thereby be improved. Culinary Plums can be used before they are fully ripe, and the removal of a portion of the crop whilst in that condition will give to those that remain an opportunity to swell to a greater size. Plums need protection from birds as soon as they commence to ripen. In the case of choicest dessert varieties, it is advisable to protect these from wasps by enclosing the fruits in little bags made of wasp-proof netting, and sold by sundriesmen for that purpose. Happily wasps appear to be scarce this season.

General work.—See that the fruit room is well cleaned before the time arrives for storing hardy fruits. Let all the woodwork be washed down with soapy water and the walls covered with limewash. Do not allow any rubbish or decayed fruit to accumulate in the room at any time in the year. Ventilate it freely at this season, for any soft fruits that are placed therein will keep the longer in the presence of a quickly circulating atmosphere.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, AUGUST 26—
Sandy (Beds.) Fl. Sh. Peeblesshire Hort Soc. Sh. at Peebles.

AVERAGE MEAN TEMPERATURE for the ensuing week* deduced from observations during the last Fifty Years at Greenwich—60.8°

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 18 (6 P.M.): Max. 70°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, August 19 (10 A.M.): Bar. 30; Temp. 68°; Weather—Cloudy.

PROVINCES.—Wednesday, August 18: Max. 62° Oxford Min. 55° N.E. Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, AND THURSDAY—
Trade sale of large quantities Dutch Bulls in variety, at 67 & 68, Cheapside, by Protheroe & Morris, at 10.

WEDNESDAY—
48,000 Roman Hyacinths, 50,000 Freesias, 50,000 Tulips, 150,000 Narcissus, &c., at 67 & 68, Cheapside, by Protheroe & Morris, at 5.

Street Trees.

The care of town trees is a subject of very high importance to urban communities. This much would appear to be a truism, but it is common knowledge that the treatment they receive frequently leaves much to be desired. Those who desire to see our towns made as beautiful as circumstances will permit them to be have several reasons for complaint. In the first place, there are many local authorities who have not yet recognised their duty in this matter. They neglect to plant trees although good situations are available and the conditions are favourable to growth. Next, there are those who plant a number of trees selected without proper knowledge of the habits and requirements of the different species. Neglecting to obtain the help of practical men in these matters, a Poplar, Lime or Plane is planted in an area scarcely sufficient for the proper development of a mop-headed Acacia. The result is that, when growth becomes greater than is desired, the saw and knife are brought into requisition, and the trees are sawn and chopped about in a deplorable manner. Minor reasons for complaint are that local authorities sometimes neglect to employ trained men to prune their trees, and even more often they omit to supply the trees with the necessary amount of root-moisture. The supply of root-moisture is in some cases of vital importance, for, owing to the construction of pavements and roads, the natural supply from the rain is prevented from reaching the roots.

It is hoped that Mr. Webster's articles on town planting, printed from time to time in these columns, will do much to dispel the

ignorance of municipal authorities and help to spread useful information on these subjects.

Many of our readers are doubtless familiar with the charm of the glorious Pine trees at Bournemouth, situated between the town and the beach. The following criticism of the Bournemouth trees generally is sent us by Mr. W. Botting Hemsley:—

No town that I have visited has, on the whole, prettier streets and roads than the borough of Bournemouth, and no other place is so well provided with public pleasure gardens and recreation grounds. Many of the streets and roads are made attractive by the tastefully-planted front gardens; and the trees, especially the Pine trees, the remains of the woods left standing at irregular intervals, add greatly to the general effect. The Chines, too, are charming, but might be better if the rules with regard to dogs had not been so greatly relaxed, or, perhaps, disregarded. It must be very discouraging to the gardeners to see the dogs, whether big or little, tearing up the young plants or seeds just put out or sown. What ruin a dog can accomplish when it gets to work with its hind paws needs no description, and I saw many engaged in this kind of destruction. But what is becoming more and more apparent is the fact that many gardens and streets are over-planted, with the result that mutilation follows to let in the light. Yet, generally speaking, trees are sacred in Bournemouth, especially the Pines, whether dead or alive, and this is much better than indiscriminate felling.

But this veneration for trees may be carried too far, especially if extended to Poplars, and result in their survival to the detriment of the Pines and other trees and shrubs, and also as a block to many pretty views. This danger is strikingly evident in the upper sections of Bournemouth Chine or Central Gardens. Bordering the stream, where Willows or other subjects of small dimensions should be planted, there are large, rapidly-growing Poplars, which will soon fill up the middle if left to themselves. On the slopes, too, in places, the other vegetation is being overtopped by Poplars. Possibly the Borough Council has no power over this part, for some of it is private property, to which the owner considerably admits the public. But if wise counsels prevail, apart from ownership, some of the Poplars will be removed before it is too late to save the more beautiful Pines and other trees.

DISEASES OF DECIDUOUS FOREST TREES.—

Messrs. HERMANN VON SCHRENK and PERCY SPAULDING have published in *Bulletin* No. 149 of the Bureau of Plant Industry of the U.S. Department of Agriculture an admirably-illustrated account of the chief diseases to which the deciduous-leaved trees of America are subject. The diseases are classified under the heads of:—(1) Environmental disease, due to smoke and sulphur gases, unfavourable soil conditions, extreme cold, and mechanical injury by animals, wind, etc.; (2) diseases due to miscellaneous parasites, such as insects, parasitic higher plants and particularly parasitic fungi; the fungi being responsible for the mildews (on the Red Oak, *Quercus rubra*, and Elm, *Ulmus americana*, Sycamore, and Willow, &c.), tar spots (black leaf blotches) of Maples, &c., rusts on Ash, Poplar, Willow, Birch, &c., leaf-blisters of Oak, &c., and the root-rots, the chief of which, common on many

trees, is due to the fungus *Armillaria mellea*; (3) diseases due to wound fungi. The characteristic symptoms produced by the attacks of this last group of fungi, which include species of *Polyporus*, *Fomes* and *Hydnum*, are illustrated by an excellent and valuable series of plates at the end of the *Bulletin*.

FLOWERS IN SEASON.—Mr. AMOS PERRY has sent us specimens of *Spiræa venusta* and others that were so greatly admired at the Royal Horticultural Society's meeting on the 2nd inst. Owing to the hot weather, the flowers were faded on receipt, but this is not surprising in the case of plants so greedy of moisture as *Spiræas*. Mr. PERRY says that in his nursery the plants are 6 or 7 feet in height, and we can well imagine the fine effect they produce there.

From Messrs. KELWAY & SON we have received a few inflorescences of *Gladioli*, representing large, erect-flowered varieties. Most of them are shades of rose or red, in some cases marked with white, whilst one is almost entirely white. The strain is a very choice one, and the specimens show first-rate cultivation.

THE BRITISH PTERIDOLOGICAL SOCIETY.—The 18th annual meeting of this Society was held at Kendal on the 2nd inst., Mr. J. J. SMITHIES, in the chair. The accounts disclosed a balance in hand of £59 15s. 6d. Forty-one new members were elected. It was decided to issue to the members a quarterly publication devoted to the objects of the Society. For this purpose a publication committee was appointed, with Dr. F. W. STANSFIELD, Reading, as chairman, and Mr. C. T. DRUERY, F.L.S., V.M.H., editor. Mr. ALEXANDER COWAN, Penicikn, Midlothian, was elected president of the Society for the year ending August, 1910. Mr. DRUERY sent a frond of his new seedling Fern, raised from spores discovered by Dr. STANSFIELD, upon Mr. GREEN's plant of *Polystichum aculeatum pulcherrimum*. It is a great advance upon the parent and was very much and deservedly admired. Mr. A. COWAN exhibited a frond of his seedling *Asplenium Filix-foemina setigerum congestum*. The meeting was the best the Society has had for some years. It was decided to hold the next meeting at Moffat on August Bank Holiday, 1910.

GLADIOLUS MACKINDERI.—Our old and valued correspondent, Mr. MAX LEICHTLIN, of Baden-Baden, writes as follows: Does any amateur or nurseryman still possess bulbs of *Gladiolus Mackinderi*? I should like to obtain a bulb of this species, either by exchange or purchase.

THE WORKS OF PROFESSOR WILLIAM MACGILLIVRAY.—Some interesting additions have lately been made to the reference department of the Aberdeen Public Library in the works of the late WILLIAM MACGILLIVRAY, M.A., LL.D., Professor of Natural History in Marischal College, Aberdeen. What is considered the most valuable addition is the volume *The Natural History of Deeside and Braemar*. This work was completed by Professor MACGILLIVRAY just before his death in 1852. The MS. was afterwards bought by QUEEN VICTORIA, and, having been edited by Dr. EDWIN LANKESTER, was printed at the QUEEN'S expense for private circulation. As the work was a presentation volume from Prince ALBERT to the various recipients, it is scarce. Other of Professor MACGILLIVRAY'S works available in the Aberdeen library include:—*A Manual of Botany*, 1840; *A Systematic Arrangement of British Plants*, W. WITHERING, corrected and condensed by W. MACGILLIVRAY, two vols. (fifth edition, 1841; seventh edition, 1848); and *A Manual of Geology*, two vols. (first edition, 1810; second edition, 1844).

KNEBWORTH HOUSE GARDENS.—We are informed by Mr. CRESSWELL, the gardener, that these gardens will be open to the public free for one day only on Saturday next, August 28, by kind permission of the Right Hon. the Earl of LYTON. These gardens have not been open for public inspection for 20 years past. Knebworth Station is situated in Hertfordshire, on the main line of the Great Northern Railway Company.

WAGES IN LIEU OF NOTICE.—At the Croydon County Court, on the 9th inst., before Mr. Registrar FOX, GEORGE FRANCIS, gardener, Purley, sued J. BRIDGER, Purley, for £1 3s. in lieu of notice. Plaintiff said that on a certain Saturday he was sent to Coulsdon to work, but it was too wet to start. Later in the day he saw his employer, who at once discharged him without a moment's notice. Plaintiff said he had come to Purley on purpose because of the promise of regular work. The defendant said there was an agreement that the man should lose all wet days. He was only paid 2s. when he did a full week's work. It was the business of the plaintiff when he could not start at Coulsdon to come straight to him and see if there was anything else to do. The Registrar said if the plaintiff was to lose all time when it was wet surely he had a right to go home on this Saturday. There would be judgment for the plaintiff with costs.

LORD ROSEBERY ON THE SUBJECT OF GARDENING.—At the fourth annual show of the Crumond Horticultural and Industrial Association, held last week, Lord ROSEBERY delivered an exceedingly interesting speech. The following are a few extracts from the reports published in the daily Press. At the hour of manhood, when before us lie the vast plains of life with their various paths leading to good and to evil, we have the choice before us whether we will be gardeners or not. I do not mean practical gardeners, but gardeners in taste, in sentiment, in appreciation. From that moment I trace my deterioration, for I did not choose to be a gardener in taste, and I am sometimes afraid it is almost too late to adopt that special form of enjoyment. Yet, Sir, to this audience I am quite free to confess that I was wrong. I feel it every day more and more; because gardening is one of the enjoyments which one appreciates more and more with the advance of years. When other amusements leave us from want of strength or aptitude, gardening remains to us an increasing enjoyment and pleasure. That is the first reason. The second is this—there is no literature more delightful than the literature of gardening. I do not mean nurserymen catalogues, which are the most arid form that printed matter can assume. But I do mean the literature of gardening from Bacon's famous essay downwards, literature that gives you the wish to be a gardener and to taste the simple pleasures of the art. I will not mention any of those books that appeal to me, because it is an inconvenient form of advertisement—not that I object to advertisement, which has become a law of nature in the twentieth century—but the last time I did anything of this kind I did refer to a book on gardening, and received at once a dozen letters asking for a copy, and as it was privately printed and I had only one copy I was unable to reply to those letters with any satisfaction. Well, the literature of gardening is another reason which makes me regret that I did not choose to be a gardener in taste. The third is this: I cannot help believing, and believing very firmly, in the moral training and atmosphere of gardening. I cannot help thinking, without disparagement to other splendid classes of our rural dwellers, that gardeners, on the whole, physically and mentally are the cream of our rural

population. I do not mean by that any disparagement to the foresters or gamekeepers or ploughmen, for all are splendid classes in their way, and we never can forget that the most beloved of Scotsmen was a ploughman. But I do think that a gardener, by the nature of his occupation, is, or should be, physically and intellectually and morally the best of our rural population. It is his duty to deal in turn with all the miracles of Nature—the bud, the flower, and the fruit. He is the first to see the opening leaf and the first green spike that pierces the mould. And then, when the weather fails and when all is too inclement for other pursuits, he is able to devote himself to the preparation for another year in the sure and certain faith that the miracles of Nature which he has witnessed in the current year will recur in orderly but miraculous rotation in the coming spring. No one can fail to see who appreciates the daily task and toil of the gardener that there is none that can or should raise the nature and the mind of man as completely as his; and therefore, believing as I do that in these circumstances they are and they must be the best of our rural population, I, if I were a ruler—which, thank Heaven, I am not!—would do all I could to multiply and increase such men, for I should feel that by so doing I was best serving the interest of the rural part of our country, and then I would take off my hat, if I had not already taken it off, to the character of the gardener.

NEW USES FOR RAPHIA.—At the exhibition held by the Société Nationale d'Horticulture in Paris in May of this year numerous articles of very diverse kinds made from Raphia fibre were shown: umbrellas, ribbons, and even clothes. The umbrellas are said to have been light and particularly efficient as sunshades owing to the insulating property of the fibre. The ribbons and waistcoats, &c., do not appear to have struck the writer in the *Journal d'Horticulture Tropicale* (July, 1909) as quite so successful. We ourselves well recollect seeing a whole family of Tamil coolies marching along a sweltering road in Ceylon under the friendly shade of a single leaf of the Palm *Corypha umbraculifera*; so that in a sense the West has only exploited the invention of the East.

THE DESTRUCTION OF RATS BY CARBON BISULPHIDE.—Mr. M. E. DE KRUFF describes in the *Journal d'Agriculture Tropicale* for July, 1909 (No. 97), a method which he has found to prove extremely efficacious for the extermination of rats in barns used for the storage of Rice in Java. The openings of the galleries of the rats are stepped with clay. On the following day 1 to 2 cubic centimetres (about 30 drops) of carbon bisulphide are poured into those holes which the rats are using (which will be found to have been opened by them). After a few seconds a light is brought near the vapour given off by the liquid. There is a slight explosion and the rats in the gallery are killed by the poisonous vapours produced during the combustion of the carbon bisulphide. A pound of the liquid is sufficient for about 250 holes, and the cost, therefore, is very small. In employing the method it has to be remembered that the light must not be brought near the bottle containing the stock of carbon bisulphide, and also that the poisonous vapours must be got rid of subsequently by ventilation. If, however, the carbon bisulphide is kept in a stoppered bottle and common-sense is exercised, there is no danger.

PUBLICATIONS RECEIVED.—*Introduced Daddies*, by W. Botting Hensley. Reprinted from the *Journal of Botany* for August, 1908. (London: West, Newman & Co., 54, Hatton Garden.)—*Beautiful Flowers and How to Grow Them*, by Horace J. and Walter P. Wright. Part 17. (London: T. C. and E. O. Jack.) Price 1s. net. *Insect Pests*. (London, Wood Green: Wm. Wood & Son, Ltd.)—*Kew Bulletin*, No. 6. (Lon-

don: Wyman & Sons, Ltd., Fetter Lane, E.C.) Price, 4d.—*The Journal of Botany* (August). (London: West, Newman & Co., 54, Hatton Garden, E.C.) Price, 1s. 8d.—*Onion Culture* (Farmers' Bulletin 354), by W. R. Beattie.—*Peanuts* (Farmers' Bulletin 356), by W. R. Beattie.—*Fumigation Investigations in California* (Bureau of Entomology, Bulletin No. 79), by R. S. Woglum.—*Notes on the Number and Distribution of Native Legumes in Nebraska and Kansas* (Bureau of Plant Industry, Circular No. 31), by Joseph Allen Warren.—*Sugar-Cane Experiments in the Leeward Islands*. Report on Experiments conducted at Antigua and St. Kitts in the Season 1907-8. Part I. Experiments with varieties of Sugar-Cane. Part II. Manurial Experiments, (Barbadoes: Issued by the Imperial Commissioner of Agriculture for the West Indies.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE R.H.S. LECTURES.—As a frequent attendant at these lectures, may I suggest to future lecturers that, however complete their papers may be for publication in the Society's *Journal*, that they rigidly restrict their spoken lectures to 40 minutes at the outside? I have so often noticed that when lectures are prolonged, not only do some persons leave the lecture hall before their completion, but that the moment the lecture is over practically all others rise to leave. On a recent occasion, what with the briefly preliminary proceedings and the lecture itself, it was 4.10 before the chairman rose to invite questions. At this point almost everyone rose to leave, and the customary vote of thanks was given by just a few who remained for that purpose. With more time, questions and ordinary courtesies of thanks would be readily forthcoming. D.

SUB-TROPICAL PLANTS AND BOTTOM HEAT.—At the commencement of "sub-tropical" gardening in this country we used to afford bottom heat to the plants thus employed in the flower garden; but, although its advantages were admitted, and the plants to which it was then applied developed splendidly, the method never became popular. Only very few gardeners now put bottom heat under their tender sub-tropicals. As a rule, the weather in the summer months is favourable to the growth of such plants in our climate to a certain degree; but they would become much more ornamental, developing greater stature, leaves of finer dimensions and more perfect form if we afforded bottom heat. The heat should be of a steady, enduring nature, capable of lasting from May till October. It was advised at about the time the late Mr. Gibson laid out Battersea Park, and the Crystal Palace grounds were laid out by Sir J. Paxton and Mr. Eyles, that if the gardener laid beneath his plants a thick layer of brickbats, chalk or coarse materials of a free, open nature, water would pass rapidly away, and the mass of soil be rendered warmer. For some of the less tender plants this manner answered well enough; but for those which require more heat this was not enough. Even this preparation, however, is now dispensed with in most places, with results that, to say the least, are not satisfactory in an average year. This year the growth of sub-tropicals is poor in the extreme in all cases that have come under my notice. Where tree leaves are to be had for the raking, the gardener has suitable materials for this purpose at his hand; but the once abundant labour is missing. The heat from well-prepared stable litter is too fleeting, and apt to be too great for the plants, and, although the mixture of leaves and litter is more lasting and less liable to high fermentation, large quantities are required, and the preparation costs much money. I am reminded by an article in a German journal of recent date of materials of the right kind, which Turkish gardeners employ in growing Gardenias in frames, namely, the paper waste from the cigarette manufactories. Woolen waste would serve the same purpose. The materials are less bulky than tree leaves or stable litter, and probably cheaper, besides being cleaner and freer from disagreeable odour than either, and, therefore, suitable for the amateur's garden. The

stuff is prepared similarly to leaves and litter by being moistened and turned over repeatedly, till the heat engendered by fermentation has declined to a safe point. It is then thrown into excavations of a size capable of containing a mass of 3 feet in depth, which is firmly trampled down during the operation. The heat endures with but little fluctuation for the better part of a year when covered with the necessary mass of soil. It is no disadvantage if a bed thus formed comes 1 foot or 2 feet above the surrounding level; rather it gives a desirable prominence to such plants as Cannas, Palms, Solanums having ornamental foliage, Maize, ornamental Gonds, Eucalyptus, *Nicotiana affinis* hybrids, *Ricinus*, *Ficus elastica*, *Buddleia variabilis*, *Dracena fragrans*, tall-growing species of summer-blooming *Begonias*, *Alocasias*, *Aralia papyrifera*, *Abutilons*, *Gerbera Jamesonii*, *Musa* of species, the species of *Vitis* introduced by Wilson from China, *Doryanthes Palmeri*, *Diospyros Kaki*, *Bambusas*, *Nandina domestica*, *Datura Knightii*, *D. suaveolens*, *Punica granatum*, in several varieties of different-coloured flowers, and Japanese Maples. These plants are handsome subjects, which in our climate would be all the better for a certain degree of bottom heat, and more especially in summers like the present one. *F. M.*

FLORAL TRIALS AT WISLEY.—This year there has been conducted at Wisley a trial of tree Carnations, both inside and outside. I should like to suggest that next year a trial of border varieties be provided, the tests of merit to be found in compact border habit, robust growth, free-flowering, quality of flower, especially in relation to non-splitting of the calyx, and, finally, general effectiveness as garden varieties. I am tempted to make this suggestion because, having recently seen in a Surrey garden one of the very best border Carnations I ever beheld, I advised the placing of some plants and flowers before the Floral Committee; but on that occasion myriads of superb house-grown flowers were presented, hence the outdoor flowers obtained little notice. Yet it would be interesting to learn how many of these house-grown varieties would give such good effects when grown outdoors as did this disregarded variety. *A.*

HORTICULTURAL TRADES ASSOCIATION.—The Nurserymen's Congress is now a well-established event, but none of the previous meetings has approached in pleasure and interest the one just concluded in Belfast, which was the tenth annual meeting of the association. The meeting was favoured by three days of perfect summer weather, which added immensely to the pleasure of the excursions, and at the same time enabled the party to see the famous Belfast Roses at their best. Everyone is familiar with Irish Roses, but many, even of those in the trade, were not aware of the immense extent to which the industry of raising new varieties has developed in this neighbourhood. Some idea of this may be gathered from the fact that three firms, viz., Messrs. Alex. Dickson & Son, Hugh Dickson, and McGredy & Son, have this season each some 40,000 plants out for trial, and one of the firms burnt last year a batch of rejected seedlings which covered several acres. These at the lowest wholesale rate for ordinary varieties would have been worth £300. Many of the novelties seen are still unnamed, so that no useful purpose would be served by detailed descriptions, but it is a pleasure to record that the raisers have broken away from the rather monotonous series of blush and cream flowers we have been receiving of late years, and have some glorious crimsons, yellows, and mixed orange and pink shades, which will make a sensation in the near future. The association spent a day at Castlewellsan, where the late Marquis of Annesley formed a garden unique for the extent and rarity of its collection of flowering and other shrubs. Mr. Smith's nursery at Newry was also a revelation to many of the visitors, both from its picturesque situation on a mountain side and its wonderful collection of plants and shrubs, which probably for extent and rarity is unequalled in any nursery in Europe. The evening meetings were passed in routine business (the election of officers, &c.) and the discussion of matters of trade interest, such as the effect of the proposed new land taxes upon nurserymen and seedsmen, which, it is scarcely necessary to add, are, owing to the position of most nurseries in the suburbs of the

larger towns, a matter of most serious concern. The gathering was an instructive and pleasant affair, and was made doubly enjoyable by the hearty welcome and generous hospitality which met us at every turn. *Chas. E. Pearson, Hon. Sec.*

PRINCIPLES OF MENDELISM.—Mr. H. J. Chapman found (see *Gardeners' Chronicle*, vol. xlii. (1907), p. 401; vol. xliii. (1908), pp. 173, 222, 254) that by crossing the two albino Orchids, *Cypripedium bellatulum album* and *C. callosum Sandere*, only plants bearing coloured flowers were produced. Both albinos when self-fertilised give albino offspring. Here we have an interesting confirmation of the result obtained by crossing the two white Sweet Peas "Emily Henderson" and "Blanche Burpee," such as Mr. Folwell asks for in his note on p. 118. Similar results have been obtained by crossing *C. bellatulum album* and *C. Lawrenceanum Hycanum*, and with Ten-week Stocks. Thus the evidence for the belief that the appearance of sap-colour depends on the simultaneous presence of two factors or "character determinants" is derived from several different groups of plants and not from Sweet Peas alone, and the phenomena thus experimentally established have suggested the explanation of the meaning of reversion. A plant is apparently an albino when the cells from which it has been derived are lacking in one or other (or both) of these factors, and only when the lacking factor is brought in will sap-colour be produced. No doubt in addition to these "character determinants" the production of sap-colour will depend upon certain other conditions as well, a fact that Mr. A. E. Bunyard has recently called attention to in your columns. It is sincerely to be hoped that all who have reliable evidence bearing on these and similar important points will record it. It would be exceedingly interesting to learn of cases where coloured flowers have been produced as vegetative sports (not seedling variations) by plants normally bearing white flowers. *Fred. J. Chittenden.*

A VILLAGE GARDEN COMPETITION.—In most villages there are now competitions in which the cottagers receive prizes for their gardens or allotments, but I believe that the scheme in operation at Old Warden is the only one of its kind in the British Isles. The entire village is the property of Colonel Frank Shuttleworth, of Old Warden Park, Biggleswade, and is one of the most charming villages in Bedfordshire. Colonel and Mrs. Shuttleworth are exceedingly proud of the village, and their head-gardener, Mr. W. C. Modral, is called upon to keep all the hedges and grass banks in proper order. In 1903 Colonel Shuttleworth decided to do something substantial towards encouraging the cottage gardeners to cultivate the gardens. The formulation of a scheme was entrusted to Mr. Modral and myself. It was eventually agreed that every garden in the village should be inspected in July and that merit marks should be awarded to each vegetable crop, and collectively to fruits and flowers. Further, every man who secured more than 70 points was to receive a prize at the rate of one penny for every point scored. In the first year the sum divided between 14 cottagers was £4 Bs. 2s., and subsequently there has been a steady improvement and a proportionate advance in the prize-winning minimum, until in the present year it stood at 100. Thus, instead of everyone securing 70 points having a prize it was necessary that no fewer than 100 should be obtained. The cottagers worked the harder, with the result that 28 took prizes among them to the total value of £13 17s. 10d. The average number of points scored by the prize-winners in the first year was 75½, but in the present year the average was 119. The judging this year was done on July 30, and the prizes were distributed the same evening in the Institute by the Rev. Mr. Cassels. It may be interesting to add that Mr. J. Wiltshire, who was first with 165 marks, has charge of the pleasure grounds at Old Warden Park; that Mr. J. Palfrey, who was second with 151 marks, is one of the estate carpenters; and that Mr. W. Foster, who was third with 138 marks, is the stud groom. It will afford me the greatest pleasure to furnish fuller details of the scheme to anyone interested in the improvement of cottage gardening. *Horace J. Wright, Dault Road, Wandsworth.*

COLONIAL NOTES.

FLOWERING OF DENDROCALAMUS GIGANTEUS AT PERADENIYA, CEYLON.

We reproduce the following notes by Mr. H. F. Macmillan from the *Annals of the Royal Botanic Gardens, Peradeniya*.

The phenomenon of the simultaneous flowering of Bamboos has been often recorded and confirmed. Whilst no one seems to have explained the cause, a great many at the present day believe in the existence of a certain infectious condition which at once influences the flowering of all specimens of the Bamboo tribe, whether it be annually or once in a number of years. In the case of species of *Dendrocalamus* it is considered by expert Indian foresters that the occurrence takes place once in 30 years, and it is a common belief that when the given moment has arrived, every plant of the same species, whether old or young, over a vast region, will put forth its flowers simultaneously, and that having seeded the plant dies. August St. Hilaire, a botanist who explored Brazil, mentions a whole forest of a certain Bamboo disappearing in a few months after flowering. So recently as during the hot season of 1901 the *Indian Forester* records "the flowering of the ordinary Bamboo (*Dendrocalamus strictus*) extending over an estimated area of 1,200 square miles in the Central Provinces." Though a few clumps here and there have escaped, the phenomenon is described as universal, affecting not only mature clumps, but quite slender seedlings of a few years growth. But against this report there is the statement by Lord Redesdale in his book on Bamboos, that this same species (*Dendrocalamus strictus*), also known as the "Solid" or "Male Bamboo," flowers every year. At Peradeniya, where it has flourished for the last 39 years, an occasional stem has been seen to blossom, but neither annual nor periodical wholesale flowering has as yet been observed. We can therefore at least contradict the statement that it blossoms annually so far as Peradeniya is concerned.

In regard to the Giant Bamboo (*Dendrocalamus giganteus*), this species has now been in a condition of flowering here for the last eight years, and elsewhere in Ceylon at different elevations for a longer period. The first case of flowering in Ceylon was not at Peradeniya (elevation 1,500 feet), but on Abbotsford estate, at about 5,000 feet elevation. That occurred about 1886 (approximately 30 years after the introduction of the plant at Peradeniya), when Mr. A. M. Ferguson, the proprietor, sent specimens to Dr. Trimen, then Director at Peradeniya. This coincides very closely with the period taken by the Giant Bamboo to flower at the Royal Botanic Gardens, Calcutta, after its first introduction.

It may be interesting here to note the history of the introduction of this noble Bamboo into Ceylon. The plant is a native of moist forests of Lower Burma, and was introduced from Penang to the Royal Botanic Gardens at Calcutta in 1831. From there Peradeniya obtained it in 1856, and all the clumps now in Peradeniya Gardens, if not in Ceylon, have been derived by division from this source. The clumps at Peradeniya, especially those near the river or in moist situations, have grown to enormous sizes, much exceeding, it is said, the dimensions normally attained by them in their native habitat, and these majestic growths have formed a feature of Peradeniya Gardens for many years past. Some of the clumps are 150 feet or more in circumference, the stems reaching a height of 120 feet each, being about 10 inches in diameter at the base. At Calcutta it flowered for the first time in 1861, exactly 30 years after its introduction; at Abbotsford the recorded flowering was, as stated, about 1886, 29 years after the introduction of the plant at Peradeniya. It is interesting to note here that on the authority of Mr. John Fraser, the present manager of Abbotsford estate, the same Bamboo which flowered about 20 years ago is still alive and in a condition of mixed flowering.

The first signs of flowering in Peradeniya Gardens were noticed in January, 1903, when three or four stems in each of three clumps were in blossom. Each year since has in most cases

produced a greater number of flowering stems, the increase being noticeable in the dry hot season, February to May. In the course of three or four years the flowering condition extended to other clumps some distance away, whilst yet other clumps within a distance of 200 yards or so, being young and vigorous, have so far shown no signs of flowering. Up to the present, out of a total number of 21 clumps in these Gardens, 11 have partly flowered or are at present in a state of flowering, thus leaving 10 clumps which have not as yet blossomed. The first clump of all which flowered does not at the time of writing contain any flowering stems; on the other hand, a number of young leafy stems have sprung up on its circumference. Other cases of flowering of the Giant Bamboo have been observed in different parts of the island during the last several years at elevations varying from 1,000 to 5,000 feet, but no death of clumps has as yet been reported. Most probably all such clumps have originated from Peradeniya, and are, therefore, off-sets of the original plants imported, so that, strictly speaking, all the clumps so derived are of the same age.

It would thus seem as if the exhaustion of nutriment rather than an infectious influence were responsible for the more or less simultaneous flowering of the Giant Bamboo. The vigorous growth of the plant is such that it cannot go on growing and extending indefinitely. The enormous demands it makes on the soil can be realised by anyone who has seen the "ruins" of an old clump, the huge crevices and upheavals formed by the elevated stumps as if the result of an earthquake. The gregarious habit of the plant also prevents its spreading indefinitely over fresh areas for fresh nutriment. Two of the flowering clumps at Peradeniya having regained a more vigorous condition have now given up blossoming entirely, presumably because their circumference has struck richer soil. Although none of the flowering clumps have as yet actually died, one or two are so nearly exhausted, evidently as a result of flowering and starvation combined, that another year will probably see an end to their existence. All the flowering clumps regain energy to some extent in the wet weather; the stems produce young leaves, and new culms are put forth from the base.

The inflorescence consists of long drooping panicles (the branchlets varying from 1 to 6 feet in length) produced normally at the nodes all along the leafy portion of the stem. At first green, it gradually changes to dingy yellow, and then light brown. Although it ordinarily occurs only on the leafy top portion of the stem, the inflorescence also arises occasionally at the base of the stems.

Up to 1907 fertile seed had not been produced at Peradeniya, and even now only very scantily. Its presence was only discovered by chance, a few seedlings appearing from large quantities of the chaff-like empty glumes which were sown. The first seed actually handled and sown here was found by Mr. Petch, Government mycologist, amongst a mass of basal flowers. It was duly sown, and germinated in seven days, and the seedling is now growing rapidly. This suggested that the basal flowers might be more productive than the usual stem flowers. Accordingly a bushel each of both basal and stem mature "flowers" was carefully gone over one by one, but the number of seeds obtained was practically the same in both cases, viz., 44 and 47 respectively. Therefore, a very large quantity of the chaff-like glumes must be sown in order to obtain any seedlings.

NOTICES OF BOOKS.

* PRACTICAL SCHOOL GARDENING.

This little volume is the work of Mr. Percy Elford, M.A., Secretary of the Oxfordshire Education Committee, and Mr. Samuel Heaton, the staff instructor in horticulture to the same body. Mr. Heaton is well known as a good professional gardener, whose cultural instruction ought to be of the greatest use to his pupils. School gardening is now so generally recognised as a fitting subject to be taught in public elementary schools,

that we welcome any book that will help teachers and pupils alike to gain a more useful and practical knowledge of the subject, however elementary. The volume prepared by Messrs. Elford and Heaton contains a good deal of interesting and practical information. But in addition to such information there are numerous references to "nature study," which so many educationalists imagine to be gardening. If the pupils in the elementary schools of Oxford county can only assimilate one-tenth part of the zoological, entomological and meteorological material in the book, in addition to the gardening information, they will indeed be worthy of the classical county. Our own experience proves that it is with great difficulty lads who spend an hour or two per week at school gardening, for one or two or three years at the outside, acquire sufficient knowledge and dexterity to cultivate just the ordinary garden vegetables and a few common flowers with anything like success. It is, therefore, a great mistake to expect the lads to acquire a smattering of all the sciences connected with gardening during their short course of study, especially when the school teachers often know as little as the pupils themselves. It is far more essential that the lads should be able to handle the usual gardening tools with a fair amount of dexterity and at the right time, and also to perform with intelligence the various gardening operations. Those who use their eyes and brains at the same time will, through performing the practical operations, unconsciously acquire a lasting knowledge of the insect pests and fungal diseases which are ever ready to attack their plants. The authors have dealt with these subjects pretty fully, so far as the ordinary crops of fruits, flowers and vegetables are concerned, and the information given ought to be of help, not only to those actually engaged in school gardening, but also to "children of a larger growth." In the 224 pages before us there is much information that ought to whet the amateur's appetite for larger treatises on the art of gardening. J.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 17.—The meeting held on Tuesday last showed a considerable falling off in the number of exhibits and the attendance. There were, however, good collections of Orchids, greenhouse flowers, Gladioli, Codiaums, Border Phloxes, and many other hardy flowers. Novelties were plentiful in all the departments. The FLORAL COMMITTEE conferred five Awards of Merit and one Botanical Certificate. The ORCHID COMMITTEE granted three First-class Certificates and four Awards of Merit; the FRUIT and VEGETABLE COMMITTEE granted Awards of Merit to four varieties of Dwarf Beans after trial at Wisley. At the three o'clock meeting in the Lecture Room an address on "Bees in Relation to Gardening" was delivered by Mr. Walter F. Reid.

Floral Committee.

Present: H. B. May, Esq. (in the Chair); and Messrs. C. T. Drury, A. E. Bowles, Jas. Walker, W. Barr, E. H. Jenkins, James Hudson, W. Bain, C. Dixon, Chas. E. Pearson, C. R. Fielder, J. T. Bennett-Poë, W. P. Thomson, George Paul, and W. J. Bean.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed miscellaneous flowering plants, including improved varieties of *Primula obconica*, both rose and white-flowered; a batch of *Gloxinias*, the plants flowering well in small pots; *Cannas* in variety; a number of well-flowered specimens of *Amphicoma Emodi* and *Rhododendrons* of the javanic-jasminiflorum type. On an adjacent table the same firm exhibited sprays of flowering trees and shrubs, having many novelties in the collection. *Buddleia variabilis magnifica* is a great improvement on the older kind. Other plants of especial interest

were *Eucryphia pinnatifolia*, *Tamarix Kashgarica*, *Sambucus canadensis* (a fragrant species), *Pavia macrostachya* and *Hydrangea Lindaviana*. There was also a fine collection of varieties of *Clematis*. (Silver-gilt Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed about 50 varieties of *Codiaeum*, many of the varieties being grouped in batches. The best of the narrow, medium and broad-leaved varieties were included in the collection, the plants being admirable examples of the best culture. (Silver-gilt Flora Medal.)

Mr. FRANK BRAZIER, Caterham, staged a semi-circular group on the floor. The principal subject was a yellow-ground *Carnation* named Mrs. Frank Brazier. Around this were arranged *Scabiosas*, *Antirrhinums*, *Gladioli*, *Stocks*, &c.

Mr. L. R. RUSSELL, Richmond, showed varieties of hardy *Fuchsias*. *F. Riccartoni Elysée* is the most floriferous of these hardy plants, and is especially suitable for summer bedding purposes.

Messrs. PAUL & SONS, The Old Nurseries, Cheshunt, showed varieties of *Phlox decussata* having fine spikes of most of the best kinds in commerce. (Silver Flora Medal.)

Mr. E. POTEN, Camden Nursery, Cranbrook, Kent, showed border *Phloxes*, *Campanulas*, a fine *Trollius* named Potten's variety, *Heleniums*, and other hardy flowers. Mr. POTEN also showed a double-flowered variety of *Pelargonium* after the style of Paul Crampel.

Messrs. JOHN PEED & SON, West Norwood, London, exhibited *Gloxinias*, including cut flowers and pot plants, the whole relieved with Ferns, Palms, and other greenery. The plants were raised from seeds sown in January, 1909.

Messrs. GEO. BUNYARD & CO., Royal Nurseries, Maidstone, exhibited garden flowers in great variety. The exhibit occupied the whole side of one of the long tables. The collection included *Gaillardias*, *Chrysanthemum maximum* in variety; *Kniphofias*, *Hyacinthus candicans*, *Aconitums*, *Lupins*, *Phlox*, *Saponaria officinalis alba*, *Montbretias*, *Pentstemons*, *Gladioli*, and other seasonable subjects. (Silver Flora Medal.)

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, Middlesex, exhibited hardy flowers. The subjects were arranged in large sheaves, with a few dwarfier kinds along the front. The more noticeable were *Tamarix hispida aestivalis* with pink flowers, *Sagittaria japonica plena*, *Aconitum variegatum alba*, *Veronica longifolia subsessilis*, *Asclepias tuberosa*, *Lythrum roseum superbum*, and *Lythrum dalcana*. A fine white-flowered *Phlox* was seen in the variety Graf von Lassberg. (Silver Banksian Medal.)

Messrs. R. HARKNESS & Co., Hitchin, showed a large group of *Hollyhocks*, all unnamed varieties.

Mr. GEO. REUTHE, Keston, Kent, staged hardy plants in variety, and a similar display was made by Messrs. T. S. WARE, Feltham, Middlesex.

Mr. M. PRICHARD, Christchurch, Hants., exhibited a large group of perennial, hardy flowers. The display was representative of the best varieties in season, and was well arranged. (Silver Flora Medal.)

Messrs. KELWAY & SON, Langport, Somerset, showed an extensive exhibit of *Gladioli*, having large spikes, the flowers being of innumerable shades of colour. The exhibit included 300 spikes. (Silver Flora Medal.)

Mr. CLARENCE ELLIOTT, Stevanage, showed a small rock-garden exhibit, in which were noticed *Acæna microphylla*, *Linna americana*, *Cyananthus lobatus*, and *Scabiosa Parnasii*.

AWARDS OF MERIT.

Astilbe rivularis gigantea.—A gigantic form of this creamy-flowered species, the inflorescences attaining to a height of about 5 feet. The racemes of tiny flowers, with the large, pinnate foliage, would prove very effective by the side of a stream or in the bog-garden. Shown by Mr. AMOS PERRY, Enfield.

Gladiolus Lord Alverstone.—A magnificent variety of the *gandavensis* type. The flowers are very large: the inner petals are a shade of purple on a scarlet base, and the outer segments are scarlet.

Gladiolus Miss Ada Reece.—A fine white variety, with a few lines of purple in the throat. The flowers are exceptionally large and they are borne on very big spikes. Both these *Gladioli* were shown by Messrs. KELWAY & SON, Langport.

* Practical School Gardening: By Percy Elford, M.A., and Samuel Heaton. Clarendon Press, Oxford; 2s.

Canna Roi Humbert.—This variety was exhibited to show its suitability for planting in the out-door garden. The flowers are exceptionally large, and borne in big trusses. The colour is fiery-red with slight markings of yellow in the centre. The foliage is bronze-coloured. Shown by Sir Trevor Lawrence, Bart., and Messrs. JAMES VEITCH & SONS, LTD.

Polystichum aculeatum pulcherrimum plumosum.—This beautiful Fern originated from the same batch of spores which has already given two handsome varieties, which may be known as the "gracillimum" section. It closely resembles the charming plumose varieties of *P. angulare* raised by Col. Jones. It is decidedly the finest of the section, including the two varieties which have already received First-class Certificates. Exhibited by the raiser, Mr. C. B. GREEN, Acton.

BOTANICAL CERTIFICATE.

Anemoneopsis macrophylla.—This is a near ally of *Cimicifuga*, from which it differs in the large Anemone-like flower and in the shape of the petals. The flowers are drooping and are somewhat like a small bloom of *Anemone japonica*, but the central petals form a tube, containing the very numerous stamens. The colour of the flowers is faint purple on a white ground. They are about 1½ inches in diameter. The leaves are compound, the petiole being about 1 foot in length. The plant is a native of Japan. Shown by Mr. AMOS PERRY.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, W. Boxall, G. F. Moore, F. J. Hanbury, J. Forster Alcock, F. Sander, W. Cobb, J. Charlesworth, H. G. Alexander, A. Dye, W. H. Hatcher, H. A. Tracy, W. Bolton, Gurney Wilson, de B. Crawsbay, and Stuart Low.

Mrs. BISCHOFFSHEIM, The Warren House, Stanmore, Middlesex (grower, Mr. Taylor), was awarded a Silver-gilt Flora Medal for a splendid group of *Disa grandiflora* made up of about 50 plants, each with one very strong, self-supporting spike, bearing in some cases seven flowers, each 5 inches across and with lateral sepals nearly 2 inches wide varying from brilliant scarlet to scarlet with a deep gold tinge, the large galeas being white to cream colour veined with purple. The plants are grown on a special system, all the offsets being removed, and the stronger potted on for flowering, with a single spike in comparatively small pots. The group represented this brilliant flower in better form probably than any previously staged.

MESSRS. SANDER & SONS, St. Albans, were awarded a Silver-gilt Flora Medal for an extensive group containing many novelties, the home-raised forms of *Odontoglossum McNabianum*, *O. Rolfeæ*, and *O. crispo-Harryanum* being specially good. Of those noted were *O. Rolfeæ* Sander's variety, a perfectly-shaped white flower blotched with purple; *O. McNabianum* Canary, a bright flower with a pale-yellow ground colour; *O. McNabianum superbum*; and *O. Harvengtense cinnamomeum*, a large, cream-white flower blotched with cinnamon brown. *Odontioda Bradshawæ* Sander's variety and *O. Vuylstekeæ* Sander's variety, although undeveloped, showed distinct features. The central plant was the noble *Vanda cœrulea* Dreadnought, and beside it the new *Lælio-Cattleya* Invincible (for both see Awards), and with them were a fine selection of hybrid *Cattleyas* and *Lælio-Cattleyas*, *L.-C. Gaston Doin* (*L. tenebrosa* × *C. Rex*) being a beautiful novelty with yellow-petalled flowers, much resembling *L. tenebrosa* Walton Grange var. A small batch of the new *Dendrobium* regium, *Cattleya Gaskelliana* delicosa (white with a pale-pink tint in front of the yellow disc), *Cypripedium Ultor*, *C. Lord Derby*, and many others, including some rare botanical species were shown.

MESSRS. CHARLESWORTH & CO., Haywards Heath, were awarded a Silver Medal for a very fine and interesting group, in which were the rare *Angreœum Rothschildianum*, *A. arcuatum* var. *Sedenii* with curious, fragrant, white flowers; a grand plant of the white *Mormodes luxatum punctatum*, *Masdevallia velifera*, *Odontoglossum bictoniense album*, and other rare species, including the handsome *Cirrhopetalum pulchrum Cliftonii* (see Awards). Among others

noted were a very fine *Cattleya Gaskelliana* alba; a handsome and distinct *C. Hardyana*, with large and richly-coloured flowers, having much golden yellow in the lip; *Cattleya Germania*; varieties of *C. Venus*; various *Lælio-Cattleyas* of fine quality; and other showy hybrids.

MESSRS. STUART LOW & CO., Bush Hill Park, secured a Silver Flora Medal for a very effective group, in the centre of which was a fine specimen of *Oncidium superbiens* with about 200 flowers. With it were good *Odontoglossum Rolfeæ* and other *Odontoglossums*, *Oncidium Lanceanum*, *O. raniferum*, *Anguloa Clowesii*, and *A. Ruckeri* superba (very dark in colour), *Dendrobium Leeannum*, *D. sanguinolentum*, and *Cattleya Gaskelliana aurantiaca*, a very remarkable form with deep-orange base to the lip.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver Banksian Medal for a small group of good and rare Orchids for the best of which see Awards. Among those noted were *Cattleya Germania*, *C. Atalanta illuminata*, *Brasso-Lælia Thwaitesii* Goodson's variety, *Cypripedium A. de Lairesse* Fairlawn variety, *C. H. S. Goodson*; several *Miltonia Roezlii* alba, &c.

Colonel G. L. HOLFORD, C.I.E., C.V.O., Westombirt (gr. H. G. Alexander), sent *Cattleya Tacitus* (bicolor × *Germania*), a beautiful flower formed like *C. Iris* and with bronzy-purple sepals and petals and bright mauve lip; also *Lælio-Cattleya Jason* (see Awards).

Mr. EDWARD V. LOW, Orchid Nursery, Hayward's Heath, showed a small group containing *Cattleya Gaskelliana Phyllis* a very finely-shaped flower; *Cypripedium Juno*, *C. Princess*, *Cattleya Harrisonæ* alba, and some pretty *Lælio-Cattleyas*, &c.

Mr. WM. BOLTON, Warrington, showed a fine bloom of his *Cattleya Warszewiczii* Boltonii.

MESSRS. J. & A. A. McBEAN, Cooksbridge, sent *Odontoglossum Pescatorei* Pretty Polly, a fine flower with some spotting on the sepals and petals and many on the lip. Messrs. MOORE, LTD., Rawdon, Leeds, showed the rare *Brassia bicolor*, and Mr. GURNEY WILSON, Hayward's Heath, sent *Rodriguezia secunda*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum Goodsonii (*Uro Skinneri* × *Pescatorei Charlesworthii*), from H. S. GOODSON, Esq., Putney (gr. Mr. G. E. Day).—A very remarkable hybrid with very prettily-formed flowers broad in all the parts. The ground colour of the flower is white, the sepals being nearly covered with a deep purple tinge, and the petals and rounded lip spotted with the same colour.

Dendrobium acuminatum, from Messrs. MOORE, LTD., Rawdon, Leeds.—A very handsome and distinct Philippine species already illustrated in the *Gardeners' Chronicle*. It is a beautiful species of the dwarf section and allied to the Bornean *D. Treacherianum*. It is probably the *D. Lyonii* Oakes Ames. The plant shown had an inflorescence of 16 flowers each over 2 inches broad, white, delicately tinted with rose-pink.

Cirrhopetalum pulchrum Cliftonii, from Messrs. CHARLESWORTH & CO., Haywards Heath.—One of the most beautiful of the genus, this variety being far superior to any other. The plant bore four umbels of handsome cream-white flowers profusely spotted with deep rose, the dorsal sepal being furnished with a peculiar bristle-like continuation.

AWARD OF MERIT.

Lælio-Cattleya Jason (*L.-C. Massangeana* × *C. Dowiana aurea*), from Colonel G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—In form this beautiful hybrid is nearest to *C. Dowiana aurea*. Sepals and petals broad, primrose yellow, lip deep violet-purple, with fine gold lines at the base.

Vanda cœrulea Dreadnought, from Messrs. SANDER & SONS, St. Albans.—One of the finest forms yet shown, the flowers being very large and beautifully netted and tinged with bright blue. Lip, violet. The plant is of the same short-leaved type as the other fine varieties of Messrs. SANDER'S importation.

Lælio-Cattleya Invincible (*Dominiana* × *Blechneyensis*), from Messrs. SANDER & SONS.—A grand hybrid, with large flowers, the sepals and petals bright purplish-rose; the large labellum of a deep ruby-claret colour.

Lælio-Cattleya Black Prince (*Blechneyensis* × *C. Hardyana*), from H. S. GOODSON, Esq. (gr. Mr. G. E. Day).—Sepals and petals bright rose-purple. Lip, glowing claret-crimson. A very handsome hybrid.

CULTURAL COMMENDATION.

To Mr. G. E. Day (gr. to H. S. GOODSON, Esq.), for a very fine plant of the clear-white *Cattleya Gaskelliana* alba Goodsonæ, with 11 flowers.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. A. H. Pearson, J. Cheal, W. Bates, G. Hobday, H. Parr, W. Fyfe, A. R. Allan, J. Davis, J. Vert, W. Poupard, A. Dean, O. Thomas, and J. Jaques.

Exhibits before this Committee were not numerous. There were several novelties submitted for award, including a Melon, a variety of Blackberry, and a Tomato named Young's Mercury, but none was considered worthy. The Committee, however, recommended four awards to varieties of Dwarf Beans after trial at Wisley. The trial consisted of about 200 stocks, many being duplicates. The varieties to which Awards of Merit were made are as follow:—

AWARDS OF MERIT.

DWARF FRENCH BEANS.—*Cholet*, shown by Messrs. VILMORIN & SONS, Paris; *Everyday*, shown by Messrs. VEITCH & SONS, Chelsea; *Excelsior*, shown by Messrs. BARR & SONS, Surbiton; *The Belfast*, shown by Messrs. ALEX. DICKSON & SONS, LTD., Belfast.

COMPETITIVE CLASSES.

There were competitive classes on this occasion for Potatoes and Beans. In a class for six dishes of early varieties of Potato there were three competitors. The 1st prize was won by A. G. GENTLE, Esq., Little Gaddesden, Berkhamsted, Herts., who showed Duke of York, Sir John Llewelyn, Ringleader, The Canon, Advancer, and May Queen; 2nd, Countess Cowper, Panshanger, Hertford (gr. Mr. R. Stanard).

In the competition for three varieties of Potatoes, the 1st prize was awarded to CHARLES COOMBE, Esq., Cobham Park, Cobham, Surrey (gr. Mr. A. Tidy).

In the class for three dishes of Dwarf Beans, Countess Cowper was awarded the 1st prize, the varieties being Victoria, Negro, and Canadian Wonder; 2nd, Rev. L. C. CHALMERS-HUNT, Wilian Rectory, Hitchin, Herts.

The Rev. CHALMERS-HUNT was awarded the 1st prize for three dishes of climbing Beans, having Best of All, Prizewinner and Scarlet Emperor.

NATIONAL SWEET PEA.

WE are informed by the secretary of this Society, Mr. C. H. Curtis, that the following awards have been made by the Floral Committee, after two visits to the trials of 350 stocks and varieties at Reading University College Gardens:—

FIRST-CLASS CERTIFICATE.—To Clara Curtis (Row No. 186), from Mr. W. J. UNWIN, Histon, Cambs.

AWARD OF MERIT.—To Charles Foster (Row No. 7), from Mr. ROBT. BOLTON, Carnforth; to Edrom Beauty (Row No. 350), from Mr. A. MALCOLM, Duns, Berwick; to Mrs. W. J. Unwin (Row No. 289), from Mr. W. J. UNWIN, Histon; to Dazzler (Row No. 334), from Mr. C. W. BREADMORE, Winchester; and to Sunproof Crimson (Row No. 338), from Messrs. DOBBIE & CO., Rothsay.

HIGHLY COMMENDED.—Mrs. Watson (Row No. 86), from Mr. ROBT. BOLTON, Carnforth.

COMMENDATION AS A MARKET VARIETY.—Mercia (Row No. 136), from Messrs. E. STARK & SON, Great Ryburgh; and to Colleen (Row No. 305), from Mr. WM. DEAL, Brooklands, Kelvedon.

BRITISH GARDENERS' ASSOCIATION (LONDON BRANCH).

AUGUST 14.—On this date the members visited Messrs. J. Veitch & Sons' nursery at Coombe Wood to inspect the collection of hardy shrubs and trees. Mr. Harrow conducted the party through the nursery, and described some of the more interesting plants.

SHROPSHIRE HORTICULTURAL.

Exhibition at Shrewsbury, August 18 and 19.

THE 35th annual show of the Shropshire Horticultural Society took place on Wednesday and Thursday last in the Quarry Grounds, Shrewsbury. It is, perhaps, sufficient to say that, from the horticultural point of view, the event was equal to previous exhibitions in the old Salop town. Indeed, it was so nearly alike to recent shows that in this very circumstance certain of the critics profess to see some danger to the future prosperity of the Society. The Society may be said to be in its middle-age period. It has grown from the most modest beginning to be the greatest provincial exhibition of its kind in Britain. This unexampled prosperity has been obtained mainly by excellent management on the part of the honorary secretaries, Messrs. Admitt and Naunton, and the committee. Thus the basis of the present position the Society holds was formed many years ago. The chief contributory causes were the foresight and enterprise that led to the adding from time to time of certain features that made the annual exhibition of novel and increasing interest. The decorated collections of fruit, the decorated fruit tables and the Champion Grape class are only a few instances. But there has come a time when it is a more difficult matter to obtain novel competitions. However, those who visit Shrewsbury every year are hoping that it may still be found possible to continue the forward policy that has always characterised the Society's history.

On the most recent occasion there were certain regulations introduced for the first time. That respecting the exhibition of seedsmen's cards appeared to meet with general approval, it being recognised that the former practice was capable of abuse. In another direction there was considerable criticism of the regulation limiting the number of awards to honorary exhibits. A definite number of silver cups, gold and other medals being offered in this section, the honorary exhibits were in some measure made to appear competitive. More than this, the medals would not nearly go round, consequently many honorary exhibitors were denied any award save a Certificate of Appreciation. It rests with the Society to reconsider this matter, and, if it be found there is a real grievance, seek some means of removing it, because it is obvious the show gains much in attractiveness by the presence of nurserymen's exhibits.

Turning to the competitive classes, it appeared to us that Grapes generally were scarcely so good as usual, but that the variety Madresfield Court was an exception. The groups of miscellaneous plants were of average merit, but contained no new features. Dahlias and other late summer flowers were shown well, but Roses were poor. Sweet Peas, on the contrary, were good, and their numbers extraordinary. Vegetables were beyond praise, it being unlikely better samples will ever be shown.

The weather on the opening day was showery in the morning, but it improved later.

DECORATED FRUIT TABLES.

In this class the collections consisted of 30 dishes of ripe fruit in not fewer than 10 distinct kinds. Each exhibit was staged on a separate table measuring 12 feet by 4 feet 6 inches. The varieties of fruit to form each separate dish or other receptacle was left to the exhibitor's discretion, but not more than 14 bunches of Grapes were allowed, in not fewer than four varieties (to include black and white), and not more than four varieties of any one kind of fruit, nor more than two dishes of any one variety. Only one variety might be shown on a single dish. Each exhibit was judged on the quality of the fruit and as a decorative display. The 1st prize consists of a champion cup, valued at 25 guineas, £20 in cash, and the Society's large gold medal. The cup, to become the property of any competitor, must be won three times (not necessarily in succession). Last year the cup was won by the Duke of Westminster (gr. Mr. N. F. Barnes). This year there were five exhibits, and the average quality of the produce contained in them was very high. The class has been in existence

for many years at Shrewsbury, and the general effect from year to year may be said to vary but little. Nevertheless, the interest of the visitors in the "decorated fruit tables" seems to be maintained. The 1st prize was awarded to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). This exhibit had an imposing and agreeable appearance, for not only were the fruits of unusually good quality, but the decorations were carried out in a bold and excellent fashion. Three large trumpet glasses contained magnificent bouquets of Lilium speciosum rubrum, with a few sprays of Francoa intermixed. Smaller glasses contained Roses and Odontoglossums. The fruits included first-rate specimens of most of the Muscat varieties of Grape and Gros Maroc. Peasgood's Nonesuch Apples were extraordinary in size and general appearance, Cox's Orange Pippin and Ribston Pippin being scarcely less remarkable. Souvenir du Congrès Pear was grand, so were several varieties of Peach and Nectarine, Golden Gage and other Plums, and there were excellent Apricots, Figs, Cherries, Melons, &c. A large seedling Melon with bright yellow exterior added much to the attractiveness of the exhibit. The 2nd prize was awarded to the Duke of PORTLAND, Welbeck Abbey, Notts (gr. Mr. J. Gibson). The pointing in this class was not exhibited to the public, contrary to previous practice, but we should suppose that the difference between the two first exhibits was not very great. The Duke of PORTLAND's exhibit contained Apples and Pears of capital quality, Gascoyne's Scarlet Seedling, Peasgood's Nonesuch and Cox's Orange Pippin Apples being excellent. The colour of Gascoyne's Scarlet Seedling was equal to the best exhibition standards. Peaches and Nectarines, Figs, Melons, Grapes, Plums and Apricots left little to be desired. Marguerite Marillat Pears were very large. The decorations, too, were light, but effective, being mainly composed of Odontoglossums and Oncidiums. The 3rd prize was awarded to the Duke of WESTMINSTER, whose exhibit may be described as above the average for such a prize; the 4th prize to G. FARQUHARSON, Esq.; and the 5th to J. DRAKES, Esq., Market Rasen.

COLLECTIONS OF FRUIT.

The largest class for a collection of fruit was one for 12 dishes in 12 distinct varieties, not fewer than nine kinds, and not more than two varieties of a kind. Black and White Grapes were considered distinct kinds of fruit. It was not permissible to include a Pineapple. Each collection was decorated with flowers, &c., but the decorations constituted a further and distinct competition, for which additional prizes were awarded. The 1st prize for the fruit was £10, the 2nd prize £6, and there were two others.

Among four competitors the most successful was E. BEWLEY, Esq., Dublin (gr. Mr. T. Cave), who had a collection of extreme merit, if some of the Grapes are excepted (see fig. 55.) The Grapes were Muscat of Alexandria (berries exhibiting much "rust"), Black Hamburgh, and Madresfield Court. This last variety was shown in best condition. The other dishes included the following fruits:—Peach Dagmar, Nectarines Lord Napier and Pineapple, Apple Emperor Alexander, Pears Souvenir du Congrès and William's Bon Chrétien, Cherry May Duke, Plum Greengage, and Melon Duke of Edinburgh; 2nd, Mr. F. NEED (gr. Mr. J. Jones), whose best fruits were Marguerite Marillat Pear, Lady Sudeley and Emperor Alexander Apples; 3rd, the Exors. of Lady ASHBURTON, Romney (gr. Mr. G. Hall); 4th, H. ST. MAUR, Esq., Newton Abbot (gr. Mr. G. Richardson). The prizes for the decorations were awarded as follows:—1st, Mr. F. NEED; 2nd, Lady ASHBURTON; 3rd, E. BEWLEY.

Collection of nine dishes.—This collection was to include not fewer than five kinds and not more than two varieties of a kind, including two bunches of Black and two bunches of White Grapes. (Open to growers in county of Salop only.) The 1st prize was

awarded to Capt. HEYWOOD-LONSDALE, Shavington (gr. Mr. J. Mills), for a creditable exhibit, excepting that it was wanting in one important detail, namely, the naming of the different fruits. At such a show such an omission is to be regretted, and the Committee would be well advised if they show their disapprobation—visitors invariably want the name of a fruit, or, for the matter of that, a flower also, if it excites their admiration; 2nd, Mrs. SWANN, Halston Hall. For the floral decorations of the groups the prizes were reversed, and, under the circumstances we have described, it would not have been surprising if the principal prizes had been awarded in the same order.

In a competition for the best collection of six dishes of hardy fruits (excepting Apricots, Peaches, Nectarines, and Plums) engaged in by Salop growers only, the prizes were awarded in the following order:—1st, Captain HEYWOOD-LONSDALE, Shavington (gr. Mr. J. Mills); 2nd, N. ROBINSON, Esq., Ellesmere (gr. Mr. W. Roberts); 3rd, Capt. T. A. M. DICKIN, Loppington (gr. Mr. T. Gilbert).

GRAPES.

Twelve bunches.—The most important class for Grapes called for exhibits of 12 bunches in four or more distinct varieties, but not more than four bunches of any one variety. Each bunch is judged on its individual merits and points awarded. A maximum of 11 points may be given to Muscat of Alexandria, 10 points to all other Muscat varieties (black or white and Black Hamburgh), and 9 points to all other Grapes. The bunches were staged on boards, and each exhibit occupied a space of 8 feet by 4 feet 6 inches in two tiers 2 feet 3 inches wide. Superior cultivation and finish were to be regarded as of greatest importance. Each collection was decorated, mostly with cut flowers and suitable greenery, shown in receptacles of a kind chosen by the exhibitor. The 1st prize for the best exhibit of Grapes was £20, the 2nd £16, and the 3rd £12. There were three other prizes of proportional value. The 1st prize was awarded to the Earl of HARRINGTON, who gained 114½ points out of a possible number of 130 (see illustration in fig. 56). These points were awarded as follow:—

	Possible No.	Points of Points. Awarded.
Black Hamburgh ...	10	9½
Muscat of Alexandria...	11	8
Muscat Hamburgh ...	11	10
Madresfield Court ...	11	10
Muscat of Alexandria...	11	8½
Black Hamburgh ...	10	9
Madresfield Court ...	11	10½
Muscat Hamburgh ...	11	10½
Muscat of Alexandria...	11	9
Muscat of Alexandria...	11	8½
Muscat Hamburgh ...	11	10½
Madresfield Court ...	11	10½
Total ...	130	114½

The varieties Muscat Hamburgh and Madresfield Court were the best in this exhibit, and in respect to the Madresfield Court the point judging may be described as somewhat low—which is a good fault, if fault it is. The 2nd prize was won by J. DRAKES, Esq., Market Rasen (gr. Mr. W. Parker). His varieties were as follow, and the points are recorded:—

	Possible No.	Points of Points. Awarded.
Muscat of Alexandria...	11	10½
Madresfield Court ...	11	10½
Canon Hall Muscat ...	11	9½
Madresfield Court ...	11	9
Muscat of Alexandria...	11	8½
Madresfield Court ...	11	10½
Muscat of Alexandria...	11	8½
Gros Maroc ...	9	9
Canon Hall Muscat ...	11	9½
Gros Maroc ...	9	9
Canon Hall Muscat ...	11	8½
Black Hamburgh ...	10	9
Totals ...	127	111½

3rd, the Duke of WESTMINSTER (gr. Mr. N. F. Barnes). This exhibitor won 106 out of 124 points available for the varieties he selected for exhibition. His examples of Madresfield Court were the most meritorious in the exhibit, and the pointing in respect to these was rather on the low side. 4th, G. FARQUHARSON, Esq., Eastnor Castle (gr. Mr. J. Mullins), who was awarded 91 points. Again the Madresfield Court were good in comparison with the other varieties. 5th, G. A. GIBBS, Esq., M.P., Tyntesfield, Flax Bourton, Bristol (gr. Mr. J. Wilkinson), who was awarded 88½ points. 6th, H. ST. MAUR, Esq., Newton Abbot (gr. Mr. G. Richardson).

The prizes for decorations were awarded as follows: 1st, the Duke of WESTMINSTER, who employed pink Carnations, *Lilium speciosum* roseum, *Francoa ramosa*, and *Chironia exifera*. 2nd, the Earl of HARRINGTON, whose flowers were *Odontoglossum*, *Lilium*, *Roses*, &c. 3rd, G. FARQUHARSON, Esq.

Four bunches.—In this class there were two bunches of a black and two of a white variety. There were as many as nine exhibits, and therefore 36 bunches. The 1st prize was awarded to Lord HARLECH, Brogyntyn (gr. Mr. T. Lambert). His varieties were Muscat of Alexandria and Madresfield Court (very well finished), shapely and moderately heavy bunches. 2nd, H. ANDREWS, Esq., Winchcombe (gr. Mr. J. R.

Mr. A. H. Hall); the 2nd prize was won by the Earl of HARRINGTON; and the 3rd by E. BEWLEY, Esq., Dublin (gr. Mr. T. Cave).

Black Alicante.—We missed in this class the heavily-shouldered bunches sometimes seen of this Grape. The 1st prize specimens from G. FARQUHARSON, Esq., Eastnor Castle, Ledbury (gr. Mr. Mullins), were very short, thick bunches without shoulder development, but possessing large, well-coloured berries; 2nd, Col. FRANCE HAYHURST.

Any other Black Grape.—The 1st prize in this class was well deserved by two champion bunches of Gros Maroc shown by the Rev. T. M. BULKELEY-OWEN, West Felton (gr. Mr. J. Langley). These bunches were heavy, the berries large, and the development of "colour" excellent. The same variety from Mr. J. H. GOODACRE won the 2nd prize, and from Mr. F. NEED, Malvern (gr. Mr. T. Jones), the 3rd prize.

Muscat of Alexandria.—There were eight exhibits of a pair of Muscat bunches, and the quality generally was only a fair average. The best were from the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes); Mr. J. H. GOODACRE was 2nd; and H. ANDREWS, Esq., Winchcombe, 3rd. The best single bunch was shown by Lord HARLECH.

Any other White Grape.—Two first-rate

Melons.—In the class for white-fleshed Melons, the 1st prize was awarded to an unusually small fruit of Hero of Lockinge, shown by Mr. HARDING; the best scarlet-fleshed variety was Scarlet Seedling, shown by the Earl of DERBY; and the best green-fleshed fruit was an unnamed specimen from Lady DUCKWORTH-KING, Exeter (gr. Mr. S. J. Baker).

Apricots.—There were 10 exhibits of eight fruits of a variety of Apricot. An exhibit of "Large Early" from Mr. A. LANGSTER, Droitwich, was perfect in every respect.

Nectarines.—Of 12 exhibits in the class for eight fruits of Nectarine, the 1st prize was awarded to a dish of grand specimens of Pineapple, shown by the Exors. of Lady ASHBURTON, Romney (gr. Mr. Geo. Hall).

Peaches.—The best dish of Peaches among a collection of 16 exhibits was shown by G. FARQUHARSON, Esq., his variety being Bellegarde.

GROUPS OF PLANTS.

There were two classes of equal importance. These were for miscellaneous plants in or out of flower and for ornamental foliage plants respectively. The exhibitors in both cases were allowed a space of 250 square feet, and the prizes were awarded to the exhibits producing



THE SHREWSBURY SHOW.

FIG. 55.—FIRST PRIZE COLLECTION OF 12 DISHES OF FRUIT SHOWN BY E. BEWLEY, ESQ. (See p. 137.)

Tooley), who showed Alnwick Seedling and Muscat of Alexandria. 3rd, the Earl of DERBY, Prescott (gr. Mr. E. F. Hazleton), who had somewhat weak specimens of Muscat of Alexandria, and two good bunches of Alnwick Seedling.

Black Hamburg.—There were 14 exhibits in the class for this early-ripening black Grape, and those selected for prizes were excellent specimens, which showed no signs of deterioration. 1st Mr. A. COATES, Glen Conway, who had very heavy bunches of perfectly finished berries, though one bunch was less shapely than desirable. 2nd, J. BRINTON, Esq., Stourport (gr. Mr. W. H. Wilson). 3rd, H. ST. MAUR, Esq., Newton Abbot (gr. Mr. G. Richardson). The best single bunch of this variety was shown by H. ST. MAUR, Esq.

Black Grapes of Muscat varieties.—The 1st prize in this class was won with two exquisite bunches of Madresfield Court. These were not particularly heavy, but they were very shapely and the berries perfect in form, development, and finish; 2nd, the Earl of HARRINGTON, who showed Muscat Hamburg.

Madresfield Court.—This handsome Grape was best shown by Col. FRANCE HAYHURST (gr.

bunches of the variety Chasselas Napoleon were found for the 1st prize in this class; and the 2nd prize was obtained by Buckland Sweetwater from H. A. ATTENBOROUGH, Esq., Daventry (gr. Mr. A. Child); and the 3rd by Buckland Sweetwater from Lord TREVOR, Brynkynant.

LOCAL CLASSES.

In the classes reserved for exhibitors from the county of Salop, the best Black Hamburgs were shown by the Rev. T. M. BULKELEY-OWEN, the best Madresfield Court by Major A. H. O. LLOYD, Leaton Knolls (gr. Mr. H. G. Pritchard); and other 1st prizes were won by Lord HARLECH, Mts. SWANN, and the Rev. R. A. NEVILL.

MISCELLANEOUS FRUITS.

Plums.—The best collection of 12 fruits of a red or purple Plum was one from the Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle). The best yellow Plums were Jefferson, shown by the Duke of PORTLAND (gr. Mr. J. Gibson), and the best "Gages" July Greengage, shown by Lady MARY HERBERT, Styche (gr. Mr. J. Birch).

the best decorative effect. In each class six exhibitors competed.

In the class for flowering plants some admirable exhibits were presented, and the judges awarded the 1st prize to a magnificent group set up by Messrs. JAS. CYPHER & SONS, Cheltenham. A tall Kentia Palm dominated the background, and this was grouped about with *Lilium speciosum*, *Ixoras* and *Crocea angustifolia*. In the centre was elevated a tall plant of *Cyperus Papyrus*, and on either side of this were graceful plumes of *Humea elegans*. The corners had a *Cocos Palm* overhanging showy *Codiaeums*, from which arose spikes of *Francoa ramosa* and *Cattleyas*. The groundwork of the group was of elegant foliage plants, including *Anthurium argyrites*, *Alocasias*, *Dracenas*, *Codiaeums*, &c. There were many finely-flowered plants of *Cattleyas* and *Laelio-Cattleyas*, with here and there a clump of *Lilium speciosum* as foils. In addition, long-branched sprays of *Oncidiums* served to add an appearance of lightness to the effect. Other Orchids were freely employed, the dwarfier subjects, such as *Odontoglossums* and *Cypripediums*, being disposed in the foreground. The front had a row of *Nertera depressa* and *Saxifraga sarmentosa* set in moss, with small

Codiaeums and Caladium argyrites at intervals. The 2nd prize was awarded to Sir GEORGE KENRICK, Edgbaston (gr. Mr. J. Macdonald). This also was a splendid group, but yellow-leaved Codiaeums were rather too plentifully employed. Mr. W. A. HOLMES, Chesterfield, with a rather heavier arrangement, but containing well-grown specimens of bright flowers and handsome foliage plants.

In the similar class for decorative foliage plants solely the 1st prize was made in favour of Sir GEO. KENRICK. In this group Codiaeums were the dominant feature, these not only being used as foils, but largely as a groundwork. The general effect, however, was very beautiful, and great skill was apparent in the method of staging. The back was built up with tall columnar Codiaeums, and a pair of elegant specimens of Acalypha Macfeeana, these being grouped about with elegant-leaved Caladiums, Anthuriums, Abutilons and Codiaeums. In the centre was a tall plant of Aralia elegantissima. At either corner was a clump of Codiaeums with Caladiums, Nandina domestica, Abutilon Thomp-

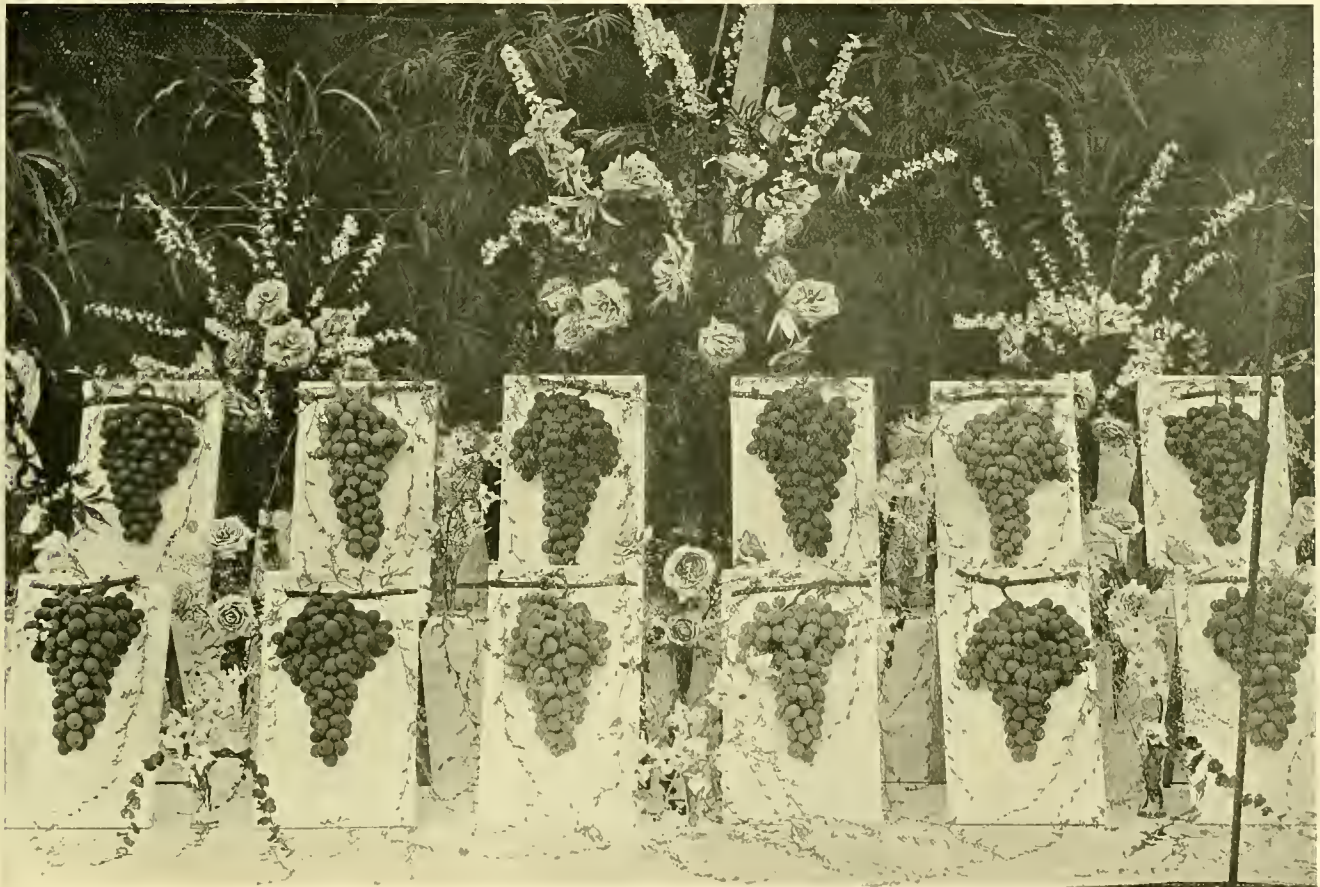
SPECIMEN PLANTS.

There were four important classes in this section. In the one for 15 stove or greenhouse plants, including both flowering and ornamental-leaved species, there were three competitors. The 1st prize was won easily by Messrs. JAS. CYPHER & SON. Amongst the flowering plants, Statice profusa was remarkable for its large size and wealth of flowers. There were also good examples of S. intermedia, Phoenocoma prolifera Barnesii, Ixora Duffii, I. Williamsii, Rondeletia speciosa, Codiaeum Countess, and large Palms, which were arranged at the back. 2nd, Mr. WM. VAUSE, Leamington, whose best plants were Bougainvillea glabra, Ixora Duffii, and a greenhouse Erica. 3rd, Mr. W. R. MANNING, Dudley, with smaller plants.

There was a class for six stove and greenhouse plants, to include not fewer than four in bloom. It was contested by Messrs. JAS. CYPHER & SON and Mr. W. VAUSE, the former exhibitors winning the premier prize easily with Statice profusa, Ixora Duffii, I. Williamsii,

3rd, Mrs. SWANN, Halston Hall (gr. Mr. C. Roberts).

Two exhibits were staged in a class for a group of tuberous-rooted Begonias arranged for effect and occupying a space of 15 feet by 4 feet. The use of ornamental-leaved plants and Ferns was allowed. The better of the two groups was shown by Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath; Messrs. T. S. WARE, LTD., Feltham, gaining the 2nd prize. The flowers in the 1st prize group, a portion of which is shown in fig. 57, were magnificent in every respect, and their tinting was charming. The plants were very large, and the blooms were thrown into greater relief by the use of Adiantum Ferns, which almost covered the Begonia foliage. Amongst the more noticeable varieties were those labelled Pink Pearl, King Alfonso (crimson), Lady Dorington (white with crimped petals), Mrs. J. Whalley (salmon-red), Winsome Partner (orange), Mrs. J. Blackmore (salmon), Empress Marie (white), Millicent (pink), G. Pike (crimson), Beatrice Rose (rose-pink), and Mrs. W. L. Ainslie (yel-



THE SHREWSBURY SHOW.

FIG. 56.—FIRST PRIZE COLLECTION OF 12 BUNCHES OF GRAPES SHOWN BY THE EARL OF HARRINGTON. (See p. 137.)

sonii, Cineraria maritima, &c., grouped about them. 2nd, Messrs. JAS. CYPHER & SONS, with a very effective exhibit. These exhibitors also employed Codiaeums mainly, having well-coloured plants of this beautiful-leaved subject. A fine example of Cyperus Papyrus graced the centre, the pot being overhung with Selaginella. The exhibit contained, in addition to Begonias of the Rex type, Dracaenas, Alocasias, Aralias, Ferns and many other species. 3rd, Mr. W. HOLMES, Chesterfield.

A special class was provided for Shropshire exhibitors only. This was for a group of miscellaneous plants in or out of bloom to occupy a space of 100 square feet. There was only one exhibitor, Mrs. SWANN, Halston House, Shrewsbury (gr. Mr. C. Roberts). The group was arranged in a semi-circle near to the entrance of the tent.

Allamanda nobilis, Statice intermedia and Rondeletia speciosa, the Rondeletia being a fine specimen. Mr. VAUSE, who gained the 2nd prize, showed excellent plants of Allamanda nobilis and Ixora Williamsii.

In the class for 30 stove or greenhouse plants in pots, the receptacles not exceeding 10 inches in diameter, there was good competition amongst four exhibitors. Messrs. CYPHER & SON, however, had no difficulty in again securing the 1st prize with a choice set, of which the more noteworthy were Rondeletia speciosa major, Acalypha hispida, Ixora Duffii, I. coccinea, Allamanda Hendersonii, and Statice intermedia. 2nd, T. SUTTON TIMMIS, Esq., Allerton, Liverpool (gr. Mr. B. Cromwell), who exhibited elegant plants of Alocasia Sanderiana, Anthurium Scherzerianum, fine specimens of Clerodendron fal-lax, Ixora Williamsii, and Lapageria rosea.

low). Messrs. WARE showed smaller blooms, but they were fresh, and representative of the best shades of colours. The rich crimson flowers of the King Edward VII. variety were conspicuous, and equally beautiful were Miss Vanece (buff-orange), and Miss Laura Ashdown (very faint blush).

Begonias were shown by four growers in a class for six varieties of these plants, including three single and three double kinds. Much the finest specimens were exhibited by Messrs. BLACKMORE & LANGDON, Bath, the plants being very large. On one of the plants were counted 20 large blooms. 2nd, G. BUNR, Esq., Shrewsbury (gr. Mr. A. Jones).

There were three exhibits of Caladiums in a class for six of these plants, the winner of the 1st prize being T. SUTTON TIMMIS, Esq., Liverpool (gr. Mr. B. Cromwell). The varieties were

principally pale kinds, candidissima being very fine. We also noticed a good plant of Baronne de Mamore with reddish veining and green markings. 2nd, E. VAUGHTON, Esq., Handsworth (gr. Mr. C. Kelland).

The best Ferns were also shown by T. SUTTON TIMMIS, Esq. (gr. Mr. B. Cromwell), who had a magnificent specimen of *Goniophlebium subauriculatum*, the fronds being 9 to 10 feet in length. *Nephrolepis davallioides* and *N. exaltata todeaioides* were also finely shown by this exhibitor. 2nd, E. VAUGHTON, Esq. (gr. Mr. C. Kelland), who had two large tree Ferns at the back, his best plant being one of *Cibotium Schiedei*.

Zonal Pelargoniums were well shown in a class for six double-flowered varieties, the best of three collections being exhibited by Mrs. R. TAYLOR, Abbey Foregate (gr. Mr. H. Clift). Not one of the plants was named. 2nd, Messrs. CLIFF & SONS, Abbey Foregate.

Mrs. TAYLOR also excelled in the similar class for single-flowered varieties, having a splendid collection of six varieties; 2nd, Messrs. CLIFF & SONS, with smaller plants.

The best Fuchsias were shown by Mr. J. TARRANT, Shrewsbury, who also excelled in the class for 12 Gloxinias.

There was a class for 12 plants suitable for table decoration. In almost every case the exhibits were largely of varieties of *Codiaeums*, but in the 1st prize group, shown by J. SUTTON TIMMIS, Esq. (gr. Mr. B. Cromwell), a *Dracæna*, *Pandanus* and *Cocos Palm* were included, in addition to some magnificent little *Codiaeums*. 2nd, T. HENSHAW, Esq., Rohy, Liverpool (gr. Mr. T. George).

Several classes were open to Shropshire exhibitors only. One was for six stove and greenhouse plants, either flowering or ornamental-leaved kinds. In a good contest the 1st prize was secured by Lord HARLECH, Brogyntyn (gr. Mr. A. Jones). His best examples were *Clerodendron Balfouri* and *Eucharis grandiflora*. 2nd, Mr. FARRANT, Shrewsbury.

A collection of 12 miscellaneous plants in pots not exceeding 5 inches in diameter was best shown by Lord HARLECH (gr. Mr. A. Jones).

SWEET PEAS

The Society offered prizes for a collection of distinct varieties of Sweet Peas arranged in vases, and occupying a space of 4 feet by 3 feet 6 inches. There were 12 exhibitors, so that a keen contest resulted. The 1st prize was well won by P. YORKE, Esq., Erddig Park (gr. Mr. G. Aitken). Not one of his varieties was labelled, but there were many new kinds, in addition to older standard sorts; the 2nd prize was won by Dr. PHILLIPS, Malpas, with a splendid exhibit of notable varieties.

Prizes were offered by trade firms for exhibits of these flowers, and great competition resulted in every case.

Messrs. Baker's, Wolverhampton, offered prizes for three bunches, one each of the following kinds: Baker's Scarlet, Earl of Plymouth and Mrs. T. G. Baker. There were five contestants, and of these Mr. F. ENGE, Calcott, showed the best, and he was followed by Mr. T. JONES, Ruabon.

There was much greater competition in Mr. Henry Eckford's class for the best collection of 18 distinct varieties of Mr. Eckford's raising, the group to occupy a space of 6 feet by 3 feet 6 inches. It was unfortunate that one exhibitor transgressed the conditions. He showed a sport from Countess Spencer, and was thus disqualified, otherwise his name would undoubtedly have appeared amongst the chief prizewinners, for his flowers were equal to the best. The 1st prize was awarded to P. YORKE, Esq., Erddig Park, Wrexham, for excellent spikes of King Edward VII., Queen Victoria, Audrey Crier, Etta Dyke, Henry Eckford, Evelyn Hemus, Mid Blue, St. George, Minnie Christie, Mrs. M. A. Sinzer, Geo. Herbert, Bobby K., Helen Lewis, Othello, Asta Ohn, Elsie Herbert and Mrs. Routzahn. The 2nd prize was awarded to G. ROBERTSON, Esq., Wrexham (gr. Mr. E. Jones).

In Messrs. Webb's class for six bunches of Sweet Peas of distinct varieties there were 11 exhibitors. Mr. T. JONES, Ruabon, won the 1st prize with a collection of high merit, having

Helen Lewis, Prince of Asturias, Mrs. Henry Bell, Henry Eckford, Helen Pierce and Frank Dolby.

Mr. JONES also surpassed all others with his exhibit in Mr. Robert Bolton's class, having fine flowers of the varieties Zephyr, Elsie Herbert, Black Knight, Clara Curtis, John Ingman, and Asta Ohn. This class was contested by 17 growers.

OTHER CUT FLOWERS.

The best collection of Cactus or decorative Dahlias, or both, arranged on a table space having a frontage of 8 feet 6 inches, was shown by Messrs. KEYNES, WILLIAMS & Co., Salisbury. The exhibits of these Dahlias, by repeated practice on the part of those contributing them, are becoming more and more tasteful. No criticism was possible of Messrs. KEYNES, WILLIAMS & Co.'s 1st prize group, unless it were from the point of view that the rather liberal use of *Gypsophila* flowers tended to obscure the effect or individuality of the Dahlias, but this charac-

with berries and ornamental foliage, W. H. BANKS, Esq., Kingston (gr. Mr. G. Bamfield), won the 1st prize.

Some choice blooms were seen in the class for 24 blooms of show or fancy Dahlias, a keen competition between five growers resulting in Mr. J. SMELLIE, Busby, N.B., being placed 1st; the 2nd prize was awarded to Mr. WM. TRESEDER, Cardiff. In the smaller class for 12 varieties, Mr. T. JONES, Ruabon, had the best of four exhibits.

Gaillardias were best shown by F. BOUSKELL, Esq., Market Bosworth.

ROSES.—The best exhibit of 24 Roses of distinct varieties was put up by Mr. HUGH DICKSON, Belfast, but Messrs. A. DICKSON & SONS, who gained the 2nd prize, were not much inferior. These exhibitors reversed these positions in the class for 18 distinct varieties.

In a class for 18 blooms of Roses, open to amateur growers only, there were four exhibits. F. R. D. NUTTALL, Esq., Prescot (gr. J. W. Barker), won the 1st prize with a moderate lot,



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FIG. 57.—PORTION OF FIRST PRIZE GROUP OF BEGONIAS EXHIBITED BY MESSRS. BLACKMORE AND LANGDON.

teristic was as much, or even more, observable in the 2nd prize group, from Mr. W. TRESEDER, Cardiff. It has to be remembered, too, that the Dahlias are very brilliant in their colouring, and they do not suffer greatly from the association of *Gypsophila*; indeed, the effect is improved, provided that its use is attended with discretion; 3rd, Mr. M. CAMPBELL, Nurseryman, Blantyre, Scotland.

Mr. H. PEERMAN, Nantwich, won the 1st prizes in the classes for 18 and 12 varieties of Cactus Dahlias respectively, being followed in the larger class by Mr. A. WADE, Bramley, Leeds.

Mr. SMELLIE also excelled in the class for 12 Cactus Dahlias. He showed Advance, Lucifer, Crepuscule, Ruby Greensted, Rainbow, Dreadnought, C. E. Wilkins, &c.; 2nd, Messrs. BOTTOMLEY & BURTON, Elland.

In the class for 12 varieties shown in vases

including Fisher Holmes, Hugh Dickson, Joseph Hill, Caroline Testout, Jeannie Dickson, and Killarney; 2nd, Mr. HINTON, Stafford. We noticed a fine bloom of A. K. Williams in this exhibit.

HARDY BORDER FLOWERS.—A first-rate class was one for a collection of hardy perennials (Roses excluded), arranged on a table space with a frontage of 10 feet 6 inches. The 1st prize was £10, the 2nd £7 10s., and the 3rd £5. The exhibits in this class formed a huge bank of colour in the fruit tent and faced the more dainty florists' arrangements of cut flowers. Messrs. GUNN & SONS, Olton, near Birmingham, won the 1st prize for an exhibit replete with the choicest varieties of hardy flowers. We were particularly impressed by a large bouquet of *Scabiosa caucasica perfecta*, which appeared unusually large and richly coloured in the individual flowers. The best Phloxes, Liliums,

Hemerocallis, Gaillardias, Papavers, and many other kinds were all represented in first-class specimens; 2nd, Messrs. ARTINDALE & SON, Nether Green, Sheffield (who obtained the 1st prize for 18 bunches); 3rd, Mr. J. GIBSON, Leeming Bar, Bedale.

Messrs. ARTINDALE & SON, Sheffield, secured the premier position for 18 bunches of hardy flowers, and they were followed by Mr. R. T. KENT, Llandaff. In the class for 12 bunches of hardy flowers F. BOUSKELL, Esq., Market Bosworth (gr. Mr. G. Hollis), was placed 1st, Mr. KENT again securing the 2nd prize. Twelve spikes of Gladioli were best shown by Mr. F. BUNN, Ledbury, and Mr. SMELLIE gained a similar award for 12 varieties of summer-flowering Chrysanthemums; 2nd, Mr. GEO. BOWNESS, Busby.

Some fine exhibits of annuals were seen in a class for 12 bunches of distinct kinds, and especially in the exhibit shown by R. T. KENT, Esq., Llandaff, to which the 1st prize was awarded. Sweet Sultan, Zinnias, Clarkia pulchella, Salpiglossis, Godetia, Celosia rubra, and Statice were shown best. Another excellent group was shown by the Rev. C. BROWN, Bedstone (gr. Mr. J. Lewis), his Salpiglossis and yellow Centaurea being very fine. The 2nd prize was well won by the Rev. E. BROWN. There were five other competitors.

CARNATIONS.

The best exhibit of Carnations and Picotees occupying a space of 6 feet by 4 feet was staged by Mr. C. H. HERBERT, Acock's Green, Birmingham; 2nd, Messrs. M. CAMPBELL & SON, High Blantyre; 3rd, Messrs. ARTINDALE & SON, Sheffield.

In a similar class, from which traders were excluded, E. ALCOCK, Esq., Blundellsands, Liverpool, showed best; whilst the 1st prize for a group of tree Carnations was won by Mr. C. F. WATERS, Balcombe.

Prizes were offered for 12 bunches of cut flowers of stove and greenhouse varieties, but not including Orchids. The 1st prize was easily secured by T. SUTTON TIMMIS, Esq. (gr. Mr. Cromwell), with Lapageria rosea and the white variety, Stephanotis, Gloriosa superba, Clerodendron fallax, Agapanthus umbellatus, &c.

DECORATIVE CLASSES.

BOUQUETS.

The best hand-basket of cut flowers was adjudged to be a basket of rather indifferent Roses shown by Mrs. ADA TOWNSEND, Worcester. We should certainly have awarded the prize to O. ROBINSON, Esq., Alderley Edge, who showed a beautiful arrangement, consisting of a very pretty pink and white Malmaison Carnation, with a few white Paneratium flowers placed low down amongst the greenery. A slight mistake was, however, made by this exhibitor in "decorating" the handle of the basket with lace and ribbon. Perhaps this mistake may explain the judges' award. Nevertheless, the Carnations were delightful. It should have been stated that Orchids were excluded from the class just described.

In a similar class, in which Orchids were permissible, the 1st prize was awarded to a very ambitious arrangement shown by O. ROBINSON, Esq., Alderley Edge (gr. Mr. J. Nixon); and for the 2nd prize Mr. W. J. GARNER, Altrincham and Hale, had an equally ambitious exhibit. Neither exhibit, however, was successful in presenting a proper colour scheme.

The best featherweight bouquet was shown by O. ROBINSON, Esq., and the best bouquet without qualification by Messrs. WOOD & EASTHAM, North Road, Preston. This latter consisted entirely of pink Carnations (probably Enchantress), with a few sprays of Asparagus, &c.

The 1st prize for a bride's bouquet was won by Mr. W. J. GARNER, Altrincham, for an arrangement of Odontoglossums and Cattleyas, as white as could be obtained with these flowers.

The biggest struggle in these classes, however, is that for the 1st prize in a class for one bride and two bridesmaids' bouquets. The coveted award was won by THE KING'S ACRE NURSERY CO., Hereford. This firm exhibited a bride's bouquet of Odontoglossums and Cattleyas (almost white), and the bridesmaids' bouquets were of pink Carnations and Lilies of the Valley.

Some comment was caused by the fact that this firm, not having engaged in numerous struggles of this exact nature previously, were able to excel such firms as Messrs. Perkins & Son, Coventry, and Messrs. Felton & Sons, Hanover Square. But these things are so much a matter of taste there is always room for new competitors.

The exhibits of decorated dinner tables were very numerous. A vase was offered as the 1st prize in a class open to ladies only, and this was won by Mrs. J. NIXON, Alderley Edge, with an arrangement composed mainly of Gloriosa superba; 2nd, Miss MARY ALLER, St. George's, who employed pink Roses and pink Carnations.

In another class for a table decoration, Sweet Peas only were allowed. A pleasing exhibit of orange and cream varieties, intermixed with grasses, Ferns, &c., in a silver epergne, staged by Miss JONES, Wem, was adjudged the best, Mrs. NIXON following with a pretty decoration formed of the Countess Spencer variety.

VEGETABLES.

There was less interest in the classes for vegetables this year, arising from the absence of the nurserymen's classes, for traders have in former

Runner Beans; the Earl of LATHOM, Ormskirch (gr. Mr. B. Ashton), was placed 3rd.

In another class, also for nine dishes, but in which less valuable prizes were offered, there were four entries. The 1st prize was awarded to H. T. TATHAM, Esq., Elstree (gr. Mr. Caiger), who had excellent pink Celery, good Leeks, Ailsa Craig Onions, Perfection Tomatos, Duke of Albany Peas, Punner Beans, Windsor Castle Potatos, Cauliflowers, and Carrots. The Misses HOWELL, Berriew (gr. Mr. E. Jones), was placed 2nd; and Sir F. G. HESKETH, Towcester (gr. Mr. Hallett), 3rd. In another class, also for nine dishes, but limited to growers in Salop only, the 1st prize was won by Lord TREVOR, Brynkynault.

SPECIAL COLLECTION CLASSES.—The prizes in this section were offered by Mr. E. Murrell, Shrewsbury. The one for nine dishes brought three entries, the 1st prize falling to Mr. CAIGER, who staged a very good collection, Mr. T. SANDERSON, Whittington, being second. In the class for six dishes, limited to Salopian growers, Mr. SANDERSON was placed 1st.

SPECIAL SINGLE-DISH CLASSES.—Mr. Jackson, Hereford, offered prizes for five Cranston's Excelsior Onions. The 1st prize was taken by Lady DUCKWORTH-KING, Exeter (gr. Mr. Baker), whose bulbs were the finest in the show. Mr. W. R.



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FIG. 58.—PORTION OF THE EXHIBIT OF VEGETABLES SHOWN BY THE HON. VICARY GIBBS.

years offered valuable cash prizes, whilst Messrs. Webb's classes were restricted to single dishes of specified varieties. The chief class for a collection of vegetables was the Society's for nine dishes, but there was no challenge prize. Thus the competition lacked the exciting interest which attached to the vegetable classes in the two preceding years. This section of the show owed much to the superb collection, not for competition, staged by the Hon VICARY GIBBS, Aldenham House, Elstree, Herts. (gr. Mr. E. Beckett).

The prizes in the Society's class for nine dishes were £10, £7, £4, and £2 respectively, but there were only three competitors. The 1st prize fell to Mr. J. HUDSON, of Leicester, who had good Cauliflowers, Leeks, Giant White Celery, Emperor Tomatos, Ailsa Craig Onions, Exhibition Runner Beans, Prizewinner Carrots, Stourbridge Marrow Peas, and Duke of York Potatos. The Duke of PORTLAND, Welbeck Abbey (gr. Mr. J. Gibson), was awarded the 2nd prize for superb Centenary Peas, fine Satisfaction Potatos, Prize-taker Leeks, fine pink Celery, Ailsa Craig Onions, Perfection Tomatos, Cauliflowers, Carrots, and

BAKER, Exeter, was placed 2nd. Messrs. Pritchard & Sons, Shrewsbury, offered prizes for six bulbs of their selected Champion Onion, the 1st prize being awarded to Mr. WESTON, Shawbury.

Messrs. Dickson & Robinson, Manchester, offered prizes in eight single-dish classes. In the class for two bunches of Moneymaker Tomato, 14 lots were staged. Mr. R. DAVIES, Bangor, was first with fine clusters.

In the class for one dish of Hercules Peas Mr. CAIGER was placed 1st. With one fruit of Manchester Melon, G. A. GIBBS, Esq., M.P., Bonrton (gr. Mr. Wilkinson), was 1st. The best exhibit of Premier Onion came from the gardens of Captain HEYWOOD-LONSDALE, there being 12 lots staged. The classes for Matchless Scarlet model and Scarlet Perfection Carrots brought indifferent competition. Mr. B. ASHTON showed the best Leeks.

Messrs. Webb & Son, Wordsley, offered prizes in ten classes, beginning with Emperor Tomato. The Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. Searle), showed the best dish, and Mr. J. HUDSON the finest Stourbridge Marrow Peas. This exhibitor was also placed 1st in the class

for New Exhibition Runners. Mr. SEARLE was also placed 1st in the class for long Carrots and also for six short Carrots. Mr. HUDSON was to the fore with Selected Ailsa Craig Onion, Mr. ASHTON had the best Leeks, and Mr. SEARLE won the 1st prize in the class for Pink Perfection Celery. Mr. HUDSON was again placed 1st in the competition for Cauliflowers, and he showed the best brace of Cucumbers.

THE SOCIETY'S OTHER CLASSES.

The 1st prize for six dishes of Potatos was won by Mr. HALLETT, but his produce was in some cases wrongly named. Mr. HUDSON, who was placed 2nd, had excellent tubers of Satisfaction, Eclipse, Windsor Castle, Royal Kidney, and, strangely enough, both Duke of York and Middlethian Early; 3rd, Lady MARY HERBERT, Stythe Hall (gr. Mr. Birch). Mrs. HARDING, Hayton (gr. Mr. H. McFall), had the best dish of Tomatos out of 21 lots, and Col. GORDON-BENNETT (gr. Mr. Swann) the best brace of Cucumbers out of 12 couples. There were 26 dishes of Peas, Mr. ASHTON being 1st with Duke of Albany, Mr. HUDSON showed the best Dwarf French Beans, and Mr. A. J. KING, Stroud, the best Runner Beans out of 14 dishes, quite a wonderful sample. There were 19 exhibits of two Cauliflowers, the Misses HOWELL having the best. In the class for four stems of Celery, J. B. AKROYD, Esq. (gr. Mr. R. C. Townsend), was awarded the 1st prize, Captain HLYWOOD-LONSDALE had the finest Autumn-sown Onions, and Mr. SEARLE the best Carrots. There were 21 exhibits of Turnips, but no card was attached to the name of the 1st prize winner. The Spring Onions were all apparently raised under glass, Mr. S. J. BAKER having the best. There were 18 similar classes for the county of Salop only.

NON-COMPETITIVE EXHIBITS.

SILVER CUPS

were awarded to the four exhibits following:

Messrs. JONES & SON, Shrewsbury, arranged an imposing display of Sweet Peas immediately against the entrance to the large fruit marquee. Tall trumpet glasses were placed on the central stage, and around it were pillars which were also clad with Pea flowers, from which chains as festoons were decorated.

From THE KING'S ACRE NURSERY COMPANY, Hereford, came a first-rate group of pot fruit trees, including vines, Plums, Figs, Pears, and Apples. Some of these trees were cropped very heavily, but perhaps the most notable feature of the group consisted in an espalier tree of Sea Eagle Peach bearing 100 fruits (see fig. 59). The same firm exhibited a group of hardy flowers, including many varieties of perennial Phlox.

Messrs. ISAAC HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, showed an extensive exhibit of hardy flowers. The two points of interest in this display were (1) a fine group of perennial Phloxes, and (2) the effect produced by numerous flowers of deep blue Delphinium. Messrs. HOUSE & SON also showed a few novelties in Sweet Peas.

In one of the recesses in the fruit tent, Messrs. HOBBIES, LTD., Dereham, Norfolk, arranged an exhibit of pot Roses. It almost reminded us of the best exhibits of the type to be seen at the Holland Park Shows! There were standard, pillar, and other forms of training well represented, the variety Lady Godiva appearing to good advantage as a weeping standard. Minnehaha was utilised to clothe one of the pillars supporting the tent.

GOLD MEDALS

were awarded to six exhibits as follows:

Messrs. DOBBIE & Co., Rothesay, made a grand display of Dahlias, which, as usual in recent years, were mostly represented in their Cactus form. Such varieties as the yellow Harold Peerman, the brilliant red Hilda Shoosmith, and C. E. Wilkins were grand. At the same time, the new Peony-flowered type was shown in a number of vases. One very showy variety was Geisha, of brilliant orange and yellow shades. There were Show and Pompon Dahlias, Sweet Peas, Pansies and Violas, making together a very fine exhibit.

Messrs. W. CUTBUSH & SON, Highgate, London, N., occupied their usual site in the fruit tent with a characteristic display of Carnations. There were many selected varieties in the group, but amongst the most interesting were two "Malmaison" varieties obtained by crossing this type with the perpetual-flowering or "tree" section. The result is said to give a perpetual-flowering "Malmaison," which may be had in blooms perfectly easily at Michaelmas. These two varieties, however, have partially lost a very agreeable quality, namely, perfume, which will probably be restored in future novelties.

Mr. ROBERT BOLTON, Warton, Carnforth, showed a group of Sweet Peas of great merit, having choice flowers of most of the newer and better kinds. A central arch with a basket of an orange-coloured variety on the summit added a pretty feature.

Messrs. SUTTON & SONS, Reading, had a large table space richly decorated with the numerous specialities of the firm. There were tempting-looking fruit of many varieties of Melon, also straight, faultless Cucumbers, fine Peas, Potatos, Tomatos, Marrows, Beans, &c. Interspersed with the food products were small groups of Egonia (tuberous and fibrous-rooted

varieties), Gloxinias, cut flowers of Sweet Peas, Carnations, Godetias, Lilliums, Antirrhinums, Asters, Marguerites, Stocks, and other kinds. The flowers were arranged in arches, and in various ways to produce the best effect.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, made an imposing exhibit with fruit trees in pots. The group was arranged in one of the circular bays of the tent containing the groups of plants in the competitive classes. It embraced Peaches, Pears, Plums, Figs, Gooseberries, and Nectarines, all admirably shown, the plants in every instance being well cropped. A magnificent example of Thomas Rivers Peach dominated the centre, and another almost as large and equally well-fruited was of the Belle Baucé variety. Some smaller trees of Peach Peregrine were also noteworthy. The Fig trees were abundantly cropped, standard trees being remarkably fine. The best of the Plums were Jefferson, Rivers' Late Orange, and Reine Claude du Comte Hotham. The Gooseberries were shown as single, double, and treble cordons, the fruits being produced as thickly as the foliage.

By far the finest, as well as the most perfect collection of vegetables, was that staged by Mr. E. BECKETT (see fig. 58). No such collection, showing such superb quality, has ever previously been staged at this exhibition. It comprised 100 dishes and occupied a length of some 40 feet run of tabling. This had a high background on which were fixed many pyramids or groups of vegetables, and the table, 3 feet wide, was also entirely filled. In the group were white and red Celeries, various Cauliflowers, grand

Mr. EDWIN BURRELL, Shrewsbury, showed a collection of Rose blooms, but the flowers were smaller than usual and gave unmistakable evidence of the unfavourable character of the season.

Messrs. KELWAY & SON, Langport, Somerset, exhibited a large group of their beautiful varieties of Gladioli.

Messrs. CLIERAN & SONS, Altrincham, had a huge collection covering a table and high background some 50 feet long, which included Celeries, Cabbages, Tomatos, Marrows, Leeks, Potatos, Beets, Carrots, Onions, Peas, Gourds, Long Pod, Runner, and Dwarf Beans, Turnips, and many other kinds in great profusion.

CERTIFICATES OF MERIT.

Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath, showed tuberous-rooted Begonias, having double, single, and frilled varieties. The plants were excellent specimens in the richest shades of red, crimson, yellow, salmon, &c.

Messrs. ALEX. DICKSON & SONS, Newtownards, Ireland, staged an exhibit of Roses. The varieties were representative of most of the sections of this flower, but especially fine were Tea, Hybrid Tea, and Hybrid Perpetual varieties.

A large exhibit of Roses was presented by Messrs. W. & J. BROWN, Peterborough, and they also showed hardy flowers and a batch of Clematis of the large-flowered varieties.

Messrs. FELTON & SONS, Hanover Square, London, showed floral devices representing fine examples of this branch of the florists' art.



THE SHREWSBURY SHOW.

FIG. 59.—TREE OF SEA EAGLE PEACH EXHIBITED BY THE KING'S ACRE NURSERY COMPANY.

Leeks, Ailsa Craig and Record Onions, numerous dishes of Tomatos, many fine samples of Potatos, white and red Cabbages, Lettuces in great variety, white and yellow Turnips, Scarlet Perfection Carrots, dark red, long, and globe Beets, many very fine Peas, Cucumbers, Dwarf, Kidney, and Runner Beans, Parsnips, Radishes, Salads, and many other sorts.

SILVER MEDALS

were awarded to six exhibits:

Messrs. JOHN PEED & SONS, West Norwood, London, S.E., staged a semi-circular exhibit of Caladiums, having large, brightly-coloured specimens in variety. A magnificent plant of the green and red variety named John Peed occupied a conspicuous position. C. E. Dahle, rose, white and green, and Mme. J. R. Box were also well shown.

Messrs. E. WEBB & SONS, Worsley, Stourbridge, set up a circular stand of fruit and flowers, with arches overhead furnished with Sweet Peas and entwined with Smilax. At the base were fine examples of vegetables, including Beans, Cucumbers, Potatos, Beet, Tomatos, Cauliflowers, &c., interspersed with Lilies, Hydrangeas, Spiraeas, Carnations, and Sweet Peas. The exhibit produced a highly decorative effect.

Messrs. BAKERS, Wolverhampton, staged a half-circular exhibit of hardy flowers, the central portion embracing a water-garden, in which Nymphaeas, Sagittaria japonica, Senecio clivorum, Peltandra virginica, and Rushes gave a realistic effect. At the back were Phloxes, Bamboos, Typha of species, Spiraeas, &c. The wings at either end were composed principally of Jorder Phloxes interspersed with Lilies, Heucheras, Montbretias, &c. Messrs. BAKERS also exhibited a group of Gladioli.

Mr. ALBERT MYERS, Sutton Lane Nurseries, Shrewsbury, showed a group of Zonal Pelargoniums in pots, and adjoining this were some artistic arrangements of cut flowers from the same type of Pelargonium. The cut flowers arranged in several methods with Gypsophila and sprays of Francoa ramosa were distinctly pretty.

Mr. HENRY ECKFORD, Wem, Shropshire, showed about 50 of the best varieties of Sweet Peas, including Nancy Perkins, which may be described as a "Spencer" form of Henry Eckford.

Messrs. ROBERT SYDENHAM, LTD., Tenby Street, Birmingham, showed a charming exhibit of Sweet Peas, arranged most tastefully in silver stands. The blooms were excellent, being large and bright in colour. They represented the best of the varieties in commerce.

Mr. THOS. W. DARLINGTON, Warton, Carnforth, staged a very fine exhibit of Sweet Peas, a series of arches decorated with these flowers and hung with baskets of the same being very pretty.

Messrs. JARMAN & Co., Chard, had a large exhibit of Sweet Peas and other flowers, in which numerous choice varieties of Centaurea were distinctly attractive. The same firm exhibited a collection of vegetables.

Messrs. WEBB & BRAND, Saffron Walden, showed Hollyhocks, having a charming selection of those flowers, the cultivation of which they make a speciality.

Messrs. DICKSONS, Chester, were amongst the best exhibitors of hardy flowers. They included two features of predominant interest. One of these was a group of the richly-marked flowers of Lillium auratum rubro vittatum, and another a number of flowers of Romneya Coulteri.

Messrs. SEAGRAVE & Co., Gleadless, near Sheffield, arranged with great taste collections of Violas and

MARKETS.

COVENT GARDEN, August 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.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Asters, Carnations, Calliopsis, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Agrostis, and others.

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

Table listing various plants in pots and their prices, including Ampelopsis, Arabis, and others.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Grapes, Lemons, and others.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Cabbages, and others.

REMARKS.—English Plums are arriving in slightly increased quantities, but not nearly up to the average of past years, and it is feared that it will only be a moderate season for this popular fruit. The supplies of home-grown Apples are also shorter than usual. Good samples of Ecklinville Seedling and Lord Suffield sell freely. There is no improvement in the Grape trade, and Tomatoes are a little easier. Lisbon Grapes are being received in very good condition and are selling freely. Lemons continue to be in good demand, and prices are certain to advance. E. H. R., Covent Garden, Wednesday, August 18, 1909.

Potatoes.

Table listing various potato varieties and their prices, including Bedfords, Early Puritan, and others.

REMARKS.—Trade is still very bad. Supplies are not quite so heavy, but many diseased tubers are still on the market, left from last week. Edward J. Newborn, Covent Garden and St. Pancras, August 18, 1909.

COVENT GARDEN FLOWER MARKET.

Many salesmen are away on their holidays and several stands are unoccupied, whilst the growers are busy preparing for their winter and spring crops. After the experience of the past season it is difficult to suggest what may be most in demand. As it is now time to commence propagating Zonal Pelargoniums, it may be suggested that Paul Crampel is taking the lead in the market as a scarlet variety, and has sold better than any other. West Brighton Gem has also sold well, whilst Vesuvius still finds favour as a good salmon-coloured kind. Mrs. R. Cannell is one of the best, but the variety named after Lady Chestertield is often asked for. Of the pink kinds Mrs. Brown Potter and Mrs.

early-flowering border Chrysanthemums. The Chrysanthemums particularly were very attractive, arranged lightly as they were with sprays of Gypsophila in neat receptacles. There were also specimens of fancy Pansies (these on boards with paper collars) and show Dahlias.

Messrs. WILLIAM CONWAY & SONS, Halifax, showed a display of hardy flowers in mixed sorts.

JOHN FORBES, LTD., Hawick, set up a large exhibit of border Phloxes, Antirrhinums, Pentstemons, Delphiniums, and Montbretias, with vases of Zonal Pelargoniums and Violas along the front. A considerable space was devoted to varieties of border Pinks, and a prominent position was afforded a stand filled with a crimson Dianthus labelled Napoleon III. The Pentstemons were a remarkably fine strain.

Messrs. GUNN & SONS, Olton, Warwickshire, showed border plants in variety. A feature was varieties of Phlox decussata; in addition we noticed fine bunches of Lilium auratum, L. speciosum, Aconitums, Heleium pumilum, Spiraea, Lythrum, Veronicas, &c.

A group of Disa grandiflora and an exhibit of Carnations were staged by Mr. WM. ANGUS, Penicuik.

Messrs. HARKNESS & SON, Hitchin, showed improved varieties of Gaillardias, also a few other garden flowers. The Gaillardias were remarkably fine.

Mr. TOM B. DOBBS, Wolverhampton, showed rustic arches and pillars for Roses, also boxes, tables, vases, seats, &c., in rustic woodwork. The exhibit was colovened with a few flowering plants, including blue-flowered Hydrangeas. This exhibit was arranged in the open.

Messrs. DICKSON & ROBINSON, Manchester, had a good collection of vegetables, their Money-maker Tomato and Premier Onions forming fine features. Associated with a floral trophy to the plant tent,

OTHER NON-COMPETITIVE EXHIBITS

were those following:— Messrs. PRITCHARD & SONS, Shrewsbury, made an exhibit of freethem flowering plants, with a border of decorative Ferns and small Codiiums at intervals. At the back were well-flowered plants of Hydrangea paniculata, and another feature was a row of the rose-coloured Verbena named after Miss Willmott.

Mr. H. N. ELLISON, West Bromwich, showed Ferns in variety. The plumose varieties of Nephrolepis exaltata were represented by well-grown specimens, and there were choice Gymnogrammas, Adiantums, Lastraeas, Pterises, Aspleniums, &c.

Messrs. HEWITT & CO., LTD., Solihull, also showed border flowers in variety, such kinds as Phloxes, Gaillardias, Chrysanthemum maximum, Gladioli, Centaureas, Campanulas, Pentstemons, Scabiosa caucasica, and Liliums being well represented. In addition to the hardy flowers, this firm arranged a small exhibit of Carnations and Roses in a groundwork of Adiantum Ferns.

Messrs. M. CAMPBELL & SON, High Blantyre, N.B., showed Dahlias, Calceolarias, Carnations, and Pansies.

Mr. W. L. PATTISON, Shrewsbury, showed varieties of Violas.

Mr. W. DEAL, Kelvedon, showed a small exhibit of Sweet Peas, which, although not large, was of good quality.

In the great fruit tent, Mr. HUGH ALDERSEY, Aldersey Hall, Chester, showed a small collection of Sweet Pea novelties, several of these being unnamed seedlings. The varieties named Tortoiseshell, with salmon-red coloured flower, and Romani Rauti, pink, were very promising.

An exhibit of Cactaceae plants was made by Miss S. S. THOMPSON, Handsworth.

Mr. JOHN SMELLIE, Pansy Gardens, Busby, showed Dahlias, early Chrysanthemums, Pansies, and Violas.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 18.

The hottest day for nearly three years.—The recent spell of very warm weather which had lasted for nearly a fortnight came to an end on the 16th. During that period the temperature in the thermometer screen on four days exceeded 80°, and on the warmest of those days, which occurred during the past week, reached 85°—the highest reading in the shade recorded here since September 3, 1906, or for nearly three years. Owing to the cooler conditions of the last few days the ground temperatures are not now as high as they were in the early part of the week, but are still 2° warmer at 2 feet deep, and 1° warmer at 1 foot deep, than is seasonable. After a fortnight of hot and dry weather, a welcome fall of rain, amounting to nearly an inch, took place on the 17th. This heavy fall restarted the bare soil percolation gauge, through which an measurable quantity of rain-water had passed for 12 days, but has not as yet affected the gauge on which short grass is growing. The sun shone on an average for 2 1/2 hours a day, or for more than two hours a day in excess of the usual duration in August. Calms and light airs have again prevailed during the week. The mean amount of moisture in the air at three o'clock in the afternoon was about seasonable. E. M., Berkhamsted, August 18, 1909.

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. THATCHER, late of Thorpe Lubham Gardens, as Gardener to MARK FIRTH, Esq., Wiston Hall, Leicester, in succession to Mr. F. J. CLARK.

French are amongst the best. Constance, though its flowers are smaller, is appreciated, as it is very free in blooming. Of white varieties, Snowdrop and Albino find a ready sale. Last season good white Zonal Pelargoniums were rather scarce, but this may not be so next spring. White Zonal Pelargoniums are more in favour than they were a few years ago.

Of semi-doubles, King of Denmark has been rather over-plentiful during the past season, yet I find it still remains the most popular "salmon." Some buyers, however, prefer Mrs. Lawrence. F. V. Raspail needs no comment except to say that it is more extensively used for bedding than formerly. Hermione is the favourite white kind, and Ville de Poitiers is a good light scarlet variety. For market purposes it is not desirable to supersede old varieties by new ones unless these latter are distinct. Even improved varieties sell best under the old names, and to illustrate this fact I may instance that this spring I was required to procure an old variety which I found had gone out of cultivation, but I sent an improved variety of the same colour, and it gave great satisfaction.

Growers of ivy-leaved varieties will do well to keep chiefly to the older varieties, but there are several newer sorts which may be worthy of trial. Early propagation is a great advantage with this class of Pelargoniums. "Geranium" is still the market name for all Pelargoniums except those of the show or decorative section. These latter plants are likely to come into favour again.

The pink-flowered Spiræas have not sold quite so well as was anticipated as the colour is rather disappointing, perhaps because many are seedlings. One grower suggested that it was in the culture that the colour was lost, but the plants of a large batch all grown under the same conditions vary much in colour, therefore that theory can hardly be accepted. *Hydrangea paniculata grandiflora* is remarkably well flowered, and other sorts appear to be well finished. One firm has already commenced marketing *Erica gracilis nivalis*; the plants are not large, but they are well flowered, the blooms being pure white. Asters in pots are very good. Supplies of *Verbenas* hold out. Miss Willmot being the most prominent variety. *Campanula isophylla* in its several varieties has become quite a popular market plant. If it could be had in flower some weeks earlier it would be of much greater value. I think this might largely be done, by hanging the plants close to the glass, or by placing them on shelves. If several plants were grown on in each pot instead of stopping them they would come in earlier.

CUT FLOWERS.

It is scarcely necessary to record that trade is bad, and added to this trouble the great heat makes it difficult to keep flowers fresh. Sweet Peas are still plentiful, but they are of little value. Carnations were never more plentiful, and good blooms of Mrs. T. W. Lawson are worth only 6d. per dozen; other sorts are proportionately cheap. Gladioli of various sorts are good. I never saw finer spikes of *G. Brencleyensis*, but there is little demand for them. Trade in *Liliums* varies from day to day; generally their prices are low. *Geranias*, *Stephanotis*, *Richardias*, and *Tuberoses* are all plentiful. Good yellow *Chrysanthemums* are seen. Asters are abundant, and it is difficult to estimate their value. *Gypsophila paniculata* and *G. elegans* are seen in large quantities. *Statice* in several sorts are now at their best, and those who wish to keep these flowers during winter should purchase early, for they keep much better when not too far advanced. The *Echinops* and *Eryngium amethystinum* are now at their best. *A. H., Covent Garden, August 18, 1909.*

CATALOGUES RECEIVED.

WM. CUTBUSH & SON, Highgate, London, N.—Carnations, Pinks, &c.

JAMES VEITCH & SONS, LTD., Chelsea—Carnations, New and Rare Herbaceous Plants, New Hardy Plants, Hardy Ornamental Trees and Shrubs, Strawberries, and New Fruits.

BULBS.

JOHN R. BOX, Derby Road, Croydon.

ROBERT STEPHAM, LTD., Tenby Street, Birmingham.

E. P. DIXON & SONS, LTD., Hull.

DICKSON & RODINSON, Cathedral Street, Manchester.

W. PAUL & SONS, Waltham Cross, Herts.

WM. CUTBUSH & SON, Highgate, London, N.

AGRICULTURAL & HORTICULTURAL ASSOCIATION, LTD., 92, Long Acre, London, W.C.

CHAS. TURNER, Royal Nurseries, Slough.

SUTTON & SONS, Reading.

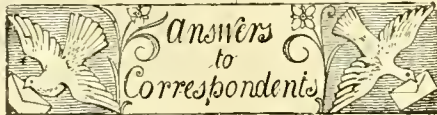
EDMONDSON BROTHERS, 10, Dame Street, Dublin.

JAMES VEITCH & SONS, LTD., King Street, Chelsea.

AUSTIN & McASLAN, 89, Mitchell Street, Glasgow.

BROWN & WILSON, 10, Market Place, Manchester.

WILLS & SEGAR, Onslow Crescent, South Kensington.



** The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ANNUALS AT EXHIBITIONS: *Annual*. Your informant is perfectly correct in stating that Pentstemons and Antirrhinums are not, strictly speaking, annuals. Antirrhinums are frequently cultivated as annuals. They are raised from seed in spring, they flower during the same season, and the plants are destroyed in the autumn. But for purposes of exhibition, the definition of "annual" given in the "Royal Horticultural Society's Code of Rules

for Judging" is a convenient one, and should be adhered to. The clause reads as follows:—"Annuals are plants which, naturally, begin and end their growth, ripen seed, and die (irrespective of frosts) within 12 months."

APPLE TREE: *A. R.* The shoots received appear to have been badly attacked with the American blight or woolly aphid (*Schizoneura lanigera*). If the trees are of any considerable size, it will be well to defer applying a remedy until winter. In winter, when the trees are perfectly leafless, they may be sprayed with the following preparation:—1 lb. caustic soda, $\frac{3}{4}$ lb. carbonate potash, 10 oz. soft soap, and 10 gallons of water, adding the soft soap last of all. The operator should wear leather gloves during the application. If you wish to apply a remedy at once, spray the trees with a weak solution of Calvert's carbolic soap, not exceeding 1 oz. of the soap to each gallon of water. This solution may be sprayed on to the trees at a temperature of 90 degrees.

ASTER DISEASE: *J. M.* From your description it would appear the plants are affected with the Aster disease, caused by *Erysiphe cichoracearum*. You will find an account of this disease in the issue for June 2, 1906, p. 355.

DISFIGURED LEAVES: *L. M.* Most of the leaves sent appear to have been attacked by what is known as the shot-hole fungus (*Cercospora circumscissa*). This fungus usually attacks what are commonly known as stone fruits, such as Plums, Apricots, Peaches, &c. It causes small, circular, brown patches on the leaves. These patches become dry, contract and fall away, leaving holes in the leaves just as if small shots had passed through them. Remedies include the spraying of the trees with the ammoniacal solution of copper carbonate. This is prepared by taking of copper carbonate 1 oz., carbonate of ammonia 5 oz., and water 16 gallons. Mix the carbonate of copper and the carbonate of ammonia, and dissolve them in about a quart of hot water. When thoroughly dissolved, add 16 gallons of cold water.

GRAPES: *W. L., T. H. S., W. Y. M., and Puzzled*. The berries are affected with the fungus disease known as *Gloeosporium ampelophagum*. The disease attacks the shoots, leaves, and fruits. Mr. Masee recommends that flowers of sulphur be dusted on the leaves and shoots at intervals of 10 days so long as the disease appears to be spreading. A small quantity of quicklime should be mixed with the sulphur on the second application, and the quantity of lime should be increased on every successive occasion until the proportions of lime and sulphur are nearly equal, always keeping just a little more sulphur than lime. Thoroughly wash the branches in winter with a solution of sulphate of iron. Any leaves, shoots, or fruits showing signs of disease should be removed and burned.

INFLORESCENCE OF STOCK: *W. M.* The term spike is often applied to any upright inflorescence, but botanically it is an elongated flower-stalk (peduncle) upon which the flowers are distributed in a sessile manner. At exhibitions, and particularly as applying to stocks, the term spike is generally understood to mean an entire inflorescence. If the plant is cut off at the ground level, the severed plant can hardly be called a spike. On the contrary, it may be branched, and therefore possess several distinct inflorescences.

MARGUERITE: *A. L. E.* The brown markings you describe are most likely caused by the leaf-mining insect common to this and other species of *Compositæ*. Preventive measures include the spraying of the plants with *Quassia Extract* or other distasteful liquids, in order to prevent the females from depositing their eggs upon the leaves. Badly-affected leaves should be picked off and burned.

MARKET PLANTS: *Amateur*. You have rightly guessed the reasons for plants bought in the market so soon losing their older leaves. In some cases it is caused by the removal from excessive heat and in others by the discontinuance of liquid or other manures that they have previously received.

MARROW, &c.: *A. W. T.* The Marrow plant has suffered from the cold and wet weather. The Asters are attacked with the fungus disease. See the reply printed above to *J. M.*

NAMES OF FRUITS: *S. W.* The Gooseberries were smashed beyond recognition.—*Subscriber*. Please send Apple again in a few weeks' time. The specimen appears to be only about half-grown.

NAMES OF PLANTS: *F. D.* We cannot undertake to name varieties of *Fuchsia*.—*R. M.* The orange-coloured flower is a *Montbretia*. We cannot undertake to name varieties of *Roses*.—*Y. M.* *Helichrysum (Ozothamnus) rosmarinifolius*.—*Lilium*. *Lilium testaceum*.—*F. M.* 1. *Cistus ladaniferus*; 2. *Olearia Haastii*.—*B. S.* *Spiræa arifolia*.—*A. J. C.* 1. *Spiræa sorbifolia*; 2. *S. japonica*; 3. *S. Douglasii*; 4. *Selaginella africana*.—*W. F.* 1. *Neillia (Spiræa) opulifolia*; 2. *Spiræa discolor*.

NIGELLA HISPANICA: *J. C. G.* The organs you refer to are nectaries.

ORCHID: *Correspondent*. The Orchids appear to have been potted in unsuitable material and allowed to remain in the same pots for some years. Again, they look as if they have been exposed too freely to the sunshine, and the atmosphere of the house has been too dry. No. 1 is *Phaius grandifolius*, and we advise you to turn it out of the pot, wash the roots, and re-pot the plant in fibrous loam, peat and decayed leaves, using these materials in equal proportions. No. 2 is a *Cattleya*. The back pseudo-bulbs you send are useless, as all the growth-eyes, or buds, are destroyed. Probably the younger pseudo-bulbs of the plants may have good growth-buds. Take these younger pseudo-bulbs, three or four together, to form new plants, discarding the useless back portions. Pot them in peat and Sphagnum-moss, with a sprinkling of decayed leaves; or it would probably be better in your case to obtain *Osmonda fibre*, or specially-prepared compost, as advertised. No. 3 is *Cypripedium venustum*. It should be potted and treated as recommended for No. 1. Damaged leaves should be removed at once from any of the plants, as they can be of no use in re-establishing the plants, and are, moreover, very unsightly.

PEA: *D. G.* This is known as the purple-podded Pea. The seed, which is large, grey-green in colour, becomes brown when cooked, and is therefore of very little value for table purposes.

PLUMS: *C. J. P.* We do not recognise the variety. It is probably of local origin.

ROSES: *Briar*. The varieties *Dorothy Perkins* and *Lady Gay* are two of the best and most suitable varieties for budding on standards to train in the shape of an umbrella. They should be budded now, as the sap is running freely; therefore the bark is easy to detach from the wood. Insert the bud in each of the growths as near to the main stem as possible. Take care to rub off at once any buds starting behind the bud inserted, and cut off the briar shoot down to the bud as soon as the latter shows signs of growth.

RUNNER BEAN: *C. A.* We have failed to find any insects excepting aphides. We do not think these have caused the injury.

TOMATO: *Anxious*. The fruits are attacked by what is termed the black rot fungus (*Macrosporium solani*). Remove every fruit that exhibits evidence of the disease and burn it at once. Spray the plants occasionally with potassium sulphide, especially when they are setting their fruits. The potassium sulphide should be used at the strength of 1 oz. to 2½ gallons of water. Open the ventilator and renew the air of the house whenever the weather is favourable, being careful also to avoid having too much moisture in the atmosphere.

VINE LEAVES: *T. C.* We do not think the leaves are affected by fungus, the colouring merely indicating approach to maturity. There is, however, a trace of red spider. The presence of this pest has always the effect of destroying the green colour in the leaf.

Communications Received.—*W. H. C.*—*J. M.*—*J. G. W.*—*H. J. C.*—*C. H. F. McL.*—*W. M.*—*H. McM.*—*Ceylon*—*W. M. S.*—*W. L.*—*New Zealand*—*J. D.*—*W. M.*—*R. H.*—*W. W. P.*—*W. Botting*—*H. L. B.*—*W. H. W.*—*E. H.*—*R. S.*—*Dr. K.*—*F. U.*—*T. H.*—*P. S.*—*F. T.*

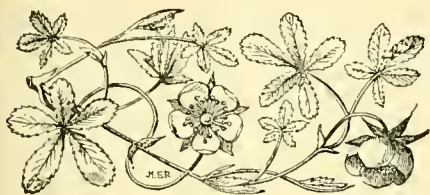


Gardchron.

Aspinwall & Meredith.

ALTHORP PARK, NORTHAMPTONSHIRE.

Photographs by H. N. King.



THE

Gardeners' Chronicle

No. 1,183.—SATURDAY, August 28, 1909.

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BERLIN BOTANICAL GARDEN.

(See Supplementary Illustration.)

ON the first inspection of the Imperial Botanical Gardens at Dahlem, the visitor is impressed by the fact that they have been created in whole and in detail in a manner most suitable for teaching purposes. It is not possible, for various reasons, to compare the Dahlem Botanical Gardens with Kew. But the main reason is that, whereas, at Kew, successful efforts are made to combine the attractions of a pleasure garden with the educational features more strictly pertaining to a botanical garden, there is but one purpose at Dahlem, that of imparting instruction. For example, take the remarkable rockery. An ordinary rock-garden, not excepting the interesting rockeries at Kew and Edinburgh, is planted with selected Alpine species from various parts of the globe, the species chosen being such as are likely to succeed in the situation and to produce a showy effect. This is not the case at Dahlem. Rock-gardening of that nature is not attempted, but instead there is a magnificent scheme in which the mountain ranges of the earth are reproduced in miniature and, as far as circumstances allow, with their natural features formed of stone obtained from the region of each particular

range. Nor is this all. In order to make the lesson more complete, the mountains are planted with species peculiar to each range. The fact that the plant may be showy or not does not come into consideration. If it is a native of the Himalayas it will be found on no other portion of the rockery than that which represents the Himalayas. Similarly, a Swiss plant will be found on the Alps, and so on. It requires no imagination to appreciate the educational character of such a feature in a botanical garden. A student is able to form a correct idea of the physical character of the mountain he wishes to study, and he finds upon it more or less the same vegetation that he would see if he made the journey to the place itself. It will occur to the reader that under such a system it is impossible to make the rockeries of Dahlem attractive at all seasons. The winter in North Germany is very much more severe than in England. Hence a large number of species which would pass the winter safely out-of-doors in this country has to be removed indoors in the neighbourhood of Berlin. Then some of the mountains must needs be clothed with a tropical or sub-tropical vegetation. This necessitates a system of pot culture in order that the plants may be removed indoors for nearly half the year. In April, therefore, when the photographs represented in the Supplementary Illustration were taken, many of the more tender species had not yet been brought back to the rockeries for the summer season. The lower slopes of these mountain ranges are clothed with grass, shrubs, and trees, amongst which Larch, Spruce, Firs and Beech predominate, just as they grow in Nature. At higher elevations the plants become smaller, until on the top of the structure are found the tiniest species. The gardeners have to regulate the growths of the species in order to obtain proportion such as occurs in Nature. The Alpium, as it is termed, stretches from one side of the garden to the middle. Each mountain range stands out quite clearly from the rest, and each has been constructed as nearly as possible to scale. Interesting as the Alpium was on the occasion of our own visit, the effect was scarcely comparable with what it is in summer; therefore, anyone interested in Alpine plants or in Alpine construction, and who happens to be in North Germany during the latter season, should endeavour to visit these gardens.

An uncommon feature in the outdoor garden is a collection of trees planted and arranged as they are in a German forest, so that students may have, as it were, a section of such a forest for purposes of study. The soil of the gardens is rather too sandy for some of the Conifers, but others succeed well enough, and that they are likely to be well represented after a further period of growth may be seen from those shown in the larger of the illustrations. In considering the growth of the trees, it has to be remembered that these gardens were begun only 13 years ago. They were formed to take the place of the older garden situated at Schonberg. Upwards of £300,000 have already been spent upon them. The arrangements for heating the glass-houses are of the most extraordinary character. There are four boilers erected in a large machine house, each boiler being 18 metres long. In the coldest weather they consume as much as 15 tons of fuel in 24 hours. The boilers supply the steam which is led by steel pipes through the different groups of houses into small tanks of water, and, after the water has been thus heated, it circulates through pipes in the ordinary way. There is a tunnel 600 metres long leading from the boilers to the most distant point of heating. The boilers and the arrangements connected with them, including the regulation of temperature in the houses, are controlled by nine engineers.

The large building shown in the Supplement is the Palm house, which has a ground area of 1,800 square metres. The arrangement of the plants in the Palm house, as everywhere else in these gardens, is geographical. Most of the species are planted out in groups. In the centre of the house is a large lawn formed of Selaginella Kraussiana. The Selaginella grows rampant, and the effect is good, but remembering the expensive character of the heating arrangements, and the expensive construction of the house itself, the devotion of such an area to the cultivation of Selaginella strikes an Englishman as suggestive of wastefulness. Yet in Germany, such indoor gardening is not uncommon; an instance may be seen in the Palm garden at Frankfurt-on-the-Main. A large, lofty building adjoining the Palm house in the botanical garden contains Australian plants, chiefly of hard-wooded species. The Victoria regia house will probably be completed this season. It contains a large circular tank for the Victoria, and around it are all sorts of contrivances for the cultivation of miscellaneous aquatic plants. The construction of this house is of such a costly nature that it is difficult for a visitor to see exactly wherein the increased usefulness thus obtained can repay the large outlay. The Ariod house is a span-roofed building and adjoins the Palm house. In the centre is a pergola formed of an iron frame covered with corks and furnished with such plants as Philodendrons, Pothos, Monstera and Rhodospatha. This hot-house pergola was a new feature to us. Another house devoted to economic plants also contains a pergola. The Orchid house is 60 feet long by 20 feet wide. It contains tropical species, most of them represented by excellent specimens. Bromeliads, Ferns, Musas and various monocotyledonous plants are cultivated in other houses, the specimens, in most cases, being planted out in groups. Two large houses, filled with Cactaceous plants and other Succulents, represent probably the best collection in Europe. Nowhere have we seen succulent plants grown so perfectly as at Dahlem. The atmosphere around Berlin being exceedingly bright and warm in summer, most of the species are cultivated out-of-doors from June until September. Some of the winter species, when moved out in the middle of April, are placed in frames containing moderately warm hot-beds, but the plants remain uncovered at night. Ericas are grown in very great numbers and variety, and their condition is such as is seldom equalled even in the best collections. An exception has to be noted, however, in Erica Cavendishii, this species having proved intractable. The temperate house is 100 feet long, 60 feet wide and 50 feet high. It is curious to note that in winter this house contains such species as the common Holly, Cedar of Lebanon and Araucaria imbricata, the Berlin winter being too severe even for these plants. In connection with the Botanical Garden, there is a large, imposing building containing the herbarium, library and museum. Adjoining the garden is the State Horticultural School, which we had an opportunity of inspecting. The appointments of the school are of the most elaborate character, everything necessary for teaching the science of horticulture being thoroughly well represented. The students, moreover, enjoy the teaching facilities afforded by the garden. Even during a hurried inspection, it was evident that the Dahlem Gardens will rank amongst the most important botanical stations in Europe. Indeed, it will probably be unique amongst them all, for it has been designed by Dr. Engler from the beginning for a specific purpose. It is due to this fact that there are few incongruities and that every plant and group of plants have a teaching value. A more detailed description of the gardens, contributed by Mr. J. G. Watson, was published in our issues for May 23, 30, and June 6, 1908.

MECONOPSIS INTEGRIFOLIA AT TOTLEY HALL.

THE accompanying illustration (fig. 60) of a group of *Meconopsis integrifolia* grown by Mr. W. A. Milner at Totley Hall, Sheffield, should do much to encourage those who have hitherto failed in the cultivation of this beautiful species. It should also serve to dispel any doubts as to its complete hardiness and amenability to the British climate. Totley Hall is in the cold part of Sheffield, adjacent to the Derbyshire Hills, and at some 700 feet above sea level. The plants were raised entirely from seeds saved at Totley Hall. Mr. Milner's experience of this plant is that it is a comparatively free-seeding subject. As grown at Totley Hall this fine *Meconopsis* gives no more trouble than other plants requiring to be periodically raised from seeds. Mr. Milner has kindly furnished me with the following particulars. The seeds are gathered on a fine day, and kept on the shelf of an airy greenhouse for a week, when they are sown in a mixture of equal parts of peat, loam, and sand. The seed-pan is placed in an intermediate house and covered by a sheet of

NURSERY NOTES.

ANNUALS AT READING.

DESPITE the unfavourable character of the season, the visitor to the seed trial grounds of Messrs. Sutton & Sons, Reading, will find much to admire. It is naturally from the comparative point of view that the trials are most interesting.

Of the Sweet Pea alone there are several acres under trial, whilst, apart from the trials, the idea of improving this or that variety, either by selection or cross-breeding, is constantly present in the minds of the members of the firm. A noticeable feature of this crop is presented here by spring and autumn-sown seeds, the latter showing a marked superiority over the former in a variety of ways; notably in height, vigour, and freedom of flowering. In the autumn-sown section are to be seen vigorous examples, 7 feet or 8 feet in height, whose exceptional growth has already demanded a double staking, the plants having long ago overtopped the first placed sticks. A great gain, too, is the much earlier flowering of the portion so treated: the plants which commenced flowering in

of plants or varieties forming a colour scheme of varying shades. For example, pink, yellow, and salmon shades, white and pale blue, salmon-pink and pale blue, salmon-pink and crimson are some of the definite mixtures that afford either harmonies or contrasts, and which might form a useful basis for further extension in the same direction. In these and other ways Messrs. Sutton are doing their best to provide harmonious pictures for the garden in place of the indiscriminate mixtures of the past. Thus the same varieties may appear, but in a definite or regulated order that will satisfy good taste.

The trials of Stocks embrace Brompton, Ten-Week, Intermediate, winter-flowering, and other types. Undoubtedly the gem in the last-named set is the white-flowered variety known as "All the Year Round," and which is literally perpetual-flowering. The plant is dwarf, bushy, strongly Clove-scented, having the glossy Wall-flower-like leaves so much appreciated. The plants carried from 16 to 20 spikes each, whilst the percentage of doubles was over 90. For culture in pots it is excellent, and for winter flowering unequalled. Christmas Pink, Yellow Prince, Queen of Mauves, and Beauty of Nice are others



FIG. 60.—MECONOPSIS INTEGRIFOLIA AT TOTLEY HALL GARDENS, SHEFFIELD.

glass darkened by brown paper. The seedlings appear in about three weeks, and, a few days later, the seed-pan is removed to a cold greenhouse. Later, when the rough leaves appear, the seedlings are pricked off and subsequently potted singly and kept in a cold greenhouse for the winter. They are then placed in a cold frame prior to being planted out in June.

Mr. Milner further adds that the above precautions are taken owing to the coldness of the district in which he resides. I would, however, impress upon those desirous of growing the plant the advantage of raising the seedlings in a warm greenhouse. Many sow the seeds and place them in a cold frame, and though apparently good at sowing time, none, or very few seedlings, survive, whilst the few that do live are weak and poor.

Mr. E. H. Wilson, who discovered the plant on the China-Tibetan borderland, informed me that, from his observations of the plant in its native home, he is of opinion that a more generous treatment than is usually given to plants of biennial duration is desirable, in order to encourage a greater development and luxuriance in the plants. *E. H. Jenkins.*

the latter part of May have continued in bloom without a break to the present time. Even now, indeed, there is apparent that superiority of growth and flowering which has characterised them throughout, and, doubtless, what is true of the behaviour of the plants in a season like the present would be so in a greater degree in a season of more sun-heat. To what an extent autumn sowing will prove generally useful is, naturally, a matter for experiment both with soils and varieties; whilst possibly, also, a good or bad seed harvest may to some extent exert an influence. What should be obvious and of the greatest importance to the private, as well as the commercial, gardener is the remarkable resources of the autumn-raised plant. Doubtless, its ultimate vigour and early and continuous flowering are but the natural outcome of many extra weeks of steady root development which, in the circumstances, is rendered possible. I cannot discuss in detail the merits of so great a variety of Sweet Peas, but mention must be made of that delightful variety Sutton's Queen, which in pink and cream affords such a pleasing combination of tints. Queen of Pinks is also a very charming variety. Very interesting, too, was a set

strongly recommended for flowering in winter. The spring bedding Stocks are invaluable to the gardener by reason of their hardy nature. These were literally hidden with spikes of double flowers; white, scarlet, yellow, blue, and pink being remarked. To obtain the best results from this group, the seeds should be sown in the open ground in July and August. The plants should be placed in their winter quarters early in autumn. To sow seeds of these late in autumn is to court failure, whilst to sow them in heat in winter or very early in spring is even worse. The perfect hardy nature of the plants is a great gain, and if afforded a long season of growth they are capable of making superb flowering examples. The East Lothians were well represented, the excellent bush-like habit producing a score or even 25 spikes per plant. East Lothian Pink was particularly fine; and only a little less good than All the Year Round was East Lothian White. Autumn-flowering Stock is virtually of this class, with fine, bouquet-like habit, but rarely producing a central spike of bloom.

Poppies were showy and plentiful, and in the Shirley Poppies present improvements incline to

the elimination of the rose-pink shades and encouragement of those of salmon or apricot tints. As proving how minor changes in the Poppy are apt to create marked improvements in the flower, I was shown an improved Corn Poppy, having golden anthers instead of black, as in the type, the change thus wrought having a remarkable effect on the appearance of the flower as a whole.

Chrysanthemums Northern Star, Eastern Star, Morning Star, and Evening Star are a set of showy, free-flowering varieties for beds or borders that deserve to be widely grown. Gypsophila elegans, pink-flowered variety with dark stems, is a decided gain in these pretty annuals, while the miniature-flowered and low-growing Leptosiphon in many bright colours is valuable for edgings and borders, being as compact in habit as a Lobelia.

Gaillardias, perennial Marguerites, and other popular flowers were equally attractive. Speaking of the Marguerites, it may be said that such varieties as Mrs. Lowthian Bell and King Edward could be selected at a glance, the Shasta Daisy appearing to considerable disadvantage when compared with them. J.

NOTICES OF BOOKS.

A FOUR-ACRE HOLDING.

So much is written upon the prospects of small holdings representing everything in the most favourable light that it is quite refreshing to read a record of experience detailing with strict impartiality both failures and successes. This has been accomplished by Mr. Fred. A. Morton in a little book of 71 pages entitled *Winning a Living on Four Acres*.* It is practically a continuation of the work by the same author, *The Simple Life on Four Acres*, and gives the results of two years' further experience in country life. The author admits that his opinion or mental outlook has been modified, but insists that he is not beginning to regret his step from town to country life. "Such a regret is impossible. My whole thoughts nowadays have as their basis the belief that the country life is the only rational one." This is satisfactory, for the record is not very encouraging from a money-making point of view; in fact, it would be difficult to produce a book more calculated to damp the excessive enthusiasm of inexperienced beginners than that under notice.

Five years ago Mr. Morton gave up a post in the Civil Service and invested £117 in the purchase of four acres of "heavy, derelict, clay-land in Essex," erected a small house, stocked and cultivated his holding himself, and has ever since existed on a vegetarian diet and followed "the simple life," living chiefly out-of-doors. The details are given on p. 66 of the income for 1908, thus:—

	1908.
Garden	£5 14 0
Fowls	27 2 0
Bees	12 10 0
	£45 6 0

From these totals has to be deducted £3 18s. 6d. for tithes, rates, and dog tax, nothing being allowed for rent or interest on capital. On the other hand, no particulars are given respecting the cost of goats kept for their milk, nor the value of the latter.

It is obvious, as indeed the author points out, that if rent had been paid and deducted from the totals the net result would have borne a poor aspect. Readers seeking information on the subject of small holdings must be thankful to Mr. Morton for the frank admissions of failures which appear in the pages, and there are so many practical and thoughtful suggestions that the book is well worth the attention of all interested in an important subject.

* *Winning a Living on Four Acres*, by Fred A. Morton. (London: A. C. Fifield.) Price 6d.

NEW OR NOTEWORTHY PLANTS.

CENTEMA BIFLORA, SCHINZ.

THIS species can hardly be called a good garden plant, but it nevertheless possesses an interest of its own. The plant, from which the illustration in fig. 61 has been prepared by Mr.

taller-growing species of Dianthus—having the swollen nodes and opposite leaves characteristic of that order. The flowers, which are of a dull shade of magenta, are borne in terminal spikes from 2 inches to 3 inches in length, and, like other members of the order, they retain their freshness for a considerable time. The plant thrives best in a warm, freely ventilated, intermediate house, and may be propagated either from seeds or cuttings.

Centema biflora was described by Schinz in *Engl. and Prantl. Noturl. Pflanzenfam.*, iii., 1a (1893), 107; also in *Engl. Bot. Jahrb.*, xxi. (1893), 135; by Clarke and Baker in Weyer, *Fl. Trop. Afr.*, vi., 56, as follows:—

Stem erect, 2 to 3 feet high, scabrid with tubercles on the ribs, leaves opposite, up to 3 inches long and ½ inch broad, pubescent, petioles in the large leaves ½ inch long, in the smaller leaves hardly any. Inflorescences terminal, pedunculate up to 2 inches long and ½ inch broad, very dense, with often ovoid heads ½ inch long on the same stem. Partial inflorescences with one or two fertile flowers, brown-reddish or red, sterile flowers with scanty, long, fine hairs on their back, the bracts ending in straight scabrid short spines. Staminal tube and sterile filaments of the genus; ovary ovoid, hairy, conic at the top.

Psilotrichum rubellum, Baker, *Kew Bull.*, 1897, is a synonym for the plant now figured. The species was collected by Welwitsch in Angola, also by Goetze in German East Africa.

FOREIGN CORRESPONDENCE.

BAGGING GRAPES.

You recently alluded to the practice of bagging Grapes (see p. 396) by putting bags over the bunches to protect them out-doors from insects, birds, and to prevent dust from accumulating on them. This, I think, is a great aid to the growers of the fruit, as it is kept in perfect condition when so treated.

Here in the United States, the golden orioles and robins are very destructive to ripening Grapes. The orioles prefer the Grapes of the choicest quality, which are usually red varieties. Grapes when bagged colour up as perfectly as can be desired, and I think with a finer bloom than when not so covered.

As I look back to the trouble there used to be occasioned in some seasons at Longleat in England by wasps, I think that in all private places the Grapes could be bagged with advantage, and the fruit could, in late vinerics, be left on the vines in safety much longer than at present.

But some may say, "Yes, but it would take a long time to bag them." At Williamson, Ontario County, in this State, one grower last year bagged more than 220,000 bunches. The variety was The Niagara, a white Grape of second quality and somewhat "foxy." The bags were slipped up over the bunch and pinned on the top. I prefer tying the bag around the stem of the bunch, as then, if the Grapes are ripe, a moderate frost of 10° will not injure them in the least, as we have found in our own case. The bagged Niagara Grapes were kept and sent to New York City at Christmas time, and brought 10s. 5d. per lb. I think it paid to bag them, as the fine bloom made them more attractive and desirable. Some growers who bag their fruit cut off just one corner of the bags to allow water to drain off, which is a wise precaution.

I enclose sample of paper in bags to show its texture. These bags are the same as are used by grocers in packing their goods for customers.

I do not know whether it would be advisable to put other fruits into bags. It may be advisable to do so to save large, fine specimens for special purposes, for exhibitions and other occasions, and I think the bags should remain on until the fruits are wanted. John Charlton & Sons, Rochester, New York.



FIG. 61.—CENTEMA BIFLORA: FLOWERS OF A DULL MAGENTA SHADE.

Worthington Smith, was presented to the Chelsea Physic Garden by Mr. J. Tabor, of Swanley College, who raised it from seeds received from West Africa. *Centema biflora* is a member of the Amaranthaceae, but when out of flower the plant has a strong resemblance to some of the species of Caryophyllaceae—especially to the

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 70-76.)
(Continued from page 128.)

7, ENGLAND, N.W.

LANCASHIRE.—The fruit crops in this district are much affected by the continued inclement state of the weather and by the low temperatures throughout the spring and early summer months. The Strawberry crops have been heavy, but the flavour is indifferent, through want of sunshine. Early and mid-season varieties of Apples are a good crop, and the skin of the fruit is very clean. The late varieties are not so plentiful. Insects have been unusually troublesome, especially in the small bush fruit trees. Loganberries are a good crop. The soil is rather retentive, resting on red sandstone rock. *B. Cromwell, Cleveley Gardens, Liverpool.*

— We only grow three or four kinds of Strawberries, such as Royal Sovereign, Sir Joseph Paxton, and Ruskin. The soil is rather a heavy loam, with fair amount of clay; very wet and cold. *T. Wyton, Abbeystead Gardens, near Lancaster.*

WESTMORELAND.—We had good prospects early in the season, but sharp frosts in May did a lot of damage. Our trees are fairly clean. A spraying of Cooper's V2 fluid was very effectual. Ours is a gravelly soil, requiring unusually liberal treatment. *W. A. Miller, Underley Gardens, Kirkby Lonsdale.*

— Cold east winds, with low night-temperatures during May and early June caused the Apple crop to suffer very much. All Plums on walls have set an enormous crop, and have to be severely thinned. Cherries, both sweet and Morellos, are also a good average crop, although a little late. Strawberries are later than usual, owing to the cold, unless weather of early summer. The crop was a good average, although the fruits were not so fine as we generally have them. *F. Clarke, Lowther Castle Gardens, Penrith.*

— The spring gave promise of good crops of fruit all round, as blossoms were produced very freely and the weather was favourable to setting. Owing to the prolonged drought in May and early June, and the continuance of abnormally cold weather, however, prospects are now not nearly so favourable. Strawberries failed to swell to any size; small fruits fell an easy prey to aphids, &c., making frequent spraying necessary. They are, however, with the exception of Black Currants, of good quality. *W. Anton, Brougham Hall Gardens, Penrith.*

— Taken on a whole, the general fruit crop in Westmoreland is quite up to the average as far as quantity and quality goes. But every kind of fruit is in an extremely backward state, and, despite the heavy rains we have experienced lately, most of the crops are badly infested with green fly and other insects. Peaches out-of-doors set a remarkably heavy crop, also small fruits, with the exception of Strawberries. Apples in the gardens here are the best crop we have had for four or five years. The soil is limestone. *W. Gibson, Levens Gardens.*

8, ENGLAND, S.W.

CORNWALL.—Although the Apple crop is over the average, it must be borne in mind that of late years the average crop has been a decidedly light one. In the spring the Apple trees, as well as other fruits, were smothered with blossom, and the fruit set in unusual numbers, but the cold, cutting winds caused large numbers to drop; yet sufficient remains to form a good crop, though I think it will be of moderate quality. Red Currants are plentiful and good, but Black Currants are poor and somewhat small. Strawberries promised well, but sharp frost on two nights destroyed the first fruits just as they commenced to swell; the late varieties are very fine. Gooseberries form the heaviest and best crop I have ever seen. Peaches are highly flavoured, and Pears promise to be good. *A. C. Bartlett, Pencarrow Gardens, Bodmin.*

DEVONSHIRE.—The fruit crops generally are very good. Black Currants are more plentiful than they have been for years past; the bushes in many parts were badly infested with the mite, but, thanks to the horticultural Press for giving publicity to the lime-and-sulphur remedy, in

several places where it was very bad it has, through perseverance, been stamped out. Strawberries have been very fine, and the crops in some districts enormous. Gooseberries have been sold at 1d. per quart and Strawberries at 1½d. per lb.! *G. Lock, Newcombes Gardens, Crediton.*

— Irrespective of kinds, there was an abundance of blossom on all fruit trees, especially Peaches, Nectarines, and Apples. Locally, the last are very blighted; the foliage having a burnt or scorched appearance. A good many of the fruits have a curled look and will probably drop; but I think there will be a fair crop. Plums

valent on the Peas and Potatos. *Geo. Baker, Membrand.*

GLOUCESTERSHIRE.—The fruit crops in this district are very satisfactory as a whole. The Apples are very free from scab. Pears suffered this season very much from the mildew all over the district, but the crop left is better than for several years past. The trees have been very clean and the leaves of a lovely colour. Plums, on the high ground, are a very heavy crop, particularly where the soil is light and on gravel, but on low ground with heavy clay soil they suffered from frosts. Small fruits are very plentiful. The birds did not seem to attack the buds as in



FIG. 62.—REMOVAL OF A LARGE PHOENIX PALM AT SAN FRANCISCO.

(See p. 149.)

look well, also Peaches. We have abundance of small fruits. The soil is sandy loam resting on old red sandstone. *Jas. Mayne, Bickton.*

— The fruit crops are good, but late. Apples are a very heavy crop. Most sorts require thinning, the fruits having set in close clusters. Pears are good, and represent an average crop. Cherries set well, also Plums, but many have fallen. Peaches set well upon the walls. There are some blistered shoots, owing to the nights having been cold with continuous fog. The six months' rainfall is less than 15 inches. Mildew is very pre-

vious years. *J. R. Tooley, Toddington Manor Gardens, Winchcombe.*

— Apples are nearly a failure here this year. The bloom was thin and weak; aphids and caterpillar are plentiful. There are some very good crops in the neighbourhood, and I find these on stronger land than our gardens. Peaches are good. An extraordinary lot of Gooseberries. Cherries and Plums are better here than usual, as also are Apricots. Strawberries, Raspberries and Currants are very satisfactory. Our soil is a friable mixture on the old

red sandstone. *John Banting, Tortworth Gardens, Falfield.*

—Our Apple crop has suffered much from the long-continued easterly winds, and the winter moth has injured many of the trees. We used grease bands, but I am afraid they were allowed to get too dry. Cherries on the walls are very bad with the black fly this year, and this pest requires constant attention to keep it under. *W. Keen, Bowden Hall Gardens, near Gloucester.*

—Apple trees bloomed abundantly, but the crop is rather a light one, owing to the Apple weevil. Pears are a fair crop; the cold nights, with the thermometer below freezing point each night from May 11 to 16, did not do much damage in this garden. Apricots, Peaches, Cherries and Plums are carrying good crops. Gooseberries and Red Currants are cropping abundantly. Strawberries are a good crop, but, owing to the wet season, are not up to the average in flavour. Our soil, resting upon limestone rock, requires deep cultivation. *F. C. Walton, Stanley Park Gardens, Stroud.*

—On the whole, we have a good crop of fruit. Strawberries were quite up to the average, but late in ripening owing to the cold, wet weather. Apples are an average crop. Trees grown on the Paradise stock are the most prolific, especially such kinds as Cox's Orange Pippin and Wyken Pippin. Manks Codlin, Annie Elizabeth, Warner's King, Stirling Castle, and Lane's Prince Albert are the best-bearing kinds in the orchards. Pears are an average crop. We are troubled much with the Pear midge. Apricots are the lightest crop. Many of the buds were killed in the winter by severe frost. Plums are an average crop. Bush fruit

from an attack of the Apple blossom weevil. Pears are an average crop and clean. Plums are under average, but the trees are healthy and the crop is doing well. Small fruits are generally very good, but Black Currants suffered very much from attacks of fly. Our soil is sandy, subsoil red sandstone. *Thomas Spencer, Goodrich Court Gardens, Ross.*

MONMOUTHSHIRE.—Notwithstanding the abundant blossom on fruit trees, the crops are not so good as we anticipated. Many unsprayed Apple trees are almost denuded of foliage by the caterpillar. (Oak trees, also, have suffered in the same way.) Pears are good, the fruit clean and trees healthy. Plums failed to set in quantity owing to the frost and damp weather experienced when the trees were in flower. Peaches and Nectarines set well and required much thinning. All bush fruits are remarkably good, although aphids has been troublesome on Red Currants. Strawberries were an enormous crop, the fruit sound and of good flavour. *W. F. Wood, Llanfrechfa Grange Gardens, Caerleon.*

—Apples, when in bud, were promising. The cold weather and the blossom weevil, however, ruined the good prospects. Pears vary, the best crops being on bush trees placed on fairly high ground. Plums are a good crop where the trees have been kept clean by spraying. Peaches upon a west wall are heavy crops, the trees being clean and quite free of blister. We attribute this state of things to protecting the trees in spring with canvas blinds. All bush fruits carry heavy crops of good fruit; while the crops of Strawberries, though later than usual, were heavy and of good quality. *Thos. Coomber, The Hendre Gardens, Monmouth.*

caused some of the fruits to decay; the season has been a long one. Apricots are a heavy crop, necessitating much thinning, following a year almost blank. The staple soil is very shallow in some cases; when wet, very sticky, but quickly dries out; overlying the white lias; lower down it becomes a heavy clay. Where the stone has been drawn and the soil made up, good crops are produced. *Geo. H. Head, Kingsdon Manor Gardens, Taunton.*

—There was an excellent show of blossom on everything this spring, and, owing to the absence of frosts at the critical times, a good "set" was the result. The only drawback in this district has been a most persistent attack of fly on fruit trees and bushes of every description, Pears excepted, and a good deal of labour has been expended on spraying. Had it been possible to do more of it, still more satisfactory results would have been obtained. The weather has been so bad that growth was slow, the night temperatures being more like autumn than summer. *A. Shakelton, Porde Abbey, Chard.*

WORCESTERSHIRE.—The fruit crops, on the whole, are very good indeed, many of the varieties of Apples having set their fruits in bunches, consequently they will have to be freely thinned. Much of our success must be attributed to timely winter spraying, the "Woburn Winter Wash" having proved most effectual. We have also used concentrated alkali wash with excellent results. Bunyard's Blight Cure for American blight is excellent. Black Currants are healthy and good. Any badly mite-affected bushes were dug up and burned, and on all other bushes (many hundreds) the swollen buds were kept picked off and burned. Rivers' Early Prolific Plum has enormous crops. Soil, sandy loam overlying new red sandstone formation. *A. Young, Witley Court Gardens, Worcester.*

—The Apple crops are disappointing when contrasted with the quantity of healthy bloom, apparently due to adverse climatic conditions during the setting period, viz., hot scorching sun by day and frosty east wind by night, continuous and persistent. Pears are healthy and good, there being far less Pear midge this year than for years past. Stone fruits are very good crops generally, but trees have been attacked again and again with aphids of the most tenacious and virulent type, involving extreme measures with washing, spraying and dipping. The winter moth larvæ has also given considerable trouble, in spite of some grease-banding. We have much to learn yet, outside the laboratory, to successfully and certainly cope with insect pests under all conditions of climate. Strawberries have been heavy crops, but flavourless, owing to cold nights and absence of sunshine by day; many of the best fruit decayed prematurely through so much humidity. *William Crump, Madresfield Court Gardens, Malvern.*

(To be continued.)

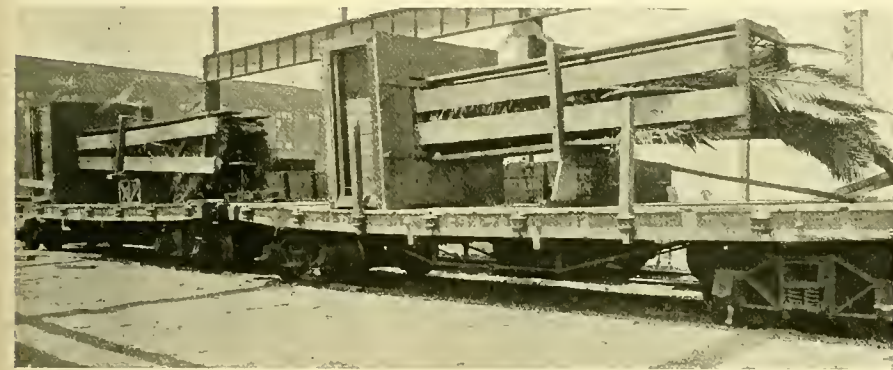


FIG 63.—LARGE PALMS PACKED FOR REMOVAL AT SAN FRANCISCO.

is abundant, and Cherries, especially Morellos, a fine crop. The soil is clay, with subsoil of light marly clay. *A. Chapman, Westonbirt Gardens, Tetbury.*

—There is a fair crop of most fruits, but Apricots suffered from the cold weather in March. Gooseberries are abundant. Currants promised well, but were badly attacked and blighted by aphids. Black Currants especially suffered, although in some gardens they are quite clean; in others all the leaves were destroyed. *Alfred E. T. Rogers, The Gardens, Sudeley Castle.*

—Gooseberries, Black and Red Currants, also Strawberries, are record crops. Peach trees have suffered from the leaf blister. The foliage of Apple trees is riddled with caterpillars. Early Pears have set better crops than later kinds, and are cleaner in the foliage than Apples. *W. H. Berry, Higham Court Gardens, Gloucester.*

HEREFORDSHIRE.—Some fruit trees are laden, others have practically no fruit on them. The drought and cold east winds were the causes of a quantity of fruit dropping. In the spring it looked like an extraordinary year for fruit. Peaches set their fruit well, and we have gathered thousands off a wall about 90 yards run. Strawberries were a huge crop. The same remark applies to Red, White and Black Currants, also Gooseberries. Apples are only just an average crop. *Thos. Watkins, Newport Hall Gardens, Eardisley, E.S.O.*

—The fruit crops generally are looking well, although below the average. Apples are a thin crop, and some varieties have suffered from fly very much more than others this season, also

—Apples in practically the whole of South Monmouthshire will be a very poor crop this season, especially in grass orchards. Aphids has been very troublesome in most districts, and very little is done in spraying the trees. Dwarf trees are somewhat better cropped, but not up to average. This is due to several varieties, such as Bismarck, Bramley's, Lane's and Newton Wonder, bearing very heavily last season. Pears are exceptionally free from aphids. The weather has been very cold, with little sunshine, and the rainfall has been below the average. *J. Basham, Bassaleg, Newport.*

SOMERSETSHIRE.—In this district the early promise of all kinds of fruit was good, but during May we had continued bright sunshine, followed by frost almost every night. June was a dull, wet, sunless month, and July has been very cold. Black and green fly have attacked almost every tree in the garden and caused much extra work in spraying. *G. Shawley, Halswell Park Gardens, Bridgwater.*

—The fruit crop this year is remarkably good, but Apple trees in the orchards are very much blighted, and many of the Apples are falling. The soil in this neighbourhood is of a heavy clay nature, and on a blue lias stone or limestone. *W. Hallett, Cossington, near Bridgwater.*

—The present season has been exceptionally bad for aphids of all kinds; complaints are heard on all sides. It has been a constant fight to keep trees clean. In many cases Apple trees are badly crippled. Raspberries did not make very good growth last season, and during the winter the canes were injured by the severe weather. Strawberries have been good, though the heavy rains

REMOVAL OF PALMS IN CALIFORNIA.

MR. H. E. HUNTINGTON has removed his collection of Palms from San Francisco to Los Robles, at San Gabriel, near Los Angeles, a distance of about 600 miles.

The Palms included two large specimens of *Phoenix canariensis*, each 30 feet in height. These are of some historic interest, having been a feature on Nob Hill for the past twenty years. They are relics of the "Big Fire" of 1906, at which time Mr. Huntington's magnificent residence was destroyed along with everything else in that district.

The fire stripped the Palms completely of all their leaves, leaving only the blackened stems, but in the three years which have elapsed fresh growth has been made and new well-developed crowns have appeared, as may be seen from the accompanying illustration (fig. 62).

The work of removing the Palms was done by the McRorie-McLaren Company, of this city. The task, owing to the great size of the plants, proved one of some difficulty. Each Palm, when boxed, weighed 13 tons, the boxes being 10 feet square and 4 feet deep. A special truck was commissioned, and a team of 10 horses was required in order to convey the plants to the railway station, where they were safely loaded each on a flat car. *Wm. McM. Brown, Menlo Park, California.*

DENDROB'UM ACUMINATUM.

THIS handsome species (see fig. 64) was awarded a First-class Certificate at the meeting of the Royal Horticultural Society on the 17th inst., when it was exhibited by Messrs. Moore, Ltd., Rawdon, Leeds. Though it belongs to the dwarf section of Dendrobium, the flowers are not small, being more than 3 inches across; they are white delicately suffused with rose-pink. Its nearest ally is *D. Treacherianum*, a Bornean species. *D. acuminatum* is a native of the Philippine Islands.

The Week's Work.**THE FLOWER GARDEN.**

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Watering.—It is best to apply a mulch immediately after watering. During very hot weather such plants as Dahlias, Gladioli, Chrysanthemums, Violets and Sweet Peas require copious waterings, and to give water every alternate day is not too often. All climbers, including Roses, should, during dry weather, be watered often, and the foliage syringed, otherwise red spider will attack the plants. Plants in vases, pots and tubs, on terraces, &c., may require water several times daily. Small seedlings and plants in nurseries intended for autumn and spring bedding must not be neglected in this matter.

Hoeing.—Keep the hoe at work to destroy weeds, which should be uprooted before they produce their seeds, which some species do very quickly.

Ferns.—Though these plants are generally placed in shaded spots, they, nevertheless, require frequent watering, especially when planted near the base of large trees. These should have an abundance of moisture during dry weather, as Ferns are very impatient of drought. The watering is best done in the cool of the afternoon. Ferns growing by the sides of lakes or ponds need very little attention beyond keeping them clear of weeds and rubbish. *Hymenophyllum tunbridgensis* does well when fastened on a sandstone rock in the shade, but it needs to be kept moist and protected from the ravages of birds.

Roses.—When the rambler varieties have finished flowering it is a good plan to cut out nearly all the old wood that has flowered. This will enable the new growths to develop and ripen their shoots better. The surface soil about the roots should be stirred, a little fertiliser worked in, and the ground well watered. This will assist the plants to build up strong shoots for next season's flowering. A syringing occasionally with some insecticide will keep the foliage clean and destroy insect pest and mildew.

Bamboos.—These shrubs are sending up fresh canes, therefore a good soaking will benefit them considerably, and especially those that are planted in large beds with other shrubs. A gentle stream of water allowed to trickle over the roots for some hours will often recuperate a half-worn-out plant. Dryness at the roots is often the cause of the premature flowering of Bamboos. In the case of plants that are very dry, it is a good plan to make a little trench a few feet from the ball and fill this with water frequently till the whole is well soaked. The majority of varieties and species are throwing up extraordinarily strong shoots this season, and they will require help to mature them. All newly-planted shrubs of other species should be examined to ascertain if their roots lack moisture.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Winter Cucumbers.—A batch of plants should be raised now for supplying fruits throughout the winter months. A variety of good constitution must be selected for this cropping: one we find excellent for the purpose is "All the Year Round." Sow the seeds singly in 3-inch pots, in a mixture of loam and leaf-soil, which should be sufficiently moist for the seeds to germinate, as this will dispense with watering. As soon as the seedlings are through the soil, place them

near to the glass to encourage a sturdy growth. When they have rooted fairly well they should be repotted into 6-inch pots, again placing them near to the glass. In the meantime a house must be got in readiness for their planting, choosing a light structure and one that is exposed to the sun during the greater part of the day. Preparatory to planting, the glass and woodwork of the house should be thoroughly cleansed with hot water and the walls limewashed. The hot-bed on which the Cucumbers are planted should be made with half-

composed of turfy loam and leaf-mould. Allow them to grow steadily in a moist atmosphere and avoid excessive fire-heat, but rather make full use of the sun's heat by closing the structure early in the afternoon.

Early vinery.—The vines may now be partly pruned, shortening the shoots back to about one-third of their length. The lateral growths should also be cut away. If the borders are well drained, a good soaking with diluted liquid manure will assist the canes to swell their buds. Whenever opportunity offers cleanse the vines, and especially if mealy bug is present, with a mixture of strong, soft soapy water, to which a little sulphur has been added. Work the specific into the crevices with a stiff brush. Soft soap and sulphur mixture is an excellent remedy for all kinds of insect pests on vines.

Melons in frames.—Plants carrying fruits approaching maturity will need every assistance to ripen the latter perfectly. The fruits must be suspended so that they are only partially shaded by the foliage. Much care should be exercised in affording fresh air. When the fruits are ripening water must be withheld at the roots and the top of the frame left slightly and continuously open to keep the atmosphere dry, as much moisture in the air causes the fruits to crack.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Heliotrope.—Plants in small pots should now be shifted into others 5 inches in diameter. Pot firmly and afterwards place the plants in a close frame for a few days, but when they have recovered from the disturbance at the roots, stand them in the open on a layer of ashes. They may remain in that position until September, when they should be placed in a warm, light house, in which they will flower.

Gardenia.—Plants which were pruned severely last spring should be assisted in maturing their shoots by allowing them plenty of room and ventilation. This will induce the plants to set their flower-buds. Young Gardenias which require larger pots should receive attention at an early date, so that they may be well established by the end of the autumn. A suitable potting soil is one composed of three parts loam, one of leaf-soil, with a little dried cow-dung and plenty of silver sand. The soil should be made firm in the pots, but care should be taken not to break the roots. Except for a short time after being repotted, Gardenias should be exposed to the sun's rays. During active growth they are best suited by a high temperature and a humid atmosphere. When the flower-buds are well set, the young shoots, which spring from their bases, should be pinched out, or the flower-buds may drop.

Primula.—After this date it will not be wise to remove the lights from the frames at nighttime, as there is a danger from heavy, cold rains. The lights may be tilted to admit fresh air. Except those of the latest batch, all the plants should now be in their flowering-pots. Well-rooted plants may receive occasional doses of soot-water, and be given a little artificial manure, which should be dusted over the surface of the soil.

Cyclamen.—As autumn-raised Cyclamens are generally the most satisfactory, seed should be sown about this time in well-drained pans of sandy soil. The seeds germinate best in an intermediate temperature, and the atmosphere of the house must contain a moderate amount of moisture.

Azalea.—These plants are forming their flower-buds and should receive some manurial assistance. Care in selecting the stimulant is very necessary; if liquid manure is used it should be weak and clear, and may be made from sheep's droppings soaked in water; should the liquid become puddled, the addition of a piece of unslaked lime will clarify it. The manure water may well be alternated with a light surface-dressing of some approved chemical manure. The plants should be heavily syringed twice daily in fine weather as a check against insect pests.

Camellia.—This plant also requires some assistance in building up the flower-buds. Whilst the plants in pots and tubs are still out-of-doors they should be thoroughly cleansed.



[Photograph by John Gregory.]

FIG. 64.—DENDROB'UM ACUMINATUM: FLOWERS WHITE, TINTED WITH ROSE-PINK.

decayed leaves and stable litter in equal parts, after the materials have been thrown in a heap and turned several times to allow the noxious gases to escape. A few inches of decayed leaves should be placed over the surface of the bed before the soil is applied. A lighter compost than that which was used for the summer crop will be necessary for this batch, as plants of medium growth withstand the dull, unless weather of winter best. When the plants are well rooted, plant them in small mounds of soil

THE ORCHID HOUSES.

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

Resting Dendrobiums.—Many of the Dendrobiums, and especially those of the noble section, are now completing their growths. It will be necessary to examine them frequently, in order that those which have ceased growing and have their leaves at the extremities of the pseudo-bulbs fully expanded, may be removed to a cooler and drier atmosphere, where they will receive the benefit of extra light. They should be exposed gradually to full sunshine, in order to mature the newly-made growths. Beginners should bear in mind that, to retain a healthy and vigorous constitution, everything appertaining to the drying and resting of these plants must be gradual, also that it is necessary for the plants to make only one set of growths in a year, and that these growths must be thoroughly ripened. The plants will be perfectly safe for the next few weeks in a house where the night temperature is about 60°, but after that time they should be removed to a structure having a cooler and drier atmosphere, where they may be allowed plenty of fresh air. The night temperature, during the autumn months, should range between 60° and 50°, or, in very cold weather, 45°. If a house can be devoted entirely to such species as *D. Wardianum*, *D. crassinode*, *D. Findleyanum*, *D. melanodiscus*, *D. chryso-discus*, and *D. nobile* and its numerous hybrids, it will be easy to choose a position on one side for the plants that have completed their growths, where they will enjoy more light and air but less moisture. It will be easy to regulate the temperature in this house to the requirements of the Dendrobiums, and the valves of the hot-water pipes may be gradually turned off as the plants complete their season's growth. Do not withhold water entirely from the roots immediately the new pseudo-bulbs are completed, otherwise they may receive a check, and buds will start into growth which should remain dormant till after the flowering season. This treatment would also have the effect of checking the numerous young rootlets pushing out from the roots made at an earlier stage; which roots should be encouraged to grow for as long a time as possible, since they are of the utmost value to the plants. It is advisable to examine the plants daily, and immediately any sign of shrivelling in the pseudo-bulbs is detected, to give them a thorough watering, but this should not be repeated until the whole compost is quite dry. When the plants have become accustomed to the resting treatment and the pseudo-bulbs thoroughly hardened, many of the leaves will turn yellow, and, although unsightly, they must be allowed to remain until they fall away naturally. In the case of plants still in vigorous growth, a hot, moist atmosphere must be maintained. Let them be removed to the plant-stove and exposed gradually to sunshine both morning and afternoon in preparation for receiving the full benefit of the sun's rays later on. The splendid *D. Hookerianum* (*chryso-tis*) always proves more difficult to cultivate than many others. I have tried several kinds of composts and different temperatures, positions, &c., for this plant, but, until the last few years, failed to keep it alive for any length of time. However, since potting the plants in the new Orchid compost and affording them a *Cattleya*-house temperature—some suspended to the roof and others standing down among the *Cattleyas*—they have grown very freely and satisfactorily. At the present time plants of this species are producing their flowers. This beautiful *Dendrobium* should never be allowed to become dry at the roots.

Hot water system.—The present is a suitable time to overhaul the heating apparatus. The nights will soon become chilly, and many tender and valuable plants may be injured if the work is delayed. The boilers should be emptied and thoroughly cleansed of all sediment; loose joints and cracked hot-water pipes must be made good; all valves oiled; and the overflow and feed pipes put in good order. The fire-bars, the flues, including those over the boilers, and ash-pit doors should also receive attention. It is important that the chimneys be swept clean, and all accumulations of soot and rubbish at their base, as well as at the back of the boilers, must be cleared away. While this work is being done, the plants in the warmest houses should be kept rather drier than usual at the roots, and there should be a correspondingly less amount of moisture in the atmosphere than when fire-heat is employed.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Morello Cherries.—The Morello Cherry succeeds in almost any part of the garden. The trees thrive exceedingly well on walls having a northern aspect, and in such situations they are for the most part generally grown. In common with other varieties of Cherries, the Morello has borne a bountiful crop this season. The fruits may be thinned before they are perfectly ripe, and those gathered may be used for cooking, but for bottling and preserving generally they should be fully developed though not over ripe. After sufficient fruits have been gathered for preserving, the remainder may be left on the trees to be utilised as required. In ordinary seasons, Morello Cherries will hang for a considerable time after they are ripe. They should be closely watched, and at the first sign of shrivelling the remainder of the crop should be harvested without delay, or decay will soon set in. Trees in fruit require plenty of moisture at the roots: clear water being best at this stage. When the fruits have been picked, any necessary pruning should be done at once.

Pruning.—The Morello Cherry needs different pruning to the Sweet Cherry, and should be treated in this respect somewhat like the Peach and Nectarine. This consists of cutting out all the old fruiting wood that can be spared and of saving young shoots which will produce the best fruits next year. The main branches should not be interfered with unless any are unhealthy, in which case the branch or branches should be cut clean out and the space filled in with young shoots. The branches should be trained thinly apart to allow the young shoots to ripen and develop their fruit-buds. Little or no pruning will be necessary in the winter months, the principal work then will be to loosen and cleanse the trees. One advantage in pruning as soon as the fruit is cleared, and whilst the leaves are still on the trees, is that the operator will not be likely to tie in too much new growth. At least 6 inches of space should be left between the shoots. Thoroughly cleanse the trees and if necessary water them until the leaves fall.

General work.—Showery weather, following a dull fortnight, has caused weeds to spring up in great profusion. Keep the ditch hoe constantly at work in the fruit quarters, not waiting till the weeds are large and require hand-pulling, as this involves more than double the amount of labour. If the hoe is kept busy, the small weeds will shrivel up with the sun's heat, and give no further trouble.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Parsley.—Parsley is in great demand all the year round, and it is necessary but often difficult to maintain a constant supply. During the next fortnight or three weeks, two sowings should be made on a south border. The seed should be placed in shallow drills and a good dressing of soot applied before raking the soil over the seeds prior to giving a copious watering. As soon as the first rough leaf is made, a portion of the young plants should be pricked off into cold frames, the soil in which should be raised to within 1 foot of the glass. Make the soil very firm, and plant in rows at 9 to 10 inches apart, allowing a distance of 6 inches between the plants in the rows. It is a good plan to plant a row at the foot of the south side of a wall or building, where, during a mild winter, it will furnish a supply of fresh leaves. The seedlings in the seed-bed should be thinned 6 inches apart and the ground kept constantly hoed and frequently dusted with soot. Parsley from early sowings planted out in the spring require all the old foliage to be removed. Apply a light dressing of a reliable artificial manure and some fresh soot, stirring up the soil deeply with the draw hoe between the plants.

Celery.—Celery in all stages is now growing freely. This crop will require much attention and plenty of moisture to bring it to perfection. Carefully remove all the surplus side growths, and attend to the covering of the shoots for blanching. It is a mistake to attempt to blanch too much of each stem at one time. About every succeeding ten days a small portion of either brown paper or fine soil should be added, taking care that the

whole of the leaf-stalks are drawn tightly together and the soil placed firmly. Keep a sharp look-out for the Celery fly, and take steps to destroy the grubs before any serious damage is done.

Cauliflowers.—Late plantings of Cauliflowers should be made secure against strong winds. This can be done by placing a quantity of earth around each stem, well up to the heart, and making it thoroughly firm. Immediately the heads are formed, see that they are carefully protected from the light by placing leaves over them and tying up the outside foliage.

Mushrooms.—Continue to make up beds, choosing, in preference to the Mushroom house proper, quite a cool shed which is not too airy and where the atmosphere can be kept moist. Almost any building on the north side of a wall will be found suitable. Beds may also be made up in the open, but take care to elevate them slightly above the natural level, so that the materials do not become saturated with water. Make them ridge-shaped and place the manure together as firmly as possible. Insert the spawn when the heat is well on the decline, and apply a layer of soil from good fibrous loam to the depth of about an inch. Afterwards cover with a layer, about 1 foot in thickness, of good stable litter.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Band performances in public parks on Sundays.—The question as to how far a public body ought to cater for the amusement and recreation of the people on Sunday is one which involves many difficulties, and is a subject that cannot fail—in this country at least—to give rise to a good deal of controversy. That there is a growing tendency on the part of the public to relinquish the old-fashioned ideas as to the impropriety of playing games on Sunday may easily be proved by a visit to a golf course or tennis ground in almost any part of the country on the seventh day of the week. Many golf courses are thronged with players on Sunday, while tennis matches are not by any means uncommon on that day.

So far, I am not aware that either of these games is officially recognised or permitted on Sundays in any public parks in Britain, but such pastimes as bathing, boating and skating have for long been allowed in many public parks on the Sabbath, and recently, in the vicinity of London, it is alleged that football matches are permitted on that day. Although the demand for facilities for playing games on Sunday is not at present very pressing, it is undoubtedly increasing, and in respect to some games will probably have to be faced at no distant date.

With regard to the provision of music on Sundays—which may very reasonably be regarded as cognate to Sunday games, &c.—the demand has already become so great that many park authorities have acceded to it, and Sunday concerts in parks are common. Many people who would not for one moment advocate the introduction into this country of what is known as the "Continental Sunday," have been instrumental in bringing about the Sunday band performance in parks, under the impression that by so doing they were enabling the masses to have an opportunity of hearing good music, which on any other day of the week it would be quite impossible for them to enjoy. Theoretically, this is all well and good, but in practice it does not work out, for, generally speaking, the habitué of the Sunday band performance is the same individual who frequents the week-night performances. As far as the convenience to the masses is concerned, it seems as if it would hardly matter whether there were bands in the parks on Sundays or not.

With regard to the ethical side of the question of Sunday games and amusements, park officials do not as a rule bother their heads, but the majority of them are certainly antagonistic on other grounds. In the first place, Sunday games and amusements mean the employment of additional Sunday labour, and the consequent interference with the legitimate rest of the staff. It also introduces a more or less rowdy element into the parks, which would not otherwise be present on Sunday. Under these circumstances, it is but natural that park officials would very much rather be without the Sunday band performance.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 31—
Roy. Hort. Soc. Coms. meet. (Lecture at 8 p.m. by Mr. James Hudson, on "The Gardens by the Lake of Como").

WEDNESDAY, SEPTEMBER 1—
Carlisle Fl. Sh. (2 days). Glasgow and W. of Scotland Soc. Exh. at Glasgow (2 days).

THURSDAY, SEPTEMBER 2—
Nat. Dahlia Soc. Exh. at Crystal Palace (2 days).

SATURDAY, SEPTEMBER 4—
Soc. Franç. d'Hort. de Londres meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—59.8°

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 25 (6 P.M.): Max. 67°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, August 26 (10 A.M.): Bar. 30; Temp. 59°; Weather—Dull.

PROVINCES.—Wednesday, August 25: Max. 63° Oxford Min. 52° N.E. Coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY AND TUESDAY—
Great Trade Sales of Dutch Bulbs, at 67 & 68, Cheapside, London, E.C., by Protheroe & Morris, at 10.

WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, London, E.C., by Protheroe & Morris, at 10.30.

Intensive Cultivation and French Gardening.

Every form of intensive cultivation is now receiving increased attention, for one of the great problems of the time is to advance production so that larger quantities may compensate for lower prices. But it is not only by magnifying the crops from a given area that success may be secured; there is the question of improved quality, which also demands consideration as a factor in obtaining a favourable balance-sheet. Still another highly-important matter is connected with the need for getting crops of both fruit and vegetables as early as possible in their respective seasons. It is with especial reference to the last-mentioned consideration that the term "French gardening" has come into so much prominence in recent years, though it is too often erroneously employed as signifying intensive cultivation generally. We have long been familiar with the admirable work of our French confrères, whose industry and skill deserve all the praise which they receive. But there are two points which should not be overlooked. One is that their productions are peculiarly adapted to the requirements of their countrymen, and the other, that equally skilful intensive cultivation of a general character has been practised by British market-gardeners and even private gardeners, over a long period. The value of early produce has been

fully recognised, and frames, hand-lights, and hot-beds of manure, have been utilised, notwithstanding that present-day gardeners have become so used to hot-water heating that they were in danger of neglecting the advantages to be got from a good hot-bed. When failure has attended the efforts of our commercial gardeners, it has been much more frequently traceable to other causes than the lack of cultural ability. By all means let us learn the lessons to be derived from our neighbours' practice, but at the same time we must be just to our own growers; some of the sensational articles and pamphlets issued during the past year or two have almost ignored them.

In advocating the introduction of French methods, an important circumstance is commonly overlooked, namely, that the amount of fresh vegetables employed in Paris and other Continental cities, either for salads or in other ways, is enormously greater in proportion to the population than it is here. The custom and taste of the bulk of the populations are totally different, and the British public will need considerable education upon the lines adopted by Mr. Eustace Miles before our consumers will appreciate the early salads to the same extent as Continental folk. Further, to command large and general sales of such produce, the prices must be low; but that is exactly what the so-called "French gardener" in England cannot look forward to with any sense of satisfaction, for he has to meet the heavy expenses which, as even the most sanguine advocates of this system admit, are unavoidable.

As regards labour, the conditions are likewise very different in the two countries. The French market-gardener and his family work longer hours and live more sparingly than do those of the same class here, and a similar remark applies to ordinary labourers. The cost of production is, therefore, greater in England than in France; considerable changes will have to be effected before there is any approach to equalisation in this matter. When it comes to a question of exporting their produce, Continental growers combine more readily than home cultivators to consign it in bulk; hence lower rates of carriage are obtained in lieu of the ordinary prohibitive charges for small quantities.

Despite the difficulties and the mistakes that have already been made by inexperienced growers and by writers who have been somewhat in the position of "the blind leading the blind," the subject is worthy of careful attention by all concerned in the extension of the best forms of intensive cultivation. In the publication of a manual entitled *French Market Gardening*,* Mr. John Weathers has set himself the task of assisting those who wish to understand the principles upon which French market-gardeners cultivate their crops and conduct their business. The author is supported by an introduction from the pen of Mr. William Robinson, who has been for many years an advocate of French methods in gardening. The book comprises 227 pages, of which 65 pages are devoted to general details and the remainder to a description of "Special Cultures," in alphabetical order, with a calendar and good index. Mr. Weathers has done his work in a thoroughly practical manner and has

* *French Market Gardening*. (London: John Murray, 1909.)

produced a manual that is both interesting and useful. He has visited the French gardens and gained much valuable information from the growers themselves.

Statistics, estimates of expenses and returns, and numerous other details, are quoted freely and with striking effect. For example, we are told that around Paris there are 460,000 lights for frames, the largest number in one garden being 1,400 and the smallest number 60. Then as regards the bell-glasses or cloches—so typical of the French system—it is said there are between five and six millions, the largest number in one garden being 5,000 and the lowest 100. Reference is made to a statement by Courtois-Gérard, published in 1844, to the effect that 1,500 acres of land were then devoted to intensive cultivation in Paris, and that this area was cultivated by 1,125 growers. On the next page we are told that the acreage devoted to this purpose at the present time is 3,000 and that the number of growers is 1,300. It is true that most of the old gardens have been destroyed and cultivators have had to go further out from the city, just as has been the case around London, but it seems extraordinary that a period of 65 years should have resulted in an increase of only 175 growers. Again, on p. 6, Mr. Weathers says: "The produce of these market-gardeners is considered to be worth over half a million sterling yearly," which, according to the area given above, is equal to £166 per acre, yet on p. 26 the estimated annual receipts from two acres of French garden are given as £860, or £430 per acre. This astonishing discrepancy needs an explanation, especially as on p. 28 the author states: "So far as the figures for the produce are concerned, the estimates have been based on rather low average prices in the markets." It is wise to give a low estimate of returns in a work of this kind, but the author has apparently followed the same plan in the estimates of expenses, which rather counteracts the good arising from the former procedure. In fact, it is a question which is the more misleading—high estimates of results or low estimates of outlay.

Still, on the whole, there is little room for complaint of Mr. Weathers' accuracy. He has made out a case for French market gardening. There is no doubt that as an adjunct to British intensive cultivation methods the system may render profitable aid to home growers, but it must be applied intelligently and some of the details may need modification.

The Greening of Potatos.

The practice of exposing "seed" tubers of the Potato to light before planting is well known and widely practised, and all who have adopted it are aware of the advantages of this procedure.

Mr. George Masee, Assistant Keeper of Kew, has recently made experiments with a view to determining the reason for the superior results obtained by "greening," as this exposure to light is called. It is, of course, evident to everybody that the light-exposed tuber makes a slower, shorter, sturdier growth than that made by the tuber planted directly beneath the surface of the soil, and since the tuber-forming shoots arise

from low down on the stem, it is advantageous that the region which bears them should not be unduly elongated. The question which Mr. Masee set himself to solve was why does the shoot of the light-exposed tuber make such remarkably slower growth than that made by the dark-grown tuber?

From experiments carried out on recently-lifted tubers—some covered and some exposed to light—he finds that the loss of weight from August 25 to March 25 was, in the case of the uncovered tubers, about $\frac{3}{4}$ ounce; in the covered, $3\frac{1}{2}$ ounces; the loss in weight being due to the formation of shoots, which were rubbed off at frequent intervals.

In another experiment, one batch of tubers was left uncovered and another covered for two months. The loss of weight was determined and found to be considerably greater in the covered lot. Then both were covered till the end of the experiment, when it was found that the batch which had been exposed for two months to the light lost only $\frac{3}{4}$ ounce, and that which had been kept covered lost $3\frac{1}{2}$ ounces.

Hence Mr. Masee concludes that the greatest amount of benefit from "greening" will be derived when it is practised in the autumn immediately after lifting. He points out, moreover, that autumn "greening" will, by causing the formation of a thicker and more impervious skin, tend to check the ravages of winter rot in the stored tubers. A full account of Mr. Masee's interesting paper is given in a recent issue of the *Journal of the Board of Agriculture*.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held at Vincent Square, Westminster, on Tuesday, August 31. A collection of Grapes will be exhibited from the Society's gardens at Wisley. Grapes will also be shown from the large vines at Hampton Court and Cumberland Lodge. There will also be exhibited on behalf of Professor SARGENT and the President and Fellows of Harvard University, Cambridge, Mass., U.S.A., a selection of photographs illustrating the flora, fauna and scenery of Central and Western China. These photographs, each of which is $8\frac{1}{2}$ by $6\frac{1}{2}$ inches, were taken by Mr. E. H. WILSON during his last (third) journey to China. Messrs. J. VEITCH & SONS will exhibit at the same time a collection representing some of Mr. WILSON's introductions whilst engaged in their service, from plants growing at their Coombe Wood nursery. At 3 o'clock a lecture on "The Gardens by the Lake of Como" will be delivered by Mr. JAS. HUDSON, V.M.H.

BRITISH GARDENERS' ASSOCIATION.—On Wednesday, September 1, at 6 p.m., a public meeting of gardeners will be held at the Alexandra Hotel, 186, Bath Street, Glasgow. The Editor of *The Scottish Gardener* will occupy the chair, and an address will be given by Mr. JOHN WEATHERS, general secretary. The Glasgow and West of Scotland Horticultural Society have agreed to allow members of the B.G.A. to visit the flower show at the reduced payment of 6d. each on showing their membership cards. On Thursday, September 2, another meeting will be held at the Y.M.C.A. Rooms, Carlisle, at 6 p.m. Mr. W. B. LITTLE will take the chair and Mr. WEATHERS will deliver an address.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—By permission of WALDORF ASTOR, Esq., the gardens at Chiveden will be open to the public on Thursday, September 16, in aid of the funds of this gardening charity.

NEW ENGLAND DAHLIA SOCIETY.—The second exhibition of this society will be held at the Horticultural Hall, Boston, Mass., on September 10, 11 and 12. The secretary informs us that the Dahlia prospects are splendid, and the exhibition is expected to eclipse anything of its kind ever undertaken in America. In connection with the show the society will issue a special number of the *Dahlia News*, containing articles by American, British, German and French contributors. The price is 10 cents. The secretary is Mr. MAURICE FULD, 5, Union Street, Boston, Mass., U.S.A.

NATIONAL DAHLIA SOCIETY.—The first exhibition will be held at the Crystal Palace on Thursday and Friday, September 2 and 3. Schedules and particulars may be obtained from Mr. E. F. HAWES, Royal Botanic Gardens, Regent's Park, N.W.

SMALL HOLDINGS SHOW AT EARL'S COURT.—This show of the products of small holdings in southern and eastern counties has begun to interest the Londoner, and quite a crowd collects about the miniature cottage, the dairy where butter is seen in the making, and the stable, cow-house, cart shed and vegetable exhibition booth. Although there is evidence on every side of the earnestness of the helpers of the movement, of their sincere wish to place the men who may have left the land in exchange for a miserable existence in over-crowded towns, the show here at Earl's Court has its Gilbertian aspect; for example, the miniature cottage garden, with its painted representation of two beehives, but never a bee, its all too tiny dairy and cottage that would scarcely admit a burly farmer at its doorway. But let these stage properties pass, the cow and calves were creditable specimens of their kind, if of dubious breed; the horse, which passed its days in examining the visitors from over the stable hatch, was a nice-looking beast. The haystack in the meadow was real new hay, was neatly thatched with straw, and weighed about 10 cwt. All these sights of country life were of never-ending interest to the visitor. In the vegetable show-hoth produce was to be observed from Norfolk, Suffolk, Cambridgeshire, Essex, Wilts. and Bucks. of a surpassingly good quality, more especially the Potatos, of which many old varieties were remarked, as, for instance Myatt's Ashleaf, red-skinned Flourball, a nice eating tuber but very liable to be affected by the rot; Early Rose, white and red Hebrons, &c. Newer varieties were, however, more common and excellently grown. Carrots, the globular Egyptian and tapering-rooted Beetroots, Onions and the red and yellow-skinned Shallots were mostly very good specimens. Cabbages were not so good as we expected to see them, and they seemed to have suffered greatly from the butterfly caterpillar. Cauliflowers were seldom in good condition, and were mostly bad in colour, and had been cut too late to be good eating. We suppose that the major proportion of these culinary vegetables were produced in the field, and not in long-cultivated gardens and by men who are deficient in gardening skill. As time goes on, however, these are matters that will be greatly improved by the small holder as he increases in knowledge. The proprietors of *Lloyd's* newspaper deserve unstinted praise for their inauguration of this novel venture.

A DISEASE OF CINERARIAS.—In contributions from the Wisley Laboratory II. (*Journal of Royal Horticultural Society*, xxxiii., 1908), Mr. CHITTENDEN describes a new disease of Cinerarias caused by the fungus *Coleosporium senecionis*. The rust produces its uredo spores in September, and soon afterwards its resting or teleuto-spores.

GREENHOUSES AND UNDEVELOPED LAND.—In the House of Commons Mr. HAROLD COX asked the Chancellor of the Exchequer whether land upon which greenhouses had been built for market-garden purposes would be exempt from the undeveloped land tax; and, if so, whether that exemption would be confined to the actual area covered by the roofs of the greenhouses, or whether it would include the land occupied in conjunction with the greenhouses and used for carrying on the same business? Mr. HOBHOUSE stated there will be no such exemption.

"BRITISH FERN GAZETTE."—The first number of this journal, which will contain a series of articles on the varietal forms of our native Ferns, will be issued in September. It will be conducted under the auspices of the British Pteridological Society, and Mr. CHAS. DRUERY, V.M.H., will act as editor. Parts will be issued quarterly; the annual subscription is 5s. Mr. DRUERY's address is Stanwixbank, Shaa Road, Acton, W., who would be pleased to furnish particulars.

THE FLORA OF THE CONGO.—We learn from *La Tribune Horticole* (iv., No. 161, July 24, 1909) that the Minister for the Colonies (Belgium) has requested M. MARCEL LAURENT, of the Botanical Garden at Brussels, to investigate the flora of the Congo.

THE LARCH FLY.—At the sixth annual meeting of the association held in the New School of Forestry at Oxford, on July 13 to 15, Dr. C. GORDON HEWITT gave an account of his investigations on the large Larch Saw-fly, *Nematus erichsoni*. From Dr. HEWITT's observations, it appears that the natural enemies of the fly are increasing in numbers and include parasitic ichneumons, a small vole and a parasitic fungus—a species of *Cordyceps* which attacks the pupa stage. Notwithstanding this increase in the organisms which prey on it, the Larch-fly is increasing and, according to Dr. HEWITT, is likely to continue to be a very serious pest.

THE BRUSSELS EXHIBITION, 1910.—With respect to the paragraph printed in the issue for August 14 (p. 115), we have received a letter from Mons. HEURSEL DE MEESTER, Librarian to the Société Royale d'Agriculture et de Botanique de Gand, stating that the Council of the Ghent Society has not come to any decision on the matter of participating in the exhibitions which will be held at Brussels next year. He states, however, that owing to the co-operation that exists between the Belgian Horticultural Societies, a very large number of Ghent nurserymen will exhibit at Brussels. The previous communication on this subject was sent us by the authorities at Brussels, who appeared to be under the impression that the Ghent Society would continue the centenary celebrations commenced last year. Mons. DE MEESTER states that the Ghent Society is engaged in the reconstruction of its famous 17th century gardens in connection with the next quinquennial exhibition to be held in 1913.

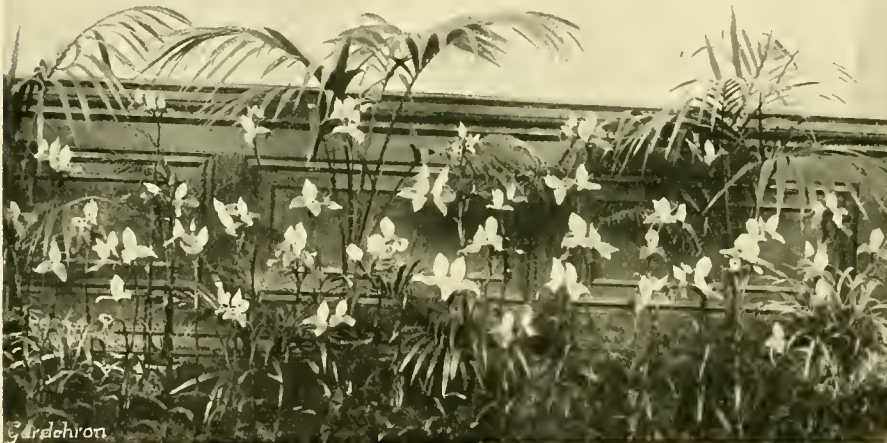
POISONING ATTRIBUTED TO FRUIT OF PRUNUS PISSARDII.—In the issue of *Die Gartenwelt* for July 31, it is stated that a six-year-old child was taken ill after eating of the fruits of this tree, but recovered after a short time. The doctor who attended believed that the illness was due to the fruit. When cooked with a suitable quantity of sugar the fruits are not unpalatable. Eaten in the raw state they are sour and flavourless, and their high degree of acidity affects the digestive organs in the same manner as do other unripe Plums, more especially when water is taken at the same time, and the digestive juices thus diluted and weakened.

THE POTATO CROP.—The following summary on the Potato crop has been received from the Board of Agriculture and Fisheries. The returns are concerned mainly with crops grown for market purposes:—"England, East.—Reports describe the crop as having grown vigorously, and it is feared in some cases too rankly. In many localities there are signs of blight in the haulms, and the tubers are slightly affected, but at present the crop is free from any serious attack. In some parts of Cambridge, Suffolk and Essex the yield is stated to be deficient, but generally it is expected to exceed the average. England, North-east.—A strong growth of Potatoes is reported, and at present serious disease is not general. A Lincolnshire estimator states that 'the crops ran to haulm excessively, and after a few days' sunshine and heat, decay set in. Second earlies are considerably blighted, and the later varieties will fare the best.' Still, satisfactory yields of tubers are looked for in this division. England, South-east.—Reports on the crop are generally favourable, the growth being vigorous and healthy as a rule. In a few districts blight has appeared, but the August sunshine has prevented it spreading. An over-average yield is anticipated generally, prospects being best in Surrey. England, East Midland.—The crop has grown vigorously, and is generally very satisfactory, the fine weather of the present month hav-

every prospect of a satisfactory yield of tubers throughout the division. Wales.—Potatoes have shown a strong and healthy growth, and are practically free from disease. All estimates of the yield place it at average or more, prospects being rather better in the southern than in the northern half of the country. Scotland, East.—A vigorous and healthy crop is reported, the weather conditions since mid-July having been favourable. On some hard lands in Perthshire the crop is said to be deficient, and the yield may be poor in parts of Fifeshire, but generally the return promises to be higher than usual. Scotland, West.—The weather has favoured the crop during the last month, and a strong growth with practically no disease has resulted. Some estimators remark that early varieties have lifted well. The yield promises to be over average."

BLACK SCAB DISEASE OF POTATOS.—We are requested by the Board of Agriculture and Fisheries to remind Potato growers that it is their duty under the Destructive Insects and Pests Order of 1908 to report all outbreaks of warty disease or black scab (*Chrysophlyctis endobiotica*) (see *Gardeners' Chronicle*, July 31, p. 79), on their premises to the Board. The penalty for failing to report the disease is £10. Certain British Colonies now require, with every consignment of Potatoes exported to them from this country, a certificate from the Board to the effect that the Potatoes have been grown in

PUBLICATIONS RECEIVED.—*Bulletin du Jardin Imperial Botanique de Petersbourg.* Tome IX., Livraison, 4.—*Verein deutscher Rosenfreunde.* Liste von 800 empflohlenen Rosen aller Klassen.—*Annual Report of the Royal Botanic Garden and other Gardens in Calcutta, and of the Lloyd Botanic Garden, Darjeeling, for the year 1908-9.*—*On the Making of Gardens,* by Sir George Sitwell. (London: John Murray, Albemarle Street, W.) Price, 5s. net.—*Illustrierter Führer durch den Japan-Garten und Teehaus von Minoru Yasuda, in der Internationale Luftschiffahrt-Ausstellung, Frankfurt A.M., 10 Juli—10 Okt., 1909.*—*The Record Poultry Book.* (London: Brown, Dobson & Co., Ltd., 15, Essex Street, Strand, W.C.) Price 1d.—*French Gardening,* by Thomas Smith. (London: Joseph Fels, 39, Wilson Street, Finsbury, E.C.)—*The Estate Magazine* (August). Price 6d.—*The Country Home* (August). Price 6d.—*Trees and Shrubs of the British Isles, Native and Acclimatised,* by C. S. Cooper and W. Percival Westell. (London: J. M. Dent & Co., 29 & 30, Bedford Street, W.C.) Price 1s.—*Programme and Rules of the International Agricultural Exhibition to be held at Palermo (Buenos Aires) by the Sociedad Rural Argentina (Argentine Rural Society) from June 3 to July 31, 1910, under the auspices of the Government of the Argentine Republic in celebration of the First Centennial of the Argentine Emancipation, May 25, 1810.* (Buenos Aires: 222265—Talleres de la Casa Jacobo Peuser.)—*Les Vegetaux, leur role dans la Vie Quotidienne.* 10 Conférences par D. Bois et G. Gadeceau. (Paris: Pierre Roger et Cie., 54, Rue Jacob.)—*The Women's Agricultural and Horticultural International Union's Monthly Leaflet.* (August.) (London: 64, Lower Sloane Street, S.W.) Price 2d.—*The Journal of the Board of Agriculture.* (August.) Price 4d.—*The Queensland Agricultural Journal.* (July). (Brisbane: Department of Agriculture and Stock.)—*Trees and Shrubs of the British Isles,* by C. S. Cooper and W. Percival Westell. (Parts 10 and 11.) Price 1s. each net.—*U.S. Department of Agriculture, Bureau of Plant Industry.* Bulletin No. 156: A Study of Diversity in Egyptian Cotton, by O. F. Cook, Argyle McLachlan, and Rowland M. Meade. Circular No. 34: The Work of the San Antonio Experiment Farm in 1908, by Frank B. Headley and Stephen H. Hastings. (Washington: Government Printing Office.)—*Agricultural Gazette of New South Wales.* (July.) (Sydney: W. A. Gullick, Government Printer.)—*Eremurus.* Kritische Uebersicht der Gattung. Von Olga Fedtschenko.—*Staffordshire County Council Education Committee, Directory for Higher Education, 1909-1910,* containing the regulations of the committee and details of schemes in operation throughout the administrative county.



[Photograph by John Gregory.]

FIG. 65.—GROUP OF *DISA GRANDIFLORA* EXHIBITED BY MRS. BISCHOFFSHEIM AT THE MEETING OF THE ROYAL HORTICULTURAL SOCIETY ON AUGUST 17.

(See p. 136 ante.)

ing proved very beneficial. The crop appears to be as promising here as in any part of England; practically no disease is reported, and good yields are expected. England, West Midland.—There is a strong growth of haulm, and every prospect of an over-average yield of tubers. The crop is generally free from disease, but reports from parts of Wiltshire and Hereford state that 'earlies' have been more or less affected. Heavy crops appear probable in Shropshire and Worcester. England, South-west.—The Potato crop has come on well, benefiting from the sunny weather, but frequent mention is made of the appearance of disease, which has, in some instances, seriously affected the haulms. In a few localities the yield may be poor, but generally the crop promises to exceed the average. England, North.—The haulms have grown vigorously and come into bloom well, while disease is absent. About an average yield is indicated in Northumberland, but elsewhere the crop will probably be heavier. England, North-west.—The hot sunshine of the first two weeks of August has been beneficial in quickening the growth of the crop and preventing serious prevalence of blight. Here and there the 'earlies' appear slightly affected. There is

a district not infected with this disease. Exporters who require further information can obtain it on application at the offices of the Board, 4, Whitehall Place, London, S.W.

THE HOP PROSPECTS.—According to the Board of Agriculture and Fisheries, the Hops in Kent have been subject to persistent attacks by aphids, and where continual washing has not been carried on there may be no Hops to pick. It is thought by some estimators that the quality may be good if fine weather continues, but a low yield is expected, one estimator even speaking of the crop in his district as the smallest since 1882. In Surrey, Sussex and Hants the continued cold and damp weather of July has made the outlook bad, the aphid attacks having been exceptionally severe. Reports from Worcestershire show that the unceasing attacks of blight have necessitated a persistent washing, but an improvement with the August sunshine is reported. In Hereford many yards are said to be a failure. One estimator in this county forecasts an average yield for his district of $3\frac{1}{2}$ to 4 cwt. per acre, with an outside limit of 5 to 8 cwt. on best soils where the crop has been well washed.

LAW NOTES.

FAILURE OF A FRUIT MERCHANT.

At the London Bankruptcy Court on Friday last, the first meeting of creditors was held under the failure of Mr. John Idiens, formerly a director of John Idiens & Son, Ltd., fruit and coal merchants. The debtor stated that the company was formed in 1900, and was a reconstruction of the original company of J. Idiens & Son, Ltd. In his capacity as director, he guaranteed payment of certain of the company's accounts to the amount of £1,500. In April last the company was in difficulties, and a receiver was appointed on behalf of the debenture holders. Certain of the creditors issued writs, and having obtained judgments, the debtor filed his petition in bankruptcy. Debtor was interested in a patent for cement block making machinery, which he sold for £750. He guaranteed the payment of the purchase of premises at Cheltenham, where the business was to be carried on, the business was dropped, the premises were sold off by auction, and, as the result of litigation, judgment was given against him last July for £1,100 and costs. The debtor attributes his position to the loss of that action and to his liability on the guarantees given on behalf of John Idiens & Son, Ltd. The total liabilities amount, roughly, to £14,700, and the deficiency to £8,999. No offer was submitted on the debtor's behalf, and the case remained in the hands of the official receiver to be wound up in the ordinary course of bankruptcy.

THE HAMPTON COURT VINE.

WHETHER a merit or a demerit, it has been the lot of this fine old vine to have been more often the subject of newspaper paragraphs than any other vine in the world. Happily, the veteran, with its 141 years of existence, bears the notoriety with indifference. But nothing, so long as it exists, will ever daunt the irrepressible energy of the autumn newspaper paragraphists in pressing the vine into copy, or, which is of much greater interest, of damping in any way the intense anxiety of the public, no matter of what nationality, to see this ancient worthy vine, which the people of Great Britain at least regards as a great national asset. If anyone doubt the existence of this interest, he has but to take his stand near the viney on any ordinary day or special holiday, and count the visitors by thousands, all flocking religiously to pay homage to the veteran which ranks to them as the oldest and most remarkable Grape producer of the kingdom. It need be, therefore, no matter for surprise that the care and culture of this ancient vine necessitates or creates material interest and anxiety. Were it to die, the fact would be known throughout the civilised world, and myriads would mourn its loss. His gracious Majesty King Edward may be its legal owner, Mr. A. Mackellar, of Frogmore, the vine's actual custodian, and Mr. Jack, under whose immediate personal care it has been for close on 27 years, may claim it specially; but the British people idolise the old vine so much that they claim it as their own. It is interesting to learn that letters relating to it and asking for information concerning its history and welfare come to Hampton Court from all parts of the globe. What a record is all this for one old, yet so illustrious a vegetable unit! Not many years ago, when the tree had to exist as best it could in its old, cramped house, with tens of thousands of people annually treading the hard, flagged floor beneath it, and raising clouds of dust to coat its leaves and fruit, it was no matter for surprise if it manifested painful evidence of old age and exhaustion. Most happily its downward progress was arrested in time. Under good advice, his Majesty sanctioned the removal of the old house, and its replacement by one loftier, lighter and larger, the removal of the floor flagging and ancient brick flues, the replacement of these offensive features by good loamy soil, and some manurial attributes, and also some severe thinning of wood, all of which, under Mr. Mackellar's wise direction, were so successfully carried out that not a shoot or bud suffered. The vine was replaced on to its new supports, and its roots received every encouragement to find food and nourishment in the new soil environment. To-day the success of all this liberal treatment is most abundantly manifested. But a few years ago the poor annual growths could barely produce from 6 oz. to 8 oz. bunches, and these coloured badly, and were, indeed, a poor sample. Now the vine is carrying bunches weighing from 2 lbs. to 2½ lbs. at least, perhaps even heavier, the berries of full size, black as Sloes, perfectly free from dust, and worthy now to be indeed the dessert of a king. Myriads of young Black Hamburgh vines to-day cannot show such capital sample bunches as now hang in the Hampton Court viney. Wood growth and leafage are first-rate also. That so remarkable a renovation or re-suscitation should have happened to a vine of such great age is, indeed, remarkable; for it must be understood that wherever its roots may be, they could not be lifted, as those of younger vines may be. That new roots are rapidly developing within the floor of the house itself is the belief of its custodians. Open trellises are laid where needed, hence the soil is not anywhere hard trodden. At the present moment, the floor is coated with some 2 inches thickness of well-trodden manure from the park paddocks, and, as this gradually decomposes, it will doubtless furnish valuable food next year. It may be re-

membered that the stem of the vine near the ground is 5 feet in circumference; but, old as it is, its bark is clean and of as robust health as it is possible for any vine to show. That at such a remarkable age it should be found possible to so wonderfully restore to almost youth and health this national vine is, indeed, matter for warm congratulation. It is just possible that a few bunches from the vine may be exhibited at Vincent Square on Tuesday next. A. D.

FORESTRY.

PIONEERS IN FORESTRY.

THE unprecedented interest which has been exhibited in the publication of the report on afforestation must, in one aspect, be regarded as simply a culmination of what has exercised the minds of many for a period, the length of which can hardly be estimated with certainty. The care of woods and the making of laws regulating the planting and tending of forest trees occupied the attention of kings and their counsellors in very early times. True it is that these laws were seldom enforced, and only here and there was due care taken of existing woods, while the laws which were thought sufficient to ensure an unbroken supply of timber would be deemed insufficient in these days. In Queen Elizabeth's reign several forestry laws were made, and it is about this period that the earliest writings on forestry of which we have record were published; though it must be conceded that these early British writers laid the works of Continental authors under considerable contribution. Olivier des Serres, indeed, exhibits, in the *Théâtre d'Agriculture*, an extensive knowledge of forestry which we discover later writers in England to have carefully studied. Lawson, a Yorkshire squire, gives a picture of the state of forestry 300 years ago which is as black as could be painted. Yet if we are to credit Blith and Evelyn, there were landed proprietors who managed their woods with much wisdom and with great advantage to themselves; the father of the last-named being one of those enlightened people who cut and replanted systematically. He blamed the governing classes during the Commonwealth for wantonly destroying trees; but against Evelyn's assertion must be placed the undoubted fact that Cromwell encouraged tree planting, and that Blith, a Republican officer, effected not a little by his individual labours. It is fairly clear that in Charles I.'s time planting progressed more steadily than it had ever done previously, and not improbably the days of the usurpation saw only a renewal of that policy. In Charles II.'s reign there was a continuance of it, largely, no doubt, on account of Evelyn's *Sylva*, which, it should be observed, was not so much the expression of the views and the experiences of an individual as the gathering together of the knowledge of the country at large on this matter, a point which he himself freely admits. Evelyn was, perhaps, the earliest to observe the disadvantage of planting woods with trees several years of age, though there is a hesitation to condemn the custom outright. The method of sowing Acorns and Chestnuts in furrows is very like that pursued on the Continent at the present day. Evelyn saw clearly that wood for profit must be planted on ground of little value agriculturally, and was aware that even the Oak, which was the chief timber tree of the period, was by no means particular as to soil. What strikes one is the small esteem in which he holds Conifers. The Scots Fir was known to him only through some young plants which he had raised from seeds sent him by Lord Argyll, who seems to have been a better forester than an ornithologist, if we are to judge from the laughable episode of Evelyn's turtle doves which he took for owls!

Contributory aids to tree planting on a large scale were the magnificent schemes introduced by Le Nôtre in the laying out of grounds. London followed on the same lines, and, accepting Switzer as authoritative, every important place in England was dominated by him or his partner, Wise. Cooke, who was associated for a while with London, held similar views, and wrote a somewhat popular work on forestry, but much inferior to that of Evelyn, who continued to be the accepted authority for a very long period.

Tree planting in Scotland was carried out on much the same lines as had obtained in England previous to the adoption of the above-mentioned methods, till about the year 1700, when, or shortly after, a new era in forestry commenced, and, instead of planting a few acres in close proximity to his dwelling, the Scottish laird made large levies on outfield, moor, and bog, and planted hundreds of acres. The sixth Earl of Haddington and his countess were admittedly the pioneers in this great work; but their example was rapidly followed by many others, thus demonstrating the existence of a general desire to engage in schemes of estate improvement. This nobleman gave, in a short treatise, the results of his experience to a limited circle of friends, and, in a letter to his grandson, some additional facts, which show that forestry was engaged in not merely as a means to produce timber, but also as a kind of landscape gardening. This letter was written in 1733, and describes the laying out of a wilderness with 14 walks radiating from a circle, each one with its peculiar termination. It also tells how a large piece of barren sand close to the sea was successfully furnished with healthy trees, and explains how a wood was laid out, one or more centres being chosen, and from these wide and straight drives were extended in every direction, besides narrow walks, which were curved or serpentine, and here and there open lawns. But the great value of these two treatises consisted in the clear and succinct directions they gave on raising, planting and pruning trees, some of the methods being such as might well be adopted at the present day. To some extent Lord Haddington broke away from the old practice in cultivating the land previous to planting; but one gathers that he had a decided liking for deep cultivation notwithstanding. To large plants he had a decided objection, and not only Conifers, but hardwoods were planted when quite small. His system of drawing the roots of two-year-old Firs through a solution of soil and water previous to planting is well worth imitation for spring planting, and, as compared with the digging out of large holes, which, previous to his time, was customary, with the absolute necessity of applying water to establish the trees, the advantages of the former method are, obviously, immense. Another important fact was discovered—but he gives Lady Haddington the credit for this—in the admirable way trees thrive to the very limits of the land on the sea-shore, and he confirmed the proposition that Evelyn had made that Oaks and other timber trees are not particular as to soil so long as it is not shallow; many acres having been planted in sand, in which they grew with vigour. The first-mentioned of these treatises was published in book form in the year 1756, again in 1760, 1765, and in 1766, and forms part of a collection of works on rural economy. Its title is *A Short Treatise on Forest Trees*. The other was published in 1761, and is entitled *A Treatise on the Manner of Raising Forest Trees*. It is embellished with an engraving showing the method of fencing, and it is curious that this engraving varies in different copies. It is padded to book proportions with two essays by Buffon. Till the commencement of the last century these exhaust the original works on forestry, though the subject is treated in not a few books, and Boucher, in 1775, published his work on trees in which there is a reversion to planting over-large specimens. B.

THE SWEET PEA SEASON.

THIS has been—in British gardens at least—a record year for the Sweet Pea. During the last three weeks (I write from Kirkmaiden Manse, N.B., on August 23) atmospheric conditions have been supremely favourable to the floral development of the finest and most fragrant of annuals.

Many of the older varieties of the Sweet Pea are rapidly disappearing, before the advent of newer and larger creations. This is inevitable, so long as we have so many earnest hybridists working assiduously to surpass the achievements of their predecessors, with finer results. Scarlet Gem, for example, has been practically superseded by Queen Alexandra, which is brighter in colour and somewhat larger in size. Though Dorothy Eckford has not yet been vanquished and driven from her throne as queen of the pure whites by Etta Dyke, yet there is, through the inordinate worship of crenulation, some danger of this. I have heard it sometimes asserted that Dorothy, though a splendid Sweet Pea, has almost too much substance, and is not refined in aspect when compared with her great rival, which, while equally commanding in dimensions, has more of a silken or silvery appearance. I have both varieties in my garden this year, and though I am greatly attached to Dorothy Eckford, and have assigned her the most picturesque situations (in one instance flowering exquisitely through the branches of *Magnolia Watsonii*, in another aspect revealing her snowy whiteness amid the long leaves of an *Ailanthus*), I cannot altogether deny the truth of this affirmation. But Dorothy Eckford is so reliable, and, at the same time, so grandly ornamental, as to be, under any conditions of "crenulated" evolution, quite indispensable.

Among the most valuable of the modern waved varieties are Helen Lewis, sometimes termed the Orange Countess (Spencer); The King, an immensely large and luminous derivative from King Edward VII.; Mrs. A. Ireland, a very beautiful Sweet Pea, somewhat akin to Florence Morse Spencer; Mrs. Henry Bell and Evelyn Hemus, highly-endowed sisters, with a margin of pink on the creamy petals, which is richly effective; Mrs. Rontzahn, which I regard as considerably less distinctive and a beautiful reversion from these towards the original type (the Countess Spencer); Asta Ohn, the grandest of all the waved lavender forms, from far California; Mrs. Harcastle Sykes, of tender pink hue, closely affiliated to Queen Victoria; The Marquis, a glorious heliotrope flower of great fascination; John Ingman, deep rose-carmine in complexion, and imposing in dimensions; Nora Unwin, an exquisitely refined, pure white; and the peerless Etta Dyke, already characterised.

Of varieties that have not yet been "Spencerised" are Dobbie's Mid-Blue, and the most fascinating in its singular beauty of all American introductions, viz., Helen Fierce, of which the former, as I have already learned from observation, requires a fine environment for its adequate effect. This also is essential to the full artistic effectiveness of my Parma Violet-coloured Eckfordian namesake (at present being crossed with the Countess Spencer in California by Mr. Henry Ohn), which requires to be planted between scarlet and white.

During last winter I had the pleasure of receiving from Mr. Lester Morse, of the Santa Clara Nurseries, San Francisco, a number of un-named Spencerian hybrids, which I gave to my friend, Mr. David A. McClew, factor on the Logan estates in this parish and one of the most successful Sweet Pea cultivators within the range of my acquaintance. Almost every seed of those Californian hybrids germinated with him at Chapel-Rossan, and, while the floral results are in every instance highly interesting, several of them are extremely beautiful, and may be regarded as decided acquisitions. Their colours range from deepest heliotrope and palest lavender to purest white. *David R. Williamson, August 23.*

PROTEAS.

It is notorious that the Cape Peninsula possesses one of the richest floras in the world, including many plants both interesting and beautiful. Among these none can excel or surpass the various species of *Protea*. Of ancient lineage, the genus *Protea* comprises 60 species, the majority of which are distributed throughout South Africa, extending towards Central Africa and adjoining territories. Many of these plants live in regions where long, dry summers are prevalent, and as they are neither succulent nor bulbous, their xerophytic habit is shown in their leaves. These meet the necessity of reducing transpiration in a variety of ways, for instance, by the reduction of the leaf surface or by a thickening of the cuticle; whilst others present the edges of their leaves to the sun's rays. To this endless variety of form the genus owes its name, in allusion to the sea-god Proteus (of the Grecian mythology), who delighted in constant change of form. The species occurring on the peninsula number 10, and their chief beauty lies not in the flowers, but in the coriaceous, imbricate bracts which surround them.

PROTEA SPECIOSA, a handsome shrublet attaining a height of 3 to 4 feet, bearing obovate leaves 3 to 4 inches in length of a glossy green and firm texture, occurs on Table Mountain at elevations of 2-3,000 feet, and is comparatively rare. The flower-heads are large and somewhat cone-like, 4 to 6 inches long, 3 to 4 inches in diameter, the scales being of a pale, fleshy mauve, incurved and bearded, with brownish hairs at the apices.

P. SCOLYMUS, one of the smallest of the genus, abounds on the sandy stretches in the vicinity of Cape Town, and is easily distinguished from its congeners by its dwarfer habit, never exceeding 3 feet, with lanceolate, linear leaves 2 to 4 inches long and flower-heads 1 to 2 inches in diameter, and, when expanded, of a pleasing yellow, whilst the surrounding bracts are obtuse and ferruginous.

P. MELLIFERA.—The Sugar bush of the natives—so called on account of the flowers containing a large quantity of nectar, which is duly appreciated by the juvenile flower-gatherers—in company with *Protea lepidocarpon* and *P. incompta*, clothes the hill and mountain sides in such profusion and quantity as to completely exclude the dwarfer vegetation which at some former period existed there. Of handsome appearance, this 6 to 8-foot shrub, when flowering, excites the admiration of all those who seek the pleasures of a mountain stroll. The colour of the flower-heads vary greatly, the acuminate bracts are sometimes white or pale lemon-yellow, becoming gradually of a vivid crimson-red at the apex. Their appearance is greatly enhanced by their transparency and shininess, due to the innumerable honey-glands which dot the surfaces of their tissues.

P. GRANDIFLORA, the Waage-boom of the Colonist, is a small tree 8 to 12 feet. The wood of which furnishes excellent fuel, and hence is eagerly sought. It has a rather straggly habit, the lower branches being perfectly bare, whilst the glaucous leaves are borne in clusters in the axils of which the flower-heads eventually appear. These, when expanded, average 3 to 5 inches in diameter, and in this case the bracts are insignificant, the numerous white stamens forming the conspicuous features of this plant.

P. CYNAROIDES, appropriately termed the "Pride of the Cape," resembles *P. speciosa* somewhat in appearance, though the flower-heads are by far the largest in the whole genus, measuring at times 6 to 8 inches across. The bracts are acuminate, externally of a pale, fleshy pink, whilst internally of a creamy colour. The leaves add greatly to the charm of this species, being reniform-rotund and of a rich green, whereas the petioles are favoured with a rosy colour. Flowering amongst a chaos of *Staavia*s, *Brunias*, *Ericas*, *Cliffortias*, and other vegetation peculiar to the Cape, this noble plant and its congener offer a

picture well compensating for the arduousness of a Table Mountain climb. *P. cynaroides* provides a striking example of the extent to which a plant varies when grown at different altitudes or when cultivated under different conditions. This *Protea* occurs also on the so-called flats, lying at altitudes of 50 to 100 feet above the sea level. The flats are of a very sandy nature, approaching the sea sand in colour and remarkably deficient in humus. Here this plant becomes acaulescent; the flowers, if any, are poor, nor do the leaves attain the size and consistency of their more fortunate companions. As illustrating its differentiation in cultivation, I may mention that, when on a visit to the Royal Gardens, Kew, that splendid institution of which every Englishman is justly proud, I saw in the temperate house a plant which struck me as being vaguely familiar, and on glancing at its label I read *P. cynaroides*. Surely, said I to myself, this plant inclining to a scandent habit and hearing narrow, lanceolate leaves is not our robust 2 to 4-foot friend at the Cape? But yes, after a closer inspection I was able to detect the resemblance, though not without some misgivings. This was not the only case, for, amongst the succulents, similar cases were noted, notably *Euphorbia Caput-Meduse*.

P. CALOCEPHALA has been reported from the Cape Peninsula, but is doubtless now extinct, for in my wanderings I have never come across it within the limits of this region. In habit it favours *P. mellifera*, as also in the flower-heads, the bracts being more obtuse and ciliated on the margins and possessing a remarkable range of colours from pale creams to dark purples.

P. ACAULIS, the stemless *Protea*, as the specific name denotes, consists of three to five spatulate leaves 3 to 6 inches in length and 1 to 2 inches broad in clusters, amongst which the sessile hemispherical head, 1 to 2 inches in diameter, appears. Its colour is of a dingy yellow, and has therefore little of beauty to commend itself to the cultivator.

P. LEPIDOCARPON is a shrub resembling *P. calcephala*, bearing lanceolate leaves 3 to 5 inches long and $\frac{1}{2}$ inch broad, the inflorescences having a peculiar charm of their own. The bracts are brownish at the base, gradually merging to a dark, velvety black at the incurving apex, forming a fluffy, hairy ring, so conspicuous a feature of this notable species.

P. INCOMPTA, a peculiar and most desirable species, is somewhat smaller in size than that aforementioned, but with broader foliage. Both the longer growths and leaves are thinly pilose. In this instance the bracts surrounding the flowers are sappy green, eventually changing to a snowy-white tomentum at the apex.

P. COCCINEA is a shrub which is rarely met with, and hence is practically unknown to cultivators. In growth and leaves it resembles the preceding species, the inflorescences partaking of the form of *P. speciosa*, but smaller and of an exceptionally attractive scarlet colour.

Notwithstanding their great claims to attractiveness and beauty, these plants, as well as their allies, such as *Leucadendron argenteum*, *L. decorum*, *L. ascendens*, *L. floridum*, &c., *Leucospermum*, *Serruria*, *Brabejum* species, and others too numerous to mention, have not received the attention and merit they unquestionably deserve. Many have been introduced to cultivation, but are now rarely met with, and the question arises, why is this? Is it due to the unfavourable climatic conditions prevailing in this none-too-sunny isle, or to a wrong composition of soil, or to fungal diseases? The first question must be answered in the negative, for are there not excellent specimens in cultivation of plants which grow side by side in their natural habitat with the representatives of the Order Proteaceæ, viz., *Agathosma rugosa*, *Colocoma alba*, etc.? The plants flourish in the most varying soils, and, as before cited, the same species is often found growing in white sand, with scarcely a touch of leaf-soil and in other

localities in a composition resembling English loam, though not so tenacious, broken slate and a liberal dash of gravel. The third question concerns the only disappointing feature of the plants of this Order, that is their tendency to die suddenly in the midst of their glory from no apparent cause whatsoever. It is this peculiarity which makes the cultivation of *Leucadendron argenteum* (the Silver Tree) extremely difficult. Such cases of sudden death have occurred in the gardens of Cape Town, where several plants, 15 to 20 feet in height, in excellent condition and planted in different positions, have succumbed one after the other within a week. In my opinion, this may be due to the mycelium of some fungus attacking the tissues of their roots—a problem the solution of which awaits the pathologist. Proteas require the conditions of a well-ventilated greenhouse with full exposure to sunlight, but during the summer they should be placed out-of-doors. Most of them thrive only in well-drained, sandy peat, and they are induced to flower freely by allowing them to become pot-bound after they have grown to the required size. Their propagation is effected by

PRUNUS PISSARDII FRUITING.—I am sending a fruit of *Prunus Pissardii*, from a standard tree growing in an exposed position in this garden. The tree was planted four years ago in a stiff clayey loam, and has been pruned at the same time and in the same manner as Plums, but not as generally practised after flowering. *John Edwards, The Gardens, Sylfaen Hall, Welshpool.*

BEGONIA "RUST."—If your correspondent Mr. H. Wood (see p. 106) will fumigate his Begonias with the solid dry cake Al fumigating compound at intervals of about 10 days for a few times he will entirely rid his plants of the Begonia mite. *J. Pitts, Pett Place Gardens, Charing, Kent.*

PRIMULAS FOR THE WILD GARDEN (see p. 122). Though it is true with Primulas seeding themselves, that they are apt to produce a crowd of seedlings which some persons may think require thinning, yet if left entirely alone the effect will be natural and wild to an extent which no art can rival. There is a wild garden near here where *P. japonica* has seeded itself in the water of the ditch draining the bog garden, the flowers producing a mass of colour which must be seen to

herewith photographs of a street of Pear trees. We need not point out to you what a feature such a street is during the spring, and, with your correspondent, should like to see such planting more general in this country. So far, we have had very little trouble through damage; our first street was planted four years ago. Arbor Day has proved a great success here. *First Garden City, Limited, Letchworth, Herts.*

A VILLAGE GARDEN COMPETITION.—I was pleased to read Mr. Wright's remarks on this subject on p. 134. C. J. Fletcher, Esq., of Dale Park, near Arundel, has offered prizes to persons on his estate having the best-kept gardens for several years past. These are not judged on quite the same lines as those at Old Warden Park. The general appearance as a whole is first regarded. This year the judging was on August 19. Some of the gardens were remarkable for the profusion of bloom, cultivation of vegetables and absence of weeds; indeed, they could not well be improved upon. *A. Gooden, Burton Park Gardens, near Petworth.*

CALANDRINIA CHROMANTHA.—I am altogether disappointed with the flowers of the new annual *Calandrinia chromantha*. Though numerous and pale rose-coloured, the flowers hardly open, and are so tiny, not exceeding the size of a pin's head, that they make no effect at all, even in a bed filled with freely-branching plants. The first flowers to open are already setting their small yellow fruits which, if produced in quantity, may be pretty. I am also anxiously expecting the flowering of the rampant-growing, annual creeper from the Himalayas (*Dicentra torulosa*) sent out last year by Messrs. Vilmorin. It is now growing all over the plant at the rate of an inch and a half a day. *W. E. Gumbleton, Belgrove, Queenstown, Ireland.*

APHIS AND GALLS.—Recently, while pruning Lombardy Poplars, I noticed numbers of galls formed on the ribs and petioles of the leaves. From a distance the trees appear to be bearing rose-coloured fruits. Apparently only the galls that are green and those in process of formation contain the mites. When a gall is vacated by the mite, a colony of aphid immediately takes possession, using the interior of the sac-shaped gall as a breeding chamber. I have no doubt that when the leaf falls many aphid are preserved alive by remaining snugly ensconced through winter's cold until they emerge again in spring. *L. Simms, Avondale Road, Palmer's Green, N.* [The purse-gall of the Poplar is caused entirely by the aphid, *Pemphigus bursarius*. The mature females or stem-mothers vacate the galls in late summer, survive our winters' frost and cold, and on the return of spring start fresh colonies in the same kind of situations as their progenitors. The acarids seen were either Inquilines or the larval stage of the aphid.—Eds.]



FIG. 66.—SAXIFRAGA BURSERIANA "GLORIA": FLOWERS WHITE.

cuttings of the half-ripened wood inserted in sandy peat under a bell-glass, or by imported seeds; though the seeds, for the most part, are generally infertile.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

"SWEET PEA STREAK."—This disease has been very prevalent this season, and as it has appeared on plants growing in all kinds of soils and under various conditions of culture, I think it may be propagated in the seed like the Tomato disease. I suggest that the seeds be steeped for a short time before sowing in sulphate of copper. The remedy is used at seed sowing with success for smut in Wheat. *George Bunyard, The Royal Nurseries, Maidstone.*

CULINARY PEAS.—Mr. Francis (p. 108) mentions a few good varieties of Peas, but he has left out one of the very best, namely, "Criterion." Here, at Laverstoke Gardens, are several rows of this variety, which for continuous bearing, heavy cropping, and flavour is ahead of all other kinds I know. *N. Kneller, Home Farm, Laverstoke, Hants.*

be realised. On a dry, marly bank nearly 100 yards long, plants of the common *Polyanthus* have seeded, the seedlings appearing in hundreds all over the bank, the edge of the path, and the neighbouring grass. Some have appeared amongst such plants as *Iris pumila*, and give to their surroundings the appearance of a wild bank, or a bit of a mountain-side. *Basil Levett, Wychnor Park, Burton-on-Trent.*

APPLE DEWSON OR DEWTSOON.—May not the correct name of this Apple (see p. 130) be *Hambleton Deux ans*, a large, late variety? About 30 years ago, a correspondent, writing in the *Journal of Horticulture*, stated that while travelling in Dorset he was impressed with a great crop of Apples, and enquiring the name of the variety, was told it was "Duson." This, after much searching, he found to be the Apple named above. *S. Jones, Chase Side Cottage, Eversley Park Road, Winchmore Hill, N.* [We have received several other communications which confirm the opinion expressed by Mr. Jones.—Eds.]

FRUIT TREES IN STREETS.—We were interested in Mr. Boelter's note in the issue for August 14, p. 118, with reference to fruit trees in streets and the institution of an Arbor Day. We have celebrated our second annual Arbor Day, and we have also four streets planted with fruit trees. We send you

SAXIFRAGA BURSERIANA "GLORIA."

THIS is the largest flowered of the many beautiful varieties of the species, which comes from the Eastern Alps of Europe. It was exhibited at the meeting of the Royal Horticultural Society, March 19, 1907, by the Craven Nursery Co., and was given an Award of Merit by the Floral Committee. Hitherto, *S. burseriana* major was the largest form of this popular rock plant, which often is in flower in February. The older variety has much shorter stems than the one under notice, but in both the sharp-pointed, glaucous leaves forming tiny rosettes in dense tufts attain to a larger development than any of their congeners. The typical *S. burseriana* comes into flower in March, and has rather smaller flowers and rosettes of leaves; the latest of all to flower—in April—is the variety *macrantha*, which has still smaller rosettes of leaves. These varieties of *Saxifraga* are liable to have the beauty of their flowers marred by rains and inclement weather of the early months of the year, for which reason glass should be placed over the plants when coming into bloom. Excellent results may be obtained by growing this *Saxifraga* in a pan in a cold frame. A compost of very gritty loam is suitable for this species, and the pots should be provided with abundant material for drainage. *W. I.*

IBERIS GIBRALTARICA.

NOWHERE is this Iberis seen to such perfection as in its native home on "The Rock" of Gibraltar. Looking out from the pierced holes in the "galleries," which formerly guarded the north front, one gazes down a sheer perpendicular precipice of many hundreds of feet. Growing at various elevations out of the face of the living cliff, apparently without a particle of soil in their vicinity, are numbers of splendid plants of *Iberis gibraltarica*, many of them over 3 feet across and sheets of flower. The sight of these plants remains an abiding remembrance, and furnishes a hint of how it should be grown in our own country—in a perpendicular position and in a compost consisting chiefly of stones. It may sometimes be seen doing fairly well in ordinary loam in a flat border, but never exhibits such perfect health as when grown among stones placed one above the other or at a very acute angle. The plant here illustrated (fig. 67) is exceptionally fine, being 4 feet across and smothered with flowers. It is growing among rough stones at the edge of a path, and is planted in grit mixed with small stones. A position where it may hang over an upright rock or bank is preferable, both on the score of appearance and for the health of the plant. Seedlings are better than specimens struck from cuttings, and are more likely to succeed if planted in as small a state as possible. Seedlings an inch in height, if set in upright crevices between rocks, soon grow away, and flower profusely the next year. In a perpendicular cutting through a stony bank about 50 seedlings under an inch in height were planted. They were set in among the stones, about a foot from the top of the cutting, grew vigorously from the very first, and made a very pretty picture when in full flower. Plants sometimes die after blooming, but they can be easily replaced. This *Iberis* is certainly the finest of the perennial Candytufts, its lilac-mauve flowers being often as much as 3 inches across. It cannot be considered absolutely hardy, except in the south-west; but in the colder districts it proves a good greenhouse subject, and may be kept in a frame until it comes into flower. Other perennials of this family are *I. correaefolia*, *I. Pruiti*, *I. saxatilis*, *I. semperflorens*, *I. semper-virens*, and *I. Tenoreana*. *Wynndham Fitzherbert*.

SOCIETIES.**ROYAL HORTICULTURAL.****Scientific Committee.**

AUGUST 17.—*Present*: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Messrs. J. T. Bennett-Poë, J. Douglas, L. Crawshay, J. Frazer, G. Gordon, A. Rolfe, G. Saunders, and F. J. Chittenden (hon. secretary).

Variation in seedling Carnations.—Mr. J. DOUGLAS, V.M.H., showed numerous flowers of seedling tree Carnations raised from seed saved from self-coloured varieties. He pointed out that among them were several singles in the proportion of about 12 per cent. of the whole, but the greatest peculiarity lay in the large number of striped flowers which were produced. The parents were white, pink, or red, but among the progeny was one with yellow flowers striped with purple.

Proliferation in Campanula.—Mr. BOWLES showed specimens of *C. persicifolia* with axial proliferation, a number of green foliage leaves growing from the centre of the flower. Some of the shoots, which were from the garden of Mrs. TROTTER, Hill House, Wormley, also showed fasciation.

Gerbera not flowering.—Heads of *Gerbera* were received, the sender thinking they were from a plant of *Gerbera Jamesonii* which had failed to produce flowers before seeding, but the heads were from *G. Kunzeana*, a plant from the Himalayan region, which does not open its flower-heads to any extent.

Potato with aerial tubers.—From Mr. BEVAN, of East Finchley, came Potato stems bearing

tubers in the axils of the foliage leaves, a condition of things which frequently follows from injury to the soft bast tissues preventing the downward flow of food from the leaves.

Double Sweet Peas.—Mrs. A. P. RIGBY, of Pentre Mawr, Trefnant, N. Wales, sent several flowers of Sweet Peas having two or three standards instead of but one. The variation had occurred last year, and seed had been produced from the flowers, which had this year given rise to a proportion of plants bearing double flowers. Other varieties than the first-named had also produced double flowers this year.

Wheat-ear Carnation.—From Mr. B. NASH, of The Gardens, Oakleigh, Cheam, came specimens of the Wheat-ear Carnation, which, instead of flowers, bears a long series of bracts repeated again and again.

East African Sandal Wood.—Mr. F. H. SEED, of the Agricultural Department, Mombasa,

British Alpine plants.—Mr. J. FRASER, F.L.S., showed a flowering plant of *Saxifraga cernua*. The plant bore six flowers and some buds. It was 7 inches high and had 10 stems arising from the base. It had been collected at the top of Ben Lawers, and is very rarely seen in cultivation. Numerous bulbils were borne in the axils of the stem leaves, and it is by these the plant is propagated. He also showed *Draba rupestris* flowering for the second time this year, and flowering specimens of *Salix Arbuscula herbacea* (flowering for the second time this year), and *Alchemilla alpina*, the latter having flowered continuously since May.

DUMFRIESHIRE AND GALLOWAY HORTICULTURAL.

AUGUST 14.—The annual show of this society was held in Cresswell Park, Dumfries, on this



FIG. 67.—A FINE CLUMP OF *IBERIS GIBRALTARICA*.

British East Africa, sent seed of the East African Sandal Wood tree (*Brachylaena* sp.), called by the natives "Muhugu." "The seed," writes Mr. SEED, "is as light as Thistle-down. The natives reported that this tree did not produce seed, but it was found that the Thistle-down lightness of the seed caused it to be caught on the tops of the long native grass and undergrowth. The Forestry Department has now arrested this loss by clearing the ground around the trees, so that the seed will reach the earth. The tree is considerably larger than the Indian Sandal."

"One square piece and two small plants were sent to be valued in Bombay Market during the year 1908, and an order was received from a merchant there offering half-a-guinea a cubic foot."

date. There was a good attendance at the opening ceremony, which was performed by Lady M'Taggart Stewart, Southwick.

The exhibition, as a whole, was an advance on its predecessors, with the exception of the one held to celebrate the jubilee of the society. A new competition this year was for the Malcolm Dunn Memorial Medal, presented, with a sum of money, by the Dunn Memorial Trustees. It was offered for a collection of vegetables, and was open to growers in the three south-western counties of Scotland. Four persons competed, the vegetables being of excellent quality considering the backward season. The medal was awarded to Mr. J. M. Stewart (gardener to J. NEILSON, Esq., Mollance, Castle Douglas), who gained 35 points; the 2nd prize was won by Mr. R.

MIDDLETON, Kirkcudbright, who totalled 30 points.

The Dumfries Town Council offered a Challenge Cup for the best table of plants, and this, also, was won by Mr. STEWART, his keenest competitor being Mr. R. A. GRIGOR (gardener to T. RANKIN, Esq., Dalswinton), who gained the 2nd prize.

The Sweet Pea classes were well contested, and the exhibits included many fine collections. The leading competition was one for 12 groups, the 1st prize including a Silver Cup, given by Messrs. James Service & Sons, Dumfries. Close competition prevailed, but the judges awarded the cup to Colonel GORDON, of Threave, Castle Douglas (gr. Mr. James Duff); 2nd, Mr. R. A. GRIGOR.

Exhibits of Roses were good, although not numerous. Messrs. T. SMITH & SON, Nurserymen, Stranraer, secured the leading prize in the open class, having fine blooms.

Exhibits of other cut flowers were generally good, with the exception of Asters. The principal prize-winners in the gardeners' and open classes were Mr. J. WILSON, Summerville Gardens, Dumfries; Mr. R. A. GRIGOR; Mr. J. HENDERSON, Elmbank Gardens, Dumfries; Mr. C. MURRAY (gardener to H. KESWICK, Esq., Cowhill); Mr. W. ANDERSON, Collin; Mr. D. WHITE-LAW, Locharbriggs; Mr. B. RUTHERFORD, Glenlair Gardens, and Messrs. J. and W. TWEDDIE, Mouswald.

Pot plants showed an improvement upon those exhibited last year, and the principal winners for these were: Mr. R. A. GRIGOR, Mr. C. MURRAY, Mr. J. M. STEWART, Mr. J. WILSON, and Mr. D. J. MAXWELL.

Fruit was not largely represented, but some good dishes were staged. Mr. J. M. STEWART was awarded the 1st prize in the class for a collection of six kinds; 2nd, Mr. B. RUTHERFORD, Glenlair. Other prize-winners in the fruit classes were: Mr. JAS. DUFF, Mr. R. A. GRIGOR and Mr. W. SCOTT.

The leading prize-winners in the vegetable classes were: Mr. J. M. STEWART, Mr. J. MORRISON, Mr. W. SCOTT, Mr. R. A. GRIGOR, Mr. J. HENDERSON and Mr. J. DUFF.

The secretarial arrangements were again under the care of Mr. R. G. MANN.

HEMEL HEMPSTEAD HORTICULTURAL.

AUGUST 18.—This Society celebrated its jubilee on the above date by an exhibition which, in point of size and excellence, surpassed all its 49 predecessors. The show was again held in the picturesque Bury grounds. Only fine weather was needed for an all-round record success. Unfortunately, the weather was unfavourable, and so much rain had fallen that it was at first deemed advisable to postpone the sports which had been arranged. However, the weather was more settled as the afternoon approached, so that it was ultimately found possible to carry out the programme.

The exhibits were staged in three large marquees, and a high standard of excellence was maintained in each of the sections. A special and pleasing feature of the exhibition were the numerous non-competitive exhibits which practically occupied the whole of one marquee. Amongst these were two groups of hothouse plants, exhibited by Mr. T. NORTON LONGMAN, Sheidish (gr. Mr. G. BURROWS), and Mr. F. P. COLLIVER (gr. Mr. T. Pigg), respectively. Near these groups were two others staged for competition by the Mayor, Mr. J. R. DRAKE (gr. Mr. Barker), and Mr. J. KERR (gr. Mr. Avery). Each of these groups displayed much taste. Mr. KERR secured the premier prize and the 2nd award was given to Mr. DRAKE. The former group included *Dracænas*, *Hydrangeas*, *Frœcoa ramosa*, *Celosias*, *Caladiums*, *Acalyphas*, *Lilies*, and *Crotons*, with a magnificent Palm at the rear. Similar plants figured in the Mayor's group; a large Palm was used as a background, and an appropriate border was made with *Adiantum*. Mr. W. FODEN staged a beautiful collection of flowers and floral designs as an honorary exhibit. Mr. DUNBAR staged a large number of Ferns and Palms in another portion of the marquee. Messrs. H. LANE & SON, Berkhamsted, staged amongst the honorary exhibits a collection of Roses, and also a varied collection of shrubs. Mrs. DENISON, Little Gaddesden (gr. Mr. A. G. Gentle), exhibited a collection of Sweet Peas. Other honorary exhibitors were

Messrs. BARRIE & BROWN, London; Messrs. G. & W. H. BURCH, Peterborough; Messrs. H. GLEESON & CO., Watford; and Messrs. CUTBUSH & SONS, of Barnet and Highgate, the latter firm making a speciality of Roses. The entries in the ladies' classes were not quite up to the average, but the judges specially mentioned a basket of Sweet Peas, exhibited by Mrs. SUMMERFIELD, for the beauty of its arrangement. Mrs. H. JENNINGS secured the premier award in the table decorations with an artistic arrangement of *Gloriosa superba* and *Allamanda*, relieved with *Asparagus Fern* and trails of *Smilax*. There was a fair number of entries in the amateur and subscribers' classes, much improvement, in point of numbers, being made in the classes for cut flowers. In the class for 12 vases of hardy flowers, Dr. THOMPSON'S exhibit was the best, but he was disqualified through his vases exceeding the 3-inch limit. Mr. T. N. LONGMAN, Mr. J. KERR, Mr. F. P. COLLIVER, and Mr. R. H. COMYNS exhibited some very fine fruit, whilst the Right Hon. T. F. HALSEY (gr. Mr. Folkes) secured numerous 1st prizes for many notable collections of vegetables, Mr. KERR being placed 2nd to him in the majority of the classes. The entries in the cottagers' section had trebled those of last year, and in some of the classes there were nearly a score of competitors. Good quality was maintained in the whole of this section. The competition in the classes for collections of vegetables from the different parishes in the district was very keen, and the champion prize was won by Mr. GURNEY, of Apsley.

ROYAL HORTICULTURAL OF ABERDEEN.

AUGUST 19, 20 and 21.—The annual show of this society was held on these dates in the Duthie Public Park, Aberdeen. The entries numbered about 1,600—about the same as last year. The quality of the exhibits, despite the unfavourable weather of early summer, was very good. The secretary, Mr. J. B. Rennett, Advocate, Aberdeen, and the committee are to be congratulated on the success of the exhibition. Unfortunately, the weather on the concluding day was unfavourable, and this greatly militated against the financial returns of what was one of the most brilliantly successful of the 85 shows held under the auspices of the society.

POT PLANTS.

The display in this section was exceedingly rich and varied. In the class for a table of stove or greenhouse plants and cut flowers, arranged for effect, measuring 8 feet by 6 feet, the 1st prize was taken by THOMAS OGILVIE, Esq., of Kepplestone (gr. Mr. A. Douglas). In the centre of the table was a large *Fuchsia*, and this was flanked with *Liliums*, whilst rich colouring was lent by *Coleus* and *Celosias* (Coxcombs); *Roses* and *Sweet Peas* in vases adding to the effect. The border was composed of *Gloxinias* and *Lobelias*, interspersed with *Adiantum* Ferns. The best specimen plant in flower was shown by Mrs. J. O. MACQUEEN, Fae-me-well, Aberdeenshire (gr. Mr. John Yule), who showed a magnificent *Begonia* of the fibrous-rooted section, whilst a finely-blossomed *Hydrangea* shown by the same exhibitor received the 2nd prize. Specimen foliage plants were well shown, Mr. JOHN ELDER, Norwood Gardens, Aberdeenshire, gained the 1st prize, which included a Silver Medal, for a fine plant of *Cordyline australis*. Ferns were finely shown, and were much admired. The best four Ferns, dissimilar, were shown by Mr. ALEXANDER BRENER, Dalhobby. Mr. ALEX. DUNCAN, Rubislaw Den House, won the premier prize in the class for six Ferns of three distinct species, in pots not exceeding six inches.

Exhibits of Zonal Geraniums made a superb display, and for these plants Mr. J. W. BRECHIN, Ardoe Gardens, Aberdeenshire, gained both the 1st and the 2nd prizes. The same exhibitor also excelled in the class for *Liliums* with a choice specimen of *Lilium auratum*. Other prominent prize-winners in the classes for plants included Mr. JOHN PETRIE, Crathes Castle Gardens; Mr. A. GILLESPIE, Aberdeen; and J. ANDERSON, Aberdeen.

CUT FLOWERS.

The large marquee devoted to cut flowers was the outstanding feature of the show. The entries, some 600 in number, was probably never excelled at an Aberdeen show. Sweet Peas were

displayed in an exquisite condition, and the variety and delicacy of their colours enhanced in no small measure the attractiveness of the show. Mrs. DUNBAR-DUNBAR, of Seapark, Forres (gr. Mr. John A. Grigor), won in the principal class for Sweet Peas with a superb exhibit. Mr. JOHN PETRIE, Crathes Castle Gardens, won the 1st prize for 16 bunches of Sweet Peas, of distinct varieties, including King Edward VII., Mrs. Routzahn, Queen Victoria Spencer, Apple Blossom Spencer, Mrs. Sankey Spencer, and Asta Obn. Mr. J. D. CROZIER, Durris House, followed closely, but his blooms were not so large, nor was his arrangement so good as in the 1st group; nevertheless, it was a very fine exhibit.

Roses were well shown. A local firm, Messrs. J. COCKER & SONS, won the Silver Challenge Cup offered for the best exhibit of 36 blooms. It was a magnificent display, and especially good was the variety Frau Karl Druschki. 2nd, Messrs. ADAM & CRAIGMILE, Aberdeen; and this firm secured the 1st prize for 24 Tea Roses. In the professional gardeners' class, Mr. JAMES JAMIESON, Udney, carried off the Silver Medal in the class for 12 blooms, and Mr. W. COURTS, Ellon, gained a similar award for 12 Tea Roses.

There was a fine show of Dahlias, Mr. J. W. BRECHIN, Ardoe, won the medal for the best group of Pompon varieties, and Mr. JAMIESON, Udney, carried off the trophy in the class for the Cactus variety.

The best collection of 20 varieties of cut flowers, and five foliage bedding plants, including annuals, was shown by Mr. ALEX. DOUGLAS, Kepplestone House; Mr. WILLIAM SCORGIE, Springhill, being a good 2nd.

Gladioli exhibited by Mr. JAMIESON, Tillery, Udney, were extremely well-grown, and easily won the 1st prize offered for these flowers. Exhibits of Asters and Marigolds were of good average quality, Mr. J. W. BRECHIN, Ardoe, Belhelvie, and Mr. JOHN GRIEVE, Woodside, taking the leading honours for these flowers. Carnations and Picotees were finely exhibited by Mr. ALEX. RENNIE, Easter Skene, Aberdeenshire. Pansies, both show and fancy, and Violas were very good, the chief honours for them falling to J. & D. MACKENZIE, Buxburn, and Mr. WILLIAM SCORGIE, Springhill. In the decorative classes, Mr. A. CUMMING, Granitehill, was a prominent prize-winner. Mr. JOHN GRIGOR, Forres, showed the best of hand bouquets (*Roses*) and the best bride's bouquet. Mr. STRACHAN, Botanic Gardens, Aberdeen, was placed 1st for a basket of flowers.

The competitions in this section open to florists and nurserymen formed, as usual, a distinguishing feature of the show. Mr. ALEX. BURNS and Mr. A. J. BURNS, Newmarket, Aberdeen, father and son, carried off all the honours for hand bouquets. In the class for floral designs they were also placed 1st, 2nd and 3rd with their several entries, made up chiefly of *Lilium Harrisii*, *Panacratiums*, *Lapagerias*, *Stephanotis*, and *White Roses*, with *Asparagus* as foliage. Messrs. D. & W. CROLL, Dundee, secured the 1st prize for a shower bouquet, and they were closely followed by Mr. ALEX. BURNS. Messrs. ADAM & CRAIGMILE, Fernielea, Aberdeen, gained chief place for Tea or Noisette *Roses*, with splendid specimens, and their wreath was also placed 1st; 2nd and 3rd places being taken in the latter competition by Mr. ALEX. BURNS.

FRUIT.

In this division there was a very fine display. The best collection of hardy fruits was shown by Mr. GRIGOR, Seapark Gardens, Forres, his exhibit being composed of Governor Wood Cherries, Moor Park Apricot, Whinham's Industry Gooseberries, Denniston's Superb Gage, Clipper's Favourite Pear, and Peasgood's Nonesuch Apples. The Apricots were the best fruits. Strawberries were well shown, there being capital specimens of that fine and exquisitely-flavoured variety Aberdeen Favourite, one of the best dessert Strawberries. Mr. GEORGE McLENNAN, Fetteresso Castle, Kincardineshire, carried off the premier honours for these. Mr. PETRIE, Crathes Castle Gardens, led in the class for Cherries. Mr. BRECHIN, Ardoe, showed the best Raspberries, taking 1st and 2nd prizes for this fruit. Gooseberries formed the outstanding feature in this division, being splendidly shown. Mr. HARPER, Tulliehelton, Perthshire, was well to the fore with dishes of Leveller, Langley Beauty, Telegraph, and Lord Derby. Mr. GRIGOR, Seapark, had the best Gooseberries of yellow kinds, and Mr.

PETRIE was a good 1st for red Gooseberries. In the class for Black Currants, the parish minister of Methlick (Rev. C. GORDON MACKENZIE) led with superb specimens. For Red Currants, Mr. HARPER, Tulliehelton, was an easy 1st.

Grapes, although not extensively shown, were of excellent quality. The Countess of ABERDEEN, Haddo House (gr. Mr. McKinnon), led handsomely in the class for two bunches of Grapes, one each of a white and a black variety, with fine specimens of Muscat of Alexandria and Muscat of Hamburg. Mr. MCKINNON was also 1st for a single bunch of a white Grape with Muscat of Alexandria. Mr. J. PETRIE took both the 1st and 3rd places for Black Grapes, and he won also 1st and 2nd honours for Melons, with fair specimens. Apples, considering the season, are naturally late, but Mr. GRIGOR, Seapark, Forres, scored finely for culinary varieties, whilst Mr. H. B. SMITH, Burdshaugh, Forres, led in the dessert class. Pears were best shown by Mr. W. SCORGIE, Springhill, and Mr. GRIGOR, Seapark, whilst in the classes for Plums and Tomatos, Mr. GRIGOR led easily.

VEGETABLES.

The best collection of vegetables in the professional classes was staged by Mr. DOUGLAS, Kepplestone House, Mr. SCORGIE, Springhill, winning the 2nd prize. Potatos were an attractive feature in this division, the leading exhibitors of these being Mr. WILLIAM COUTTS, Ellon; Mr. ALEX. BREBNER, Dalhebit; Mr. J. FERGUSON, Linton House, Cluny; Mr. GRIGOR, Seapark, Forres; and Mr. WILLIAM LAWSON, Oakbank, Aberdeen. Turnips were best shown by Mr. LAWSON, and Beetroot by Mr. JAMIESON, Tillyry, Udney.

The amateur classes were well represented in all the divisions. Mr. GEORGE MAITLAND, Great Northern Road, Woodside, won the Silver Cup for the best table of greenhouse plants in this section.

NON-COMPETITIVE EXHIBITS.

MESSRS. JAMES COCKER & SONS, showed Roses and hardy perennials; Mr. M. H. SINCLAIR had a brilliant display of Water Lilies, Sweet Peas and herbaceous plants; Mr. JAMES ROBERTSON, Hadden Street, staged a large collection of herbaceous plants and hardy annuals, also 60 varieties of named Gladioli; Mr. ALEX. BURNS, Newmarket, exhibited white Heather in pots and made into wreaths, the latter adorned with Gordon tartan ribbon. Other exhibitors were Messrs. BEN. REID & Co., Guild Street, Mr. McHARDY, Guild Street, and Messrs. W. SMITH & SONS.

SHOW AT LE TOUQUET PARIS-PLAGE.

AUGUST 21.—The international horticultural show was opened on the above date at Le Touquet Paris-Plage, near Boulogne-sur-Mer. The show was organised by the Société Générale du Touquet, and was under the patronage of the National Horticultural Society of France and the local Horticultural Society of Abbeville. The Count d'Applaincourt was president of the exhibition.

Although international in name, there were, so far as exhibitors were concerned, no foreigners present, and the main body of the show was made up of exhibits from the well-known French nurserymen.

MESSRS. VILMORIN, ANDRIEUX ET CIE had by far the most imposing and effective display, both in the open and under cover. They had two very large grass lawns, upon which were arranged a series of flower-beds of various shapes and sizes. The same firm had also at the far end of the exhibition grounds several ornamental flower-beds filled with various subjects, and under cover a very large collection of Gladioli. In the same building as the Gladioli was a large collection of cut blooms of Cactus Dahlias exhibited by Messrs. DUBUISSON-FOUBERT.

Roses were not numerous, but a local firm, Messrs. MOREL BROS., staged a neat, although not large, collection.

In the open ground were several interesting collections of flowers. One, staged by M. GRAVEREAU consisted of a great variety of Gladioli, occupying four or five long-shaped beds.

The well-known exhibitor, M. FERARD, had several beds filled with Begonia gracilis rose, Dahlias, Begonia Bertinii, Datura arborea fl. alba, and other seasonable flowers.

M. COMPOINT, the well-known cultivator of Asparagus, sent a collection of plants and cut Asparagus in bundles.

The gardener of the town of Abbeville made an imposing display in three large beds. They were principally composed of large standard Fuchsias in great variety, with Zonal Pelargonium Decorator covering the bed, and a double-row edging of Cineraria maritima and Iresine (Achyranthes) Triophia. Another was varied by the addition of tuberous-rooted Begonias.

M. CANTRELLE had a long, triangular bed prettily furnished with single and double large-flowered Begonias.

MESSRS. CAYEUX & LE CLERC were prominent exhibitors. They furnished several beds of varied form with Dahlias and Cannas.

Ornamental shrubs and foliage plants were well shown, there being several exhibits of considerable dimensions. The chief of these came from Messrs. CROUX ET FILS and Messrs. MOSER, of Versailles.

M. G. BOUCHER filled a long border with Privets in varieties.

THE SOCIÉTÉ GÉNÉRALE DU TOUQUET PARIS-PLAGE (gr. M. Bougibault) had an excellent display set up in a large bed artistically arranged. It consisted of a border Vandyke in shape and composed of a double row of Pyrethrum laciniatum and Achyranthes brilliantissima, the intervening spaces being filled with tuberous-rooted Begonias. Here and there at regular intervals were planted clumps of Sweet Peas trained to wire supports.

MESSRS. DUBUISSON-FOUBERT, who are famous as Chrysanthemum growers, arranged in a hollow square a series of borders intersected at intervals by paths. There were Zonal Pelargoniums in full flower, the majority being French varieties, but little known on our side of the Channel, with the sole exception perhaps of Paul Crampel, which was in capital form. Ivy Pelargoniums were also freely used in the various borders, with Anthemis Perfection, Lantana Gavotte, L. Imperatrice Eugenie, Anthemis floribunda, Lantana Eole, Ageratum Triomphe de Filibeaucourt, Michaelmas Daisies, &c. Salvia Zuchter Zwerg of a dazzling crimson hue was arranged as an inner edging. There were also numerous fine plants of Chrysanthemum maximum Etoile d'Anvers.

M. AUG. NONIN, of Paris, arranged in circular beds, cut out in the grass, Dahlias, Begonias, Salvias, and other flowers.

The well-known Begonia cultivator, M. BILLARD, set up one of his interesting collections of large-flowered tuberous Begonias.

The Grand Prix d'Honneur was awarded to Messrs. VILMORIN, ANDRIEUX ET CIE. M. DEBRIE was awarded a Prix d'Honneur for a beautiful table decoration set up in his usual form. M. GUERIN was awarded a Gold Medal for greenhouse plants, and most of the other exhibitors named were awarded works of art, gold, silver-gilt, and silver medals. The arrangements and laying out of the grounds were entrusted to M. Henry Martinet.

STIRLING AND DISTRICT HORTICULTURAL.

THE last excursion of the season took place on the 14th inst., when Dunfermline was visited. The principal objective was Pittencreeff Park and its surroundings. The Abbey, the "Glen," with its rockery that cost £6,000, the large park with its wealth of trees and shrubs, the experimental fruit garden, the glass structures, the flower gardens and flower borders were all visited. The visitors were entertained by the Dunfermline Carnegie Trust.

The meetings will be resumed on the second Tuesday in September, that occasion being "Hospital Night," when contributions of flowers will be sent to the various hospitals in Stirling and the district.

Obituary.

PETER E. KAY.—We regret to record the death, from heart failure, of the well-known and highly esteemed nurseryman, Mr. Peter Kay, of Clagmar Vineries, Church End, Finchley. The deceased, who was 56 years of age, passed all his life at Finchley, where he built up the large business which is now a limited liability company. Mr. Kay long ago achieved a wide reputation as a successful cultivator of Grapes for

market, his produce being among the finest ever sent to Covent Garden. He was one of the first to take up the cultivation of the Canon Hall variety of Muscat, to the growing of which he devoted special attention. In addition to Grapes he grew Tomatos and Cucumbers on a large scale for market, and his keen insight into what is required by the public was shown in his selecting the Comet variety of Tomato for his stock.

Mr. Peter Kay was among the group of distinguished horticulturists who received in the year of its foundation, 1897, the Victoria Medal of Honour in Horticulture.

The funeral took place on Wednesday, August 25. The service at St. Paul's, Finchley, was attended by the general manager, Mr. Thos. Allen, and the oldest employés of the firm, Messrs. J. Smith, G. Lawford, W. Shorten, W. Castle, F. Saltmarsh, R. Webb, J. Osborne, and others; the length of whose service with the firm ranges from 12 to 50 years. A beautiful wreath of Lilies, Orchids and White Heather was sent by the employés, upwards of 60 of whom followed the remains to the grave in Marylebone Cemetery, East Finchley. Mr. Peter Kay leaves a widow, two sons, and two daughters.

ANSWERS TO CORRESPONDENTS.

BUDELEIA VARABILIS VEITCHIANA: W. B. This plant was found by Mr. E. H. Wilson when collecting plants for Messrs. James Veitch & Sons, Ltd., in China, during this collector's first trip to that country.

FERTILISATION OF PEA: C. S. Each ovule is fertilised by a separate pollen tube. The abortion of individual seeds may be due to the failure of pollen-tubes to reach certain of the ovules.

GRAPES DISEASED: C. W. S. The berries are affected with "spot" disease, so often described in these columns. (See reply to W. L. and others in the last issue, p. 144.)—J. H. and Reader. The berries are affected with Grape rot (Gleosporium fructigenum). Burn all diseased berries and spray the vines with some approved fungicide, such as Bordeaux mixture or potassium sulphide.—W. W. The berries were packed without sufficient care, and were in a condition of pulp when we received them. They showed traces of rot disease; see reply to J. H. and Reader above.

NAMES OF FRUITS: W. T. B. Apple Red Joaneting (syn. Juneating).—B., Watford. Apple Irish Peach.

NAMES OF PLANTS: E. S., Hackness. Spiraea arifolia. (Please send fresh specimens of the Pears for examination).—Lady D. Clerodendron fallax.—H. B. Olearia Haastii.

NECTARINE SHRIVELLED: W. F. P. The skin of the fruit has been injured by the sun's rays. This has caused the shrivelling, and afterwards the damaged part of the fruit has been attacked by the common mildew. The Peach leaves are affected with the "shot hole" fungus. (See reply to L. M. in the last issue, p. 144.) The vine leaves are free from disease. They have been damaged by drops of water focussing the sun's rays so as to burn the tissue. The Carnations should be sprayed with quassia extract.

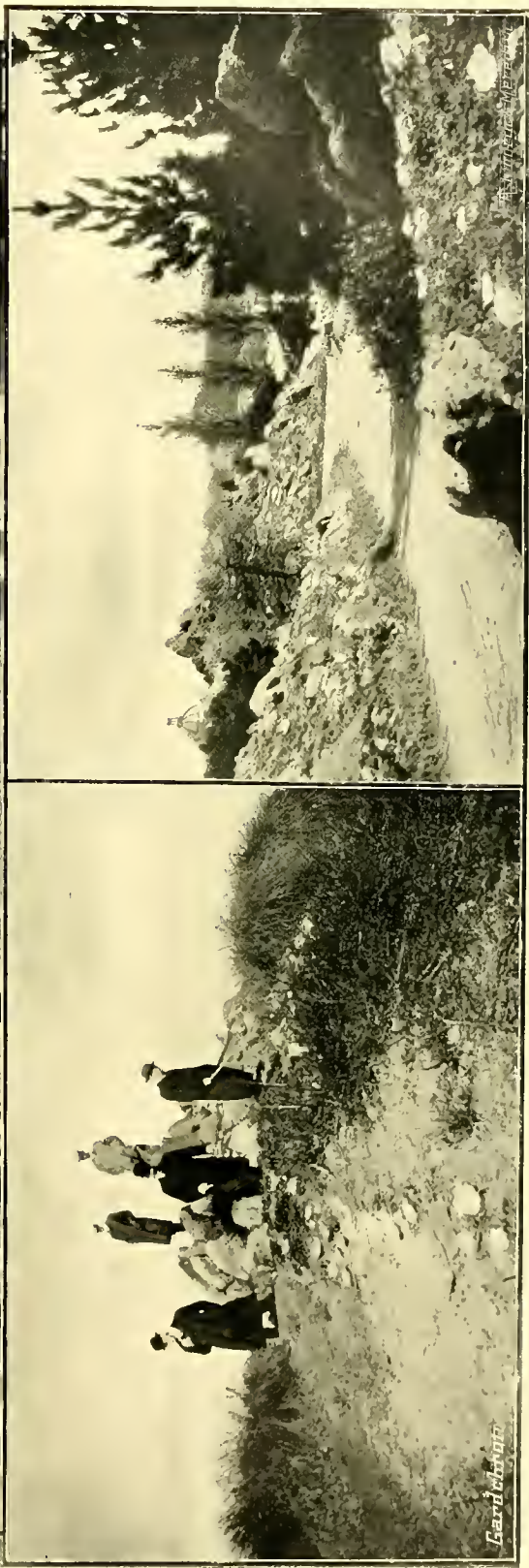
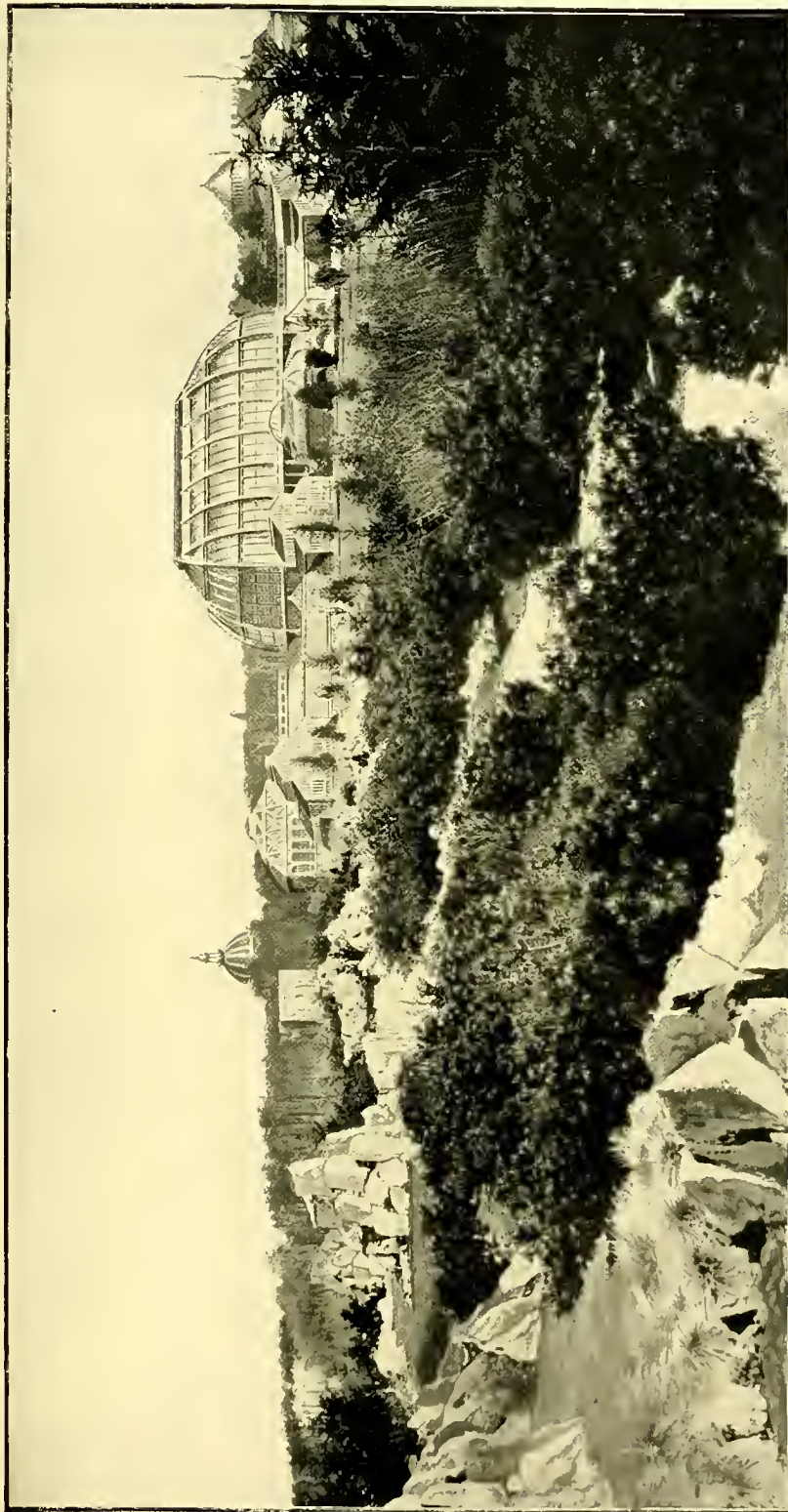
PLUMS: B. R. Davis. The skins have been scorched by excessive sun-heat, and, following this condition, there is slow decay.

POTATOS DISEASED: W. J. K. The tubers are badly affected with "warty disease." See an article, with illustrations, on this subject in the issue for July 31, p. 79. A note on this disease also appears on p. 154.

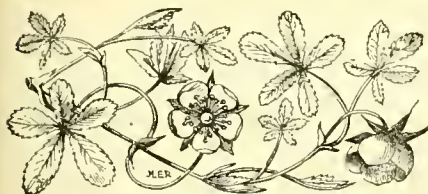
PUPILS IN GARDENING: C. H. M. Insert an advertisement in the horticultural Press, or in such papers as *The Field* and *Country Life*. We cannot advise you as to terms.

TOMATOS DISCOLOURED: Subscriber and A. R. The hard, yellowish patches in Tomatos are to be attributed to a lack of potash in the soil. Supply a manure containing this element.

Communications Received.—Wm. Wood & Son, Ltd.—J. P. A.—J. S. & Co.—W. A. Windsor—T. A. B.—F. K.—A. Grove—H. C. & Sons—S. A.—F. N.—C. T. D.—F. M.—W. F.—W. I.—G. H.—F. C. L.—J. S.—R. H. P.—R. Veitch & Son—A. B.—T. J.—T. S.—C. W.—R. H. L.—F. W. B.—W. J. W., Ltd.—G. H. T.—W. D.—J. H. E.—A. H.—T. V.—F. G.—J. F. M.—W. B.—W. T.—E. W.—A. H. L.



VIEWS IN THE IMPERIAL BOTANIC GARDEN, DAHLEM, NEAR BERLIN.



THE

Gardeners' Chronicle

No. 1,184.—SATURDAY, September 4, 1909.

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MR. WILSON'S EXPEDITIONS TO CHINA.

TO the long list of botanical explorers which is given in Bretschneider's exhaustive *History of the European Botanical Discoveries in China*, published in 1898, the name of Mr. E. H. Wilson must now be added. Wilson started on his first plant-collecting expedition in China some 10 years ago, and, as he is just about to proceed to the United States of America to overhaul the specimens collected on his third journey, the present affords an opportune time for reviewing the work which he has accomplished during the past decade.

For many years previous to Wilson's first trip, China had attracted the attention of Messrs. Veitch as a possible field for plant collecting, but unfavourable conditions had prevented projected expeditions from being carried out. In 1879 Charles Maries, whilst travelling in the East for the firm of Veitch, had reached as far inland as Ichang, but returned without having accomplished much. It was due to the writings of Dr. Augustine Henry and to his rich collections of dried plants that interest in the subject was revived. This resulted in Wilson being sent by the late Mr. James H. Veitch to collect plants in China on behalf of his firm.

Wilson's first journey, commenced in 1899, was to Szemao in Yunnan and to Ichang, Central China. From the last-named locality, which is situated about 1,000 miles from the mouth of the Yangtze Kiang, numerous plants of horticultural value were introduced. A second journey, commenced in 1903, was to

the Chino-Tibetan frontier, about 1,000 miles west of Ichang, a region rich in Alpine plants and hardy trees and shrubs.

In December, 1906, a third trip was commenced, this time on behalf of Professor Sargent, of the Arnold Arboretum, Boston, U.S.A. For the most part, the routes previously mentioned were retraced, but other interesting localities were also visited. On this expedition a most valuable collection of photographs illustrating the scenery, flora, and native industries of Western China was obtained; a selection of which, comprising about 100 photographs, was shown at the meeting of the Royal Horticultural Society on Tuesday last. The first two journeys formed the subject of an interesting series of articles from Wilson's pen which appeared in the *Gardeners' Chronicle* for 1905, Vols. xxxvii. and xxxviii., under the heading "Leaves from My Chinese Notebook." During the last trip some interesting letters were addressed to Professor Sargent, to whose courtesy readers of the *Gardeners' Chronicle* are indebted for their publication.

A large number of plants introduced through Wilson have been figured and described in the *Botanical Magazine* and in the horticultural Press, particularly in these pages. A review of these introductions will show to what extent horticulture has been benefited by Wilson's journeys.

Among herbaceous plants many of the species are already widely known and promise to be permanent. Two important additions to the genus *Astilbe* are *A. Davidii* (1) and *A. Grandis* (2); the former with rich rosy purple, the latter with pure white, flowers. Both have elegant, tufted foliage, are of robust habit, and succeed well in the open border, especially in moist situations. *Aconitum Wilsonii*, a strong-growing species with pale blue flowers, and *A. Hemsleyanum*, remarkable for its climbing stems, are two interesting *Aconites* suitable for the border, as is also *Artemisia lactiflora* (3), a new species of Wormwood with erect stems clothed with elegant dark-green leaves and terminal panicles of creamy-white, sweet-scented flowers.

A handsome perennial, which unfortunately is not quite hardy, is *Rehmannia angulata* (4), which produces numerous flowers resembling in size and form those of *Incarvillea Delavayi*. It is best treated as a cool greenhouse subject, but it also succeeds well if planted out during the summer months. Several improved forms, obtained by selection, have already appeared. In *Geranium platyanthum* (5) we have an addition to the hardy Storksbills, which produces large rose-colored flowers throughout the summer months.

For moist situations the new *Rodgersia asculifolia* and *R. pinnata alba* (6) have proved valuable plants, attractive both when in leaf and in flower. Where plenty of room has been given them, either by the margins of lakes or in the wild garden, the new species of *Senecio* have proved very striking subjects. *Senecio clivorum* (7) has rich orange-yellow flowers, resembling miniature Sunflowers, freely produced in branching corymbs

well above bold, heart-shaped leaves. A bed of this species near the Pagoda at Kew was particularly attractive last summer. To a different section of the genus belong *Senecio Veitchianus* (8) and *S. Wilsonianus* (9), which produce their small, but numerous, yellow flowers along the upper half of tall, erect scapes, which attain to a height of from 3 to 5 feet and have a setting of large heart-shaped leaves on long petioles. A new species of *Thalictrum* which promises well is *T. diptercarpum* (10), a species from Western China, recently put into commerce. It has graceful, loose panicles of rose-purple flowers, borne on stems 4 to 5 feet high. As it appears to succeed well on poor soil in sunny situations, it will no doubt be largely grown in the future.

A very important class of garden plants at the present time consists of those suitable for rock-gardens, and to this many of the recent Chinese introductions belong. Perhaps the most important of these is *Meconopsis integrifolia* (11), the yellow-flowered Tibetan Poppy, to obtain seeds of which was the principal object of Wilson's second expedition. Unfortunately, the culture of this magnificent Alpine is not generally understood, and in consequence it has yet to be seen in this country in the same luxuriance as that with which it grows in its native home. Well-grown examples were exhibited by Messrs. Veitch during 1904 and 1905 at the R.H.S. fortnightly meetings, some of them bearing nine large flowers; but the plant often bears double this number in its native habitat.

Other species of this fine genus introduced through Wilson are *Meconopsis punicea* (12), a scarlet-flowered species; *M. Henrici*, with smaller flowers, rich purple in colour with yellow anthers; and *M. sinuata* var. *Prattii*, with steely-blue flowers.

Another important Alpine family represented by numerous species are the Chinese Primroses. A large number have been introduced, but unfortunately many are of biennial character, and, owing to their failure to produce seed after flowering, have been lost. The most distinct in point of colour is *Primula Cockburniana* (13), a biennial species which has orange-scarlet flowers in whorls on erect scapes. It is of easy culture and has now found its way into many collections. Belonging to the same section of the genus, but more robust in habit, is *P. pulverulenta* (14), a perennial resembling *P. japonica*, but with larger flowers of a richer colour and flower-stems covered with a white meal—a most distinct and decorative feature. At the recent Temple Show Messrs. Veitch exhibited a number of hybrids derived from crosses between these two species. They are distinguished by the varietal names "Unique" and "Unique Improved" and show characters which indicate the influence of both parents. One of the hybrids is particularly interesting in that it closely resembles *P. Cockburniana* in appearance, but is perennial in character. Other Chinese Primulas which cannot here be mentioned in detail, but which are also valuable as rock-garden plants, are

(1) *Gard. Chron.*, 1902, vol. xxxii., p. 95, fig. 34.
 (2) " " 1905, vol. xxxviii., pp. 47, 426. Supp. ill.
 (3) " " 1906, vol. xl., p. 387.
 (4) " " 1908, vol. xxxvii., pp. 269, 290. Supp. ill.
 (5) " " 1906, vol. xxxix., p. 52.
 (6) " " 1905, vol. xxxvii., p. 338.
 (7) " " 1902, vol. xxxii., pp. 142, 217. Supp. ill.

(8) *Gard. Chron.*, 1905, vol. xxxviii., pp. 212, 455. Supp. ill.
 (9) " " 1905, vol. xxxviii., p. 212.
 (10) " " 1903, vol. xlix., p. 215. Supp. ill.
 (11) " " 1904, vol. xxxvi., p. 240. Supp. ill.
 (12) " " 1904, vol. xxxvi., p. 289, fig. 130.
 (13) " " 1905, vol. xxxviii., p. 331, fig. 137.
 (14) " " 1905, vol. xxxviii., p. 259, and 1907, vol. xli., fig. 164.

NURSERY NOTES.

W. LEARMONT & SON, DUMFRIES.

THERE are several well-known nursery firms around Dumfries devoting much attention to the propagation of forest trees and shrubs, for which the climate of the district is highly favourable. The business of Messrs. William Learmont & Son, Larchfield, has been established for many years, and, under the management of Mr. John Learmont, is increasing rapidly. A recent visit to the nursery afforded the opportunity of making the following notes. The land on which the nursery is situated embraces about 65 acres. It is elevated ground, lying to the south-east of the town of Dumfries, and, sloping to the east, is fully exposed, so that the trees and shrubs grow hardily and withstand the climate of very cold districts. As a result of this and of the methods of cultivation, the stock is in splendid condition.

Although the writer has visited many nurseries, he has seen only some two or three which can compare with Larchfield with respect to

Forest trees are raised on a large scale, and many millions of young trees are to be seen in their various stages. It is a policy of the firm to avoid keeping these too long, and the plants are all either of a suitable size for planting, or intermediate between that and the seedling stage. There are great breadths of Larch and other forest trees in all stages of young growth, and generally looking well. The Japanese Larch being in demand, Messrs. Learmont grow a large number of this tree.

The firm makes a speciality of young specimen trees for town and park planting. These are all trained to stakes from an early stage to secure straight stems and symmetrical growth. Elms, Limes, Ashes, Planes, and other trees are carefully reared in this manner.

Trained fruit trees, Apples, Pears, Plums, &c., are also grown in large numbers, and are trained for planting against walls or as espaliers. Dwarf and standard fruit trees are also grown in quantity.

There are large plantations of Gooseberries, Currants, Raspberries, Loganberries, &c., as

P. cognata (15), *P. deflexa*, *P. nivalis* var. *farinosa*, *P. orbicularis* (16), *P. vittata* (17), *P. sibirica chinensis* (18), and *P. Veitchii* (19).

The Chinese Fumeworts are also charming rock-garden plants, the largest species being *Corydalis thalictrifolia*, which has glaucous green leaves and racemes of pale yellow flowers. It requires a sheltered situation, and is perhaps best seen under glass. The smaller-flowered *C. cheilanthifolia* (20) has delicate, fern-like foliage and is perfectly hardy. *Corydalis Wilsoni* (23) and *C. tomentosa* are smaller species with attractive glaucous foliage and rich yellow flowers, but are rather tender and need protection out-of-doors.

Hardy terrestrial Orchids have received a welcome addition in *Cypripedium tibeticum* (21), the Lady's Slipper of Tibet. It is allied to *C. macranthon* but has larger flowers, which are remarkable for the large purple-flowered pouch. Of the beautiful Chinese Lilies, *Lilium Henryi* and *L. sutchuanense*, large quantities of bulbs were sent home, and the new species *L. myriophyllum* (24) was introduced. This last-named Lily is remarkable for its large, trumpet-shaped, white flowers and narrow leaves, thickly disposed on the stem.

Many of the ornamental trees and shrubs which have been introduced to gardens in this country from Japan are really of Chinese origin, and Wilson's researches have shown, by the number of fine plants he has secured, that this source of supply is by no means exhausted.

The most notable of the trees introduced is probably *Davidia involucreta* (22), of which large quantities of seeds, as well as living plants, were sent home. So far, it has failed to flower in this country; but in the arboretum of M. M. de Vilmorin, at Les Barres, a plant produced flowers for the first time in 1906. The flowers themselves of this plant are not conspicuous, the showy part being the two large bracts which subtend each inflorescence. When fully developed, the bracts are pure white, and, being larger than the leaves, are very conspicuous. Seeds of a variety having hairy leaves were also secured, and from them plants have been raised. *Herman Spooner*.

(To be continued.)

HYBRID CALLA.

FIG. 68 represents an inflorescence of a hybrid Calla raised from a cross between *C. Rehmanni* (female) and *C. Elliottiana* by Dr. A. Ragionieri, of Castello, near Florence, Italy. The specimen figured is curious in that it shows a tri-lobed spathe. The tuber which bore the inflorescence was itself bilobed, and, when divided into halves, each halved tuber produced trilobed spathes. It will be noticed that the shoot bearing the inflorescence is somewhat twisted and also deeply and doubly grooved (A in fig. 68), as though indicating that the abnormal condition responsible for the monstrous lobed spathe is general throughout the plant and expresses itself by the lobing of tuber, flower-stalk and spathe. It is highly probable that the malformation will prove to be hereditary, though whether the flowers of the abnormal inflorescence are fertile or not remains to be discovered. The colour of the spathe is pure white tinged before opening with rosy-violet, which colour later gives place to cream.

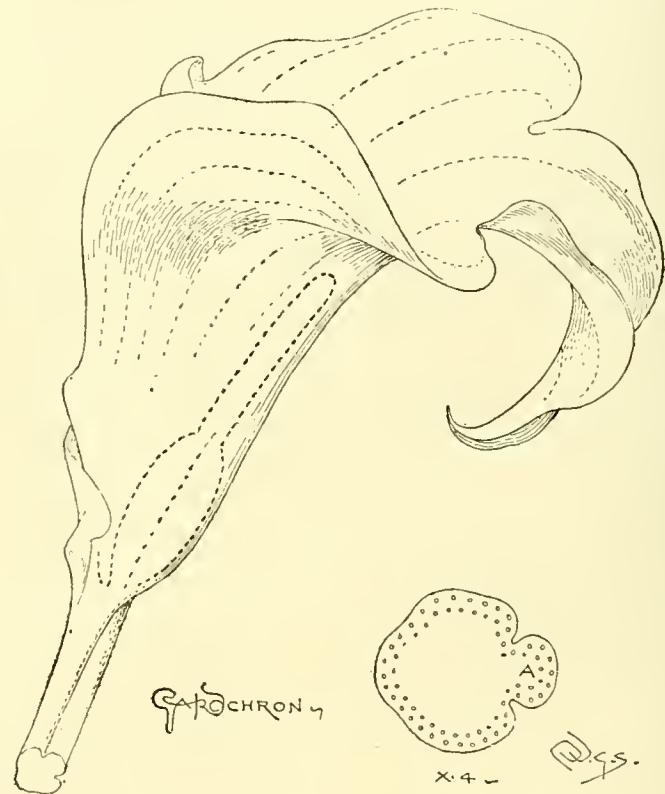


FIG. 68.—HYBRID CALLA WITH LOBED SPATHE.

cleanliness and order. Thus, although the Black Currant mite abounds in some parts of the district, it is, thanks to the preventive methods employed, absent from Larchfield.

Many thousands of Roses are propagated and sold annually, and a visit to the quarters which they occupy showed that the stock is not only large but in capital order. Hybrid Perpetual varieties are cultivated extensively, and also Hybrid Teas. Tea Roses are well represented, and the manager, Mr. Hunter, is of the same opinion as the writer, viz., that they do even better in Scotland than in the south. Few fail, even in these exposed nurseries. China Roses are also grown on a large scale, although these Roses are not increasing in favour in Scotland to the same degree as in other parts. Climbing, dwarf Polyantha, and all other classes of Roses are represented, the exception being the species, for which there is little demand.

well as of Strawberries. The stock comprises a full selection of the best varieties for market and private use. All have been carefully tested, and an ingenious method of separation reduces to a minimum the risk of error in supplying a particular variety.

Ornamental shrubs find a large place in the nurseries, both for the garden, the shrubbery, and the covert. Hollies are extensively cultivated; also Spiræas, Berberises, Azaleas, Rhododendrons, Lilacs, Olearias, Weigelas, Brooms, Hydrangeas, Heaths, and many more; whilst large breadths of Thorns, including the ornamental flowering varieties, are met with at Larchfield.

Vigorous, sturdy growth is what is aimed at in the Larchfield nurseries, and this seems to be secured by the soil, climate, and methods of propagation and cultivation. *S. Arnott*.

(15) *Gard. Chron.*, 1906, vol. xxxix., p. 358, fig. 145.
 (16) " " 1906, vol. xxxix., pp. 290, 403, fig. 164.
 (17) " " 1905, vol. xxxvii., p. 390, fig. 165.
 (18) " " 1907, vol. xli., p. 350, fig. 147.
 (19) " " 1905, vol. xxxvii., p. 344. Supp. ill.
 (20) " " 1902, vol. xxxi., p. 289. Supp. ill.
 (21) " " 1906, vol. xxxix., p. 347, fig. 139.
 (22) " " 1903, vol. xxxiii., p. 236, fig. 98, and vol. xxxix., p. 346, fig. 138.
 (23) *Bot. Mag.*, t. 7939.
 (24) *Gard. Chron.*, 1903, vol. xxxviii., p. 328. Supp. ill.

RANUNCULUS NYSSANUS.

LITTLE is apparently known of this *Ranunculus*, as it is not mentioned in Johnson's or Nicholson's *Dictionary of Gardening*, and in the supplement to the latter work all that is said of it is that it is "a showy plant." It is a handsome member of the Buttercup family, growing to a height of about 18 inches and bearing quantities of blossom, each flower being 2 inches across, and of brightly-polished yellow. The flowers are not so large as those of *R. cortusifolius*, which is also a taller grower, but the plant is very free flowering and absolutely hardy. It is, apparently, of the easiest possible culture, and indifferent to the character of the soil, for it may be seen in the best of health under very varying conditions, growing as vigorously in poor soil as in a rich compost. It increases very rapidly, a little plant forming a clump 2 feet or more across in a few years. A good-sized colony has a very bright effect in the border in the early days of May. *Wyndham Fitzherbert.*

THE CULTURE OF LILIES.

IN the interesting note on this subject by the Rev. David Williamson in the issue of the 21st ult., the question is asked, whether *L. Washingtonianum* and *L. rubellum* are ever likely to be permanently established in this country? While the answer may safely be given in the negative so far as the general run of gardening folk is concerned, there is no reason why anyone specially interested in the culture of Lilies should not succeed in growing and keeping both species.

As a preliminary to success, it is essential that the bulbs should be grown in this country from seed, and that is as true of one species as of the other.

For some reason or other, the typical *L. Washingtonianum* of the Sierras resents being lifted even more than most Lilies, and, when transported, almost invariably succumbs to that mystifying complaint "soft rot," with the result that out of a batch received from California it is rare to find more than a small percentage of sound bulbs, the number of which is likely to be still further reduced after the bulbs have been in the ground a few months.

Assuming that seed has been procured from one direction or another, and that the resulting bulbs are ready to be put out, it is as well that they should be planted deeply in a loose, sandy, alluvial soil, possibly best described as a loamy soil, so free that one can work on it in wet or dry weather without doing any harm. Generally speaking, a mixture of three barrowfuls of sweet loam to one of sifted leaf-soil, one and a half of coarse sand or grit, and half of very fine charcoal may be relied upon to produce a suitable compost.

Provided that the soil is suitable and sufficiently deep, the position does not appear to matter much, though shelter from blustering winds is desirable. In this country the sun is so often absent that full exposure seems to do more good than harm, provided the ground in which the Lilies are growing is well covered with low shrubs such as *Vaccinium*, *Andromeda*, or *Epimedium*.

Proper drainage of the soil is absolutely essential for the successful culture of this bulb, and it can hardly be too sharp, whilst in dry seasons water should be afforded from time to time both under and over the bulb. During the growing period the Lily abhors lime, and not a trace should be allowed in the ground.

The Oregon variety of *L. Washingtonianum*, known as *purpureum*, is far more easy of cultivation in Britain from imported bulbs than is the type. The bulbs are heavier and more solid than those of the latter; and, travelling much better, may generally be found to arrive in sufficiently sound condition to ensure a modest proportion of bloom a couple of years after planting, with increasing growth as the years go by; pro-

vided, of course, the conditions are satisfactory. *Rubescens* is another variety also easier of cultivation than the type, and equally beautiful. In this country it does not seem to grow so strongly as the variety *purpureum*, and is in point of fact altogether a more tender plant. The flowers are deliciously fragrant, more so indeed than those of any other Lily except *L. auratum*.

When the flowers open they are usually a creamy colour with purple dots; after a couple of days the purple spreads gradually till the creamy ground gives place to a lovely plum colour, which grows deeper and deeper till the flower dies down.

Of *L. rubellum* it may reasonably be said that it is almost hopeless to expect any permanent result from imported bulbs, even though the parcel post has reduced the time of transit from

shaded places, under trees and shrubs, coming up through the grasses just as do *L. auratum*, *L. Japonicum* (*Kramerii*), and most of the other Japanese species. Strange though it may sound, the soil in which it grows is a rather stiff reddish clay, with thorough natural drainage.

The bulbs exported by the nurserymen are collected in the mountains and grown on for a year or so in half-shaded positions on the hillsides, between the rows in tea plantations that afford them the shelter and shade which appear to be so absolutely necessary to their existence in Japan.

It must be remembered, however, that the Japanese summer is tropical, and that fact alone may account for the undoubted difficulties there are in the culture of the majority of Japanese Lilies in this climate. One is frequently recommended to plant these bulbs in half-shaded



[Photograph by Wyndham Fitzherbert.

FIG. 69.—RANUNCULUS NYSSANUS: FLOWERS YELLOW.

Yokohama to London via the Trans-Siberian railway to well within a month.

The deplorable custom pursued by the Japanese of cutting off the roots of bulbs prior to packing is one that only Lilies having far more power of recuperation than has *L. rubellum* can be expected to stand. Whilst sound bulbs of this plant can usually be relied upon to bloom during their first year, it is seldom they do so afterwards; an examination of the bulbs revealing the fact that what little heart is left in the general mass of rotting scales is in possession of myriads of "skip-jacks" intent on finishing off what life may still be left. There is all the more reason, therefore, for raising the bulbs from seed, and as to this there is no difficulty.

L. rubellum comes from the Province of Iwashiro, the northern part of the main islands of Japan, and, according to Mr. Alfred Unger, than whom no living being knows more of the Lilies of Japan, it grows there in half-

places; but it is a great question whether all the sun we get as a rule in Britain is half enough for most of these plants. In hot countries it might perhaps be as well to plant them in some position where they receive a certain degree of shade between 12 mid-day and 2 o'clock, but, with this possible exception, it seems very much open to question whether a fully-exposed position is not the best; any attempt in the direction of imitating the natural soil of the country from which they come would surely be fatal in this country.

Home-raised seedlings of *L. rubellum* may readily be grown on in very much the same soil and under the same conditions as apply in the case of *L. Washingtonianum*; except that, in the case of the former bulb, there should be rather more leaf-soil, and, if possible, even sharper drainage.

By flowering a few imported bulbs in frames, seed may readily be obtained and ripened, but

care must be taken to fertilise the blooms. In planting, the bulb should be surrounded with clean sand, and it is important that this should not be thrown in carelessly, but carefully packed under, around, and over the bulb. It does not appear necessary to plant this bulb very deeply. The winter in the Province of Iwashiro, whence it comes, is very severe, and the ground is often frozen to the level at which the bulbs are found.

In Japan the Lily blooms in May, and the bulbs are ready for export in July; but, for some reason or other, they are seldom offered by dealers in this country before Christmas. Anyone interested in the subject, however, can arrange for the bulbs to arrive by the middle of September by using the Japanese parcel post. The sooner the bulbs are in the earth the better; for, if properly managed, the flowers may be expected even a little before those of *L. Hansonii*, except in such a season as that now drawing to a close: *L. auratum* being in flower side by side with *L. Chalcedonicum*.

In dealing with Lilies, as with many other plants, no hard and fast rule as to culture can be laid down. All the cultivator can do is to indicate generally the lines on which particular kinds have become what may fairly be described as established, and with that reservation, it may be said that, provided soil conditions are suitable, and artificial watering is available when needful, both the Lilies under notice can be grown well in this country. A.

FOREIGN CORRESPONDENCE.

ELISENA LONGIPETALA.

As Mr. W. Botting Hemsley invites correspondence (p. 90) on the subject of *Elisena longipetala*, I think he will be interested in reading the article on John Rudbeck in vol. xxx. of *Rees' Cyclopadia*, in which reference is made to vol. ii. of *Campi Elysii*, which can be found in the Linnean, Banksian, and Sherardian libraries.

I am inclined to think that the name *Elisena* was after Rudbeck's work above mentioned (*Elysii—Elisena*).

In vol. xxvi. of the same *Rees' Cyclopadia* he will find under "Pancratium" much information and valuable references which possibly may throw some light on the subject.

As this cyclopadia is now an old and obsolete work, I suppose few people consult it; but I have always found it very useful as a work of reference. To quote only one instance: there is a description of *Static arborea*, a plant I lately rediscovered after it had been lost for 20 years; and although the article is a century old, I do not think any modern botanists mention it. *George V. Perez, Puerto Orotava, Teneriffe.*

TOWN PLANTING.

THE AILANTHUS (TREE OF HEAVEN).

AILANTHUS GLANDULOSA flourishes in many a London street; indeed, next to the Plane, it is, perhaps, the most commonly-cultivated tree both in urban and suburban districts of the metropolis. By reason of its rich green, spreading foliage, the *Ailanthus* is a great favourite, the leaves, in many cases, reaching to a length of fully 2 feet. This tree has been planted largely in many Continental cities. In some of the most smoke-infested parts of London, as in the Lambeth Borough Recreation Ground, and throughout the East End, the *Ailanthus* does remarkably well, and grows with a vigour that is excelled by no other species; while the noble specimens in Bloomsbury and other public squares testify to its capacity for withstanding the impurities of a town atmosphere. The greenish-white, inconspicuous flowers are freely produced, and are succeeded by innumerable fruits resembling the keys of the Ash, but of a reddish-brown colour, which imparts to the tree a hue that, unfortunately, is seldom seen in this country. *A. D. Webster.*

NOTICES OF BOOKS.

* THE BALANCE OF NATURE AND MODERN CONDITIONS OF CULTIVATION.

THE author claims in the preface that "the object of the present volume is to treat of the chief wild and semi-wild vertebrates . . . found in the British Isles in relation to the cultivation of crops. . . . These embrace the garden, allotment, small holding, farm and estate—its woods, commons, moors, mountain tracts and the waters of all to the foreshore of the sea." And, further, that "the cultures adopted are gardening, farming, foresting, sporting and fishing." In the medley of subjects which the author discusses within the pages of this work there is very little that pertains to the "Balance of Nature" in its strictest sense, and absolutely nothing with regard to the "modern conditions of cultivation," excepting the short, historical sketch given in the introduction; so that the title affords little or no indication as to the contents of the volume. Those portions of the book which deal with the "Insectivorous and Harmless" mammals, birds, &c., are, on the whole, very good, and the author is to be congratulated on bringing together so much useful information; but a great deal of the text is rendered almost unintelligible by the bewildering repetition of facts and the dubiousness of many of his statements. A few examples will suffice. Under the headings "Useful and Partly Injurious" (*bis*. pp. 37 and 156), we are reminded

What effect, may we ask, would such wholesale slaughter have on the "Balance of Nature"? It is stated that the female robin is distinguished from the male by "having the breast of a duller yellowish-brown colour!" and that "the primary wing feathers of the jay are of a brilliant blue marked out by bands of black." [The italics are not the author's.] We would point out also that the *Limicola* is not a family but an order; that the *Colymbidae* does not include the little grebe, and that the close relationship of *Cinclus* is not with the ant thrushes of the Neotropical region or with the *Turdidae* either. There are also some orthographical mistakes, such as *Colomba*, *Sylviade*, &c., which may be printers' errors.

Much useful information is given in the latter portion of the work regarding the means of destroying ground game, rats and other farm vermin. Indeed, nearly the whole of Chapters VII.-XI. should form a useful compendium to the gamekeeper and the vermin catcher, as almost every conceivable form of trap is figured and described. In addition, there are also many valuable hints on the protection of seeds, fruits, trees, &c., from the ravages of birds and mammals. This, so far as it goes, is excellent; but all lovers of birds will agree that there is no justification whatever for giving an illustrated account of the cruel and shameful method of destroying birds (the sparrowhawk and the kingfisher are particularly mentioned) by means of the illegal pole-trap. This and other similar traps for the destruction of birds should be relegated to the museum of antiquities. We also discountenance the use of poisoned grain, the ground clap-net, or any other of the methods recommended which in any way tends to the indiscriminate destruction of birds.

Of the 271 figures given in the text, a few only are passable, the majority being the most ancient caricatures we have seen in a recent work, reminding us very forcibly of the quaint pictures dating back to the 16th century.

OXALIS ADENOPHYLLA.

THIS attractive species is the Chilean counterpart of the beautiful *O. enneaphylla*, which is a native of the Falkland Islands. The glaucous foliage is similar in both plants, although the leaflets are more numerous in the Chilean species. The principal difference between them lies in the root-stock, which, in *O. adenophylla*, is large and bulb-like and covered with a strong fibrous coat, while that of *O. enneaphylla* is smaller, scaly, and without the fibre that is so prominent a feature in the other. In *O. enneaphylla* the large, white flowers are produced singly on short stalks, reaching just above the foliage, while in the subject of our illustration the flowers are produced two or three on each stalk, and are rose-coloured with a purple base. *O. adenophylla* was collected near San Martin at an elevation of 6,000 feet by Mr. H. J. Elwes, who presented a plant to Kew in 1902. It flowered in May, 1905, and was figured in the *Botanical Magazine*, t. 8054. So far, it has been grown in pans in a cold frame with a northern aspect, and has increased freely under that treatment, but it will probably prove as hardy in the open as *O. enneaphylla*. Plants at Kew have been planted out in a half-shaded position in the rock-garden to test their hardiness during the coming winter. At that season the leaves die down, leaving only the fibre-covered root-stock showing its apex just above ground. A mixture of loam and leaf-soil with plenty of sharp sand is used as a rooting medium, the pans being plunged in ashes to their rims. The illustration (fig. 70) is reproduced from a photograph of a plant in the Alpine house at Kew in May, when a succession of flowers was produced for some four or five weeks. When in flower, plenty of light is needed, for the flowers do not open to any extent on dull days. As a pot plant it makes an excellent companion to *O. enneaphylla* and thrives under similar conditions. *W. I.*



[Photograph by W. Irving.]

FIG. 70.—OXALIS ADENOPHYLLA: FLOWERS ROSE-COLOURED WITH A PURPLE BASE.

that the redbreast is "regarded generally as entirely harmless." but because it takes occasional toll of Red Currants and ripe Grapes, he advocates, as an alternative to closely-netted ventilators, the cruel method of trapping these birds, and goes so far as to give a diagram of the trap baited with a Grape.

The song thrush "charms alike in town and country with its sweet song"; and its usefulness as an insect and slug destroyer is recapitulated; but, for its fruit-eating propensities, the suppressive measures advocated are trapping; "the common rat-trap (two figures given) . . . is excellent, a partly-ripe Strawberry being secured by its stalk to the table." He adds also that "a gross of traps would be required per acre," at a cost of about £10. "In these traps, seen to early and late, probably 3,000 birds may be destroyed in a season." And in relating his own experience the author says, "We have had recourse to trapping, a couple of dozen traps properly worked 'making-end' of 500 birds in a season." The author is not content with this, but suggests that possibly Britons may acquire a taste for thrush shooting as in Belgium and elsewhere on the Continent of Europe, so that fruit growers may thus recoup themselves by killing the birds and disposing of them as food.

* *The Balance of Nature and Modern Conditions of Cultivation*: A practical manual of animal foes and friends for the country gentleman, the farmer, the forester, the gardener, and the sportsman, by George Abbey. With 150 diagrammatical drawings. (London: George Routledge & Sons, Limited; New York: E. P. Dutton & Co.) 1909. Price 7s. 6d. nett.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 70-76.)

(Concluded from page 149.)

WALES.

DENBIGHSHIRE.—The cold weather of January, February, and the early part of March delayed the blossoming of fruit trees so that they escaped the usual spring frosts. With the exception of three very exposed trees, all are carrying good crops. Apples, Apricots, Peaches, and Nectarines are very plentiful, whilst Pears are a good average crop. Severe frosts each night from May 1 to May 22 damaged the Strawberry blossom, and this, followed by heavy rains during the last week in June, caused this crop to be one of the worst for some years. *J. Martin, Bryn Esyn Gardens, Wrexham.*

—The fruit crops, with the exception of Pears, are very satisfactory in these gardens. What has been lost in quantity is compensated for by quality, and we have been saved much labour in thinning the fruits. Insect pests have been very plentiful; but with repeated winter sprayings we have not suffered so much from this cause as others who have neglected to spray their trees. Our soil needs much cultivation, but it pays for working. *George Aitkens, Erddig Park Gardens, Wrexham.*

—The fruit crops in these gardens are very satisfactory. Most varieties of Apple trees have set good crops, whilst Plums are much above the average for this district, and small fruits are plentiful. The soil in these gardens is a stiff clay, overlying a subsoil of clay. *J. A. Jones, Chirk Castle Gardens, Ruabon.*

FLINTSHIRE.—Caterpillars have been very plentiful, the foliage of some trees having the appearance as though riddled with shot; even the Oak trees are half-denuded of foliage. Aphis has also appeared in abundance, and now we are promised a plague of wasps. Apricots are a heavy crop, and the same remark applies to Gooseberries. *J. Barnard, Mostyn Hall Gardens, Mostyn.*

GLAMORGANSHIRE.—The fruit crops in this district are above the average. All small fruits and Strawberries were very heavy crops, but Strawberries were quite 10 days later in ripening than last year, and both the flavour and the colour of the berries were inferior, owing, no doubt, to the lack of sunshine and exceptionally cold nights. Peaches and Nectarines are wonderfully good and the trees clean. Apples and Pears are an average crop. Plums are under an average quantity, and the young growths have been badly affected with fly. Cherries are the heaviest crop I remember in this district. *R. Milner, Margam Park Gardens, Port Talbot.*

—The Apple crop generally in this district is very light. On a west wall we have Cordon trees of Allington Pippin and Cox's Orange Pippin carrying heavy crops of fine fruit, whilst King of the Pippins and Allington Pippin on pyramids are also good; with these exceptions, Apples are few. Pears are a light crop and Plums a failure. Peaches and Nectarines are excellent: the best crops for many years. All the trees are laden with fine fruits and the growths are very clean and free from blight. Cherries also are plentiful and of fine quality. Bush fruits are excellent. Strawberries were an average crop of fine fruits. The soil here is a rather heavy loam on a rocky subsoil. *C. T. Warmington, Penllergaer Gardens, Swansea.*

MERIONETHSHIRE.—The fruit crops in this part are generally good, but 6° frost on April 7 spoiled the Plum and Pear crops. Aphis is very numerous all round this year. Black Currants are almost a failure, but other bush fruits are in abundance, especially Gooseberries. A very hot, dry May was followed by a wet, cold June. Our soil is a fairly light loam with a gravel subsoil, and, consequently, our crops soon feel the effects of drought. *John S. Higgins, Rhûg Gardens, Corwen.*

MONTGOMERYSHIRE.—The first part of the season was very wet, and this was followed by a long spell of east winds and drought, which caused a tremendous amount of blight to appear, especially in exposed positions; consequently, on trees in open positions there are light crops, but

heavy crops are the rule in sheltered places. Small fruits have cropped heavily, with the exception of Black Currants, which are infested with blight. Plums have suffered, although not so severely, from the same cause. *J. Lambert, Powis Castle Gardens.*

PEMBROKESHIRE.—Apples are a very heavy crop in this district, as also are Plums and Damsons; in fact, the trees are much overcropped. But Pears are a very scanty crop generally. We have a good number of Pear trees on walls on the Quince stock with only a fruit here and there. They blossomed late, owing to March being very cold, and I have always observed that if Pear trees bloom very late they never set their fruits well. *Geo. Griffin, Stebeck Park Gardens, Haverfordwest.*

—This is the most remarkable season for fruit that I remember, it being exceedingly abundant and of good quality. Apple trees are laden with their fruits. Pears set well after an abundance of bloom and are satisfactory. All Plum trees are bearing heavy crops of good quality fruits. Peaches are exceedingly good, although aphis was very troublesome on the trees early in the season. Sweet Cherries are carrying a heavy crop of good fruit. Strawberries were abundant and of good quality. Givon's Late Prolific furnished a late supply of large, highly-flavoured berries. Gooseberries are plentiful and good. Raspberries, Red and Black Currants are all plentiful and of good quality. Aphis of most kinds have been troublesome on fruit trees, and the shoots are not so clean and free-growing as last year. The soil in this district is generally a light loam, resting on slate stone. *W. A. Baldwin, Clyffnew Gardens, Boncath.*

RADNORSHIRE.—The Apple crop is small, owing to frost appearing when the trees were in flower, and the same applies to a few of the later-flowering Pears. Where the trees were sheltered by walls, &c., there is a heavy crop. In fact, the fruits have required thinning. Insect pests have been very troublesome on all fruit trees, especially in the case of Black Currants. Gooseberries and Red Currants are the heaviest crops for several years. *J. MacCormack, Maestluch Gardens, Glasbury, Hereford.*

—Strawberries have been an excellent crop, being very little injured by late frosts. The berries were large and swelled quickly. We have a large crop of Gooseberries, Red Currants and Raspberries. Apples are much above the average in quantity where spraying was practised, but blight has been very troublesome, and crops will be poor where this has been neglected. Saw-fly on Gooseberries and Currants gave much trouble. This district is the home of the wild Strawberry and Raspberry, and the soil, although poor, suits both these fruits when properly grown. *C. M. Nixon, Knighton.*

—The present season is a most remarkable one for fruits of all kinds in this part, which is not considered a good fruit district. The trees in private gardens, as well as orchards, are well laden. The soil is a fairly good loam, some of it resting on a gravelly and some on a deep yellowish subsoil with a mixture of clay in places. *Wilson Palliser, The Gardens, Norton Manor, Norton, R.S.O.*

9, IRELAND, N.

DUBLIN.—The fruit crop in this district is a good average one. All bush fruits and Strawberries bore splendid crops, and the quality was good. Stone fruit generally promise well. The soil is a stiff loam on a hard calcareous subsoil. The greater part of this district is about 60 to 100 feet above sea level. *A. Campbell, St Anne's Gardens, Clontarf.*

MEATH.—Fruit growing has been dying out in this district for the last 5 or 10 years. There has been much trouble with the Gooseberry-mildew. Most growers did not take steps in time to grapple with this disease, but followed the Department of Agriculture's advice as to spraying the bushes, and after wasting their money on this the officials ordered the bushes to be destroyed. One grower spent over £100 on spraying according to the Department's advice. *Michael McKown, Julianstown, Drogheda.*

—The Gooseberry crop is the best we have had for years; young Apple trees have done

very well, and there is a good crop of all other kinds of fruit in this district. The rains just came in time to make the Strawberry crop a success. The late frost in April did little or no harm, as all kinds of fruit trees were late in flowering this season. We have 3 feet of black soil resting on clay. Pear trees do not fruit well in the open but succeed well on walls. *J. B. Pow, Dunsany Castle Gardens.*

TYRONE.—The fruit crops are the most satisfactory that we have had for some years. Apples are uneven, some trees being very heavily cropped and others but lightly, these being mainly early dessert varieties. Pears are the heaviest crop I have seen here. Cherries are not largely grown in this district, but all that have come under my notice are carrying good crops. Small fruits are all good. The season has been remarkable for low average night temperatures, although no severe frosts were recorded. The month of May was very bright, with a deficiency of rainfall causing many Plums to drop, and reducing an enormous set of fruit to a fair average crop. Our soil is a very heavy, cold clay—deficient in lime. All fruits are very late, our first Strawberries from outside were gathered on July 5. *Fred. W. Walker, Sion House Gardens, Sion Mills.*

WEST MEATH.—The fruit crops in this district are the best I have seen for many years. Apples, Plums, Gooseberries and Strawberries are carrying generous crops. Pear trees, with the exception of those planted on a southern aspect, are carrying very satisfactory crops. Our soil is mostly of a heavy nature, and very shallow in places; the subsoil is yellow clay. *George Bogie, Pakenham Hall Gardens, Castle Pollard.*

10, IRELAND, S.

ATHLONE.—The Strawberry crop turned out fairly well, considering the fact that all the earliest berries were destroyed by severe frosts about the end of May. We grow only Leader, Royal Sovereign, and Latest of All. The Gooseberry crop is the largest I have ever seen. Plums and Pears suffered by the late frosts, but not to any considerable extent. *J. Murray, Moydrum Castle, Athlone.*

KILDARE.—Strawberries, also Pears and Plums in the open, suffered from the severe frost on May 14, but taken all round the fruit crops are very satisfactory. *Frank Bedford, Straffan House Gardens.*

WATERFORD.—Generally, there are good average fruit crops in this district. Trees in the lower-lying parts suffered somewhat from the continuous frost in the first fortnight of May. Our soil varies from a light sandy loam to a stiff retentive clay. *David Crombie, Curraghmore Gardens, Portlao.*

CHANNEL ISLANDS AND ISLE OF MAN.

GUERNSEY.—We had a very good show of bloom and a good set of fruits, but a large number of Pears dropped during June. No doubt this was owing to the unfavourable weather we had subsequent to their setting. This has been anything but a warm summer, and it is quite surprising that fruit has done so well. *Chas. Smith & Son, Caledonia Nursery, Guernsey.*

JERSEY.—Most kinds of fruits promised well, but after the fruit was well set, we were visited by a severe hail-storm, which damaged it nearly all. Holes were made in the fruit by the hail almost as though shots had been fired into the trees. It may or may not develop and grow out of it, but I am afraid not. Of Strawberries, the Royal Sovereign is the variety chiefly grown, also the Monarch. These two sorts do splendidly here. *T. Sharman, Imperial Nursery, St. Heliers.*

ISLE OF MAN.—All fruit trees promised well for good crops until May 15, when we experienced 10° of frost. Pears were just setting and Apples coming into bloom. The flowers were blackened right through. Strawberries promised well until the same date, when the early flowers were spoiled, and owing to cold east winds later blooms did not set well. Gooseberries and Currants are abundant and good, and we have a big crop of Loganberries. *James English, Brunswick Road Nurseries, Douglas.*

ANTIRRHINUM SEMPERVIRENS.

THE creeping Snapdragons are very pretty plants for the rock-garden, especially if allowed to drape a perpendicular ledge with their foliage and flowers. *A. Asarina* was introduced into this country as long ago as 1699, so that it has been in cultivation with us for over 200 years. It is a native of the South of France, and has been described as an annual and a greenhouse plant. We now know it to be without doubt a hardy perennial in light soils, but apt to die off in heavy ground. The plant has a peculiar habit, its long, trailing stems rambling to a distance of 6 feet or more when it is in good soil, and the grey foliage is so arranged that, in the twilight, the long stems have the appearance of snakes with large scales. The flowers are yellowish-white, nearly the size of those of the common Snapdragon, and are produced all along the stems. Seedlings often appear around the parent plants. *A. glutinosum*, a Spanish plant, was introduced into England 17 years ago. It is said to grow freely in the great walls of the Alhambra at Granada, and is



FIG. 71.—ANTIRRHINUM SEMPERVIRENS: FLOWERS YELLOWISH-WHITE.

at its best as a wall plant. In dry walls this little Snapdragon finds a congenial home and bears its white flowers profusely through the summer and autumn. It has long, trailing stems thickly set with small, alternate and velvet-smooth leaves, grey with the silky hairs that cover both upper and under surfaces. The whole plant is somewhat sticky to the touch, as its name implies. It is rather tender, and has a habit of dying out in some gardens, but it can be treated with success as a half-hardy annual. *A. sempervirens*, the subject of the accompanying illustration, is apparently a rare plant, as it is not mentioned either in *Nicholson's Dictionary of Gardening* or in the century supplement of that work, and I have just consulted a hundred volumes of the horticultural Press without finding any allusion to it. It is, however, to my mind, distinctly superior to the two creeping Snapdragons already mentioned, as it does not die out in the way they so often do; but remains in perfect health year after year. It is at its best in May, but continues to bloom

through the summer and autumn. Its habit of growth is not so trailing as that of the other *Antirrhinums*, and it spreads more evenly. The flowers are white with a pink veining on the upper petal. The plant shown is growing behind a large, perpendicular stone about 2 feet in height, and has entirely draped this to the ground level, while it has covered the rock for a width of 2 feet 6 inches with a wealth of foliage and flower. *Wyndham Fitzherbert.*

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Pineapples.—Suckers of the varieties Smooth Cayenne and Charlotte Rothschild should be detached and potted if they are becoming large, as they not only exhaust the plants, but themselves become drawn and weak. When potted, plunge them in a moderately warm hot-bed, where they will quickly form roots if a close and moist atmosphere is maintained, and the glass shaded during the bright weather. Young

afternoon, when the house is closed and charged with moisture, the thermometer may be allowed to rise to 100°; the bottom heat must not be allowed to decline below 80°. The plants being well rooted, stimulants may be given in increased strength.

Strawberries in pots.—Sunshine and freely moving air are necessary to ripen the crowns before the end of autumn; therefore the plants must not be crowded. Cut off all runners and all side growths. Turn the pots round occasionally to prevent the roots from growing through the pots into the gravel or ashes. When the plants are fairly well rooted, some weak liquid manure may be given, and this may be increased in strength as the plants develop more roots. Syringe the foliage occasionally with some specific to ward off mildew.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Potatos.—Seldom have I known the Potato crop to appear more promising in this district: disease so far has not affected it seriously, but no time should be lost in lifting the tubers, for should cold, showery weather set in, a large percentage of the tubers may become diseased. Choose fine weather for the work, and where the facilities exist, place the tubers in sheds. Then, after a week or two, sort them prior to placing them in the open. I sprinkle freshly-slaked lime over them as they are put in the clamps, as this dries up any affected tubers which may have been overlooked, act as a general sweetener, and improves the flavour. Burn every particle of the old haulm, and should the soil be deficient in lime, apply a good coating of this substance over the surface.

Cabbage.—Plants from the earliest sowings will now be ready for planting. Apply a good dressing of farmyard manure to the soil, trench or dig it deeply, and plant in rows at from 18 to 20 inches apart, allowing 1 foot between the plants in the rows. Make the soil firm, and then water thoroughly. Where slugs abound, place a few finely-sifted cinder-ashes around each plant.

Coleworts.—The soil about these should be flat hoed frequently to promote a free, succulent growth. Any spare plants may still be put out on a south border, allowing them a distance of 12 inches apart each way.

Cauliflowers.—Seeds should be sown in finely-prepared soil on a south border to raise plants for wintering in cold frames for furnishing an early supply next year. The true stock of the old Walcheren is still one of the best varieties for sowing at this season. Magnum Bonum is also excellent, and, where room can be found, Autumn or Early Giant should be included.

Spinach.—This plant does much better when allowed plenty of room, and there should be a distance of 3 or 4 inches between each plant. Apply frequent dressings of soot, and keep the surface soil constantly stirred. Continue to sow at intervals of about 10 days in various parts of the garden for winter and spring supplies.

Carrots.—The main crop of this vegetable should now be lifted and stored. Great care should be taken not to place the roots in too large a bulk, or they will become heated and damaged. Late sowings in frames should be thinned sufficiently to prevent overcrowding. As small Carrots are generally very acceptable, the plants may be thinned as required. Where young Carrots are in request throughout the winter, make another sowing in a slightly-heated pit, selecting one of the stump-rooted, quick-maturing varieties for the purpose.

Endive.—Continue to transplant seedlings from late sowing, choosing a south border. Tie the leaves, when they are dry, of any which are ready for blanching.

Onions.—Lose no time in harvesting, for nothing will be gained by allowing them to remain longer in the open. Sow, each fortnight, small quantities of seed in boxes, and rear them in a cold frame for use as a salad.

Radishes should be sown in small quantities frequently during the next four weeks. Radishes may also be sown in cold frames.

plants that require repotting should be attended to without delay, so that the roots may develop in the new soil before the dull weather sets in. Syringe them twice daily during fine weather, and keep the house close and moist. Plants intended for winter fruiting should be treated more liberally in regard to feeding when they have passed the flowering stage. Guano-water and liquid manure are both excellent stimulants for Pines when applied with discretion. If the plants are growing in pots, some rich material placed around the base of the stems will encourage fresh roots to develop and assist the fruits to swell.

Queen Pines.—The season has not been favourable for plants which will be required for fruiting next year; it will be wise, therefore, to assist them in every way, and every opportunity should be taken during fine weather of confining as much sun-heat as possible in the house, by closing the ventilators early in the afternoon, after syringing the plants and damping all the bare spaces around. Ventilate the house with great care during stormy weather, for on no account must the plants be subjected to a chill through cold draughts. A minimum temperature of 70° should be maintained, but during the

[Photograph by Wyndham Fitzherbert.]

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODGE, Bart.,
Leonardslee, Sussex.

Propagating.—No time should be lost in commencing the work of propagating all kinds of bedding plants. Plants raised from cuttings have a better chance of surviving through the winter when they have plenty of roots. For this reason Pelargoniums, Irisines, Alternantheras, and similar plants should be rooted before the autumn.

Roses.—Cuttings of half-ripened shoots about 9 inches long should be inserted at this time. Those of the more tender varieties should be placed under frames or handlights, but those of the hardier sections may be put in small trenches made on a sheltered border. All kinds of Rambler Roses grow extremely well on their own roots, and such plants are preferable to those propagated in any other way. Good plants may be had from cuttings in two years. The cuttings should be lightly shaded from strong sunshine and protected in the winter by a thick coating of wood-ashes over their roots.

Shrubs.—Many species of shrubs may be propagated at this season. Select half-ripened, healthy shoots and make the cuttings from 7 inches to 9 inches long. Mix a quantity of decayed leaves and old potting mould with the soil, tread the ground firm, and then make a small trench with the spade. When the cuttings are inserted make the ground about them very firm. Cuttings of Camellia, Olearia, Ribes, Skimmia, Philadelphus, Hydrangea, Genista, Cistus, Escallonia, Deutzia, and Buddleia may be easily rooted in this manner, and, if left for a year, then transplanted the following autumn, will develop into useful plants the following season. It may be necessary to protect the cuttings in frosty weather, and this may be done by simply placing a little dry bracken over them and removing it again as soon as the frost disappears. Continue to prune any shrubs that require their shoots shortened: most flowering shrubs require some pruning after their flowering period, if only to get rid of the old seed vessels. Others may require pruning for preserving their shape or keeping them within bounds. Place a mark to any that are to be shifted, and especially to the deciduous varieties, for, when the foliage has fallen, the plants may not appear to be crowded.

Dahlias.—These will now require much attention, especially in the matters of staking, tying, and thinning or disbudding the shoots. During dry weather afford them copious waterings, sometimes giving liquid manure. Set traps to catch earwigs, or these pests will soon disfigure the blooms. Seedlings should be selected as they flower, and the worthless varieties marked for destruction later.

Agapanthus.—Plants in bloom should receive copious supplies of water, and, occasionally, a little fertiliser and soot-water. The Agapanthus forms a fine plant for growing in tubs to place on terraces; the foliage is very stately.

Clerodendron trichotomum.—The plants are now developing their scarlet and white bracts, and should receive manurial assistance in the form of manure water.

Helleborus (Christmas Roses).—Plants in positions exposed to direct sunshine should have plentiful supplies of water to enable them to tip up the crowns.

Tecoma grandiflora.—Plants on south walls are showing the flower-buds in profusion. Assist their expansion by liberal supplies of water or liquid manure. This plant requires very warm weather to bring its flowers to perfection.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow,
Cornwall.

Bulbs.—To obtain a succession of bulbous flowers after the Roman Hyacinths and Polyanthus Narcissi are finished, batches of Dutch Hyacinths, various Tulips, such as Duc van Thol, Belle Alliance, Cottage Maid, La Reine, and Vermilion Brilliant, with Crocuses in different colours, should be potted without delay. The potting soil should consist of equal parts loam and leaf-soil, with plenty of sand added. As in the case of the bulbs that are already potted, the receptacles should be placed on ashes in the open

and covered with the same material until about an inch of growth has been made. Small batches of these plants should be potted about once a fortnight for succession until the time arrives for potting the main batch; shortly, Narcissi and Scilla may be included.

Retarded plants.—Crowns of Lily of the Valley, which have been subjected to the cold treatment, are especially suited for supplying flowers as late as the end of December. The crowns are now sold very cheaply, but unless there are proper conveniences for keeping them, it is best to order small quantities as they are required. Astilbe (Spirea) is another flowering plant that forces well; the pink-flowered varieties should be included.

Hyacinths in glasses.—To be successful with these plants it is necessary that the glasses containing the bulbs be kept in a cool, dark situation until the receptacles are fairly well filled with roots. Although the bulbs should not be exposed to the light, they must not be kept in a damp, stagnant atmosphere, but in some place where the surroundings are comparatively dry. As a rule it will be found that the single-flowered varieties are the most suitable for this method of cultivation. Place a few pieces of charcoal in the glasses and nearly fill them with water so that the bulbs just touch the water. Examine them from time to time and replace occasionally any water that is lost by evaporation. Should the water become foul, wash the glasses and refill them with fresh rain-water.

Richardia africana.—The plants growing in trenches should be chopped around their roots with a spade so that when, a week or so later, they are lifted and potted, they will not suffer such a check as otherwise would be the case. For a few days after being potted the plants should be kept close and be well syringed.

Salvias.—Plants intended for flowering in the greenhouse, and which, for the summer, have been planted out-of-doors, should now be carefully lifted and potted into pots of a convenient size. After the plants have been potted give them a good watering and keep them close and shaded from sunshine, syringing the foliage twice daily until the root action has recommenced.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell
Park, Kent.

Perpetual-fruited Strawberries.—These plants require more attention than is usually accorded to the summer-fruited varieties; they should receive a dressing of some artificial manure, after which a copious watering should be given to wash the constituents of the manure into the soil. When this has been done, dust the ground about the plants with a mixture of equal parts soot and slacked lime to keep down slugs. Place some clean wheat straw along the rows to prevent the fruits from becoming splashed with soil. At the time the fruits are ripening the weather is usually very damp, either from rains or heavy night dews, and if the berries are allowed to lie directly on the damp straw, there is a great danger of them rotting before they ripen. Many of the best fruits are spoiled in this way; but it can be largely prevented by supporting the trusses of fruit with little forked pieces of stick, or wire supports, sold by the horticultural sundriesman for the purpose. When handling the trusses to place the supports in position, superfluous fruits may be removed, and thinning well repays the trouble it entails. If very cold and damp weather sets in, the plants may be protected by lights placed over them, or even handlights; but, whatever is used, take care to allow a constant circulation of fresh air about the plants at all times. St. Joseph, St. Antoine de Padou, and Laxton's Perpetual are three of the most reliable Strawberries for late supplies.

Wasps.—Notwithstanding the cold and wet of spring and early summer, wasps are very numerous. They are destructive of all kinds of fruit, and every effort should be made to locate their nests and destroy them. Their haunts should be marked in the daytime, so that the work of destroying them may be done after sunset, when most of the wasps will have returned to their nests. Soak cotton wool in cyanide of potassium dissolved in water, and place this in

the mouths of the holes containing the nests. The cyanide is a deadly poison, and should be kept under lock and key. We generally use tar-water from the gasworks, as it is safe for the operator and very effectual, nor are the fumes so noticeable in application as gas-tar, which is often used. The old rule in gardens of paying the staff one penny each for all queen wasps killed in the spring had much to recommend it, and should be more generally practised.

THE ORCHID HOUSES.

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

Sobralias.—These Orchids, though possessing large Cattleya-like blooms, are not general favourites. The principal objections to them are that the individual blooms, having no stalks, are of little value as cut flowers, and that they last fresh for a few days only. The plants, when well established, afford a long succession of handsome flowers, and a representative collection of the various species and hybrids finds some of the members in flower over a period of five or six months. Among the best from a decorative point of view are *S. macrantha*, *S. m. alba* (pure white), *S. Lucasiana*, *S. xantholeuca*, *S. Liliastrum*, *S. Warszewiczii*, *S. Holdfordii*, *S. Sanderiana*, *S. albo-violacea*, *S. x Amesia*, *S. Lowii*, *S. Lindenii*, *S. Veitchii*, *S. Colmania*, *S. Wiganie*, and the rare *S. Ruckeri*. All the above are strong-rooting plants, and, as they are now developing their new growths, they need plenty of water at their roots. Should a plant need a larger pot, or an unwieldy specimen require dividing, the rooting medium should be allowed to become rather dry for a few days prior to the operation. Because of their strong-growing habit, Sobralias require a considerable amount of pot room, and plenty of clean crocks for drainage purposes. They thrive best in a compost consisting of fibrous loam and Osmunda fibre in equal parts, with a small quantity of Sphagnum-moss. The Osmunda and Sphagnum should be divided into moderately small pieces so that it will incorporate well with the loam. Add plenty of small crocks to these materials, and mix them well together. In potting, keep the base of the plant below the rim of the receptacle, and pot them similar to greenhouse plants. For some time afterwards watering must be done with great care; but when the plants are well established, and growth is vigorous, they will require an abundance of moisture. A light position in almost any house having an intermediate temperature will suit Sobralias throughout the year.

Lalia purpurata and *L. tenebrosa.*—Plants of *Lalia purpurata* and *L. tenebrosa* should be examined to ascertain if they require increased root room, as by this time the new breaks will have grown a few inches, and will soon commence to produce young roots. Old plants that require rejuvenating should also be seen to, removing all worn-out and leafless back pseudo-bulbs; two or three pseudo-bulbs behind each leading growth will be sufficient. Previous to potting, remove as much of the old soil as is possible without injuring the roots, and use pots sufficiently large to accommodate them for two seasons. When repotting young, well-rooted plants into larger pots, the soil in front of the leading growths, if in good condition, need not be disturbed, it being sufficient to remove the old compost where the back pseudo-bulbs have been cut off. By this method, some of the plants may be placed into similar pots to those they have hitherto occupied. Fill the pots to about one quarter of their depth with clean crocks; pot firmly, and, for a compost, use Osmunda and Polypodium fibre in equal parts, with plenty of small crocks added to keep the mixture porous.

Lalio-Cattleya elegans.—Plants of this natural hybrid will be sending up the flower-spikes from the apices of the current season's growths. At this stage the shoots are tender, and decay soon sets in if the plant is kept too wet at the roots, especially when the night temperature is low. Growth will be completed just after the fading of the flowers, and if the plant is repotted at that time, the new roots which are emitted from the base of the flowering growth will appreciate the fresh potting mixture. The same material as advised for *L. purpurata* will suit this plant. It will be advisable to water the plants less frequently, and to gradually afford them an increased amount of light and fresh air.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Appointments for September.

- SATURDAY, SEPTEMBER 4—
Soc. Franç. d'Hort. de Londres meet.
- WEDNESDAY, SEPTEMBER 8—
Roy. Caledonian Hort. Soc. Centenary Exh. at Waverley Market, Edinburgh (2 days).
- MONDAY, SEPTEMBER 13—
United Hort. Ben. and Prov. Soc. Com. meet.
- TUESDAY, SEPTEMBER 14—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Edward A. Bunyard on the "Physiology of Pruning"). British Gardeners' Assoc. Ex. Council meet.
- THURSDAY, SEPTEMBER 16—
Nat. Rose Soc. Autumn Exh. at Hort. Hall, Westminster.
- MONDAY, SEPTEMBER 20—
Nat. Chrys. Soc. Executive and Floral Coms. meet. at Essex Hall, Strand.
- TUESDAY, SEPTEMBER 21—
Nat. Dahlia Soc. late Exh. at Roy. Bot. Gardens, Regent's Park (2 days). Edinburgh Autumn Holiday.
- TUESDAY, SEPTEMBER 22—
Roy. Hort. Soc. Coms. meet. (Masters' Memorial Lecture on the "Production of Varieties," by Prof. Hugo de Vries at 3 p.m.).
- WEDNESDAY, SEPTEMBER 23—
Michaelmas Day. Quarter Day.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—59°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, September 1 (6 P.M.): Max. 59°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 2 (10 A.M.): Bar. 29.9; Temp. 59°; Weather—Dull.

PROVINCES.—Wednesday, September 1: Max. 56° Ireland S.W. coast; Min. 48° Lincoln.

SALES FOR THE ENSUING WEEK.

- MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, in all varieties, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
- WEDNESDAY—
Thousands of Roman Hyacinths, Narcissus, Chionodoxa, Amaryllis, &c., Azorean Lilies, Amaryllis, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.
- FRIDAY—
Choice Imported and Established Orchids in variety. Orchids in flower and bud, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Bordeaux Mixture.

The results of a very complete and elaborate investigation into the use of Bordeaux mixture for spraying orchard trees, &c., are published in the *Bulletin* of the Agricultural Experiment Station (University of Illinois). The introduction to the *Bulletin* gives an excellent historical account of the origin of the use of copper sulphate as a fungicide. Readers of the *Gardeners' Chronicle* will be interested to learn that, so long ago as 1861, Mr. W. F. Radclyffe published in these pages an account of his discovery on the value of this fungicide. Reasoning from a knowledge of the fact that "solution of vitriol was a sure remedy for smutty Wheat seed," Mr. Radclyffe "applied, with a watering pot, to Rose bushes affected with mildew, a solution of 2 ounces of blue vitriol to a stable bucket of cold water. The receipt signally succeeded, and the Geants are perfectly cleaned of the mildew."

The credit for the discovery of the beneficial action of copper sulphate and lime together rests, however, with Millardet, who

has himself placed on record how, on the outbreak of mildew in France in 1878, he set himself to study the *Peronospora* in the hope of finding a weak point in its development that would permit of its being mastered. In 1882 he observed in certain vineyards of Medoc that the vines along the roadside still bore leaves, whereas, everywhere else, the leaves had fallen. On enquiry of the manager he learned that it was the custom to cover the leaves with copper sulphate and lime in order to deter passers-by from pilfering. From this accidental observation and Millardet's acumen the discovery of the spray-material of most general use was made.

The *Bulletin* gives also a useful account of the old and new formulæ, showing that, as originally prepared, Bordeaux mixture was far stronger than is now the case, and recording how the present 4-4-50 formula (4 lbs. copper sulphate, 4 lbs. of lime, and 50 gallons of water) came to be generally adopted in most parts of America. As its use has been extended to scab, curl and brown-rot, so the tendency has grown to reduce yet further the strength of the mixture. The author, Mr. Charles S. Crandall, is careful to point out, however, that strength of the mixture is only one of the factors which contribute to success in its use: purity of materials, time of application, and prevailing weather-conditions are other factors of equal importance. After an account of the mode of preparation, the chemistry of Bordeaux mixture is discussed, and in the course of the discussion it is admitted that much remains obscure as to the form which the copper takes and as to the precise way in which it acts.

A very full consideration is given to the damaging effect which Bordeaux mixture may have on foliage, particularly in producing brown spotting (burning) and yellowing of leaves. Mr. Crandall's experiments lead him to conclude that though at times the injury is due to carelessness in making the mixture, nevertheless injury sometimes follows when a perfect mixture is applied. He concludes that Bordeaux mixture most nearly approximates to the ideal spray, but that its harmlessness (with respect to damage of foliage) cannot be absolutely depended upon. Though weather-conditions do not appear to be responsible for the yellowing which sometimes follows the use of Bordeaux mixture, there seems to be no doubt that rain following on the application is the chief factor in producing brown-spots or burning.

The Darwin Exhibition at South Kensington.

The authorities of the Natural History Museum at South Kensington have placed the section of the public interested in natural history under a deep debt of gratitude. It is doubtful whether any other great museum can vie with the Natural History Museum in general attractiveness. A visit to most museums may be vastly instructive to the specialist, but it is certainly a weariness to the uninitiated. The specimens may be imposing, and even beautiful; but, exposed in severely systematic order, or, as is sometimes the case, in no order whatever, the adult visitor does not know where to begin nor how soon to end with them. At South Kensington

a very different system has been adopted with conspicuous success. The chief cases tell some story in natural history. Aided by brief descriptive notices, the layman may arrive at a sound understanding of the meaning of such terms as natural selection, sexual selection, species, varieties and the like, in a pleasant and yet thoroughly business-like manner.

Now, in addition to the permanent cases, there has been opened a special series of exhibits serving as a memorial of Darwin's life and work. Though the prime object of this Darwin exhibition is to illustrate the main argument of his great work *The Origin of Species*, the objects themselves are individually of such interest that the visitor who is more concerned with the man than with his achievements may spend a profitable hour in their inspection. The guide-book, prepared by Dr. W. G. Ridewood, serves as an admirable aid to the study and appreciation of the exhibit. If the history of a nation is the history of its great men, then, in no better way, can the present generation learn something of the progress of thought in the latter part of the last century than by studying such an exhibition as that displayed at South Kensington. As he passes in review the 300 separate exhibits, the visitor sees the life of our greatest naturalist re-lived before his eyes. Among the manuscripts he finds, for example, one which marked the turning-point in Darwin's career and, hence also, an epoch in natural science; that in which Darwin replies to his father's objections to his joining in the voyage of the "Beagle." He may also see the extraordinary care and labour which the great naturalist bestowed on his writings; manuscripts corrected and re-corrected time after time before the unwilling words could be induced to express the writer's great ideas. We ourselves having, in our student days, been privileged to use some of the books which Darwin himself used and annotated, were profoundly impressed by the way in which he devoted his attention to the matters which ordinary mortals would have passed by: a testimony to the truth of the saying that the only sure sign of genius is that it does not follow the beaten track.

Though it is true that everyone with a garden has the best museum ready-made; nevertheless, it is true also that, without some guide to observation, the living museum remains of comparatively small value. A visit to the Darwin memorial exhibition will prove not only instructive in itself, but a great stimulus to all who have access to Nature, in country or in garden, to observe natural phenomena for themselves.

OUR SUPPLEMENTARY ILLUSTRATION shows flowering plants of *Lilium rubellum* raised from home-saved seed. Although it is now 11 years since this beautiful Japanese Lily was first flowered in England, it seldom grows satisfactory in this country, and, were it not for the fact that bulbs are imported annually from Japan, this Lily would be seldom met with. Growers can, however, raise their own seedlings. At Kew plants from seed are found to grow well and to flower more freely than those from imported bulbs, most of which only last for two or three years. Several of the specimens depicted in the illustration flowered in their third year. They are now six years old, and have improved each successive season. *L. rubellum* belongs to the *Eulirion* or *Brownii*

group, and is closely allied to *L. Kramerii*, from which it differs in having broader leaves and smaller, richer, pink flowers. It is found wild in the Northern Nippon district of Japan, and is the earliest Japanese Lily to flower in this country, being at its best from the last week in May to the third week in June, which season of flowering is slightly in advance of that of *L. elegans* and its varieties. In the *Botanical Magazine*, tab. 7634, the stems are described as slender: this term, however, can scarcely be applied to the plants shown in the illustration, for they are 18 inches to 2 feet in height, and 1 inch to 1½ inches in circumference. Several of the plants are carrying three or four flowers on one stem, some have five, whilst one has as many as six flowers, all of which are open together. The original account describes the leaves as 2 to 3 inches in length, but several of the Kew plants had leaves 3 to 4 inches long and 1½ inches wide. The perianth is funnel-shaped, 3 inches in length, and about 4 inches in diameter, the three inner segments 1½ inch broad, the three outer ones 1 inch broad. The colour of the blooms varies from pale rose to rose-pink. The seeds should be sown as soon as they are ripe, when they will be found to germinate quicker than if kept until the spring of the following year. *L. rubellum* succeeds best in a well-drained soil composed of sandy loam and peat: if the latter is not available, leaf-mould may be used. Being a stem-rooting Lily, the bulbs should be planted 3 to 4 inches deep.

THE CHAMPION FRUIT-TABLE CLASS AT SHREWSBURY.—In our report of this show (see p. 137), it was remarked that, contrary to the practice which obtained in former years, the pointing in the exhibits in this class was not shown to the public. A correspondent has since addressed a letter to us on this subject in which he strongly complains of the discontinuance of the pointing last year and this year. Owing partly to the important position our correspondent has filled for many years past at Shrewsbury, both as exhibitor and judge, we addressed an enquiry to the Shrewsbury secretaries as to the responsibility of the judges in this matter. In reply we are informed that the society had no intention of publishing the points, nor was it stated in the schedule that they would be published. It is regarded as scarcely possible to do so in the time allotted for judging before the opening of the show, especially as the 30 individual dishes of fruit are not specified in the schedule, and are not similar in kind. It is further suggested that the judges may still have the pointing book in their possession, in which case there is no reason why the pointing should not be published. We think that efforts should again be made to publish the pointing in this class directly the judging is finished, for there is no doubt it would greatly increase the interest in the competition. Our correspondent also states that there appeared general dissatisfaction with the awards of the 2nd, 3rd and 4th prizes, but this is a matter that cannot be satisfactorily discussed in these columns.

FRENCH GARDENING.—In a lecture to the Fellows of the Royal Horticultural Society on the subject of French Gardening (*J. R. H. S.*, xxxv., Part I, July, 1909), Mr. C. D. MACKAY pointed out that from February to April there are sent every day from France to London 4,000 to 5,000 crates of Lettuce, 500 crates of small early Carrots, 100 crates of Asparagus, 100 crates of long French Turnips, and 50 crates of Celeriac. Mr. MACKAY, who advocates strongly the wider adoption of the French method of intensive cultivation, provided in his lecture a number of facts, the consideration of which is well worth the while of all concerned in market work.

PROPOSED NEW PARK FOR ABERDEEN.—It is proposed to acquire from the Aberdeen Land Association some 24½ acres of ground in the west-end of the city, for the purpose of laying it out as a public park. The sum asked and agreed to by the Links and Parks Committee of the Town Council amounts to £9,800 at £400 per acre. The works in connection with the park, including walls, laying out the grounds, gate lodge, and proportion of outlays for street making, are estimated to cost £8,200, making a total estimated cost of £18,000. It is suggested that the Council should also acquire 14 acres 3 roods of land contiguous to the proposed park, and to be used for feuing purposes, at the same price, namely, £470 per acre—£5,900. Details would amount to £946, making a total outlay of £6,846. The return to be derived from this area from feuars is estimated at £12,603, showing a balance over the purchase price in favour of the city treasury of £5,757. In the meantime plans are to be prepared showing the position and extent of the different sites, and circulated among the members of the City Council.

A GARDEN SUBURB FOR BRISTOL.—The project for providing a garden suburb for Bristol shows prospects of early realisation. The company formed to take up land at Shirehampton for the experiment has placed its prospectus before the public with success. The allotment letters have been posted, and the minimum subscription upon which the directors were prepared to go to allotment has been exceeded. The company has been formed to acquire from Mr. PHILIP NAPIER MILES about 26½ acres of land situated close to the Shirehampton railway station. The site is within the area supplied by the Bristol Water Works Company, and gas and electricity are also available. The property will be laid out with wide roads and good open spaces, and as the area of the house plots, with a few exceptions, will not be less than 340 square yards or thereabouts, a good garden is assured to each house. The directors propose to provide houses for all classes, and it is part of the scheme to erect houses for which a rent of 6s. or 6s. 6d. per week can be accepted, and also larger houses which will, it is anticipated, command as much as 10s. per week.—*Times*.

POTATO SCAB.—The method of treating scabbed seed Potatoes with formaline before sowing has been recommended frequently. According to the results of experiments carried out by Mr. W. J. MORSE (*Report of Experiment Station, Maine, U.S.A.*, 1907), the method is eminently successful. Potatoes soaked for two hours in a solution of ½ pint formaline to 15 gallons of water, and used subsequently as seed, gave a crop of which less than 1 per cent. consisted of scabbed Potatoes; whilst the percentage of diseased tubers obtained by planting untreated tubers was over 5 per cent. Mr. MORSE has also tried formaldehyde gas instead of the liquid, and finds it very efficacious. The gas is generated by pouring formaldehyde over potassium permanganate placed in tin trays. The room is closed, and the tubers are exposed to the vapour for 24 to 48 hours. For a space of 1,000 cubic feet 23 ounces of potassium permanganate and 3 pints of formaline are required. Where Potatoes are stored in large quantities, in places that can be closed in, it might be well worth trying this formaline gas method once or twice during the time of storage as a preventive not only of scab but also of rot.

HELIANTHUS.—The Helianthus which has been much advertised recently as making enormous growth and serving as food for beast and man, is identified by P. GRAEBER in a leaflet issued by the Botanical Gardens and Museums of Berlin as *Helianthus macrophylla*.

RUBBER PLANTS.—It is perhaps not so widely known as it deserves to be that the members of the Kew staff, both the practical and the botanical, have been for some years past engaged on questions relating to rubber plants. The late Director, Sir WILLIAM THISELTON-DYER began many years ago an investigation of the species of *Landolphia* and other genera of Apocynaceae, but pressure of other work prevented him from continuing his studies in this direction. Mr. W. WATSON, the Curator, has, moreover, always been interested in raising seedlings of rubber plants of reputed good quality for distribution to the Colonies and India. At the herbarium, Mr. W. BOTTING HEMSLEY and his successor, Dr. OTTO STAFF, have been engaged on the purely botanical discrimination of genera and species, and the results of their labours have appeared from time to time in the *Kew Bulletin* and HOOKER'S *Icones Plantarum*. The former has devoted himself mainly to the American rubber plants and the latter more particularly to those of the Old World. The last part of the 29th volume of the *Icones Plantarum* (plates 2,876-2,900) contains figures and a full botanical description of *Manihot dichotoma*, reputed to yield a rubber superior to that of *M. Glaziovii* and of species of the genus *Sapium*, including a number previously undescribed, the account constituting a continuation of Mr. HEMSLEY'S review of the American species of the genus. The excellent plates by Miss MATILDA SMITH were all prepared from authenticated specimens, mostly preserved at Kew, but some at the British Museum, others at Berlin and Paris, kindly lent for the purpose by the authorities of the several establishments. Collectors' and contributors' reports on the quality of the rubber of a number of the species are given, and also references to the literature of the commercial side, but there is no attempt to discuss the relative commercial values of the various species.

APPOINTMENT OF AN ENTOMOLOGICAL RESEARCH COMMITTEE.—A committee has been appointed by the Earl of CREWE to carry out investigations in economic entomology, with special reference to Africa. The work of the committee will be directed to the discovery of the relations which exist between insects and disease in man, animals and economic plants. Among the members of the committee are Lieutenant-Colonel PRAIN, C.I.E., Mr. R. NEWSTEAD, of Liverpool, and Mr. F. V. TUEOBALD. Trained entomologists are to be sent, one to the east side, another to the west of Tropical Africa, in order to encourage official and other residents to collect and observe noxious insects, and to give instruction in the use of scientific methods. Collections are to be made, and the scientific results obtained in various parts of Africa are to be published from time to time by the committee.

IMPORTATION OF POTATOS INTO THE TRANSVAAL.—The Transvaal Government *Gazette* for June 11 contains a Government notice to the effect that, on and after September 1, 1909, no person shall introduce into the Transvaal from outside South Africa any consignment of Potatoes, unless accompanied by a certificate from the consigner stating fully in what country and district of that country the Potatoes were grown, and also a certificate from the Board of Agriculture of the country in which the Potatoes were grown to the effect that the disease known as "warty disease" or "black scab" has not been declared to exist in the district from which the Potatoes came. Any consignments not accompanied by such certificates will be liable to be seized and destroyed by the Department of Agriculture.

THE CENTENARY SHOW OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—On December 5 next this society will enter on the second century of its existence. In order to signalise the event a great exhibition of fruits, flowers and vegetables will be held in the Waverley Market, Edinburgh, on September 8 and 9. A large number of the leading trade growers will exhibit, and it is anticipated that the competitive classes will be well filled. The members of the nursery trade in Edinburgh offer a Silver Centenary Cup of the value of 18 guineas, in addition to a monetary prize offered by the society, for a collection of cut flowers. Other cups of the same value are offered in the fruit and vegetable sections, and these in addition to the 50-guinea challenge trophy for eight bunches of Grapes, presented by Mr. MASSIE in 1904. The present holder of the trophy, Mr. KIRK, Norwood, Alloa, has won it twice, while Messrs. GOODCRE, BEISANT, and LUNT have each won it once. Another prize which should attract competitors is the HUGH DICKSON memorial prize, consisting of a Silver Cup, of the value of 15 guineas, for 24 Rose blooms.

PUBLICATIONS RECEIVED.—*Report of the Botanical and Forestry Department, Hongkong, for the year 1908.* (Hongkong: Noronha & Co., Government Printers.)—*A Pure-Line Method in Corn Breeding*, by Dr. George Harrison Shull. Reprinted from American Breeders' Association.—*The "Presence and Absence" Hypothesis*, by Dr. George Harrison Shull. Reprinted from *The American Naturalist*.

ARRANGEMENT OF BEDDING PLANTS.

THE different combinations possible in the arrangement of bedding plants are well-nigh inexhaustible. Nothing in connection with the management of a flower garden gives more room for consideration or choice. Common observation shows that, whilst many plants of only average merit, from the decorative point of view, are made to appear most charming by tasteful association with other plants, some of the showiest and best lose much of their effectiveness owing to their being misplaced or ill-assorted with others which do not harmonise with them.

We print below a list of the beds and their occupants as arranged this summer in Belgrove Gardens, county Cork. Mr. Gumbleton cultivates an exceedingly large collection of the choicest annual, biennial and perennial plants, and takes the greatest personal interest in their grouping in the numerous flower-beds at Belgrove. The list may, therefore, possess interest to those who, in the management of public parks or large private flower gardens, are called upon to furnish fresh schemes of flower-bedding from year to year.

CONTENTS OF 42 BEDS IN BELGROVE GARDENS.

1. Six choice named Delphiniums, edged with a double row of *Dimorphotheca aurantiaca*.
2. Thirty tall Lobelias, in five varieties; *Coreopsis* King of Tom Thumbs, edged with dwarf variegated *Nasturtium Elstree Midget*.
3. Hybrid *Montbretias* and *Bidens pilosa*.
4. Eleven plants of *Salvia splendens* "Fireball" and 27 plants of the double white Ten-week Stock "Bismarck," edged with *Tropæolum fimbriatum Isola Bella*.
5. *Tagetes* Legion of Honour, to replace 44 Pansies, which failed from attacks of wireworm; the bed edged with *Viscaria aculata candida* (new variety).
6. *Dahlia lignea*, *Linaria dalmatica*, *Glaucium Fischeri*, *Argemone grandiflora*, *Symphandra Hofmanni* and *S. osetica*, *Alyssum spinosum roseum*, *Lychnis cognata*, *Campanula amabilis*, *C. betonicaefolia* and *C. michauxioides*.
7. Seventy *Gladiolus Princeps* and three *Gladiolus Evolution* (blue variety).

8. Pillar of *Rose Dorothy Perkins*; *Tropæolum polyphyllum Leichtlinii* at the base.

9. *Coreopsis*, dark brown, in centre; new variety *Tiger Star*, double row, around it.

10. *Gillia coronopifolia* and *G. aggregata*, with new single *Petunia "Norma"* (blue and white) as a carpet.

11. *Richardia Elliottiana*, carpeted with *Eschscholtzia nana hybrida "Diana."*

12. New annual *Calandrinia chromantha*, with rose-coloured flowers followed by orange-yellow coloured fruits.

13. *Campanula primulefolia*.

14. *Lobelia cardinalis "Firefly."*

15. Perennial *Phloxes*, edged with *Inulas*, *Roylei*, *glandulosa superba*, *fimbriata* and *speciosissima*.

16. *Crinum Powellii album*.

17. Herbaceous *Pæonies*, in 12 varieties.

18. Early-blooming *Cosmos*, in three colours, edged with *Nemesia Crimson King*.

19. *Salvia splendens* *Victor Emanuel* and "Fireball," with four named *Eschscholtzias*—*Mikado*, *Dainty Queen*, *Carmine King*, *Intus rosea*.

20. New *Brachycome iberidifolia* *Blue Star*, edged with *Coreopsis* King of Tom Thumbs.

21. Scarlet semi-double *Begonia Lafayette*, edged with double *Lobelia Kathleen Mallard*, and carpeted with *Mesembryanthemum cordifolium variegatum*.

22. Twenty-two choice double *Cactus Dahlias*.

23. *Anchusa capensis* and *A. furcata*.

24. *Helichrysum monstrosum* *flore pleno*.

25. *Crocospia* species, *Achillea Crimson Queen*, *Alyssum sinuatum*, and *Anemone japonica*.

26. Pompon double Dahlias.

27. *Impatiens Oliveri*, surrounded by 30 of different shades of *I. Holstii*, and carpeted with *Mesembryanthemum cordifolium variegatum*; edged *Gazania splendens variegata*.

28. *Dimorphotheca aurantiaca* (101 plants): (the brightest bed in the garden.)

29. Carter's *Nemesia grandiflora*, edged with 40 plants of the dwarf *Nemesia Orange Prince*.

30. *Begonia Martiana grandiflora*, with double row of *Godetia Sunset* and *Crimson Glow* on each side.

31. All the best forms of *Chrysanthemum leucanthemum* or *Ox-eyed Daisy*.

32. Same as bed 4, substituted *Salvia Victor Emanuel* for "Fireball" and *Nasturtium Isola Bella* omitting.

33. Nine choice named *Tigridias*, of which the *Giant* and *Rosy Giant* were the largest and best.

34. White variety of *Impatiens Holstii*, with new *I. H. Leignitzia* surrounded by new double *Eschscholtzia*.

35. Thirty choice named *Violas*, surrounded by *Nemesia Blue Gem*. The *Violas* failed for same cause as in No. 5.

36. *Clarkia flore pleno* in two colours, *Brilliant* and *maculata*.

37. *Nemesia Dobbie's Triumph*.

38. Forms of *Anemone japonica*.

39. Named varieties of *Campanula persicifolia*. (These go out of bloom so soon that they are no good for summer bedding.)

40. Named varieties of *Papaver orientale*.

41. *Campanula persicifolia Moerheimii*.

No. 23, being now out of flower, has been replaced by *Lobelia cardinalis "Firefly."*

No. 40, *Poppies* having ceased to bloom, have been replaced by *Tagetes Croix de la Legion d'Honneur*.

CONTENTS OF 22 SMALL ROUND BEDS IN BELGROVE GARDENS.

1. *Geranium Lowii* or *anemonefolium*.
2. *Dahlia collerette* *Maurice Rivoire*.
3. *Aster flore pleno* *Beauty of Colwall*. (First double *Michaelmas Daisy*.)
4. *Dahlia coronata*, edged with blue *Lobelia*.
5. *Dahlia odorata Bruantii*, edged with *Dianthus Comte de Kerchove* (a fine double-flowered, striped *Indian Pink*).
6. *Dahlia Etoile Poitevine*.

7. *Dahlia odorata Bruantii*, edged with *Antirrhinum calycinum* (a good old Portuguese plant seldom met with).

8. *Dahlia lignea*, edged with blue *Lobelia*.

9. *Dahlia collerette "G. Bruant,"* edged with *Viscaria* and variegated-leaved *Tropæolum*.

10. *Dahlia pæonia germania* (sweet-scented).

11. *Dahlia M. G. Bruant*, with four seedling *Tweedia cœrulissima*.

12 and 13. *Dahlia Twentieth Century* (single).

14. *Hemerocallis fulvida flore pleno*.

15. *Salvia dichroa* (large specimen), a very handsome, tall-growing species.

16. *Lupinus polyphyllus roseus*.

17. *Lilium speciosum* *Henryii*.

18. *Incarvillea grandiflora* or *Fargesii* and *Tunica saxifraga flore pleno*.

19. Pillar of *Rose Lady Gay*.

20. Pillar of *Rose Perle des Neiges* and *Lathyrus panonicus* *Smithii*.

21. Pillar of *Rose Hiawatha*.

22. *Montanoa mollissima* (interesting free-blooming, white-flowered Composite shrub), with the rare *Impatiens amphorata* at foot.

NOTES FROM A "FRENCH" GARDEN.

WE are now cutting our last batch of Cauliflowers, which has been grown as an intercrop amongst the Melons on the old manure beds. The heads are not very large, this defect being due to the damp weather before they commenced to develop.

Celery has done remarkably well this season. We are now blanching the variety "Winter Green," as we shall soon require the room the plants occupy. The crop of Celeriac is ready for marketing.

The Carrots sown in the middle of July are well forward and will be ready for pulling in late September; they will require copious waterings at least three times weekly.

This season has been very favourable to the growth of Cardoons; although there is still four weeks for them to complete their growth they are now larger than in an ordinary summer. The plants have had no manure water; they are planted in holes previously filled with well-decayed manure.

The curled and Batavian Endives planted in the middle of August are growing well. The ground should be hoed twice during September to prevent weeds growing during October and November.

We are now preparing the ground for transplanting the Onions sown last month. After having dug and levelled the bed, it is mulched with a layer of well-rotted manure. From 4,000 to 4,500 Onions occupy a full-sized bed, which measures 65 feet by 11 feet.

Early next week we shall prick off under cloches the young Lettuces sown the last days of August, placing 30 plants under each cloche. The ground is well watered before Lettuces are planted, and the cloches are shaded during bright days.

The young Oxheart Cabbages have just germinated through the soil; the ground will be kept moist, and every effort made to obtain strong plants early in October. The land on which they will be set in November should be dug and manured heavily as early as possible.

A dry and well-sheltered spot should be selected for the crop of Lettuces for next spring; the ground when available should be well dug and lightly manured. Where the mildew has been prevalent in former years it will be advisable to water the ground with sulphate of copper, using one part of the copper salt to 1,000 parts of water as a preventive.

We shall sow next week in frames the first Cauliflowers for next season's earliest crop. The variety "Driancourt" will be planted on hot-beds and in the open, but where Cauliflowers are wanted early in May the Early London or Little Salomon will be found useful. *P. Aquatias*.

THE ROSARY.

CULTURAL NOTES FOR SEPTEMBER.

As the Rose season, generally, is very late, there is still a good opportunity for intending purchasers to visit the nurseries for the purpose of selecting plants for autumn delivery. Many of the late-flowering Hybrid Perpetual Roses, and also Hybrid Teas, are now in their best condition of growth and flowering. Although Roses were late in starting into growth, their condition is now all that can be desired, and, with a continuation of the present fine weather, the growths should be thoroughly matured and in a condition to withstand the cold weather of winter. Much harm is often occasioned by leaving too great a number of shoots, especially weakly ones, in the head of the plant. The shoots should be well thinned, as the aim of the grower should be to obtain strength and maturity of growth. These conditions cannot be fulfilled, unless ample space is allowed the top shoots of the plants so that air can circulate freely.

flowering period of Roses from May till well on to Christmas. Finish the repotting of established Roses intended for forcing in winter: some that were freshly potted last year will probably only require top-dressing. Take out about 2 inches of the old soil, make good the drainage, and replace the soil by a mixture of sandy loam and bonemeal. When repotting is necessary, shake away most of the old soil, and, if the roots are in a healthy condition, put the plants into a pot one size larger. If the roots are stunted, remove the old soil from about them, replace with fresh compost, using pots of the same size as before. The Tea, China, Noisette and N. Tea Roses may be dealt with first, following with the earliest varieties of the Hybrid and Perpetual sections. All these Roses may be stood outside on a bed of ashes for a month. After one thorough soaking, apply water sparingly till the plants are re-established. Give the shoots an occasional syringing. The potting loam and manure should be stacked in layers some months before use, so that the manure becomes thoroughly decayed and incorporates well

Roses in borders under glass which were given a top-dressing of cow manure and an abundance of water are making good growths, and promise to furnish a fine crop of flowers, especially the Tea, Hybrid Tea and China varieties. Plenty of ventilation both night and day should be given through this month on all favourable occasions. *J. D. G.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PIONEERS IN FORESTRY (see p. 155).—An early author who deserves the greatest consideration is John Manwood, who wrote *A Treatise of the Lawes of the Forest*, "wherein is declared not onely those Lawes, as they are now in force, but also the originall and beginning of Forests; and what a Forest is in his owne proper nature, and wherein the same doth differ from a Chase, a Parke, or a Warren, with all such things as are incident, or belonging thereunto, with their



FIG. 72.—EXHIBIT OF FRUIT, FLOWERS, AND VEGETABLES AT THE SHREWSBURY SHOW FOR WHICH MESSRS. SUTTON AND SONS WERE AWARDED A GOLD MEDAL. (See ante p. 142.)

Failures in budding can still be made good by the insertion of fresh buds, as the sap is still flowing actively. For late budding the Ruga and Boursault stocks are to be recommended, specially for working vigorous climbers of the Tea and Noisette family. The budding should be completed as early in the month as possible. When the earliest-budded plants have "taken," the ties should be loosened, but not removed altogether, and the shoots on the standard Briar shortened to about 6 or 8 inches. During dry weather the hoe should be kept constantly at work amongst the beds and borders, as this largely prevents evaporation of the moisture which rises from below. A good surface mulch is even better for conserving the moisture in the soil, and it is best applied after a copious watering. By a system of early and late propagation, growing the plants in pots that are plunged during the summer months, and also by judiciously stopping the shoots of planted-out Roses, with a light house and without any attempt at forcing, it is possible to maintain and extend the

with the soil. For Roses of the Tea family, some sandy grit or leaf-mould should be added to the compost, which should be well mixed at least one month before it is used. Firm potting is necessary for Roses, and a potting stick should be employed. Leave a space of about half an inch below the rim of the pot for holding water. Pot-Roses propagated during winter and spring, and plunged outside, are now crowded with flower-buds, especially the Hybrid Teas. A portion of the stock should be brought under cover by the end of the month, since the flowers develop a better colour under glass, and also to protect them from the autumn gales. Before housing the plants, they should be well cleansed from insect pests and mildew, both of which have increased of late. There is no better remedy for these pests than a solution of soft soap and tobacco. Syringe the plants at a temperature of 95°, adding to each gallon of the above solution, and keeping well stirred, a wineglassful of paraffin. Apply the wash during the evening, and syringe with clean water the following morning.

several proper tearmes of Art." Also a *Treatise of the Pourallee*, "declaring what Pourallee is, how the same first began, what a Pourallee man may do, how he may hunt and use his owne Pourallee, how far he may pursue and follow after his chase . . . Collected as well out of the Common Lawes and Statutes of the Land and out of the Assizes of Pickering and Lancaster. London: Printed by Thomas Wight and Bonham Norton, 1598." *Donald McDonald, Clerve House, Bexley Heath, Kent.*

TWO GOOD LATE STRAWBERRIES.—Of recent introduction are Leader and Givon's Late Prolific. At this season of the year, when new beds are being made, intending planters will do well to give them a trial. In these gardens the variety Leader exhibits good growing qualities, and is quite as early in fruiting as Royal Sovereign. It produces very large fruits, some of which measure $7\frac{3}{4}$ inches in circumference. The colour of the berry is a dark scarlet, the flesh is firm, and the flavour excellent. Blackbirds made their way through the net into the bed containing both Leader and Royal Sovereign, devoured the fruits of the former, and left untouched

those of the latter variety. The compact habit of growth is a great point in its favour, as the plants may be placed close together. In Givon's Late Prolific we have another fine late Strawberry. It is quite a fortnight later here in coming into bearing than the maincrop varieties. The plants are vigorous, and bear heavy crops of large, crimson-coloured fruits, which are excellent in flavour. The plantation is made on a border facing north, and we are still gathering nice fruits of this excellent variety (August 18). Our soil is somewhat heavy, and well suited for Strawberry culture. *W. H. Y., Rotherfield Park, Hants.*

NEW GARDEN FEATURES.—In making a new kitchen garden in 1904, my client said she would prefer to have something out of the common. Nearly at the top of the ground selected was a grand Beech tree, and I made a long archway of iron uprights with strained wires every 18 inches—8 feet wide at base and 7 feet from the soil—with a central grass path 6 feet wide. Upon this I placed alternate pairs of single, double, and treble cordon Pears and Apples, broken occasionally with gridiron trees. These have now met at the top and form a grand, cool corridor some 85 yards long, so placed that from the mansion the view is down the centre and ends with the Beech, round which is a rustic seat. The beauty of this erection when the trees are in blossom is most striking, and it is again interesting and useful when the trees are in fruit. Highly-coloured varieties of Apples were selected for planting, again starting from the Beech and leading away at an angle towards the rockery dell. A similar arch of 80 yards was made of Cobnuts and Filberts. These, selected with long spurred shoots, soon covered in the entire arch, and have borne freely, being pruned on the spur system. The foliage is large and of a deep cool green, making a most delightful walk on a hot day. The two "Pleached alleys" take away the formality of a kitchen garden, combine utility with beauty, and were much appreciated both by my client and by the present owner. I venture, therefore, to suggest such structures to any who are laying out fresh places or who would welcome new features in their present gardens. The ground plan of this kitchen garden was an obtuse triangle, and on the mansion side there is a long curving walk backed by espalier trees, set well back to allow long lines of annual flowers for summer display and for cutting. Walls were objected to. *Geo. Bunyard, Maidstone, August 2, 1909.*

THE WONDERBERRY OR SUNBERRY (see fig. 73).—We have six plants fruiting in 8-inch pots, each plant more than a yard across, and completely covered with berries about the size of large Marrowfat Peas. The fruits hang in clusters of seven and eight berries together. Several of the bunches are ripening and quite black. We have about 100 plants planted out-of-doors in an enclosed fruit plantation. The seed was obtained last February from New York. *Jas. Rogers, Langton Gardens, Blandford.*

PLANTS FOR HEDGES IN SEA-SIDE GARDENS.

—The writer of the valuable article on plants suitable for the formation of hedges omitted to mention two plants which, according to my experience, are admirable for the formation of hedges in gardens with poor, sandy soil, particularly near the sea. The plants in question are a species of a chenopodiaceous plant (an Atriplex) known locally, in the part of Brittany from which I write, as "Agnis Cactis" and Gorse. The former plant grows in the readiest possible manner from cuttings, and makes extraordinarily rapid growth. Such cuttings struck in a garden three years ago have now formed dense but spreading bushes 5 feet high. A hedge of this plant, with its silver-grey foliage, is very beautiful, and, resisting as it does the damaging effects of sea winds, may be grown close to the shore. It, however, lacks the quality which, of course, Gorse possesses to an extraordinary degree, that of impenetrability. Gorse (*Ulex europæus*) grown from seed produces a fine hedge in three or four years. It may be cut back hard and, if required, maintained in a formal shape. Nothing on earth is more beautiful than a Gorse hedge in spring, as travellers in Brittany, passing through miles of road lined on either side by Gorse bushes 10 or more feet high, can testify. These natural hedges supply the Breton with kindling and also

to some extent with winter food for cattle. It is the practice to cut the Gorse every three years. As I write, I look out on the result of an experiment of planting a mixed hedge of the two plants—the "Agnis Cactis" and Gorse. Several years after planting, the hedge, which is but a few yards from the shore, was to all appearances a Gorse hedge; now, some eight years after planting, the latter plant is being smothered by the former; no doubt because the light requirements of the more slow-growing Gorse are high. *F.*

SWEET PEAS IN POTS.—This is one of the most pleasing methods of growing these flowers, which make splendid subjects for the decoration of verandahs, open porches, and glass corridors, keeping up a succession of their flowers in these positions for six weeks. Seeds may be sown the first week in January. Place eight seeds around the edge of a 5-inch pot filled with moderately light soil. Cover the seeds with half an inch of soil, afford water, and place the pans in a cool greenhouse. No further watering will be required until germination takes place,

Lady Griscl Hamilton, Duke of Westminster, Jeannie Gordon, Countess Spencer, Coccinea, King Edward VII., and Queen Alexandra. *H. Arnold, Carron Hall Gardens, Carron.*

ENTOMOLOGICAL RESEARCH.—I was pleased to read the announcement of the appointment of an Entomological Research Committee; but my pleasure was somewhat damped on discovering that the committee was to carry out its investigations chiefly with reference to South Africa. I am well aware of the need for enquiry into the part played by insects in the propagation of such tropical diseases as sleeping sickness. I am glad that an organised effort is to be made to add to our knowledge; but I repeat that I should have been more pleased if I had discovered that our own country had also been included in the region to be investigated. Noxious insects whose depredations cost the agricultural and horticultural community huge sums are not unknown here. Scattered scientific observations, some of considerable value, are made from time to time by independent workers; but anything like a well-planned



FIG. 73.—THE WONDERBERRY.

which usually occupies a fortnight. If mice are troublesome place a square of glass over each pot at night-time. As soon as the seedlings are through the soil, afford fresh air on all favourable occasions, and expose the plants well to the light. When they are 4 to 5 inches high they should be transferred to their flowering-pots, the most serviceable size being those 10 inches in diameter. The soil for this potting should consist of good loam four parts, leaf-soil one part, decayed manure one part, and a little bonemeal, with enough sand to make the whole porous. Pot firmly and tie the shoots to thin stakes. About the first week in May they should be stood out-of-doors in a sheltered position, but guard against damage by east winds. Four 6-foot stakes or canes should be inserted around each pot. The roots must never be allowed to become dry; on hot days especially they will require constant attention in this matter. Stimulants may be given, after the first flowers are open, in the form of weak soot-water and the soakings from cow-dung, these being alternated with water. Varieties suitable for the purpose are Dorothy Eckford,

attack upon these pests is lacking. In saying this, I am not reflecting on the work of our various institutions, such as the Board of Agriculture and our universities. I am merely drawing attention to the plain fact that the home country is neglected in comparison with distant parts of the Empire. A small committee, with a definite programme, appointed to deal practically with economic entomology, should prove of the utmost service to the horticultural community. *F.*

CALANDRINIA CHROMANTHA.—I have, since writing the note which appeared in your last issue on p. 157 about this most disappointing plant, discovered that it is only a very old West Indian plant, which has been reintroduced under a new name by a German nurseryman. Its original name was, and still is, *Talinum patens*, and it is figured under this name (with the panicle Purslane as an English equivalent) on plate 253 of the fourth volume of Andrew's *Botanist's Repository*, an old book published in the year 1800. It is greatly flattered in the coloured plate, the

flowers being depicted as fully and flatly open, of the size of about a threepenny piece, and of a pretty bright pink colour. Although coming from the West Indies, I am informed that it lived out-of-doors through last winter at the Glasnevin Botanic Gardens near Dublin, where plants of it planted out last summer at the foot of a wall are now in flower. W. E. Gumbleton.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 31.—There was much that was interesting at the meeting held on Tuesday last, and the exhibition generally was rather above the average for the time of the year. The outstanding feature was the remarkable and unique collection of photographs taken by Mr. E. H. WILSON on his last expedition to China in the service of Harvard University, U.S.A. Both Mr. WILSON and Mr. E. J. WALLIS, who prepared the photographs from the negatives, are to be congratulated on their efforts. Arranged close by the pictures was a selection of some of Mr. WILSON'S introductions whilst in the service of Messrs. Jas. Veitch & Sons, from plants growing in the Coombe Wood Nursery of this firm. There were also fine exhibits of Dahlias, Montbretias, Gladioli, Phloxes, and other seasonable garden flowers. Orchids were represented by several good exhibits. In the fruit and vegetable section, there were two excellent groups of fruiting trees in pots, one of which received the high award of a Gold Medal. The exhibits of Grapes from the Society's gardens at Wisley, and the Black Hamburgs from the old vine at Hampton Court attracted much attention. It was freely remarked that these latter were equal in quality to any seen at the foremost exhibitions. No novelties were granted awards by this Committee; but the FLORAL COMMITTEE conferred three Awards of Merit, whilst the ORCHID COMMITTEE granted two Awards of Merit, two Botanical Certificates and one Certificate of Appreciation.

At the 3 o'clock meeting in the Lecture Room, an address was given by Mr. James Hudson, V.M.H., on "The Gardens by the Lake of Como."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Druery, H. B. May, A. Kingsmill, J. Green, G. Reuthe, W. Howe, J. Jennings, C. Blick, R. W. Wallace, A. Turner, Chas. E. Pearson, Wm. Cuthbertson, E. H. Jenkins, and W. J. James.

One of the most interesting exhibits was the series of about 12 dozen photographs illustrating the flora, fauna and scenery of Central and Western China taken by Mr. E. H. WILSON, when collecting in China for Harvard University, 1907-9. The photographs had been developed and printed by Mr. E. J. Wallis, Kew. Among the more interesting were the following:—*Primula sinensis*; fruiting sprays and fruits of *Actinidia chinensis*; a grove of the somewhat columnar-looking *Populus euphratica*, the trees, about 100 feet in height, are growing outside the city of Taitien-lu, with a snow peak of 23,000 feet high showing in the far distance; *Paulownia imperialis* and a large truss of flowers separately displayed. The tree was very freely flowered, though taller and less spreading than some we have seen in favoured parts at home; pictures of *Bambusa vulgaris* and *Phyllostachys nigra*, by the Min River, were charming, as was also that of *Nelumbium speciosum*; *Rodgersia aesculifolia*, with its foamy white inflorescences, was particularly good, as also were *Primula Veitchii*, *Hydrangea vestita*, fields of the Opium Poppy, *Lilium Suchuanense*, a magnificent colony of *Cypripedium tibeticum*, *Davidia involucreta* freely covered with the whitish bracts; *Ficus infectoria* 50 feet high and 15 feet in girth, *Osmanthus fragrans*, *Cunninghamia sinensis*, forming pure forests on red sandstone; a trunk of the giant *Pterocarya stenoptera* 90 feet by 20 feet, and *Keteleeria Davidiana*. (Gold Medal.)

Messrs. JAMES VEITCH & SONS, LTD., Chelsea, displayed a collection of new plants from Central and Western China, in which, among many others, were noted the very remarkable *Ilex Peryi*, *I. Fargesii*, the latter as unlike a Holly as is possible; *Veratrum Wilsonii*, with

creamy-coloured flowers; *Davidia involucreta*, *Cotoneaster rugosa* Henryi, with axillary clusters of fruits on horizontally-disposed branches; *Viburnum Henryi*, *V. rhytidophyllum*, *Populus lasiocarpa*, a very handsome-leaved species, with red foot-stalks and veins; *Berberis Gaignepainii*, the very handsome *Tilia Oliveri*, an autumn or August-flowering form of *Clematis montana* named *Wilsonii*; *C. Armandi*, an evergreen species with white, axillary flowers produced in clusters; *Eleutherococcus leucorrhizus*, and *E. Henryi*, distinct-looking and perfectly hardy plants, having roundish heads of starchy-white blossoms and fruit clusters that greatly resemble those of the Ivy. Messrs. VEITCH also showed varieties of *Javanico-jasminiflorum* *Rhododendrons*. (Silver-gilt Flora Medal.)

Messrs. H. B. MAY & SONS, Edmonton, exhibited *Bouvardias*, *Carnations*, *Veronicas* and other plants arranged with Ferns in a most effective manner, all the plants representing excellent culture. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond, brought a very fine exhibit of *Clematis* in well-flowered plants, particularly noticeable being *C. integrifolia* *Durandii* with intensely blue-coloured flowers, Mr. G. Jackman (white), *Lady Northcliffe* (blue), *Mme. E. Andre* (reddish), *Marcel Moser*; *Jackmanii rubra* (very fine), and *Snow White*. Mr. RUSSELL also exhibited a group of *Celosias* in many distinct shades of colour. (Silver Flora Medal.)

Messrs. WALLACE & CO., Colchester, displayed an admirable exhibit of the newer varieties of *Montbretias*. The more noticeable were those labelled *Prometheus*, *Hereward*, *King Edmund*, *Norvic*, *Pageant*, *Lord Nelson* and *Geo. Davison*. Messrs. WALLACE also displayed fine spikes of *Lilium Henryi*, and a delightful series of *Gladiolus* hybrids, those of the *G. primulinus* group having rose-pink, yellow and cream flowers. (Silver-gilt Flora Medal.)

Mr. AMOS PERRY, Hardy Plant Farms, Enfield, showed hardy flowers, including many choice Lilies; also *Lychnis grandiflora*, *Eryngiums*, *Kniphofias*, *Pentstemons*, *Phloxes* and other seasonable flowers. A basket of the *Belladonna Lily* was remarkably fine. (Silver Banksian Medal.)

Herbaceous *Phloxes* were well shown by Messrs. GUNN & SONS, Olton, near Birmingham. The collection was of a most representative character. This firm also showed *Viola cornuta purpurea*. (Silver Banksian Medal.)

Hardy flowers were shown by Mr. G. REUTHE, Keston, Kent, the double form of *Erica vulgaris* and the showy, red-flowered *E. v. Alportii* being remarked. (Silver Banksian Medal.)

Select Alpines and an exhibit of rockwork, together with a big bank of *Artemisia lactiflora*, were the more prominent subjects in a group exhibited by Messrs. F. S. WARE, LTD., Feltham.

Messrs. HANKNESS & SON, Hitchin, displayed a showy group of seedling Gladioli in a great variety of colours; also a select exhibit of *Roses*, the intensely-coloured and fragrant-flowered variety named *Victor Hugo* being excellent. *Edu Meyer*, a lovely apricot tone, and the well-known *Mme. Abel Chatenay* were also good. (Silver-gilt Banksian Medal.)

Hardy plants were also shown by Mr. F. BRAIZER, Caterham, including *Phloxes*, early-flowering *Chrysanthemums*, *Pentstemons*, &c.

Messrs. J. PEED & SONS, West Norwood, showed a considerable variety of hardy cut flowers, among which were many good *Phloxes*.

Begonia blooms in single, double, crested and fringed varieties were admirably displayed by Mr. A. L. G. WILLIAM, New Eltham, Kent.

Messrs. CARTER, PAGE & CO., London Wall, occupied the entire space at the western end of the hall with an exhibit of *Cactus*, single and Pompon Dahlias, arranging the numerous varieties with skill and taste in baskets and bamboo stands. The variety *Dainty* in salmon-rose and yellow was singularly beautiful, and attracted much attention. Trails of *Asparagus*, and also small-leaved *Ampelopsis*, were employed with *Kochia* here and there as relief, with good effect. (Silver-gilt Flora Medal.)

A fine table of hardy plants and herbaceous *Phloxes* was put up by Mr. F. EAMES, Frome, Somerset. The *Phloxes* were particularly showy and well arranged. (Silver Flora Medal.)

Sweet Peas of exceptional merit were shown by Messrs. DOBBIE & CO., Rothesay. The collection including the *Marquis*, *Mrs. Hugh Dickson* (pink), *Clara Curtis* (cream), *St. George*, and

many more equally beautiful kinds. (Silver Banksian Medal.)

M. W. PFITZER, Stuttgart, showed hybrid Gladioli in variety.

A large assortment of *Montbretias* was displayed by S. MORRIS, Esq., Thetford (gr. Mr. G. Henley). The collection contained most of the leading varieties in commerce, and also a new variety named *George Henley*. (See Awards.) (Silver-gilt Banksian Medal.)

Messrs. W. H. ROGERS & SON, LTD., Southampton, exhibited a fine scarlet *Pelargonium* named *James I. Hamilton*.

Messrs. BARR & SONS, Covent Garden, displayed a large assortment of *Phloxes*, Gladioli, *Kniphofias*, and other seasonable plants. *Veronica subsessilis* was noticed in capital condition. (Silver Banksian Medal.)

Messrs. KELWAY & SON, Langport, Somerset, displayed an exceedingly fine collection of Gladioli. A few of the more striking and distinct kinds were *Alice Wood* (yellow), *Glory of Somerset* (crimson), *Kelway's Triumph* (crimson), *Coronation* (pink), *Lady Warwick* (white), *Black Meg* (dark crimson), *Lady Inchiquin* (scarlet), and *Mrs. F. Field* (white). (Silver Flora Medal.)

Messrs. WM. WELLS & CO., Merstham, brought *Phloxes*, *Pentstemons*, and early-flowering *Chrysanthemums*. *Leslie* is a pleasing yellow *Chrysanthemum* flowering at this season.

Messrs. J. CHEAL & SONS, Crawley, showed single and *Cactus Dahlias* in variety, also an assortment of cut shrubs and herbaceous plants in very considerable numbers.

AWARDS OF MERIT.

Montbretia Pageant.—A handsome variety, the plants attaining to nearly 4 feet in height and bearing much-branched inflorescences. The shapely flowers are of a clear orange shade, a ring of crimson encircling the base of the segments internally. The plant is apparently of vigorous growth. From Colonel PETRE, Westwick, near Norwich (gr. Mr. Davison).

Montbretia George Henley.—A very beautiful and distinct variety with large open flowers of pale apricot orange colour borne on an erect spike. The habits of both growth and flowering are free. Exhibited by Mr. S. MORRIS, Thetford (gr. Mr. G. Henley).

Gentiana ornata.—A new species of *Gentiana* exhibited under the above name and collected by Mr. E. H. WILSON at an altitude of 12,000 to 13,000 feet in China at Szechuan-Kansu, where acres of it were growing in company with *Mecopopsis punicea*. The plant is about 3 inches in height, of stoloniferous habit, and bears linear glabrous leaves, each about 2 inches long. The intense, deep blue funnel-shaped flowers are 1½ inch across. This beautiful and distinct plant was exhibited by Messrs. VEITCH & SONS, Chelsea.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, de B. Crawshaw, Gurney Wilson, Stuart Low, W. Cobb, H. Little, W. P. Bound, A. Dye, W. Boxall, C. H. Curtis, J. Charlesworth, J. Forster Alcock, H. G. Alexander, F. J. Hanbury, W. H. White, W. H. Hatcher, A. A. McBean, H. Ballantine, H. A. Tracy, and W. Bolton.

Lt.-Colonel G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander) staged a select group of hybrid Orchids raised at Westonbirt, for which a Silver Flora Medal was awarded, a Cultural Commendation being given Mr. H. G. ALEXANDER for the excellent culture of the plants: A grand specimen of *Laelio-Cattleya Golden Oriole* "Westonbirt variety" secured an Award of Merit. Among other notable plants were *Brasso-Cattleya Digbyano-Warneri magnifica*, a grand rose-tinted flower with a small purple blotch on the finely-fringed lip; *Cattleya Euphrasia* "Westonbirt variety" with two spikes of six flowers each; *C. fulvescens* with seven flowers; *Sophr-Cattleya Dana*; the beautiful *Laelio-Cattleya Lustre* "Westonbirt variety," having large rose-coloured flowers with a deep ruby purple lip; and a very richly coloured form of *L.C. Berthe Fournier*.

Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed the very rare *Zygopetalum* (*Warszewiczella*) *Lindenii* with pure white flowers having violet-coloured lines

on the lip, and the singular little *Listrostachys forcipata* which received a Botanical Certificate.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed an interesting selection of rare species, including the dwarf, orange-scarlet *Lælia monophylla* with 11 flowers; *Epidendrum* (*Nanodes*) *Matthewsii* with nine blooms; *Bulbophyllum guttulatum* with four flower-spikes; a charming little clump of *Masdevallia nidifica* and the cream-white *Dendrobium ciliatum annamense*.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), exhibited the new *Sophrö-Cattleya Blackii* (*S. grandiflora* × *C. Hardyana*). (See awards.) Also a selection of *Cattleya Adula*, several plants of *Odontodia Thwaitesii*, and a plant of *Sophrö-Cattleya Warnhamiensis atro-purpurea*, with bright ruby crimson flowers with Cowslip yellow base to the lip.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for an effective group in which was seen great variety. Among those noted were the handsome *Lælio-Cattleya St. Gothard*; *L.-C. Blethleyensis Othello*, a fine dark form of *L.-C. Chloë Goodson's* variety; *Cattleya Adula Goodson's* variety, and *C. Adula Bronze Wing*, two very dissimilar forms of this pretty cross between *C. bicolor* and *C. Hardyana*. *Odontoglossum crispum Herbertii* has a finely-blotched flower; *Cypripedium H. S. Goodson*, a large though not very showy hybrid, and various interesting species were also shown.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a group. We noticed the handsome *Odontoglossum crispum xanthotis Charlesworthii* with large and finely-formed pure white flower having distinct clear yellow markings; a splendid example of *Zygotetium* × *Roeblingianum* with waxlike white flowers heavily blotched with rose and violet; the rare *Miltonia Schröderiana*; good examples of *Cynoches maculatum*; *Lycaste Skinneri alba*; *Oncidium ornithorhynchum album*, with several graceful spikes of white flowers; *Odontoglossum Eleanor* and other hybrid *Odontoglossums*; varieties of *Lælio-Cattleya Elva*, *Cattleya F. W. Wigan*, *C. Mrs. Pitt*, *C. Venus*, and *C. Rhoda*; and, amongst other hybrids, a well-flowered plant of *Cœlogyne Brymeriana*.

Messrs. SANDER & SON, St. Albans, staged an extensive group, to which a Silver Flora Medal was awarded. The large and fragrant *Angracum infundibulare*, *A. Chaillanum*, with a finely-developed spray of white flowers; a few plants of the rose-tinted *Dendrobium regium*, *Sophrö-Lælia lata*, some pretty hybrid *Cattleyas*, including *C. Wavriniana*, and various hybrid *Cypripediums*, among which were two of the yellow *C. Rossettii*, are some of the more interesting plants in this exhibit.

Messrs. STUART LOW & Co., Royal Nurseries, Bush Hill Park, secured a Silver Banksian Medal for a very praiseworthy group, all the plants being well grown and finely flowered. There were two forms of *Cynoches maculatum* with fine racemes of its singularly-formed flowers, *Cattleya Gaskelliana alba*, *Dendrobium formosum giganteum*, *Oncidium Lanceanum*, *O. oblongatum*, *Bulbophyllum Godseffianum*, and various *Odontoglossums*. The hybrids included *Cypripedium Wm. Lloyd magnificum*, a very fine claret-tinted flower; *C. T. B. Haywood*, *Cattleya Harold var. Hildegarda*, varieties of *C. Adula*, *C. Atalanta*, *C. Pittiana*, *C. fulvescens*, and others.

F. LOWENADLER, Esq., Badgemore, Henley-on-Thames (gr. Mr. Hatton), showed a good example of the pink-tinted *Dendrobium acuminatum*, which was illustrated in the last issue of *The Gardeners' Chronicle*, p. 150, fig. 64.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. Ballantine), showed a small group of hybrid *Cypripediums* raised at The Dell. The exhibit included fine forms of *C. Maudiae*, *C. A. de Lairesse*, *C. Watsonianum*, and the new *C. John Clark* (*Harrisianum superbum* × *Fairrieanum*), a dark-coloured hybrid, showing some of the characters of *C. Harrisianum superbum*, both in form and colour.

Messrs. WM. BULL & SONS, Chelsea, staged a number of hybrid *Cattleyas*.

Mr. H. A. TRACY, Twickenham, showed a remarkably fine form of *Anguloa uniflora* imported from Peru, and probably identical with that on which Ruiz and Pavon founded the genus: it was far superior to the smaller and more angular form generally seen in cultivation. The flower

was ivory-white of wax-like substance, the labellum spotted with red in the interior.

ARTHUR BURR, Esq., Lynwood, Udney Park, Teddington, showed a distinctly-coloured form of *Lælio-Cattleya eximia* (*L. purpurata* × *C. Warneri*).

Mr. EDWARD V. LOW, Orchid Nursery, Vale Bridge, Haywards Heath, sent two good plants of the clear white *Cattleya Gaskelliana alba*, the one with four and the other with six flowers. This exhibitor also showed *Bulbophyllum grandiflorum*.

AWARDS.

AWARD OF MERIT.

Lælio-Cattleya Golden Oriole Westonbirt variety (L.-C. Charlesworthii × *C. Dowiana aurea*).—A beautiful form of this variable, but always handsome, hybrid raised at Westonbirt. The flowers are large and elegantly formed, the sepals and petals of a bright chrome-yellow colour, the well-expanded lip ruby-red veined with gold from the base to the centre. Two other forms were also shown. (Shown by Col. HOLFORD.)

Sophrö-Cattleya Blackii (S. grandiflora × *C. Hardyana*), from R. G. THWAITES, Esq., Streatham (gr. Mr. J. M. Black).—A fine hybrid of dwarf habit, and having comparatively large flowers, nearest to *S.-C. Doris*, but of a bright scarlet colour tinged with cherry-red, the base of the lip being chrome-yellow.

BOTANICAL CERTIFICATE.

Dendrobium muricatum, from F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin. A very remarkable species from New Caledonia. In habit the plant resembles some of the species of *Eria*, having dwarf, conical pseudobulbs, each bearing a single fleshy leaf. The inflorescence is about 8 inches long, and springs from near to the apex of the pseudo-bulb, bearing on its outer half a raceme of 15 flowers, each 1 inch in breadth. The sepals and narrower pedals are cream-white marked with brownish-purple. The narrow lip is crimped on the front half; the colour is purple at the base and yellow in front.

Listrostachys forcipata, from Sir TREVOR LAWRENCE (gr. Mr. W. H. White).—A singular dwarf species from the Cameroons, with erect, fleshy, semi-terete leaves and short, erect spikes bearing 8 to 10 very singularly-formed, silver-white flowers, the spurs of which are enlarged at the apex.

CERTIFICATE OF APPRECIATION.

Odontodia Grairiana (Odontoglossum Rossii majus × *Cochlioda Noezliana*), from Monsieur H. GRAIRE, Amiens.—An interesting hybrid, with the growth of *O. Rossii majus*. The plant bore a spike of several flowers comparable in size and colour to some of the forms of *O. Bradshawia*. The sepals and petals were obscurely blotched and tinged with salmon-red, the lip being bluish-white, with a yellow callus, behind which are some dark lines.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the Chair); and Messrs. J. Cheal, J. Harrison, E. Beckett, Alex. Dean, W. Pope, H. Parr, J. Vert, H. Markham, J. Willard, J. Davis, J. Lyne, G. Reynolds, G. Hobday, J. Jaques, O. Thomas, C. Foster, G. Wythes, H. S. Rivers, and S. T. Wright (secretary).

The most prominent exhibit before the Committee was a large group of fruit trees in pots shown by THE KING'S ACRE NURSERIES, Hereford. There were some six dozen trees in all. In the centre was a fine flat-trained tree, 6½ feet by 3½ feet, of Thomas Rivers Peach, carrying 60 good fruits. Behind it and beside were tall trees of Peaches Dr. Hogg, Dymond, Sea Eagle, Late Devonian and Violette Hâtive; also Nectarines Rivers Orange, Pineapple and Byron. The Plum trees included Jefferson and Coe's Golden Drop, both heavily cropped; also both flat-trained and standard vines, the varieties being Madresfield Court, Muscat of Alexandria, Black Hamburgh, Foster's Seedling, Melton Constable, Black Alicante and others. At the sides were numerous Pear trees bearing fine fruits, including Triomphe de Vienne, Pitmaston Duchess, Conference, Louis Bonne, Beurré Bachelier and Beurré Diel. On the other side were equally fine Apple trees, including Jas. Grieve, Emperor

Alexander, Peasgood's Nonesuch, The Queen, Gloria Mundi, Cobham, Worcester Pearmain, King of Tompkins' County, Washington, Gascoyne's Scarlet and Baumann's Reimette. The exhibit also contained numerous Figs, chiefly of Brown Turkey, Negro Largo and Black Ischia varieties. The collection was a superb one, and representative of the highest culture in pot fruit trees. (Gold Medal.)

Messrs. T. RIVERS & SONS, Sawbridgeworth, set up on the opposite side of the hall a group of some 50 pot trees. Peaches included The Nectarine, Dymond, Violette Hâtive, Prince of Wales, Golden Rathripe and Sea Eagle. Nectarines were represented by Pineapple, Goldoni and Humboldt. Of Plums there were Monarch, Golden Transparent, Admiral, Reine Claude de Bay, Decaisne, Curlew, Grand Duke and Pond's Seedling. Apples included Lady Sudeley, Cox's Orange Pippin and Gascoyne's Scarlet. Very pretty were fruits of the Dartmouth and Red Siberian Crabs. The group also contained numerous Fig trees. In front were baskets containing superb Apples of Ribston Pippin and Cox's Orange Pippin; also Peasgood's Nonesuch. There were also gathered fruits of Peregrine Peaches and a few Plums. (Silver-gilt Knightian Medal.)

From the Society's Gardens, Wisley, came 23 varieties of Grapes in pairs, 46 bunches in all. The black kinds were Madresfield Court, Gros Maroc, Diamond Jubilee, Lady Hastings, Muscat Hamburgh, Appley Towers, Black Monukka, Black Prince and Alnwick Seedling. The white kinds embraced excellent bunches of Cannon Hall Muscat, Bowood Muscat, Diamant Traube, Muscat of Hungary, both these having small bunches; Duchess of Buccleuch, White Nice, Chasselas Napoleon, Golden Queen, White Frontignan, Foster's Seedling and Mrs. Pearson, the last-mentioned being specially good. Red Grapes were represented by Muscat Champion and Grizzly Frontignan, both of high flavour. The exhibit was educational and attracted much attention.

Of exceptional interest was a collection of 12 bunches of Grapes cut from the old vine at Hampton Court Palace (see p. 155 in our last issue). That such really superb bunches, so massive, having such fine berries, and so finely coloured—as black as Sloes—should have been grown on a vine 141 years old called forth expressions of wonder and of admiration. It is indeed doubtful whether any young Black Hamburgh vines in the kingdom have this year produced finer or more perfect bunches. The 12 bunches averaged 3 lbs. each in weight. Exhibited by his MAJESTY THE KING (gr. Mr. A. Mackellar). (Hogg Memorial Medal.)

H. SIMPSON, Esq., Holmwood, Putney Hill (gr. Mr. F. S. Carter), sent a collection of rather small and generally unripe Melons grown without artificial heat.

Messrs. SPOONER & SONS, Hounslow, staged a collection of hardy fruits, including culinary Apples Grenadier, Lord Grosvenor, Potts's Seedling, Stirling Castle, Gold Medal, Lord Suffield and others; and, of dessert kinds, Carlisle Castle, Mr. Gladstone, Langley Pippin, Worcester Pearmain, Williams's Favourite, Lady Sudeley and Red Astrachan. They also showed Plums Early Transparent, Belgian Purple, Prince of Wales and Curlew; and of Pears Beacon and Beurré Gifford; also Morello Cherries and Loganberries. (Silver Banksian Medal.)

Six dishes of very fine Pears were shown by Sir MARK COLLETT, Sevenoaks, Kent, (gr. Mr. Nicholls), the varieties being Benrre Mortillet, Mme. Trevey, Gansel's Bergamot, Souvenir du Congrès, Triomphe de Vienne and Margaret Marillat. (Silver Knightian Medal.)

A few seedling Potatoes and Apples were placed before the Committee, but none exhibited any special merit. The chief novelty was a striped Gooseberry, a seedling from the well-known Warrington variety.

COMPETITIVE CLASSES.

There were no exhibits in the class for four dishes of Peaches, and E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), was the only exhibitor in the class for two dishes of these fruits, showing medium-sized samples of Royal George and Rivers Early. The 1st prize was awarded. The same exhibitor was the only competitor in the class for four dishes of Nectarines, having Rivers Orange, Pine Apple, Humboldt and Elruge. The 1st

prize was again awarded. In the class for six dishes of Plums, Lord HOWARD DE WALDEN, Audley End (gr. Mr. J. Vert), was placed 1st with excellent samples of Rivers Late Orange, Golden Transparent, Jefferson, President, Pond's Seedling and Reine Claude Comte Althan. C. COOMBE, Esq., Cobham, Surrey (gr. Mr. A. Tidy), was awarded the 2nd prize, having, amongst others, fine fruits of Lawson's Golden Gage, Jefferson, Washington and Kirke's.

In the class for three dishes of Plums, Viscount ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham), the only exhibitor, won the 1st prize. The varieties were Victoria, Washington and Belle de Septembre.

STIRLING HORTICULTURAL.

AUGUST 26, 27.—This society, instituted in 1812, held its annual show on these dates in the Albert Halls, Stirling. The amateurs' classes for cut flowers were eliminated this year, and because of this the number of entries was not so large as usual. In all other respects the show was a decided success. Exhibits of pot plants were superior to those of last year. Messrs. J. K. MESTON, Springbank, Stirling, and H. GRAY, Park Terrace, Stirling, were the most successful exhibitors in the classes for foliage and flowering plants respectively.

Although cut flowers were not so numerous, those shown were of good quality, especially Dahlias, Carnations, Gladioli, Pansies and Violas. There was good competition in this section, 12 different competitors taking 1st prizes in the respective classes.

Vegetables were well shown. Mr. SHAW, Boquhan, Kippen, easily surpassed all other competitors in the class for a collection, his produce being the best seen at a Stirling show.

Fruit was exhibited finely, all kinds being well represented. Mr. BLACKLOCK, Blairdrummond, led in both the classes for a collection of fruits, Madresfield Court Grapes being excellent. Mr. TROTTER, Carbrook, Larbert, led in the class for four bunches of Grapes: he showed excellent bunches of Muscat Hamburg.

Mrs. ROBERTSON, Gargunnoch, and Messrs. GRAY, SHAW & TROTTER were successful exhibitors in the decorative classes.

NON-COMPETITIVE EXHIBITS.

Messrs. WM. DRUMMOND & SONS, Stirling, showed Roses and Sweet Peas; Mr. JOHN CRAIG, Stirling, exhibited table plants, including Codiaëums (Crotons), Palms, Dracænas, &c., also Tomatos; Mr. M. CHAPMAN, Torbrex Nursery, showed herbaceous and Alpine plants; Mr. JAS. McARA, Crieff, exhibited 100 varieties of Roses.

THE NATIONAL VEGETABLE.

AUGUST 31.—At a meeting of the committee of this newly-formed society, held at the Windsor Hotel, Westminster, on the above date, Messrs. W. Poupart (Twickenham), G. Hobday (Romford) and C. Foster (Sutton Place Experimental Farm) all reported that the early Cabbage seeds received from 19 firms, and comprising some 46 named varieties, had in every case made exceptionally good growth, the plants from the first sowing being now ready for planting on to the respective trial grounds. It is hoped next spring to make a joint exhibit of these Cabbages at one of the R.H.S. meetings. It was agreed to issue 2,000 copies of a circular addressed to all interested in vegetable culture, appealing for membership and subscriptions. Copies of this circular, when ready, can be had on application to the secretary, Mr. E. G. Quick, Kelmiscott, Harrow View, Wealdstone, Harrow. A strong desire was expressed that an exhibition of vegetables should be held next autumn in the Horticultural Hall, Westminster, provided that a suitable date can be arranged.

Obituary.

GEORGE HORRELL.—The death of Mr. George Horrell occurred on August 23, at the Gardens, Mount Henry, Portarlinton, Queen's County, Ireland. He commenced his gardening career at Mount Henry, serving under his father, whom he succeeded as steward and gardener at Mount Henry in 1888. Next he went to Moore Abbey,

Monasterevan, then in the care of Mr. Bailey Wadds. Afterwards he entered the services of Lord Windsor, Lord Annally and others, finally taking charge of Mount Henry, as stated above. The cause of death was heart failure, his age being 53 years. The funeral, which took place in the parish church of Lea, was attended by the employés from the farm and gardens at Castle Henry. Six of his old staff carried his remains to the graveyard, and 20 others from the estate formed a procession in front of the coffin. The high esteem in which Mr. Horrell was held was shown by the attendance of several hundred friends and neighbours at the funeral.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

AMERICAN BLIGHT ON APPLE TREES: Reader

The following details are from the leaflet issued by the Board of Agriculture and Fisheries on the subject: "The woolly aphid injures the trees by causing swellings and excrescences upon them, and by drawing away the sap. The irritation caused by their beaks in the tender tissue of the shoots causes an abnormal growth of cells, which ends in the large 'canker-like' patches in which the blight more or less shelters. Similar growths are formed on the roots. These rugosities are often taken for true 'canker,' but, on examination, the presence or absence of white wool will at once decide the question. This blight is especially prevalent in neglected orchards, where the trees are set close together, and have their trunks and boughs covered with lichens and moss, and where rank grasses grow below. These points should all receive attention and be remedied at once. The vegetal encumbrances can be removed by washing the orchards during the winter with caustic alkali wash. This wash is composed of 10 lbs. of caustic soda, 10 lbs. of carbonate of potash, and 100 gallons of water, to which two or three pounds of soft soap are added to make the wash adhere more readily to the trees. This is by far the best method of cleansing the trees, and at the same time it destroys many hibernating insects. Another plan likely to do good is to whitewash the trunks of the trees. Before this is done all the rough bark must be scraped off, so that a smooth surface is made to take the wash. The best 'paint' to use is one made of soft soap and lime, as follows: 1 lb. of soft soap, 1 gallon of lime, and a small quantity of size, mixed with just sufficient warm water to form a thick whitewash. In destroying this insect during the summer and when it is on the young wood, washing, to be effectual, should be commenced directly the first traces of the white wool appear. Ordinary soft soap and quassia wash may be used, but paraffin emulsion has been found best for this attack. With regard to the attack on the roots, the best plan is to use bisulphide of carbon. This is injected into the soil in four places about 2 feet away from the trunk of the tree. One fluid ounce of bisulphide of carbon is sufficient for a good-sized tree, injected into the soil so as not to come into actual contact with the roots. Kainit hoed in the soil about the roots has also been found efficacious in Canada."

ASPERS DISEASED: J. B. & J. H. E. The plants are attacked by a fungus—Erysiphe cichoracearum. The plants and soil should be sprayed every five days until the disease is checked with a solution of permanganate of potash diluted with water to a pale rose colour.

BEGONIA LEAVES DECAYING: C. L. There is no disease present in your plants. The trouble has been caused by excess of moisture. Use care in watering and keep the atmosphere of the house drier, allowing a little ventilation so that the air about the plants does not remain stagnant.

BROAD BEANS: Fungoid. The failure of your Beans is not to be attributed to what you de-

scribe as a fungus-like growth on the roots. These are nodules which contain bacteria that fix the free nitrogen of the atmosphere and bring it in a condition available for assimilation by the plants. The trouble must be looked for in some other direction.

CAMELIAS FOR A COOL CONSERVATORY: Camelia.

Any or all of the under-mentioned varieties of Camelia will answer your requirements as regards size, form and colour of flowers and free-growing and free-flowering habit of the plants. C. H. Hovey, flowers large, dark red; frimbriata, bright, scarlet-crimson; Lady Campbell, brilliant red; alba plena, flowers large, well formed and, as the name implies, double white, an old favourite and still one of the best all-round varieties; candidissima, a good white, fine form—a late-flowering variety; Baronne de Bleichroder, pink, with bright red stripes; Staryi, pink, well imbricated and regular in form; Comte de Paris, salmon-pink, edged with white; Chandleri elegans, large light rose-coloured flowers, which are generally mottled with white, and are very showy, and Donkelaarii, flowers large, semi-double, rich crimson, marbled with white—a grand old variety. If the plate from which the roof of your three-quarter span conservatory proceed is of sufficient height from the ground-line to admit of the door being fixed in the centre of the upright glass front, it would be an advantage, as then a continuous border inside the house could be formed in the shape of a horseshoe; the pathway entering at the heel from the door. If the soil and drainage are not good, it will be advisable to remove the former to the depth of 2 feet, then put over the excavated space a layer 6 inches deep of brickbats or clinkers, broken fine on the top, for drainage, and cover these with thin turves, grass-side downwards, to prevent the soil getting into and choking the drainage. This done, fill up the excavation with a compost consisting of the best available sandy loam and peat in proportion of four parts of the former and one part of the latter. If the plants are pot-bound, it will be advisable to slightly disentangle the roots by the aid of a pointed stick before planting, spreading the liberated roots out all round with an inclination downwards in planting, and make the soil quite firm about the roots in doing so. Do not bury the stems of the plants more than 1 inch deeper in the soil than they were in the pots, and give a good watering to settle the soil immediately after planting. Maintain a rather moist and close atmosphere for a few weeks afterwards in order to promote fresh growth in root and branch by syringing the plants overhead with clean water morning and afternoon on sunny days. March will be the best month to plant, as your house is not heated.

CARNATIONS: G. H. T. We do not undertake to name varieties of Carnations. From the small specimen you send it is apparently a strong-growing tree variety.—*T. J.* The flower was withered when we received it, and we were therefore unable to judge of its merits. Next season send examples to one of the meetings of the Royal Horticultural Society for the consideration of the Floral Committee.

COLLECTION OF FRUIT: J. S. You do not appear to have ascertained whether your exhibit was disqualified or not. You should first ascertain if this was so, and the reason. The Papaw Carica Papaya and the Water Melon Citrullus vulgaris would be admissible according to the terms of the schedule, which only asks for a tray of six varieties of fruit. The exception to these because they are foreign fruits cannot stand (1) because such are not excluded in the schedule, and (2) they are in the same category as the Grapes and Nectarines, neither of which is a native of this country. The schedule, like many other regulations of local flower shows, has been worded with insufficient care. If Peaches, Nectarines, Apples, &c., were required the word "kind" should be used. Royal George, Peregrine, Alexander, &c., are "varieties."

EPHYPHYIC ORCHIDS AND THEIR NUTRITION: J. L. QUESTION: For a plant to grow I have always understood from my biological studies that it must be supplied (usually by its roots or by some other organ which fulfils the function of roots) with, besides water and air, calcium,

potassium, magnesium, iron, nitrogen, sulphur and phosphorus. Now, I am informed by Orchid growers that this is not correct as far as the epiphytic forms are concerned. These plants are, or can be, reared from seeds through the seedling stage, and kept alive as mature plants on plain water and air alone. I can understand mature plants living for a time on the stored food in their bulbs like the camel on its hump or hibernating animals on their fat. Will you kindly explain where I am wrong? ANSWER.—Your biology is perfectly right, and any one who has told you that a plant, epiphytic or other, may be reared from the seedling to the adult stage on water and air only, has made a mistake. A superficial examination of epiphytic Orchids, growing either in their natural situations on the branches of trees, or on blocks of wood or cork in hot-houses, would lead to the conclusion that such plants are able to live without the mineral substances which you mention. More careful examination will show, however, that this is not the case; and that they take up in solution in the water, which is absorbed by their roots or other structures, the mineral salts without which they cannot grow. Dust and debris, in conjunction with the decayed remains of algae and fungi, collecting in the crevices, are other sources whence the mineral substances are derived.

GUMMING IN CUCUMBERS: *Constant Reader.* If you will send examples of the affected fruits we will endeavour to assist you.

HEATING FORCING PLANT HOUSES: *H. B.* Judging from your sketch plan, No. 1 house has four rows of 4-inch pipes—two flows and two returns placed one above the other about 2 feet apart inside the enclosed bed on the left-hand side, we presume, for supplying bottom heat, and four rows—the two flows being placed upon the two returns close together on the floor line on the right side of solid bed. We should advise you to fix two rows of these, one above the other (for the sake of room), upon the solid bed and close up to division wall with a throttle valve in the top flow to regulate the circulation of hot water; the pipes returning by the pathway close up to the bed and nearly on a level with the top of same and supported by 4½-inch brickwork. Thus placed, a better and more equal distribution of heat will be obtained in the house. If the bed on the left is only meant for open staging, it would be better to have all the pipes fixed flatwise—two flows and two returns—about 6 inches below the top of staging, fixing a throttle valve in the Y pipe connecting the two flows with the main flow in order to regulate the heat. Should the side walls of the house be a dead level, or nearly so, it will be necessary to allow a rise of about 1 inch in every 20 run of piping in order to insure a good circulation of hot water in the house. On the other hand, should the ground on which the houses are built rise a foot or more in the length of structures, all that is necessary is to fix the pipes at the same distance from the wall plate the entire length of the house. The eight 4-inch pipes shown in No. 1 house and arranged as suggested will afford an amply sufficient temperature for the forcing of bulbs, &c., the heating apparatus being set and stoked properly. The connections (A, A) in No. 1 house, between the main and branch 4-inch pipes, appear to be made with a single 2-inch pipe. This is quite wrong; a 4-inch connection should certainly be used. We should advise you to have six 4-inch hot-water pipes in No. 2 house—two flows fixed one above the other, as they appear to be now, on the top of staging on either side and close up to the parting wall, returning through a chair syphon alongside the pathway and close up to and on a level with the staging.

LAW OF CHANCES AND MENDELISM: *W. J. M.* Your surmise is correct. The ordinary 3:1 (1D:2DR:1R) ratio in F_2 is, on Mendelian hypothesis, the result of the chance mating of D and R male cells of the pollen grains with D and R female (egg) cells. The average result of such mating can, of course, be predicted mathematically, and is in accordance with the results obtained by experiment. (See Bateson's *Mendelian Heredity*.)

LIMING LAND: *T. A. B.* We cannot undertake to analyse your soil. The ground may contain sufficient lime; but, in any case, apply a light

dressing of this material, and repeat it, if necessary, later. Two or three tons per acre may be applied. You should obtain the pamphlet on the subject of liming from the Board of Agriculture and Fisheries, 4, Whitehall Place, London. Copies are given free, and the application need not be stamped.

MELONS: *F. E. G.* We cannot account for your Melons having the flavour of chloroform. When the crop is finished, remove the old soil to a distant part of the garden and thoroughly cleanse all parts of the frame before starting afresh.

NAMES OF PLANTS: *E. W. and G. G.* Hibiscus Syriacus.—*W. F.* 1, Helichrysum (Ozothamnus) rosmarinifolius; 2, Tamarix gallica; 3, Artemisia Abrotanum.—*F. G.* Hamanthus puniceus.—*W. T. & Co.* Spirea Douglasii.—*W. D.* 1, Ixora coccinea; 2, I. coccinea var.; 3, Eucryphia pinnatifolia; 4, Tabernamontana coronaria fl. pl. Solidago is usually considered the national flower of America.—*A. B.* 1, Scirpus cernuus (Isolepis gracilis); 2, Acer palmatum; 3, Strobilanthes Dyerianus; 4, send when in flower; 5, Geum chilense; 6, Isoloma hirsuta; 7, Phyllanthus niveosus; 8, Senecio cineraria; 9, not found; 10, Geum coccineum; 11, Pentstemon barbatus; 12, Heuchera (garden hybrid); 13, Potentilla argrophylla var. atrosanguinea fl. pl.—*W. B. H.* 1, Clematis diversifolia; 2, Thalictrum minus.—*A. Hillman.* 1, Sutherlandia frutescens (not hardy); 2, Inula thapsoides.—*T. V.* 1, Cattleya superba; 2, Disa Veitchii; 3, Brassia verrucosa.—*F. W. B., Cheshire.* Liriope striata (Ophiopogon); 2, Euphorbia jaquiniflora; 3, Begonia subpeltata maculata; 4, Begonia Louise Chretien; 5, Fittonia argyroneura.—*J. F. M.* 1, Veronica salicifolia; 2, V. speciosa var.—*W. B.* 1, Rhamnus Frangula; 2, Cornus alba var. Spaethii; 3, Cornus Mas variegata; 4, Acer species, probably A. lycranus; 5, Reseda Luteola; 6, Anaphalis margaritacea.—*W. B.* Senecio Jacobæa (Ragwort).—*Geo. M.* Begonia radicans.—*F. M.* 1, Pteris aquilina; 2, Adiantum formosum; 3, Pteris cretica; 4, Asplenium lucidum.—*R. O. H.* 1, Oncidium incurvum; 2, Brassia verrucosa; 3, Stelis muscifera; 4, Pleurothallis macroblepharis; 5, Cattleya intermedia.—*C. G.* Gladiolus gracilis.—*Foreman.* 1, Epidendrum cochleatum; 2, Dendrobium sanguinolentum.—*G. H. D.* 1, Nerium Oleander, double variety; 2, Asclepias curassavica; 3, Hypericum Androsæum; 4, Melittis melissophyllum (Balm).

NECTARINE PRINCE OF WALES: *C. Y.* The probable cause of the splitting of the fruits of your Prince of Wales Nectarine when approaching the ripening period is a check of some kind: perhaps dryness at the roots, coupled with an atmosphere surcharged with moisture at the same time. You say the roots are confined to a border 14 feet long, 2½ feet deep, the same width, properly made, and having a concrete bottom, and that the main flow hot-water pipe comes through the back wall (against which the tree in question is growing), about 4 feet from the main stem, and returns in front of same at a distance therefrom of 2½ feet. You further state that this tree, planted four years ago, makes a weakly growth, and yet that the border is properly made. These combined circumstances go to strengthen our opinion that dryness at the roots is the cause of the trouble complained of. There is no reason whatever why trees growing in borders of the above-mentioned dimensions, provided that they consisted of a suitable compost, and were well-drained, should not annually yield heavy crops of fine fruit. The condition of the fruits of your Humboldt Nectarine may likely enough be attributed to the same cause that is responsible for the cracking of the fruits of the Prince of Wales Nectarine, as the trees are growing against the same wall and under like conditions; or the rusty condition of the fruits might be the result of strong sunshine following a period of sunless days, coupled with lack of sufficient moisture at the same time in the soil in which the roots are growing. Red spider and thrips sometimes disfigure the epidermis of choice fruits.

PARSLEY TURNING BROWN: *A. M.* The roots are injured by eelworms. Gas-lime applied to the soil is the only certain remedy for this pest.

PEACHES FOR NAMING: *F. C.* We cannot undertake to name Peaches or Nectarines unless samples of the foliage are sent. The glands on the leaves are the most valuable clues to determining a variety, whilst the shape of leaf and appearance of wood are other factors which assist.

PEACH LEAVES: *W. R.* The foliage is affected with the Shot-hole fungus, and red spider is also present in quantities. This latter pest may be kept in check by frequent syringings of clear water. Not much is known about the Shot-hole fungus, but Mr. Massee recommends spraying with ammoniacal solution of copper carbonate, the first time just when the leaves are expanding, and repeating at intervals. Bordeaux mixture should not be used for Peach or Almond, as the leaves, and even young shoots, are injured by dilute solutions of this specific.

ROSE BURRS: *C. W.* The burrs are common on plants of *R. canina*, the wild dog Rose. They are galls caused by *Rhodites rosa*. In country districts the galls are termed Robins pincushion.

SPANISH CHESTNUT: *G. P.* According to Loudon, in his *Arboretum et Fruticetum*, the Sweet Chestnut, *Castanea vesca*, is generally said to have been brought to Europe by the Greeks from Sardinia, in Asia Minor, about 504 B.C. Loudon adds: In Britain the Sweet Chestnut is by some considered to be indigenous; but, notwithstanding the great age of some specimens, it appears to us more than probable that they have all been planted. This doubt is noticed by Ray and Evelyn, and was warmly taken up by Daines Barrington, about the middle of the last century; and the discussions which took place between that gentleman, M. Ducarel, and some others, will be found in the *Philosophical Transactions*, vols. lix. and lxi.; and in the *Gentleman's Magazine* for 1766. (See p. 25.) In the *English Flora*, the Chestnut is stated to be "found in woods; and it appears to be wild in the south and west of England." It has been planted in Scotland, and sometimes ripens a few fruit in the warmest districts of East Lothian. It grows vigorously in Ireland, but never ripens fruit there. In Scandinavia it is unknown. It is apparently wild in some parts of France, and still more so in Spain and Italy; though it is most probable that it was originally planted in these countries by the Romans. It abounds in the neighbourhood of Nice, and in the kingdom of Naples. It is particularly abundant on the Apennines, especially at Valombrosa, and also between Florence and Bologna.

STREPTOCARPUS HYBRIDS: *W. T.* We cannot find any evidences of your Streptocarpus having been crossed with a Gloxinia. Although you may have pollinated Streptocarpus flowers with pollen from a Gloxinia, it does not necessarily follow that the cross was effective. Unless you took proper steps to emasculate the blooms of the Streptocarpus they would, in all probability, be self-fertilised, this notwithstanding your applying pollen from the Gloxinia, which was, in all probability, impotent. The fact that white Streptocarpus threw coloured flowers is of interest, though as far as we know the colour heredity in this plant has not been investigated.

THE WONDERBERRY: *A. H. L.* It is a mistake to pack fruits and flowers directly in cotton-wool. In the case of fruits, it adheres to and disfigures them, whilst it is so absorbent of moisture that flowers soon wither when packed in it. With respect to your enquiry as to the fruits being edible, we have never tasted these berries, nor were those you forwarded sufficiently attractive for us to make experiments. You will find an article on the subject in our issue for March 27, 1909, p. 204, and an illustration on p. 172, fig. 73, in this issue.

TOMATO: *K. & B.* The fruit is attacked by a fungus, *Macrosporium tomato*. Burn all the diseased fruits.

Communications Received.—*H. W.—E. W.—F. C. S.—C. G.—M. C.—G. M.—W. B.—H. R.—A. H.—H. F. E. S. & Co.—G. T.—H. H.—E. S.—R. W. B.—E. B.—H. S.—C. H.—R. V. & Son—F. M.—J. J.—T. S.—T. F.—R. I. L.—F. M.—W. F. G.—W. H.—H. J. W.—H. A.—E. J. A.—S. G.—W. E. B.—H. M.—W. Miller (the flowers were lost in the post).—W. T.*



Photograph by C. F. Ruffill.

HOME-RAISED SEEDLINGS OF LILIUM RUBELLUM, FLOWERING IN THE ROYAL GARDENS, Kew



THE

Gardeners' Chronicle

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NURSERIES AND GARDENS IN NORMANDY.

IN connection with a tour organised by a trade journal, I recently had the pleasure of visiting a few of the largest nurseries in Normandy.

Before commencing the tour of the nurseries proper, I made a visit to the Botanic Garden at Caen. I was by no means impressed with what I saw. Although there was a nice piece of carpet-bedding on a grassy slope, and a few good trees in the grounds, the aspect of the botanic garden proper was depressing indeed. Imagine a series of long, narrow beds about one metre in width filled with all kinds of weeds and unkempt plants arranged according to their botanical families, and the intervening pathways a prey to weeds and untidiness. Trees, shrubs, and herbs are mixed up incongruously, and there seems to be no attempt whatever at cultivation. The great pride of the garden, indeed, appears to be centred in the labels. Large, oblong, with white enamelled faces, and standing on iron legs 2 to 3 feet high, these labels almost blinded one in the dazzling sun. One of the

features of the gardens consists in veteran specimens of Palms, Callistemons, Myrtles, Pomegranates, Oranges, Acacias, Eucalypti, &c., grown in large wooden tubs almost as ancient as the plants themselves, and sadly needing repairs and paint. I was pleased with a very fine specimen of the Hottentot Cherry (*Cassine Maurocenia*), an evergreen shrub with thick, fleshy leaves, the under surfaces of which are of a soft brown in the young state. Though, as will be gathered from what has been said already, the Jardin des Plantes is disappointing, nevertheless it would require but a small amount of attention to make it interesting.

CAEN.

I was interested to discover in Caen some small allotment gardens. Compared with our own, however, they are very poor, and I think, if I may judge from this example, that the British artisan would easily hold his own at allotment gardening against his French neighbour.

In Caen the only nursery of any importance is that of MM. Vételier, Son & Co. They have large tracts of land devoted to ornamental trees, shrubs and Conifers, and they also do a big business with florists' flowers; such plants as Fuchsias, Cannas, Zonal Pelargoniums, Begonias, Lilliums, Lobelias, &c., being grown in large quantities, in addition to Palms and Erythras in the home nurseries. About two miles away, another large nursery is devoted to stocks of Apples, Pears, Plums, &c., and, as befitting the great cider industry of Calvados, an enormous number of Cider Apples are grown each year.

One of the most interesting features of the Mondeville district of Caen is the large area devoted to "French" gardening or intensive cultivation. Although the surrounding fields and gardens were parched up by the almost tropical sun, the gardens of the intensive cultivators looked like refreshing oases in the desert with their beautifully-arranged and enticing crops of Lettuces, Endive, Melons, &c.

USSY.

The next centre visited was Ussy, reached by train via Coulbœuf and Falaise. At Falaise I had the pleasure of meeting M. Locard and his son, who own a very interesting little nursery in which many subjects useful for a retail trade are grown. Driving from Falaise to Ussy, I found the latter place to contain about 900 acres of nurseries, one almost on top of the other. They are situated chiefly in spots where water is available during the summer months. Streams run from top to bottom of the nurseries in straight lines, and are so arranged that water is easily secured for the tender seedlings grown in the adjoining beds. Some of the principal nurseries visited at Ussy were those of MM. James & Son, the oldest, established in 1800, Pierre Sebire & Sons, established in 1860, Levavasseur & Sons, Colombe-Lenault-Huet, Engène Bricon, &c. The nurseries are all constructed on similar lines. They are divided into beds about 4½ feet wide, and 30 to 40 feet long, with a narrow pathway, about 1 foot wide, between each. There are also broad roadways here and there where necessary, but it is easy to see that very little ground is wasted. In

these nursery beds all the most popular kinds of trees and shrubs, Conifers, fruit-tree stocks, and Rose stocks (of Canina and Manetti principally) are raised from seeds, cuttings, layers, grafts, or buds. There were seedlings of Oak, Beech, Birch, Conifer, Holly, Cherry, Maple, Corylus, Mountain Ash, Barberries, Crataegus, Ash, Cotoneaster—in fact, every tree and shrub that is useful for the park, garden, or forest. The seed-beds are extremely interesting, and show how well and how carefully the seeds are sown, to judge by the regularity of their germination. The first and second year-transplanted beds show plants of a larger growth, and it is rare that any particular group of plants remains in the nursery beyond the third or fourth year. At one place—that of MM. Colombe-Lenault-Huet.—I was impressed with some fine specimens of the variegated Tulip tree (*Liriodendron tulipifera variegata*). It is worked on stocks of the common green Tulip tree, which is raised in all the nurseries almost by the million. The variegated form is so pleasing in appearance and colour that it deserves to become highly popular, and would no doubt thrive in the British Islands. All the nurseries are models of cleanliness and tidiness, and particular mention may be made of MM. Pierre Sebire & Sons and MM. James & Sons, the latter business being picturesquely situated in a fertile valley surrounded with well-wooded, undulating hills.

One peculiarity I noticed in connection with the young Oaks: they were nearly all affected badly with mildew, but it was stated they grew out of this condition in a few years. This is doubtful, as hundreds of older trees were noticed in the hedges away from the nurseries to be similarly affected. It is possible, indeed, that the uncultivated Oaks are responsible for the trouble in the nurseries.

ANGERS.

Falaise was left at midday, on August 11, in tropical weather, the thermometer registering about 90° in the shade, and Angers was reached in the evening. Passing southwards, the principal crops noticeable were Wheat, Oats, Beetroot, Mangolds, and Hemp, and after passing a place called Sablé, the white-wine region was entered—the variety Chasselas de Fontainebleau being the variety of vine chiefly grown. On the next day, the weather being hotter than ever, the nurseries of MM. F. Delaunay, Victor Détriché, Chas. Détriché, Chedane & Pajotin, and Vincent Le Breton—all in Angers and district—were visited. In passing through the streets a noticeable feature was the fine standards of *Magnolia grandiflora*, used in the same way as Plane trees in London. Here and there also, scrambling over a wall, could be seen a wealth of orange, yellow and red tubular flowers of *Bignonia* (or *Tecoma*) *grandiflora*—a sight not likely to be seen in many parts of the United Kingdom.

The nurseries at Angers are arranged on somewhat similar lines to those at Ussy. Trees and shrubs are cultivated in the early stages, but there is a good deal more variety and floral material noticeable. *Acacia dealbata*—the Silver Wattle, or *Mimosa*, of the London florists—is grown by Mr. Delaunay in thousands, as are also such Roses as *Mme. Levavasseur* and *Hermosa*,

In M. Victor Détriché's nursery I noticed a fine specimen of *Maclura aurantiaca* var. *inermis* in fruit, each fruit being green, as large as an Orange, and with a wrinkled skin. A fine specimen of *Diospyros virginiana*, with half-ripened fruit, also attracted attention. *Trachelospermum jasminoides* was met with nearly everywhere, flowering freely and growing as easily as the Periwinkle does with us. At M. Chas. Détriché's place, *Rhus semialata*, owing to its ornamental appearance and winged leaf-stalks, was immediately noticed, and should be popular for sub-tropical bedding purposes in this country.

Amongst these open-air nurseries it was interesting to come across one containing a few glasshouses. The establishment of M. Fargeton, although not so extensive as the others, was nevertheless interesting for the cultures of *Gloxinias*, *Bouvardias*, *Cannas*, &c., of which he makes specialities. The *Gloxinias* were particularly fine.

NEW OR NOTEWORTHY PLANTS.

*GENTIANA VEITCHIURUM, HEMSL.

At least three different species of *Gentiana* have been, and perhaps are still, in cultivation under the name *ornata*, originally given by Wallich to a Himalayan species, which reaches almost the upper limits of phanerogamic vegetation in that region. About the year 1830 a *Gentiana* was cultivated in the Edinburgh Botanic Garden bearing this name, and was figured in the *Botanical Magazine*, pl. 6514, as such; but, as was pointed out by W. I. (Walter Irving) in the *Gardeners' Chronicle*, 1906, vol. xl., p. 182, the plant represented is not the true *G. ornata* of Wallich. What it really is, is uncertain, and the history of its introduction into cultivation is apparently not on record. In 1883, the *Gardeners' Chronicle* published (vol. ii., p. 396, fig.

Now comes a third *Gentiana*, to which the name *ornata* has been attached. The species in question was exhibited by Messrs. James Veitch & Sons at the meeting of the Royal Horticultural Society on August 31, and received an Award of Merit. The history of it is as follows. In August, 1906, Messrs. Veitch sent a plant of it to Kew for name, with the information that it was raised from seed collected by Mr. E. H. Wilson near Tatienu, Western China, at an elevation of 12,000 feet. It was identified with dried specimens collected by Père Soulié in the same region and described by Franchet (*Bull. Soc. Bot. France*, vol. xliii., p. 493), and named *Gentiana ornata* var. *obtusifolia*. With all the material before me, I have no hesitation in accepting the identification; but I cannot agree in leaving it as a variety of *G. ornata*. Considering the large number of described Chinese species of which I have seen no authenticated specimens, there is some risk of duplication in proposing another, but that is the only course open under the circumstances.

G. Veitchiorum is a larger, more robust plant than *G. ornata*, with relatively broad, obtuse leaves, larger flowers, with broader corolla-lobes, and very broad, toothed folds between them. The flowers are of an intense blue with light longitudinal bands on the outside. W. Botting Hensley.

MR. WILSON'S EXPEDITIONS TO CHINA.

(Concluded from page 162.)

AMONGST flowering shrubs the forms of *Buddleia variabilis* distinguished by the varietal names "*Veitchiana*," "*magnifica*," and "*Wilsonii*" are well worth the appreciation they have met with. They are much finer than the type species which they have now practically superseded. The racemes of purple flowers produced by "*Veitchiana*" sometimes reach a length of 18 inches; the flowers of "*magnifica*," which appear later, are larger and of a darker colour, whilst those of "*Wilsonii*" are of a distinct and deeper shade. Of robust habit and easy culture, there are few gardens where they would fail to succeed. Not the least important of the flowering shrubs recently introduced are the many fine forms of *Deutzia discolor*. The variety known as "*major*" has larger flowers than the type, and "*Veitchii*" has similar blooms, richly tinted with deep rose. In both forms the flowers are freely produced along the whole length of the preceding year's growths. Other new species of this valuable genus are *Deutzia Wilsonii* (25), *D. reflexa*, *D. globosa*, and *D. mollis*.

The species of Chinese *Rhododendrons* form a group of important garden subjects. In a wild state they vary in habit from small trees to dwarf heather-like plants, according to the altitude at which they are found. The flowers of our present garden varieties already possess a wide range of colour, but amongst the new introductions will probably be found new forms and colours, which will serve as material from which the hybridist will evolve distinct races. At present the majority of the seedling plants are too young to flower, but in *Rhododendron intricatum* (26), and *R. Souliei* (27), which have already been exhibited, we have examples of the types we may expect to see in future years. The first-named is an example of the small Alpine species of dwarf habit, densely covered with small flowers of a bluish-purple shade; *Rhododendron Souliei* is a larger plant, with trusses of rich rose-coloured flowers of fair size.

(25) *Bot. Mag.*, t. 8083.

(26) *Gard. Chron.*, 1907, vol. xli., p. 262, fig. 111.

(27) " " 1909, vol. xlv., p. 381, fig. 167, and Supp. ill.



FIG. 74.—GENTIANA VEITCHIURUM, HEMSL. (A NEW SPECIES): FLOWERS BLUE.

In the nurseries of M. Vincent Le Breton and others, it was noted that raffia was not used for budding the stocks of Roses or any other plants, although sometimes employed for fruit trees. Woollen thread—worsted—appeared to be much more popular, and even the leaves of *Sparganium ramosum*, after being cut a year and placed in water, were considered a superior material to raffia for tying buds. Raffia is, however, almost universally used when grafting standard trees. Other nurseries well worth visiting at Angers were those of MM. André & Louis Leroy, who, in addition to fine stocks of Roses and fruit trees, ornamental trees, shrubs, and Conifers, also deal in Oranges, Azaleas, Musas, Skimmias, Fuchsias, Hydrangeas, &c. Another very interesting nursery was that of M. Hilaire-Bechet, devoted principally to bulbous and tuberous-rooted plants, *Cannas* forming a special feature, many new varieties of these plants being raised every year. J. Weathers.

(To be concluded.)

60) an excellent illustration, reproduced in fig. 75, of the genuine *G. ornata* of Wallich, from specimens grown in the Wisley garden of the late Mr. Wilson. Turning to that, I find that it is a slender trailing plant with narrow, very acute leaves and very acute corolla lobes, with narrow folds between. A coloured figure of the same species was given in the *Botanical Magazine* for 1907, pl. 8140. Comparing the flowers actually figured in the *Magazine* with the type of Wallich's species in the Kew Herbarium, I think there is no doubt that it was correctly identified. Mr. J. Hutchinson, who contributed the description of that figure, suggests that the plant figured in the *Botanical Magazine*, pl. 6514, is *G. nipponica*, but I have not time to follow up this suggestion.

* *Gentiana Veitchiorum*, Hemsl.—Nova species ex affinitate *G. ornata*, Wall. a qua differt foliis latioribus obtusis, calycis lobis subfoliaceis vix acutis, corollæ amplioris lobis latis obtusiusculis et plicis inter lobos latis denticulatis. *G. ornata*, var. *obtusifolia*, Franch.—Sineæ occidentalis incolæ, legit E. H. Wilson.

The Chinese *Viburnums* are represented by several species of horticultural value; such, for example, are *V. rhytidophyllum* (28), which has very large, rough leaves and corymbs of cream-coloured flowers, and the smaller *V. utile* (29), which produces numerous heads of pure white flowers and has neat foliage of a bright glossy green.

In *Ilex Pernyi* (30) we have a small-leaved compact-growing Holly of very attractive appearance, which, when recently exhibited at the Horticultural Hall, gained a First-Class Certificate. A similar award was made to the dwarf *Berberis Wilsonae* (31), which, when covered with its attractive coral-red fruits, is a very decorative subject. Other hardy shrubs worthy of mention are the new species of *Cotoneaster*, notably *C. applanata* and *C. humifusa*, the former excellent for a wall and the latter for clothing banks or rockwork; the numerous species of *Rubus*, of which *R. bambusarum* (32), *R. flagelliflorus*, *R. innominatus* (33), and *R. lasiostylus* have already

unfortunate that the beautiful *Jasminum primulinum* (34) has not proved perfectly hardy; otherwise it would have been a most valuable addition to this group. Except in favoured situations, it is best grown in a cool greenhouse, where it produces freely its semi-double, rich yellow flowers in early spring.

The hardy ornamental vines, which have been introduced as a result of Wilson's journeys, have proved excellent subjects for pergolas. The most distinct are perhaps *Vitis Henryana* and *V. armata Veitchii*; the former has compound, five-foliolate leaves with silvery veining, the latter prickly stems and large, simple leaves, which assume in autumn a rich colouration. Other species of this genus are *Vitis Thomsonii*, *V. leeoides*, *V. megalophylla*, *V. flexuosa Wilsonii*, and *V. repens*, all of which have their distinctive features to recommend them and are well worthy of cultivation if room can be found for them. Mention should also here be made

seen how greatly we are indebted to Messrs. Veitch for their enterprise, and to Mr. Wilson, on whose knowledge, energy, and tact so much depended. *Herman Spooner.*

VARIATIONS AMONGST ORCHID SEEDLINGS.

SOME years ago much discussion took place on the variations amongst imported species of Orchids. Many of the blotched varieties of *Odontoglossum crispum* were regarded as of hybrid origin; why such a contention should have been held I have always been at a loss to understand. Those concerned with the raising of seedling Orchids cannot fail to have been struck with the marvellous results that have been obtained from the same seed-pod, and especially in the case of the so-called primary crosses of *Odontoglossums*. When a white and a finely blotched kind are used as parents the progeny includes a fair number having white and blotched flowers. Cross two of the finest blotched varieties and the result is a larger



FIG. 75.—GENTIANA ORNATA (WALLICH). (See p. 178.)

been sent out, and *Sarcococca ruscifolia*, which attracted much attention when recently exhibited. In the large genus *Rosa* it is difficult to find a new species which is really distinct; yet such a term may with justice be applied to *Rosa Moyesii* and *R. Willmottii* (35); the former has rich red flowers of much substance, the latter flowers of a unique shade of rosy-pink, profusely borne.

Plants suitable for walls, poles, or pergolas have several valuable additions amongst the new Chinese introductions. Probably the most popular is *Clematis montana rubens*, which this season has been particularly fine, and will, no doubt, improve as the plants get larger and older. It resembles the type in bardiness and freedom of flower, but differs in having deep rose-coloured blooms. It is

of *Actinidia chinensis* (36), a handsome climber with bold foliage and buff-yellow flowers of large size, which are followed by edible fruit the size of a Walnut. Some plants bear male flowers only, others produce perfect flowers which are followed by fruit. To produce flower the plant appears to require a poor soil, otherwise it produces strong, sappy growths and luxuriant foliage only.

The new Chinese *Comifers* collected by Wilson were described by the late Dr. Masters in these pages. At present the plants are too small to permit of judgment of their suitability for planting in this country. The handsome *Libocedrus macrolepis* (37) is unfortunately not quite hardy, and is, therefore, only suitable for favoured localities, but *Pinus Armandii* (38) appears to withstand the winters unharmed.

From the foregoing sketch, which by no means embraces the whole subject, it will be

proportion of white or albino forms than is the case where a white and a blotched form are used as parents. I have instanced *Odontoglossums*, but these observations are found to be true in the case of other genera of Orchids. Take, for example, the so-called albinos of the *Cypripediums*. All of these, when fertilized with their own pollen, produce offsprings true to the albino characteristics of the parent plant. Yet two albinos of distinct species are crossed, the hybrids, with but one exception, have coloured flowers, or such as would have been produced had normal coloured types of such species been used. The late Mr. Norman Cookson and myself crossed the following albino *Cypripediums*. In each instance the crosses were made both ways:—*C. bellatulum album* × *C. Lawrenceanum Hyanum*, *C. bellatulum album* × *C. callosum Sanderae*, *C. bellatulum album* × *C. insigne Sanderae*, *C. Lawrenceanum Hyanum* × *C. insigne Sanderae*, *C. callosum Sanderae* × *C. insigne Sanderae*. With the exception of *C. Mandiae* (*C. callosum Sanderae* × *C. Lawrenceanum Hyanum*) all the seedlings reverted to the normal coloured type. Many of the albino

(28) *Gard. Chron.*, 1906, vol. xxxix., p. 418, fig. 167, and vol. xlii., fig. 95.
 (29) " " 1909, vol. xlv., p. 345, fig. 151.
 (30) " " 1909, vol. xlv., p. 75, fig. 41.
 (31) " " 1907, vol. xlii., fig. 153.
 (32) " " 1907, vol. xlii., fig. 108.
 (33) " " 1906, vol. xxxviii., p. 290, fig. 112.
 (35) *Bot. Mag.*, t. 81846.

(34) *Gard. Chron.*, 1903, vol. xxxiii., p. 197.
 (36) " " 1909, vol. xlv., p. 77. Supp. ill.
 (37) " " 1901, vol. xxx., p. 467.
 (38) " " 1903, vol. xxxiii., p. 66, fig. 3.

Cattleyas may also be quoted as examples of reversions in their offsprings to the coloured forms. The one consistent producer of albino offsprings, when intercrossed with the white varieties of other species, appears to be the white *C. Mossiae* Wageneri.

Passing from the species to the intercrossing of the best spotted and barred varieties of the hybrids, we get some very remarkable results. The accompanying illustration (see fig. 76) represents five flowers of *Odontoglossum* × *percultum* all raised from the same pod of seeds, and is the result of intercrossing *O.* × *Rolfeae* Oakwood variety (*Harryana* × *Pescatorei*) with the pollen of *O.* × *Ardentissimum* *Cooksoniae* (*O. crispum* × *O. Pescatorei*). The offspring thus consist of one-half *O. Pescatorei* and one-fourth each of *T. crispum* and *O. Harryanum*. There were a number of absolutely spotless forms, as seen in the lower left-hand corner of the illustration, and many others, linking up the different steps, until *O.* × *percultum* *Cookson's* var., which is represented in the centre of the photograph, was obtained. The flowers of this variety have a peculiar shade of slaty or bluish purple. Looking at these results from a raiser's point of view, there can be no doubt that the best varieties are found among the secondary hybrids.

From the scientific point of view, the results of the secondary crosses cannot fail to be instructive in their bearing on the laws of inheritance, and where records have been faithfully kept no doubt the lessons derived will ultimately lead to a workable formula that will determine, more or less, the exact results that are possible at the time of cross-fertilization. *H. J. Chapman, Oakwood, Wylam.*

THE UPRIGHT-FLOWERED LILIES.

THE upright-flowered Lilies, whose blooms are more or less cup-shaped, form a well-marked group. Some of the members are especially valuable for garden decoration, because their cultural requirements are comparatively simple. Most of them may be purchased cheaply, and they flower well the first season after planting. Ordinary garden soil is suited to several members of the section; indeed, one species, *Lilium croceum*, known popularly as the Orange Lily, forms a conspicuous feature in many cottage gardens. The type corresponds with the sub-genus *Iso-lirion* of Mr. Baker; the best known and most useful for garden purposes are as follow:—

LILIAM BULBIFERUM.—This species occurs more or less plentifully throughout a considerable part of Central Europe. Although so well known, it is less often met with in cultivation than some of its immediate allies. It reaches, as a rule, a height of from 2 to 3 feet, and is sometimes confounded with one or other of the forms usually classed as varieties of *L. dauricum*, but which are often grown in nurseries under the collective title of *Lilium umbellatum*. *L. bulbiferum* is distinguished from such varieties by the less crowded head of deep orange-red blossoms, and also by the small bulbils being produced in the axils of the leaves. The species flowers in June, and is essentially a plant for the open border. The flowers when expanded retain their brightness of colouring for a longer period than most other Lilies.

LILIAM CONCOLOR.—A small but charming Lily inhabiting the northern part of Asia and extending into Japan. The bulbs are small, and develop slender stems, which reach a height of 1 foot or 18 inches. Early in July the stems are terminated by one to three erect, star-like flowers, about a couple of inches across and bright-scarlet in colour. In the variety *Coridion* the flowers are bright yellow. There is also another form—*pulchellum*—rather more vigorous than the type and

with reddish-crimson blossoms. The flowers of *Lilium concolor* are of an unusually thick, wax-like nature. The plant is sometimes known as *Lilium sinicum*. A cool, fairly-drained soil, lightened if necessary by peat, leaf-mould, and sand suits *L. concolor* well. From its lowly stature it is suited for planting in the cooler parts of the rock-garden.

LILIAM CROCEUM.—When planted in ordinary garden soil and allowed to remain undisturbed, this Lily soon forms a dense mass or clump. Under favourable conditions it reaches a height of from 4 feet to 5 feet. The leaves are narrow, dark-green in colour, and very numerous; the flowers are disposed in a loose, pyramidal-shaped raceme. Individually they are broadly funnel-shaped and of a bright reddish-orange colour. There is a variety known as *Chaixii*, that flowers somewhat earlier than the type, and is also of lesser stature, whilst the flower-heads are more compact. This Lily is grown in some Dutch nurseries under the specific name of *aurantiacum*.

LILIAM ELEGANS OR THUNBERGIANUM.—This Lily must be regarded as the most variable of all the members of the genus, for the colour of the flowers ranges from the clear lemon-yellow of the variety *Alice Wilson* to the rich blackish-crimson of *Horsmannii* or *hæmatochrom*, which is now, I am afraid, lost to cultivation. Collectively, these varieties of *L. elegans* form a charming group of dwarf-growing plants, some being little more than 6 inches high, although the more vigorous may attain to a height of 2 feet. Having regard to the small size of the bulb and the lowly stature of the plant, the flowers may be considered large. Apart from their value for planting amongst dwarf shrubs, these varieties of *L. elegans* succeed well under pot culture, and they are then valuable for the embellishment of the greenhouse or conservatory. The flowering season is variable, for, while the earliest sometimes bloom towards the end of May, most of them are at their best in June. A few, however, open in July and even as late as August. A selection of



FIG. 76.—VARIETIES OF *ODONTOGLOSSUM* × *PERCULTUM*, RAISED FROM THE SEEDS OF ONE POD.

LILIAM DAURICUM.—The typical form of the Dahurian Lily is not extensively cultivated, but there are a number of hybrids which are sometimes called by the same name. By others these garden forms are referred to as *Lilium umbellatum*, but this name, though expressive of the compact umbels in which the flowers are borne, is not recognised by botanists. In the production of this *umbellatum* group it is very probable that, in addition to *L. dauricum*, two other species—*L. bulbiferum* and *L. croceum*—have played a part. Among the best of these garden varieties are *grandiflorum* (orange-red), *erectum* (red, flushed with orange, the segments being very broad), *incomparabile* (dark scarlet red, the richest coloured of all), and *Cloth of Gold* (rich orange-yellow). These varieties are all good garden Lilies, and will succeed under the same conditions as does *Lilium croceum*. They are a bright feature in the flower-border during the month of June, and in some instances the flowering period extends into July.

The best varieties includes:—*Alice Wilson*, a very dwarf form with lemon-yellow flowers, a rare variety; *alutaceum*, yellowish-apricot, grown by some of the Dutch nurserymen under the varietal name of *Kikak*; *atrosanguineum*, dark red; *Batemannie*, bright apricot, the plant grows 2 feet high and flowers at the end of July and in August; *bicolor*, yellow flamed red, a flimsy flower, but very beautiful; *flore plena* or *staminosum*, some of the stamens are transformed into petals, thus forming a double flower; *Horsmannii*, already referred to; *marmoratum aureum*, yellow, thickly dotted with red; *Orange Queen*, rich orange-buff; *Prince of Orange*, a robust yet dwarf form, with buff-coloured flowers; *Van Houttei*, rich crimson, very fine; *venustum*, clear orange, a late bloomer; and *Wilsonii*, apricot-yellow, spotted with purple. *Lilium elegans* is a native of Japan, and considerable numbers of bulbs are received from that country during the winter months.

LILIAM PHILADELPHICUM.—This delightful Lily is, with the exception of the nearly allied *Lilium*

Catesbaei, the only one of the Isolirion group native of the New World. It is widely distributed in North America, where it occurs principally in open woods. Under cultivation it needs a totally different treatment from any of the preceding, for it will thrive only in a cool, moist soil containing a liberal proportion of vegetable matter such as peat and leaf-mould. Conditions favourable to the hardy *Cypripediums* and *Trilliums* are exactly suitable to this Lily. The bulbs are small, and the slender stems, which reach a height of 1 foot to 2 feet, are clothed with narrow leaves, arranged, for the most part, in regular whorls. The flowers are sometimes borne singly, although two to five are often found in an umbel. They are about 3 inches across, the segments being of an orange-red colour marked with yellow at the base and freely spotted with purplish-crimson towards the centre of the flower. The segments are peculiarly stalked, which feature gives to the bloom an appearance uncommon among Lilies. W.

SAXIFRAGA GERANIODES.

THIS Saxifrage (see fig. 77) belongs to a small section, comprising four species, of the mossy group, in which the members are all more robust in habit and coarser in foliage than those usually grown in gardens. The largest of the four is *S. aquatica*, which is found in the Pyrenees growing on the banks of the mountain streams. It develops large patches of fleshy leaves, three-to-five-partite, in rosettes, while the stems grow from 12 inches to 18 inches in height, and bear corymbs of large, white flowers. Compared with those of the *cæspitosa* or *muscoidea* group, this species is somewhat ragged in habit, and is hardly worth a place in the small rock-garden. *S. geranioides* is also a native of the Pyrenees, where it is found growing on shady rocks. The growth is more compact than in *S. aquatica*, and the plant does not require so much moisture. It makes an excellent pot plant for the Alpine house, and is readily grown from seed, which ripens freely, and it may also be propagated by division. The stems are somewhat woody at the base, while the upper part and leaves are covered with viscid hairs. The white flowers remain in good condition for a considerable time. *S. pedatifida*, from Southern France, is rather smaller in habit than either of the above-described species, and has five-to-seven-cleft leaves, with narrower, more deeply divided segments. The remaining species, *S. pedemontana*, comes from the Piedmont, where it grows on high rocks. It forms closer mats of foliage, and the stems bearing the corymbs of white flowers are not so leafy as those of the other species. W. I.

*** THE GENUS EREMURUS.**

UNDER the brief title given below, which may be translated *A Critical Review of the Genus Eremurus*, Mrs. Fedtschenko has presented the world with a most comprehensive and thorough monograph of this favourite and striking liliaceous genus. Much confusion has prevailed regarding the identity and limits of the species, and an authoritative guide is most welcome. The talented authoress, who is well known to London botanists, is a botanist, cultivator, and explorer, having thrice visited Russian Turkestan, the centre of the greatest concentration of the species of *Eremurus*. Widow of A. O. Fedtschenko, she spent the years 1868 to 1871 in that interesting country with her late husband, who perished in 1873 in a violent storm on the Col du Géant, Mont Blanc, whither he had gone to investigate the glaciers for purposes of comparison with those of Turkestan. Since then, in 1897 and in 1901, Mrs. Fedtschenko has made further extensive journeys in company with her

son, Mr. Boris Fedtschenko, now attached to the Imperial Herbarium at St. Petersburg.

These visits afforded her opportunities for studying at least half of the known species of *Eremurus* under natural conditions, and she has 13 species, besides a number of varieties, under cultivation in her own garden at Moshaisk. In addition to these advantages, she has been able to examine most of the herbarium specimens of importance in defining the species. This has enabled her to elucidate obscure points and eliminate the confusion in nomenclature.

Mrs. Fedtschenko's monograph is a real treasury of information—historical, bibliographical, geographical, biological and cultural. With the exception of the purely descriptive part, which is in Latin, German is the language used; fortunately, not Russian. Following an exposition of the characters employed in the discrimination of the species is a highly interesting chronological epitome of the progress of discovery and record of species. Then comes the tabulated distribution of the 20 species recognised by the authoress†, from which we learn that the genus ranges from the Crimea and the Caucasus eastward to Western China. The whole area is divided into 26 districts, of which 6 to 20 are within Russian Turkestan. Thirteen species occur in 19, the Pamir district, and the number rapidly decreases, both eastward and



[Photograph by W. Irving.]
FIG. 77.—SAXIFRAGA GERANIODES:
FLOWERS WHITE.

westward, one reaching the Crimea, and one, a local one, inhabits the extreme west of China.

There is one point on which Mrs. Fedtschenko expresses no opinion, and that is on the differential characters of *Eremurus* as a genus, and its affinities. But there is little to be said, except that *Eremurus* (as many other adopted genera of the Liliaceæ) differs from its nearest allies in habit rather than floral structure, and it is otherwise hardly distinguishable from *Anthericum*. After the description of the genus, there is a definition of the four sections into which it is divided, followed by a key to the species, which is so useful that a translation will be given below. As an example of the method of treating the species, *E. robustus* may be cited. Reference to first publication and moderately short Latin description, followed by six pages of references to literature, in each case giving the name employed by the writer, and the nature of the communication, whether descriptive or nomenclatorial. Then comes a list of published figures, 27 in number, and a list of the herbaria in which specimens have been seen. Then three pages of localities in which the species has been found, with all the particulars furnished by the various

collectors' labels. Next comes a note on the uses of the species. From the roots of *E. robustus* a kind of glue is prepared, and they may also be eaten. W. Komarow, who has actually eaten them, states that, boiled, they taste somewhat like asparagus.

Two pages are devoted to cultivation, and nearly five to the literature of the subject, of which this is a specimen: O. O. Wrigley, at Bridge Hall, Bury, Lancashire. *E. Elwesianus*; scape 9 feet 6 inches; raceme 4 feet 8 inches. *Gard. Chron.*, 1902, 2, p. 42. These references extend from 1870, when *E. robustus* was introduced by the Fedtschenkos, to 1906.

The plates are reproductions of pen-and-ink sketches of a diagrammatic nature, but embodying the characteristic features of the species. As to the maps illustrating the distribution of the genus and the species, they are perhaps the least satisfactory part of the work, the few place-names being in Russian written characters, and the longitude is calculated from Moscow; but such full geographical details are given in the text that this is of relatively little importance. W. Botting Hemsley.

EREMURUS.

Definitions of the sections and key to the species translated from the Latin in Mrs. Olga Fedtschenko's monograph.

Section I.—*Eremurus*. Leaves of the perianth three-nerved, eventually rolled back. Filaments usually long.

E. spectabilis, turkestanicus, altaicus, Korshinskii and sogdianus.

Section II.—*Anmolirion*. Leaves of the perianth three to five-nerved. Perianth narrowly tubular, bell-shaped; leaves scarcely rolled back. Filaments short, scarcely exceeding the perianth.

E. iberiensis and *comosus*.

Section III.—*Trochanthus*. Leaves of the perianth one-nerved, eventually converging inwards. Bracts very narrow, not fringed.

E. stenophyllus, *Olge* and *chinensis*.

Section IV.—*Henningia*. Leaves of the perianth one-nerved, at length converging. Bracts linear or lanceolate, fringed.

E. robustus, *Aitichisonii*, *himalaicus*, *Kaufmannii*, *Griffithii*, *persicus*, *Alberti*, *lactiflorus*, *anisopterus*, *bucharicus* and *luteus*.

KEY TO THE SPECIES OF EREMURUS.

- 1. Capsule transversely wrinkled...*E. spectabilis*
- Capsule smooth 2
- 2. Leaves hairy 3
- Leaves glabrous or fringed on the margin 5
- 3. Perianth brown-red, narrow, tubular, bell-shaped, about ½ inch long, bracts broad, white *E. comosus*
- Perianth broadly bell-shaped, about ¾ inch long 4
- 4. Leaves clothed with short, straight hairs. Perianth pale rose ... *E. persicus*
- Leaves clothed with longer, deflexed hairs. Perianth white, with yellow centre *E. Kaufmannii*
- 5. Leaves narrow, triquetrous, less than ¾ inch broad 6
- Leaves ¾ to 1½ inch broad, distinctly keeled 13
- 6. Bracts naked 7
- Bracts fringed 9
- 7. Perianth golden-yellow ... *E. stenophyllus*
- Perianth pink or rarely white 8
- 8. Roots spindle-shaped. Leaves of the perianth narrower *E. chinensis*
- Roots cylindrical. Leaves of the perianth broader *E. Olge*
- 9. Leaves of the perianth 5-12ths to 7-12ths inch long 10
- Leaves of the perianth 7-12ths to 8-12ths inch long 11
- 10. Perianth narrowly tubular, bell-shaped, dirty red. Pedicels erect... *E. iberiensis*
- Perianth broadly bell-shaped, yellow-green outside, whitish within. Pedicels long, spreading *E. sogdianus*

† The numbers in this table do not quite correspond to those affixed to the descriptions in the body of the work, where an additional species is admitted and a new one described at the end.

* *Eremurus: Kritische Uebersicht der Gattung.* Von Olga Fedtschenko. *Mémoires de l'Académie Impériale des Sciences de St. Petersburg*, Série 8, vol. xxi i, No. 8. Quarto; pp. 210, with 24 plates. (St. Petersburg) 1909.

11. Capsule globose, large, thick-walled.
Perianth pale rose E. anisopterus
— Capsule more or less ovate 12
12. Capsule ovate-globose, narrowed at the
base. Perianth white E. bucharicus
— Capsule oval. Perianth yellow ... E. luteus
13. Perianth 6-12ths to 7-12ths inch long ... 14
— Perianth 8-12ths to 10-12ths inch long 16
14. Pedicels thickened upwards, indistinctly
jointed. Perianth white, greenish
outside. Filaments nearly black, an-
thers linear, red E. turkestanicus
— Pedicels slender, distinctly jointed at the
top 15
15. Perianth orange-red E. Korshinskii
— Perianth ochre-yellow or brown-red
..... E. altaicus
16. Scape about 3 feet high 17
— Scape 3½ to 9 feet or more high 19
17. Perianth whitish E. lactiflorus
— Perianth red. Bracts very long... E. Alberti
18. Perianth snow-white E. himalaicus
— Perianth red or pale red..... E. robustus

E. schiwanus O. Fedtsch., a new species described in the addenda is allied to E. robustus and E. himalaicus, differing from both in the leaves being clothed with downy hairs. W. B. H.

{Mme. Fedtschenko requests us to announce that she would be glad to exchange species of Eremurus with readers of the *Gardeners' Chronicle*. She particularly wishes to obtain plants, seeds or dried specimens from Afghanistan, Baluchistan, India and China. In return she offers seeds or plants of those she has under cultivation, or, rather, of such as she has to spare. These include an undescribed variety, which she calls Eremurus altaicus multiflorus, which is much finer than the type, the scape bearing as many as 700 flowers. Mme. Fedtschenko has the following species and varieties in her own garden at Olgino, Moshaisk, Gouvernement of Moskau, Russia:—E. spectabilis and var. marginatus; E. altaicus and var. pallidus and var. fuscus; E. turkestanicus (Regel 1875 not of 1880); E. interdensis; E. sogdianus; E. himalaicus; E. Olga; E. robustus and var. pallidus and var. Elwesii; E. stenophyllus and var. præcox; E. lactiflorus; E. Kaufmannii; E. Warei; and E. isabellinus (hybrid).—Eds.]

CULTURAL MEMORANDA.

CLEFT GRAFTING OF CLIANTHUS DAMPIERI.

CLIANTHUS Dampieri, a grand flowering shrub, indigenous to South Australia and New Zealand and known to the white inhabitants as the Desert Pea, is not much grown in this country, owing to the belief that it is difficult of cultivation. This is not so, however, in regard to grafted plants, which are satisfied by ordinary greenhouse treatment in this country, and with a sheltered spot out-of-doors in the mildest parts of Cornwall and South and West Ireland. The plant is propagated from seeds, which should be sown between sheets of moist blotting paper, or, better still, of felt. The best time to graft is when the seed has germinated and the shoot is visible between the cotyledons. As stock for the grafts Clianthus puniceus should be raised from cuttings or seeds, preferably from the latter, which may be sown a fortnight earlier than those of C. Dampieri. When tall stems are required for the latter, the stocks should be reserved for one, two, or three years, that is, till they are of the desired height, before the grafting is carried out. In the case of newly-raised seedlings of C. puniceus, the young plants are potted in thumbs, in a mixture of loam and silver sand, and when two to three normal leaves have formed, they are topped and cleft grafted with the wedge-shaped scions of C. Dampieri, on which the cotyledons are retained. The grafted plants are provided with suitable ligatures, and placed under cloches or hand-lights on a floor of finely-broken coke, coarse sand, or coal ashes, which must be kept very moist. After a few days ventilation should be afforded, and in 10 to 12 days the cloches or hand-lights may be removed. The temperature at this stage should not exceed 60° Fahr. In about three weeks the grafted plants may require to be repotted, and at the same time the

shoots which the stock may have pushed forth should be removed. The chief difficulties now overcome, growth will be rapid, and the plants will need several repottings, and, in order to produce a bushy habit, the stem must be stopped at the tenth or twelfth leaf, which will retard the flowering by about three weeks, but there will be greater floriferousness later, as every side shoot will produce a raceme of flowers from the leaf axils. During the summer it is advisable to keep the young plants in a garden frame or pit, in the full sunshine, only making use of the lights in very wet or windy weather. The plants, if they pass the winter in the greenhouse without the loss of the points of the lateral shoots, will begin to show for flower in March. F. M.

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Peaches.—The fruits are ripening very slowly, and it will be advisable to remove a few of the leaves or to tie back any shoots that intercept the sun's rays. The foliage should be syringed in the afternoons of warm days to ward off red spider and other insect pests; but when the fruits commence to ripen syringing should be discontinued. See that the roots have a sufficiency of moisture; trees planted close to high walls in warm situations need moisture very frequently. Whenever water is applied, it should be given copiously. In the case of trees that are carrying large crops of fruits, a dressing of artificial manure, alternated with farmyard liquid manure, will be of benefit. The artificial manure should be washed into the soil, and it is therefore best to apply it before watering. The liquid manure should be properly diluted before it is given. Attend to the gathering of the fruits as they ripen, and when they are picked store them in the fruit room until they are required. For a succession throughout the season the following varieties are recommended: Duchess of Cornwall, Early Alexander, Amsden Jume, Alexandra Noblesse, Grosse Mignonne, Goshawk, Bellegarde, Violette Hâtive, Dymond, Barrington, Thomas Rivers and Sea Eagle.

Nectarines.—The remarks as to watering, &c., apply equally to Nectarines. For a succession of these fruits the following varieties should be planted: Early Rivers', Rivers' Early Orange, Darwin Spencer, Stanwick Elruge, Lord Napier, Pineapple and Victoria.

Pears.—These fruits are developing rapidly, and especially those on wall trees. The best fruit should be supported by tying a piece of matting around the stalk and fastening it to the trellis or branch. If this precaution is not taken, the fruits of large varieties, such as Pitt-maston Duchess and Souvenir du Congrès, will be likely to drop because of their weight even before they are mature. The fruits should be exposed to the sun as much as possible, in order to develop the colour and flavour. Afford water and manurial stimulants wherever necessary, giving extra attention in this matter to late fruiting varieties. Keep the hoe constantly at work in the fruit plantations. Should wasps attack the fruits, the latter must be protected by wasp-proof netting, but do not cover up the fruits unless absolutely necessary, as it prevents them colouring.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Portable frames.—These are generally termed cold frames and are indispensable to the kitchen gardener, being, in my opinion, much more useful than brick pits. If sufficient of these were provided in gardens we should hear much less of the so-called "French" system of gardening. I have for years used and advocated the use of these frames. Just double the number of frames to the number of lights should be provided, and they should all be of a standard size. Better results may be obtained with these frames than from any number of cloches. Our system is to build up one large bed according to the size required, with leaves and manure, half of which should be taken out every year and renewed. The old manure and leaves not only form splendid

material for manurial purposes, but also for the growing of crops which do not require bottom heat through the winter and spring. Steps should now be taken to arrange the frames on that portion of the hot-bed which is to remain. The soil should be made up fairly close to the glass, leaving sufficient room only for the development of the various crops. Lettuces, late Endive, Parsley, Cauliflowers, and Spinach—providing these are likely to fail outside—may all be grown in these frames. The soil in all cases should be freed from wireworm and put together moderately dry. The glass should be thoroughly washed, as the plants will need all the light possible.

Beetroot.—This crop has made remarkable progress during the past few weeks, and there is a danger, if the roots are allowed to remain too long in the ground, that they will become too large for table use. Medium-sized Beetroot should always be chosen in preference to coarser ones. Beetroot may be pulled any time when large enough, and, if carefully stored, will last in excellent condition all through the winter months. Care should be taken not to break the end of the main root: the leaves should be twisted off with the hand and not cut.

French Beans.—A sowing should be made in 7-inch pots. Germinate the seeds in a gentle heat, and when the seedlings are through the soil arrange the pots on shelves quite close to the glass in a cool house. Syringe the under side of the foliage twice daily with tepid water. Ne plus Ultra is a capital variety for sowing at this season.

Capsicums and Chillies.—These should be removed from cold frames to a house having an intermediate temperature.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Renovating Peach trees.—The present is a suitable time to attend to those trees which have yielded unsatisfactory crops during the first season. If the soil of the border is sour, remove as much of it as possible and replace with fresh loam. Open out a trench at the end of the border about 3 feet wide and as deep as the drainage material. Carefully fork the soil from among the roots, gradually working towards the tree. See that the roots are not injured and cover them with damp mats. Should the roots be growing in both inside and outside borders, the whole of the inside border should be replaced. When the soil has been removed, make sure the drains are in working order: should the subsoil be cold and heavy a layer of cement should be placed over it to prevent the roots growing into it. A layer about 9 inches or a foot in thickness of brickbats, placed evenly in the bottom of the trench, will provide suitable drainage. Over this place a layer of turves, grass side downwards. The size of the new border must depend on the amount of roots, but do not make it too large: rather leave room for adding fresh soil later. Very strong roots may be shortened back, and those that are damaged severed with a clean cut, but preserve as many fibrous roots as possible. A good compost consists of calcareous loam, mixed with plenty of old brick rubble and burnt garden refuse. Should the loam be excessively rich, it may be toned down by adding a quantity of common garden soil. Unless the soil is very poor, no manure should be included. Place the roots in layers towards the surface of the border and make the soil quite firm by treading. When finished give sufficient water to soak the border through. Shade the trees for a week or two and spray them two or three times each day. Do not allow cold draughts from the front ventilators.

Lifting fruit trees.—Young trees which have made extra strong growth should be lifted, as this is the best way to bring them into a proper fruiting condition. The soil should be in a moist condition, but not too wet, before the work is commenced. Dig out a trench a few feet from the trees and fork some of the soil from about the roots till the ball is small enough to be lifted, but preserve as much soil as is possible about the fibrous roots to prevent a check. Cut back all strong-growing roots and those that grow downwards. When replanting the trees, take care not to place them too deeply, always allowing a few inches for the soil to settle down.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Bouvardia.—The plants which have been grown out-of-doors during the summer should now be carefully lifted and potted. Before commencing the work see that the soil about the roots is thoroughly moistened. As the potting is proceeded with, carefully remove the surface soil from the roots and see that each ball of soil rests firmly on its base in the pot. Use the smallest pots that will accommodate the root-mass, and press the fresh soil firmly; the compost should consist of a mixture of loam, leaf-soil, and sand. The plants should be kept shaded and be frequently syringed until they have recovered from the disturbance at the roots; afterwards place them, together with the pot-grown plants, in the house where they will flower. As a rule it is not advisable to repot *Bouvardias* after this date. They flower best in relatively small pots; food can be afforded when they are well-rooted in the shape of concentrated manures. Where *Bouvardias* are grown solely for supplying cut flowers, good results, with less labour, are obtained by planting them in prepared beds in an intermediate house. Red spider, green fly, and mealy bug are the chief enemies of the *Bouvardia*. The first-named may easily be combated by moisture, fumigations easily dispose of the aphids, and mealy bug may be killed by methylated spirit applied with a small brush.

Souvenir de la Malmaison Carnations.—The layered shoots are now well rooted and ready for potting. It will be wise to sever them from the parent plants a few days previous to performing this work. Care must be exercised in lifting and potting the young plants so that no injury accrues to their roots. The pots must be well provided with material for drainage, so as to allow a perfectly free passage of water. A suitable compost is three parts loam, one each of decayed manure and leaf-soil, with some sand added, the quantity of the last-named being regulated by the texture of the loam. Extreme care must be exercised in watering these plants, and during the winter watering, whenever possible, should be performed on the mornings of fine days. Although these Carnations require greenhouse treatment during the winter months, an abundance of fresh air should be afforded them whenever the external conditions permit.

Liliums.—Directly bulbs are received from the nurseryman they should be potted, as there is a risk of them deteriorating if they are kept out of the soil for any great length of time. To obtain flowers of *Lilium longiflorum Harrisii* at Christmas, potting early in autumn is imperative. A good potting medium is composed of loam and peat in equal quantities, with the addition of some leaf soil and sharp sand. The bulbs should be placed low down in the pots, leaving ample space for future top-dressing. Should the presence of disease be suspected, a little powdered charcoal should be shaken amongst the scales of the bulbs. After being potted, they should be plunged out-of-doors in cocoanut fibre or ashes, where the later varieties may remain until spring.

THE ORCHID HOUSES.

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

Masdevallia.—The *Masdevallias* have showy and curious flowers, and the various species bloom throughout all seasons of the year. At the present time the following are in flower:—*M. deorsa*, *M. nidifica*, *M. vilifera*, *M. anchorifera*, *M. maculata*, *M. infracta*, *M. Schlimii*, *M. tridens*, *M. calura*, *M. x Ajax*, *M. campyloglossa*, *M. x Jessie Winn*, and *M. muscosa*. No species excites greater curiosity and interest than the last-named by reason of the extraordinary sensitiveness of its trap-like labellum. Other dwarf-growing varieties are *M. Wageriana*, *M. Estradae*, *M. melanopus*, *M. floribunda*, *M. picturata*, *M. O'Brieniana*, *M. Arminii*, *M. hieroglyphica*, *M. triadactylites*, *M. ionocharis*, *M. x Geiriana*, *M. caudata Schuttleworthii*, *M. x Courtauldiana*, *M. rosea*, *M. x Stella*, *M. x Geleniana*, *M. Shatryana*, var. *Chamberlainiana*, *M. simula*, *M. Schröderiana*, and *M. polysticta*. These should all be placed in a position well up to the roof glass, either suspended or stood on an elevated stage. Contrasting greatly both in flowers and growth with those already mentioned are *M. macrura*, *M. Trochilus*,

M. elephanticeps, *M. Peristeria*, *M. Gargantua*, *M. Epihippium*, *M. coriacea*, and *M. x Curlei*. *M. macrura* is the giant of them all, having leaves more resembling those of a *Cattleya* than a *Masdevallia*, with flowers also of large size, the petals being of a distinct and pleasing colour. Species and hybrids characterised by brilliantly coloured flowers include *M. coccinea*, which embraces the many distinct varieties of the *M. Harryana* section, also *M. amabilis*, *M. Veitchiana*, *M. ignea*, *M. coccinea* var. *Lindeni*, *M. x Chelsoni*, *M. Barleana*, *M. splendida*, *M. x Heathii*, and the yellow *M. Davisii*, which is distinct from all the others. Plants of this last and of *M. Veitchiana* are liable to deteriorate if allowed to flower out of season, therefore, if any flower-spikes appear during the winter months, they should be pinched out. The present is the most suitable time to thoroughly overhaul the plants, because it is now that they make the greatest number of roots, and the cool moist weather of autumn is favourable to their speedy reestablishment. Large healthy specimens that may be required for exhibition purposes next season should not be disturbed unnecessarily now, otherwise they may fail to bloom satisfactorily later. Large plants that have become shabby by losing their centre leaves may be divided into suitable clumps, placing these in the centre of the pot, or they may be potted singly. As regards the small or dwarf-growing forms, many, if the soil is in a good condition and they have sufficient space for further development, will need no root disturbance. If, however, the compost is sour the plants should be repotted at once. When in a healthy condition, *Masdevallias* are vigorous rooting plants, and require a good amount of space, but if roots are few it is safer to err on the side of affording small pots rather than large ones, because the larger the bulk of soil the longer does it take to dry after being watered.

Potting.—The pots should be about half filled with clean crocks, and over which should be placed some rough Sphagnum-moss and some of the potting material. The latter should consist of *Osmunda* fibre, *Polypodium* fibre and Sphagnum-moss in equal parts, with plenty of small crocks. Keep the crown of the plant on a level with the rim of the pot, and work the compost carefully among the roots, potting each plant with moderate firmness. The critical time with *Masdevallias* is immediately after repotting, any excess of moisture at the root or in the atmosphere at that time generally results in loss of leaves and roots. For a few weeks, water must be carefully given, and the atmosphere of the house kept fairly moist, but when the new roots have entered the fresh compost the quantity of water may be gradually increased, and, as colder weather comes on, the humidity of the air slightly reduced. Grow the plants in the cool house, and to prevent black marks on the foliage do not allow a temperature lower than 45°. A winter night-temperature of 50° is best, with an increase of several degrees by day, but during very cold weather, and when much fire-heat is necessary, the lower temperature is preferable.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Cyclamen.—Prepare the soil for the planting of the corms, which should be placed in warm nooks and sheltered corners: they are especially effective under trees. From the middle to the end of September is the best time for planting spring-flowering hardy *Cyclamen*. Those of the autumn-flowering section, including *C. europæum*—both the red and white-flowered varieties—and *C. neapolitanum*, are now showing their flower-buds. They are charming little plants. Their principal requirements are a well-drained soil, a warm position, and an abundance of water during dry weather.

Hyacinthus candicans.—In order that the flowering season of this stately plant may be prolonged, it is necessary to provide the roots with copious supplies of liquid nourishment and to cut off all the old flower-spikes.

Silene acaulis and *S. alpina*.—The dead flowers should be removed, or they will develop seeds which will furnish a crop of seedlings next spring where they are not required.

Colchicum.—The soil around these should be cleared and freed from rubbish or weeds, and a

little soot and Clay's fertiliser worked into the soil with a hand fork. This will assist the development of the flowers, which will soon be produced. One of the best for garden purposes is *C. autumnale album plenum*. *C. Decaisnei* and *C. giganteum* are other fine autumn-flowering varieties.

Chrysanthemum maximum.—If the old inflorescences are cut off, a second crop of flowers will appear. King Edward, Queen Alexandra, and Mrs. Caroline Lothian Bell are some of the best varieties, the last-named producing very large flowers.

Michaelmas Daisies.—Place neat stakes to these plants to train them in position and to secure them from damage by the wind. A selection of the best kinds includes *H. J. Cutbush*, *Rosy Morn*, *Surprise*, *ericoides*, *Hon. Edith Gibbs*, *Ophir*, *Grace Darling*, *Admiration*, *Fascination*, *Amellus bessarubicus*, and *Darkness*. These flowers brighten up the borders till frost cuts them down, and in addition they are most useful for cutting purposes.

Berberidopsis corallina.—This plant on a north-east wall is flowering splendidly. The flowers are of a coral-red shade and are produced freely. It is very impatient of dryness at the roots.

Caryopteris Mastacanthus.—This autumn-flowering shrub is sometimes considered tender, but it has withstood 24° of frost in these gardens and is now a mass of flowers. Its propagation is easily effected by cuttings; it is not at all partial as to soil, but a mixture of leaf-soil and loam with sand appears to suit it best.

Yucca.—Having flowered profusely this season, the old flower-stems of *Yuccas* should be removed, so as not to exhaust the energies of the plants.

General work.—The beds and borders are beginning to lose their summer appearance, therefore it is extremely necessary to keep all dead and decaying flowers and foliage picked off, the grass verges cut, and all weeds eradicated. The lawns should be mown frequently and the paths rolled after rain. Make preparations for the lifting of those plants that are to be housed during the winter by inserting a spade around the roots; this will sever the larger ones and fibrous roots will form nearer the stem.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Home-propagated versus purchased plants for park decoration.—A few months ago in the *American Florist*, a number of park superintendents in the United States carried on an interesting correspondence on the subject as to whether park authorities should propagate their own bedding plants or purchase them from the trade. I was somewhat surprised to find that any doubt could exist on this question, and that a number of park officials were found to advocate the purchase of bedding plants in preference to the establishment of a propagating department in connection with public parks. While reading this discussion, I was not at the time aware of the fact, which has since come to my knowledge, that even in our own country there are two opinions on this matter, and that in the parks of at least one well-known English town all the bedding plants used are purchased by tender from nurserymen. The responsible chief of the parks in question has, however, long since been dissatisfied with this arrangement, and has done his best to alter it, but without success, as his committee are apparently too conservative to bring themselves to alter a condition of things which has been so long in existence. While it must be admitted that municipal authorities, being generally more or less model employers—as they ought to be—cannot compete on equal terms with private trading firms, even in the matter of plant multiplication, yet the difference in cost—supposing it does exist—between home-grown plants as compared with those purchased, is so infinitesimal, and the superiority of the former over the latter so decided, that even apart from other numerous advantages accruing from home propagation, there seems to be no question as to the advisability of every park system having its own propagating department. This is especially the case where the quantity of plants required runs into hundreds of thousands every year.

EDITORIAL NOTICE.

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 13—
United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, SEPTEMBER 14—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Edward A. Bunyard on the "Physiology of Pruning"). British Gardeners' Assoc. Ex. Council meet.

THURSDAY, SEPTEMBER 16—
Nat. Rose Soc. Autumn Exh. at Hort. Hall, Westminster.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—58·8°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, September 8 (6 P.M.): Max. 55°; Min. 45°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 9 (10 A.M.): Bar. 30; Temp. 58°; Weather—Sunshine.

PROVINCES.—Wednesday, September 8: Max. 55° Cambridge; Min. 49° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapsea, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Twenty-fourth Annual Unreserved Sale of Pot Plants, at Dyson's Lane Nurseries, Upper Edmonton, by order of Messrs. H. B. May & Son, by Protheroe & Morris, at 11.

TUESDAY—
Great Annual Trade Sale of Winter-blooming Heaths and other Plants, at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller & Son, by Protheroe & Morris, at 11.

WEDNESDAY—
Great Annual Trade Sale of Winter-flowering and other Plants, at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

THURSDAY—
Twenty-eighth Annual Sale of Winter-blooming Heaths, &c., at Longlands Nursery, Sidcup, S.E., by order of Messrs. H. Evans & Sons, by Protheroe & Morris, at 11.

The Big Trees of California.

(See Supplementary Illustration.)

The groves of *Sequoia gigantea*, the "Big Trees" of California, are among the wonders of the world. They are remarkable not only for their size and beauty, but also for their splendid isolation. The blue gum (*Eucalyptus*) of Australia may rival the *Sequoia* in height—for both are said to attain to upwards of 300 feet—but in majesty the "Big Trees" are peerless. The height of the tallest specimen is estimated to be 335 feet and its lowest limbs a hundred feet above the ground. Curiously enough, the cones of *Sequoia gigantea* are small, and each cone contains from 100 to 200 parchment-like seeds not unlike those of the Parsnip. The cinnamon-coloured bark is as much as 40 inches thick and, furrowed longitudinally, gives the trunks the appearance of huge fluted columns.

The principal groves, situated on the slopes of the Sierra Nevada mountains, are the South Park grove, consisting of some 1,300 trees; Calaveras, which contains a hundred giants and many smaller specimens; the Tuolumne grove, each of whose 30 trees is more than 300 feet high; the Mariposa grove of 600 trees; the Fresno grove, covering an area of two square miles; the General Grant and Tulare river groves.

The groves, within which the range of distribution of the species is confined, lie all in the same forest belt, at an altitude of about 4,000 feet, a hundred miles distant from the coast, in the centre of California.

The Big Trees stand in primeval forest associated with Sugar Pines (*Pinus Lambertiana*), Incense Cedars (*Librocedrus decurrens*), and

Firs (*Abies grandis* and *A. magnifica*), themselves marvels of vegetable growth, but which, magnificent though they be, appear, when seen from an eminence, as dwarfs in company with giants.

Though it might have been hoped that their venerable age no less than their stately beauty would save them from so mean a fate, nevertheless, the woodman's axe has been busy among the trunks of the Sequoias. Trees which grew from seeds sown before the commencement of the Christian era have proved too tempting to the greed of lumbermen. Such vandalism has now ceased. The groves contained in the national parks are patrolled by soldiers and kept cleared of undergrowth in order that forest fires may not destroy the trees. Thus, protected by Government, the Big Trees are held in trust for lovers of Nature for all time. We may be sure that in the future the trees will be spared not only from death but also from further mutilation such, for instance, as that depicted in our Supplementary Illustration.

In one of the most delightful of his essays, Asa Gray, writing of *Sequoia* and its *History*, discusses the significance of its isolation.

He asks, "were they created thus local and lonely, denizens of California only . . . ? Are they veritable Melchizedeks, without pedigree or early relationship and possibly fated to be without descent? Are they now coming upon the stage to play a part in the future? Or are they remnants, sole and scanty survivors of a race that has played a grander part in the past but is now verging to extinction? Have they had a career and can that career be ascertained or surmised, so that we may at least guess whence they came and how and when?"

The essay, which more modern writers might take as a model, and which should be read in its entirety, proceeds, in order to answer these questions, to examine into the distribution of the nearest relatives of *Sequoia gigantea*, the Red-wood *S. sempervirens* of wider distribution along the coast of California, and the much more distantly-related Bald Cypress (*Taxodium*) of the swamps of the Atlantic coast, and *Glyptostrobus*, a Chinese plant closely allied to *Taxodium*. Appealing to the geological record, Asa Gray shows that, in the tertiary period, the Bald Cypress, a *Glyptostrobus*, and more than one *Sequoia* co-existed in Europe. By following the geological evidence further he is led to the conclusion that the Sequoias now remarkable for their restricted range and numbers are of an ancient stock. Their ancestors and kindred formed a large part of the forests which once flourished throughout the Polar regions, now desolate and ice clad and which extended into the low latitudes of Europe. He concludes that "differences of climate or circumstances of migration, or both, must have determined the survival of *Sequoia* upon the Pacific and of *Taxodium* upon the Atlantic coast, and still the Redwoods will not stand in the east, nor could *Taxodium* find a congenial station in California. Both have probably had their opportunity in the olden times and failed." But man has now intervened, and the Sequoias flourish tended by his art in regions whence inexorable Nature long ago decreed their banishment.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held at Vincent Square, Westminster, on Tuesday, September 14. At 3 o'clock a lecture on "The Physiology of Pruning" will be delivered by Mr. E. A. BUNYARD. A show of home bottled and preserved fruits and vegetables (including fruits bottled in water and in syrup, jams, &c.) will be held on December 1 to 4. Dried or bottled fruits and vegetables of any kind may be shown, subject to the conditions that they contain no chemical preservative or artificial colouring matter, that they be tasted by the judges, and that the fruit used has been grown in the British Isles.

FLOWERS IN SEASON.—Messrs. H. CANNELL & Sons, Swanley, send a bloom of *Dahlia coronata*, obtained from Mexico. This is the flower that attracted notice last season as the so-called Scented *Dahlia*. As in the flowers last year, we failed to detect this attribute in Messrs. CANNELL's specimen. It resembles a large single-flowered *Dahlia* with scarlet florets. Messrs. CANNELL also send a dwarf bedding *Dahlia* named Little Othello. The foliage is very dark and distinct. It is recommended for bedding purposes, and is said to harmonise well with silver-leaved *Pelargoniums* or with *Phlox Comtesse de Jarnac*. —Mr. SMITH, of Newry, sends several interesting specimens, including *Berberis pinnatifida*, from Yunnan, with whitish fruits; *B. virescens*, just commencing its autumn colouring, which will last well until Christmas, and will be still beautiful by reason of its brilliantly-coloured bark; *Coriaria nepalensis*, in flower and fruit; *Carniola* (*Genista*) *mantica*, with the second crop of flowers; *Clematis integrifolia* Durandii, a handsome perennial variety; *Clethra acuminata*, not so sweetly scented as *C. canescens*, but earlier in blooming and very distinct; *Euonymus verrucosus*, just assuming its brilliant autumn colour; *Mallotus japonicus*; *Rosa gymnocarpa*, in fruit, and two new *Cratægus*, *C. integra* and *C. difusa*, with exceptionally long, thick thorns. —Amongst several interesting and uncommon shrubs sent by Messrs. ROBERT VEITCH & SON, Exeter, were the following:—*Sambucus canadensis*, *Sophora flavescens*, *Desmodium tiliaefolium*, *Pentstemon cordifolius*, *Sorbus americana*, *Pavia macrostachya*, *Palinurus aculeatus*, *Eucryphia pinnatifolia*, and *Coriaria terminalis*. —A selection of remarkably fine *Pentstemons* has been received from Messrs. FORBES, LTD., Hawick, N.B. This firm's strain of these useful bedding flowers is well known as a very fine one; the flowers sent are not only large, but possess a wide range of colours.

"THE BOTANICAL MAGAZINE."—The issue for September contains notices and descriptions of the following:—

APHELANDRA TETRAGONA, tab. 8272.—The species has been described previously under the name of *Justicia tetragona*, and it agrees also with the plant figured in 1798 as *Justicia cristata*. A two-year-old plant flowered in a warm house at Kew Gardens during September of last year, and another specimen flowered this year in May, the time of flowering depending on the age of the plant and the treatment afforded to it. It enjoys a rich loamy soil and a plentiful supply of water at the roots. The colour of the corolla is a brilliant pink.

MEGAELINIUM PURPUREORACHIS, tab. 8273.—This plant was described in the *Gardeners' Chronicle*, vol. xlv., p. 293, as *M. Bufo*, when exhibited by Sir Trevor Lawrence, Bart., at the Royal Horticultural Society's meeting in April last. The specimen from which the plant in the *Botanical Magazine* was illustrated, flowered in the Royal Botanic Garden, Glasnevin, in September, 1908. The flowers are developed on a broad, flattened, slightly twisted

rachis, which is freely dotted with purple spots. The individual flowers are brown. The plant thrives best in an intermediate house, with a night temperature of 55°. It was discovered by Mr. L. GENTIL, on the Upper Lomami, a tributary of the Congo.

EXOSTEMMA SUBCORDATUM, tab. 8274.—The species differs from others of the genus in its subcordate leaves. It is very closely allied to *E. floribunda*, but has larger calyx-segments. The plant forms a small shrub about 3 feet high. Its flowers, which are pure white and very fragrant, are produced in autumn. It thrives best in a warm plant house, such as is suited for *Ixoras*.

EUPHORBIA LEDIENII, tab. 8275.—The species is nearest to *E. cœrulescens*, from which it differs by its more numerous and less sinuous angles, its more distant and less marked constrictions and shorter spines. The spines are produced in pairs, and are from 2 to 4 lines long. The cymes include three involucre, each of the latter being 1½ to 2 lines long, glabrous and yellow.

PELIOSANTHES VIOLACEA VAR. **CLARKEI**, tab. 8276.—This is one of the most attractive species of *Peliosanthes* cultivated at Kew. It differs from the type form in having a dark purple perianth. The leaves are oblong-lanceolate, about 1 foot in length and 2½ inches wide. The racemes are about 6 inches long, the flowers being solitary in the axils of obtuse, acuminate bracts. The flowers are about 15 lines in diameter. The plant flowers at Kew usually in April in a tropical house.

CHERRY LEAF SCORCH.—In certain districts the crop of Cherries is in some years seriously reduced owing to the prevalence of a fungus-disease which attacks and kills the leaves. The first symptoms of the disease is a dull-brown colour of the leaves on which yellow-orange spots appear. The spots increase in size, and ultimately invade the whole leaf. The dead leaves remain on the trees, and on them the winter spores (asco-spores) develop. Infection of the young leaves takes place about June. Where it is possible to devote the labour to the purpose, the disease may be stamped out by gathering all the affected leaves, both those on the trees and on the ground, and burning them. This wholesale picking and destruction of diseased leaves was carried out some years ago in a district of Prussia (Altenlaude) with complete success. The disease, which had for years ruined the Cherry crop, was stamped out by systematically burning the leaves during two successive winters.

FLORA OF THE LOWER AND MIDDLE CONGO.—The first part of the third volume of the fifth series of the botanical contributions to the *Annales du Musée du Congo Belge* is a continuation of the *Flora of the Lower and Middle Congo*, by Dr. E. DE WILDEMAN, who seems to possess an inexhaustible capacity for work. This part comprises 27 plates and 147 pages of letterpress. Among the plants figured *Dorstenia yambuyaensis* is remarkable for its wide-spreading involucre with linear bracts 4 inches long. Of the polymorphic genus *Clerodendron* there seems to be no end to new species in Africa. *C. Pynaertii* has a large, open, campanulate calyx from which emerges a very slender corolla less than an inch long. *C. excavatum* has stout, hollow, prickly branches bearing dense clusters of almost sessile flowers with a closed calyx and a very slender tubular corolla 5 inches long. *Monnera congolana* (Anonaceae) bears flowers on very long, naked stalks in clusters on the old wood. *Cnestis Laurentii* (Conmaraceae) has densely-woolly beaked pods, and *Trochomeria Verdickii*, of which only the male flowers are known, is a singular cucurbitaceous plant having included stamens and long, exceedingly narrow reflexed petals.

PRESENTATION AT CAPE TOWN.—Mr. H. J. CHALWIN, on his retirement from the curatorship of the Municipal Gardens, Cape Town, was presented with a dressing-case, and an illuminated address. The Mayor (Mr. F. W. SMITH) presided, and the presentation was made by the Acting Commissioner (the Hon. D. P. DE VILLIERS GRAAFF). Mr. CHALWIN has since 1881 had the charge of the Municipal Gardens, or *Staads Tuin*, which are descended from Governor VAN DER STEL's famous garden of 230 years ago. In the year 1891 arrangements were made for the Government to hand over the Botanical Gardens to the City authorities, and to pay an annual subsidy towards their upkeep. Mr. CHALWIN brought together the finest collection of Orchids in South Africa.



FIG. 78.—EFFECT OF THE UNFAVOURABLE SEASON ON THE SEEDING OF SWEET PEAS OF THE SPENCER TYPE.

THE SWEET PEA SEED CROP.—It is well known that the Spencer varieties of Sweet Peas do not seed nearly as freely as those of the old type. It would not be an exaggeration to say that some of the choicest "Spencers" do not yield a tenth of what the old varieties did, and this in a favourable season. This year the proportion will be nearer that estimated by Mr. HUGH ALDERSEY, viz., one twenty-fifth or one-thirtieth. In the seed-growing districts of Essex the Sweet Pea crop is giving growers anxious concern. Seed pods on plants on the flat, which have not been stuck, are

almost a blank—in many instances the amount of seed used for stock will not be returned. Crops which have been stuck are far from satisfactory. The spring was late and cold, frosts continued into June, and right through the summer the temperature was low, especially at night-time. This condition of affairs, combined with rain almost every other day, except for a fortnight in August, has prevented the flowers setting. The photograph, reproduced in fig. 78, was sent us by a well-known firm, and represents the end of a row of Sweet Peas as it appeared after the rainstorm of August 25.

ODOURLESS ONIONS.—According to an American contemporary, WING HOP, a Chinese gardener, who owns a small truck farm, declares that he has produced an odourless Onion. For years HOP has been working on the production of an Onion which would have all the taste and other qualities of the normal vegetable but would be free from the disagreeable odour which offends so many people. Now he claims to have succeeded, and his contention is borne out by the statement of many of his white neighbours and rivals. Having regard to the close association between taste and smell, we confess to a certain measure of doubt as to whether, in divorcing the odour from the Onion, Mr. WING HOP has been able to retain the flavour.

CINERARIA AND CHRYSANTHEMUM FLY.—Leaflet No. 27 of the series issued by the New Zealand Department of Agriculture describes the methods recommended by the Department to check the ravages made by the larvæ of the flies *Phytomyza negricornis* and *P. chrysanthemi*. The larvæ tunnel through the leaves after the fashion of leaf-miners in general, and in bad seasons are very destructive. Mr. KIRK, Government Biologist, finds that the females do not lay eggs on plants which have been sprayed with tar water (½ lb. coal tar boiled in one gallon of water for 20 minutes; then diluted with 50 gallons of fresh water and stirred till well mixed). This remedy might well be tried in this country as a specific against the Celery fly, which in some seasons does so much damage to the young plants. Since the Celery plants are attacked in the very young stage, there would be little risk of the tar affecting the taste of the mature Celery. The Leaflet of the Board of Agriculture on the Celery Fly, No. 35, recommends the use of a spray consisting of a mixture of paraffin, soft soap and water (paraffin 1 quart, soft soap ½ lb., water 10 gallons).

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.—The annual report, balance sheet, and list of members has been issued by the London Society of French Gardeners. The continued and steady increase numerically and financially which the society enjoys is due, in a large measure, to the personal and active interest of the president, Mr. GEORGE SCHNEIDER. The society, which will soon attain its majority, has been the means of helping many a young gardener to advance himself in his profession, and this on both sides of the Channel. The issue under notice contains an excellent portrait frontispiece of Mr. HARRY VERTCH, accompanied by a biographical notice. There is also the usual matter relating to the society's rules, lists of members, library catalogue, balance-sheet, and reports of the monthly meetings. An account also appears of the annual dinner, with the text of the various speeches delivered on that occasion. The remainder of the volume is devoted to the papers read by the young members at the society's monthly meetings. Of these articles, the more interesting are those on the leading London parks, Pear culture in England, the Temple Show, Roses for forcing, the Bouvardia, and an account of Messrs. ROCHFORD's nursery.

CUCUMBER AND MELON CANKER.—This disease, described recently by Dr. GROSSEBACHER as being due to a fungus *Mycosphaerella citrullina* Grossenb., has now, according to the observations of Mr. G. MASSEE, made its appearance in this country. The symptoms of the disease as it occurs in Melons are as follow:—Wilting of leaves; stem nodes, particularly those near the ground, present a water-logged appearance and may exude gum; the plant collapses and dies. At a late stage the diseased patches become ashy-grey or white in colour and the epidermis is broken up and studded with numerous perithecia belonging to the conidial stage of the fungus. Later in the ascigerous stage the resting spores are produced. Mr. MASSEE has found that the disease is, unfortunately, not confined to Melons, but also affects Tomatos, which, according to the grower's statement, were so rapidly affected as to fall over like ninepins. Cucumbers, which are said to be immune from this disease in the United States, are attacked by it in this country. It is suggested that the warm moist conditions of indoor cultivation provide those under which the fungus becomes actively parasitic; for inoculation experiments, successful in this country, are generally failures in the United States, where the plants are cultivated in the open. The spores appear to be very resistant to fungicides, and it is recommended, as a preventive measure, to spray the plants several times with Bordeaux mixture. The report in the *Bulletin* is illustrated by a plate showing the canker-like effect on the stem of the Tomato, and is accompanied by a description of the two forms of spores, conidia and ascus-spores.

THE USE OF CUT POTATOS FOR "SEED."—From experiments carried out at Frankenthal by Messrs. J. OSTERSPY & RENNER, and published in *Mitt. der Deutscher Landwirtschaft Gesell.*, May 1, 1909, it appears that the yield obtained from Potato tubers cut lengthwise is, under suitable conditions, equal to that of mid-sized tubers of the same weight. The times at which it is best to cut the tubers depend on the nature of the soil in which they are to be planted and on the weather. In dry soils and during cold weather, it is found that the cutting of the tubers is best done shortly before planting; whereas, on wet soil and during warm, damp weather, the tubers should be cut some days (two to eight) before they are planted. When cut some days before planting, the tubers may be protected from drying by a covering of sacks.

FUMIGATION OF NURSERY STOCK.—Experiments made by W. E. BRITTON, and reported in the *Journal of Economic Entomology*, I., 1908, demonstrate that carbon-bisulphide and carbon tetrachloride are efficient substitutes for hydrocyanic acid gas for the fumigation of nursery stock. Apples infested with San José scale were used for the experiments. When carbon-bisulphide was used, it was found that 60 ounces to 100 cubic feet, allowed to act for three hours at 59°, killed all the scale and left the trees uninjured. Carbon tetrachloride, 30 ounces to 100 cubic feet, was equally fatal to the scale and innocuous to the trees.

THE EXPERIMENTAL ERROR IN FIELD TRIALS, a short paper by Mr. A. D. HALL, F.R.S., Director of the Rothamsted Experimental Station, published in the *Journal of the Board of Agriculture* (Vol. xvi., No. 5, August, 1909), should prove valuable to horticultural instructors and others who are occupied in carrying out that most difficult form of experiment known as field trials. Mr. HALL shows by striking examples that, in all such methods of experiment, there is inevitably an element of error, and that the unavoidable error may be as much as, or, indeed, exceed, 10 per cent. Hence

it is impossible to draw any conclusion of value from results which fall within this margin of error. In order to eliminate the experimental error, due to chance differences of soil, &c., it is necessary, either to repeat the experiments year after year, or to conduct them on a number of plots. It is no good to increase the size of the experimental plot and to think that the error will be eliminated if the results are estimated from samples taken from selected parts of the large plots. Increased accuracy is rather to be obtained by increasing the number of plots and decreasing their size, so that the whole produce of each plot may be measured. In the past, so many results of field trials have proved misleading or untrustworthy, owing to the neglect of these considerations, that it is to be hoped that all engaged in this form of experimentation will give heed to Mr. HALL'S advice.

TULIPDMANIA.—A very attractive paper on the introduction of the Tulip is contributed by Mr. W. S. MURRAY to the current number of the *Journal of the Royal Horticultural Society* (Vol. xxxv., Part 1, July, 1909). Mr. MURRAY gives an historical account of what is known on the subject of the introduction of the Tulip into England, beginning with the quotation from RICHARD HAKLUYT, who, in 1582, in his *Remembrances of Things to be Endeavoured at Constantinople*, records the bringing into England from Vienna of divers kinds of flowers called Tulipas, procured from Constantinople a little before by an excellent man called M. CAROLUS CLUSIUS. It is probable, however, as Mr. MURRAY proceeds to point out, that it was ANGERIUS GHISLENIUS BUSBEQUIUS, an ambassador of FERDINAND I. to the SULTAN, who first brought seeds from the neighbourhood of Constantinople to Western Europe. The cult of the Tulip spread fast, for even in 1590 Tulips were becoming popular in Holland. Mr. MURRAY'S paper, which is admirably illustrated, provides fascinating reading, not only with respect to the history of the Tulip and of its chief forms, but also of that astonishing period when a veritable mania for Tulips—recalling, but also far surpassing, a recent mania for a less beautiful plant—broke out in Holland and spread over Europe.

BANKRUPTCY STATISTICS RELATING TO GARDENERS, FLORISTS AND NURSERYMEN.—The 26th annual report of the Inspector-General in Bankruptcy for last year contains the following particulars: In 1904 there were 49 failures among gardeners, florists, and nurserymen, with liabilities estimated at £29,104. In 1905 there were 31 failures, with liabilities amounting to £27,065. In 1906 there were 32 failures, with a total indebtedness of £62,343. In 1907 there were 45 failures, with liabilities amounting to £35,467, and last year there were 48 failures, with liabilities amounting to £43,811, so that compared with 1907 there was last year an increase of three in the number of failures, and an increase of £8,344 in the estimated amount of the liabilities.

PUBLICATIONS RECEIVED.—*Comments of the Joint Railway and Parliamentary Committee on the Report of the Board of Trade Railway Conference.* (London: Tavistock Hotel, Covent Garden, W.C.)—*Proceedings of the Agri-Horticultural Society of Madras.* (January to March, 1909.)—*Bulletins Nos. 109 and 110 of the Agricultural Experiment Station of Nebraska.* (Nebraska: Lincoln.)—*U.S. Department of Agriculture, Bureau of Entomology.* Bulletin No. 82: Part I. The Colorado Potato Beetle in Virginia in 1908, by C. H. Popenoe. Bulletin No. 64: Part VII. New Breeding Records of the Coffee-Bean Weevil, by E. S. Tucker. (Washington: Government Printing Office.)—*Some Small Houses.* (Illustrated.) By Walter G. Ross. (London: W. G. Ross, 1, West Street, Finsbury Circus, E.C.)

A MARKET FRUIT-GROWER'S YEAR.

THE first 15 days of August were remarkable, for the most part, for intense heat, long hours of sunshine, and absolute drought. For ripening the Plum and early Apple crops this weather was splendid; but in my own district, where the rainfall of June and July had been only moderate, more good would have been done by an alternation of showers and sunshine. However, we had rain enough in the next ten days, greatly impeding the raising of the Potato crop, mainly consisting of Second Earlies, which in this southern district are quite fit to be dug up in August. My crop of British Queens proved disappointing. The haulm had been magnificent; but, partly because there had not been rain enough in June, and partly on account of disease, it died off prematurely, and thus reduced the yield of tubers from a promised 10 tons per acre to about 7 tons. Up-to-date, on the other hand, now just being lifted, seems likely to yield fully 10 tons per acre.

PLUMS AND THEIR PRICES.

That the Plum crop is a small one in the country at large is proved by the prices realised up to the time of writing. Rivers' Early Prolific appears to have been generally better cropped than any other variety. These Plums sold well for the most part, 3s. 6d. to 4s. per half-sieve of 28 lbs. having been the prevailing price, though in one week-end there was a temporary glut, which brought the price down to 2s., and even in some cases to 1s. 6d. for a small consignment. A recovery, however, quickly took place, and Czars came in at 3s. or 3s. 6d., rising later to 4s. or 4s. 6d. My own crops of both these varieties were excellent; but Czars were not generally abundant. The greatest yield with me was that of Gisborne, picked green because there was a wide gap between the ripening of Czars and the colouring of Victorias, and the demand was so good that these green Plums sold at 3s. to 3s. 6d. per half-sieve, as compared with last year's 1s. 6d. for ripe Gisbornes. The yield of Gisbornes exceeded that of either of the two earlier varieties named above, being at the rate of 6 tons 3 cwt. per acre. This Plum is much underrated. Usually it is one of the cheapest, and yet it is one of the very best varieties for tarts, puddings or jam. Fruits of the Victoria variety are reported to be generally thin on the trees, but are abundant in my plantations. I have not marketed any at the time of writing, but there is every reason to expect them to sell well. Pond's Seedling and Monarch are not abundant, and I venture to predict that they will make 6s. or 6s. per half-sieve. It is quite cheering to have remunerative prices for Plums, after two or three years of miserably low prices.

APPLES.

As in the case of Plums, the prices of Apples indicate a general shortness in the supply. For fruits of best quality, dessert varieties, 4s. to 5s. per half-sieve of 21 lbs., have been common rates, while large culinary Apples have made 3s. Unfortunately, the majority of Apples this season are small, and in the cases of some varieties they are scabby or spotted also. The aphid and the Apple sucker are accountable for the failure of many Apples to develop properly; moreover, the check to the flow of sap caused by the cold weather of June and July had an injurious influence. One great help to the sale of Apples hitherto has been the absence of strong wind to cause windfalls, which frequently causes a glut in the markets at the end of August. Some varieties have fallen freely, it is true, but in nothing like the numbers common in windy seasons. Cooking varieties that

were sold last year at 1s. 6d. to 2s. (best) and 1s. to 1s. 3d. (second quality), have been making quite half as much again this season. One of the best tests of a prolific Apple season is to be found in the observation of the very old trees to be seen in farm orchards and cottage gardens. Last year these old trees were fairly loaded with the poor fruit which is all that they ever bear; this year they are almost or entirely barren.

Blackbirds have been and are still extremely mischievous in pecking holes in dessert Apples, and even in the more attractive fruits of culinary sorts. The proportion of Apples thus rendered unmarketable is a serious item in the grower's returns. In the case of one variety, it was necessary to gather the fruit, before it was ripe, to prevent the spoiling of more than half the crop. The thrush, so far as my observation goes, does not interfere materially, if at all, with the Apple crop. If the fruit-grower's interest alone had to be considered, the extermination of blackbirds would be desirable, on account of their voracity for Strawberries, Raspberries, Cherries, Currants, Apples, Pears and ripe Plums. Thrushes are as bad amongst small fruits, but not in the case of Apples or Pears, so far as my observation enables me to judge. We have a plague of wasps this season, the worst ever known. Fruits pecked by birds are devoured by wasps, and some kinds, such as Plums and Nectarines, are attacked by them and by large blue flies.

BUDDING PLUM TREES.

The budding of Plum stocks has been extremely troublesome this season, because it has been impossible to get the wood out of the great majority of the bud scions without tearing the inner layer of the bark. Possibly the rapid ripening of young shoots by the hot and dry weather of the first half of August is accountable for this difficulty.

In the rush of fruit picking and marketing, and the digging and marketing of Potatos, much pressing work is apt to be neglected. Hoeing by horse-power or by hand can be carried on if extra labour be employed; but such delicate work as the summer pruning of Apple trees cannot be entrusted to a casual labourer. In my own case, I would rather leave it undone than give it to anyone but myself. The mere thinning of mature trees can be done by any intelligent workman with a little instruction; but it is so easy to do more harm than good by summer pruning, particularly among young trees, that great caution is necessary in the selection of the operator. Even in the case of hoeing, it is not easy everywhere to obtain extra men; while the corn harvest is in full swing, and where there is not this difficulty, a grower is tempted to defer urgent work until his regular hands are available for it, in order to keep down expenses. This is seldom a good policy, as it commonly happens that weeds become rampant at this period of the season, while rainy weather in the autumn renders it impossible to destroy them thoroughly later. For this reason I have come to the conclusion that Potato growing on a fruit farm is not desirable, because it absorbs the attention of men who are wanted for hoeing during the period of raising the Potato crop. The miserably low prices of Potatos for the second year in succession have influenced me in this conclusion. The fact is that the production of Potatos in Great Britain is now overdone, not on account of any increase in the acreage of the crop, but on account of the yield having been enhanced by the choice of prolific varieties, improved cultivation and manuring, the use of sprouted seed, and spraying. My starting price for Second Earlies this season was only half what it was in the first two or three years of the present century. *A Southern Grower.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE HAMPTON COURT GRAPES.—In order to ascertain the actual weight of the fine bunches of Black Hamburg Grapes shown at the recent R.H.S. meeting from Hampton Court, they were weighed next morning at Frogmore, and found to exceed 3 lbs. each, one weighing as much as 3 lbs. 14 ozs. In his book on *Vines and Vine Culture*, Mr. A. F. Barron refers to the berries of the Hampton Court vine as being small, but berries almost an inch long and nearly 3 inches in circumference such as were exhibited cannot be called small. When Mr. Barron saw the vine it was carrying the enormous crop of 1,700 bunches in one season, and the berries were no doubt small, and the bunches were about half a pound each. The great vine at Cumberland Lodge is held to be derived from the Hampton Court vine, but there seems to be a belief abroad that it bears more resemblance to the Hamburg strain once known and grown in the oldinery at Chiswick many years ago as the Frankenthal. If there be some differences such as, for instance, the hammered form of the berries at Cumberland Lodge, no such marks being seen on the Hampton Court berries, that may be evidence of distinctness or of a product of diverse soil. It would be interesting could "eyes" be obtained from a dozen or so of the finest Black Hamburg vines in the kingdom and be grown at Wisley under similar conditions. It could then be clearly determined whether all Black Hamburgs are alike or whether any of them differ. *D.*

ANTIRRHINUM SEMPERVIRENS.—Although overlooked by your correspondent Wyndham Fitzherbert (p. 166), this Antirrhinum is mentioned in Nicholson's *Dictionary of Gardening*. Following a description of Antirrhinum molle, it is stated that Antirrhinum sempervirens comes close to this species. Again, in such an old publication as London's *Hortus Britannicus*, the name occurs. Its native country is there given as the Pyrenees, and the date of introduction 1821. *JF.*

SWEET PEA HELEN LEWIS.—I enclose a spike of Sweet Pea Helen Lewis with seven flowers on it. We find this variety one of the best of its colour for furnishing cut blooms for decorating purposes. Several other spikes had five flowers, but this is the first I have cut with seven. *Thos. Simpson, Henham Gardens, Wangford Suffolk.* [The unusual number of flowers is due to fasciation.—EDS.]

ROBINIA PSEUDACACIA (FALSE ACACIA).—Probably no other tree can compare with the False Acacia for withstanding the prolonged heat and drought of our larger centres of industry, a fact that has been brought forcibly home to us by the behaviour of the tree both in France and England during unusually warm summers. When most vegetation is burnt up, the Lime and Elm look seared and sickly, and the Holly is dying out owing to the long-continued drought and heat, the Acacia stands nobly forth in all its freshness of branch and leaf, and, if anything, blooms all the more freely for the scorching heat and want of moisture to which it is subjected. Almost by the hundred may the False Acacia be seen in London and many other English towns. It is one of the most ornamental of trees, with its great wealth of pure white flowers and beautiful Pea-green foliage. As a town tree, it retains its rich verdure till well on in autumn. It grows freely in almost any soil, reproducing itself in suitable positions, and soon forms a handsome tree of almost giant proportions. The most suitable for town planting are the upright-growing and free-flowering kinds. The varieties known as Decaisneana, microphylla and sophorae-folia are most to be desired. *A. D. Webster.*

TWO GOOD LATE STRAWBERRIES.—*W. H. Y.* p. 171, is in error regarding the variety Leader. At the latter end of last century you did me the honour to print in your columns a note in which, under a system of culture detailed, I claimed for Leader the distinction of producing the largest weight of fruit possible in any variety then in cultivation. Leader, as its name implies, is a first early Strawberry,

but is not by any means of recent introduction. Subject to these two corrections, his note is very practical. *R. G., Whitfield Gardens, Alenmore, Hereford.*

SOCIETIES.

CARLISLE HORTICULTURAL.

SEPTEMBER 1, 2.—The second annual show of this society, held in the Market Hall on these dates, was a great success. The building is large, spacious, and well lighted, and very suitable for a flower show. Exhibits of Sweet Peas, of which there were upwards of 1,000 vases, formed the outstanding feature of the show. Competition in most of the classes was very keen. The Silver Cup offered for the best exhibit of 24 blooms of Cactus-flowered Dahlias was won by Mr. G. BOWNESS, Riverside Nursery, Glasgow; the 2nd prize being awarded to Mr. G. FINDLEY, East Layton Hall, Darlington. The best exhibit of 12 Cactus Dahlias was shown by Mr. W. VEITCH, The Cemetery, Carlisle. The same exhibitor was also first in the class for 12 Show or Fancy Dahlias, but he was beaten by Mr. G. BOWNESS in the class for six vases of Pompon Dahlias. Mr. BOWNESS also won the premier place in the class for four vases of Cactus-flowered Dahlias.

In the classes for Roses, Miss HELEN RHODES, Barrock Park, won the 1st prize for 12 blooms and Mr. W. S. HASLINGTON was placed 1st for six varieties, Miss RHODES taking 2nd place in this class. Mr. W. VEITCH excelled in the classes for Fancy Pansies, Show Pansies, Stocks and Gladioli. The best collection of hardy herbaceous flowers was shown by Mr. JOHN ROBERTSON, The Knells; 2nd, Mrs. RHODES, Barrock Park. Stove plants were best shown by Mr. A. KNIGHT. In a good competition, Mr. ADAM KNIGHT, Brayton Hall, carried off the premier honour for a decorated dinner table; Mr. C. ROWLAND, Mickleton, being 2nd.

VEGETABLES.—A Silver Cup was offered for a collection of vegetables. The trophy was won by Mr. C. ROWLAND, Mr. J. FORRESTER, Whitley Bay, being second. Mr. ROWLAND also excelled in the class for a collection of six varieties of vegetables. This exhibitor also showed the best Parsnips and the best Onions and Celery. Other prominent prize-winners in the vegetable classes were Messrs. J. J. GRIEVE, W. CLARKE, G. MILLICAN, Hallbankgate, J. HARDCASTLE, H. PIGNEY, R. HORNE and T. TAIT.

FRUIT.—In the important class for a collection of fruit, Mr. A. HARDWOOD, Netherby, was awarded the 1st prize; 2nd, Mr. W. SCOTT, Edenhall. The best black Grapes were shown by Mr. W. SCOTT, and the best white Grapes by Mr. W. FIXTER. Mr. SCOTT also showed the best collection of hardy fruit.

The amateur and cottagers' classes were numerous, and well contested.

NON-COMPETITIVE EXHIBITS were a feature of the show, the more important being the following:—Messrs. SUTTON & SONS, Reading, exhibited a large circular group of flowering and foliage plants, for which a Gold Medal was awarded; Messrs. GEORGE FAIRBURN & SONS, Botcherby Nurseries, Carlisle, were also awarded a Gold Medal for a display of flowering and foliage plants, floral designs and Sweet Peas; a Silver-gilt Medal was awarded to Messrs. LITTLE & BALLANTYNE, Carlisle, for a stand of hardy plants in pots; Messrs. DOBBIE & CO., Rothesay, received a Silver-gilt Medal for an exhibit consisting chiefly of Dahlias; a fine collection of vegetables was staged by Messrs. CLINRAN & SON, Altrincham; it consisted of well-grown specimens, and was awarded a Silver Medal; Messrs. STORMONTH & SON, Kirkbride, Carlisle, received a Silver Medal for a very interesting example of a water garden and rockery; for a collection of Phloxes grown in pots Messrs. E. F. FAIRBURN & SON, Edentown Nurseries, Carlisle, received a Silver Medal; the stand also included an assortment of cut herbaceous plants.

The CUMBERLAND COUNTY COUNCIL (per Mr. W. B. Little) exhibited 30 varieties of Apples from the county experimental fruit plots, with a view to demonstrating the most suitable varieties for the locality.

ROYAL CALEDONIAN HORTICULTURAL.

CENTENARY EXHIBITION, SEPTEMBER 8 and 9.

THE annual exhibition of the Royal Caledonian Horticultural Society this year has marked the centenary of the Society, which was established in 1809. Though this centenary exhibition was not of much greater extent than usual, it certainly well maintained a high average of merit. The leading features were the Grapes and other indoor fruits, the wonderful collections of hardy cut flowers, and the splendid vegetables. Hardy fruits and certain cut flowers would have been even finer had the season been more propitious; but development has been slow in the recent summer, and the lack of sufficient sunshine has naturally been felt even more severely in northern districts than in the English southern counties.

We fear that the Society is not so prosperous as it should be. Its present energies are mainly devoted to the holding of meetings for the discussion of horticultural subjects of interest, and to the promotion of two great competitive exhibitions each year. For some time past these competitive exhibitions have not attracted the number of people necessary to maintain the financial position at a proper degree of prosperity. This condition of affairs, reacting upon the shows themselves, has tended to impoverish the displays and weaken enthusiasm. But the centenary is likely to have a good effect in correcting these matters. It has caused the Council and others to read up the history of the Society, and thus to recognise and take pride in the valuable work that has been done through its agency. They are now reading the destiny of the Society in the light of its proud past, and it was evident during our short visit to the Scottish capital that there is a feeling of discontent at the present condition of things. This feeling could easily be detected during the proceedings at the dinner on Wednesday afternoon, at the Royal British Hotel, when Mr. J. W. McHattie (vice-president) presided, and speeches were made by Mr. W. H. Massie, Mr. R. Laird, Mr. J. Methven, J.P., Mr. J. Whytock, Mr. David W. Thomson, the Chairman, and others. Two points raised in these speeches deserve serious consideration. The first was raised by Mr. Whytock, and related to the suitability of the Waverley Market for the spring and summer shows. We think it likely that Scottish people, being more accustomed to it, fail to notice the somewhat depressing effect which this building has upon the general visitor. For ourselves, we think that Mr. Whytock's suggestion that the shows may prove more attractive to the general public if they are held in one of the city parks is a very reasonable one.

The other point was raised by the Chairman, and consisted in a plea for the two leading Scottish societies to amalgamate. The Royal Caledonian Horticultural Association and the Scottish Horticultural Society are each doing good work in the city of Edinburgh for Scottish horticulture generally, but the position would doubtless be much strengthened if, instead of separate organisations, a united executive were established for the furtherance of a definite programme.

In the following report reference is made to the leading classes, but there are so many classes for cut flowers and small numbers of specimen plants, that it has not been possible to refer to them all in detail. It may be added that the Chairman at the dinner referred in feeling terms to the loss the Society sustained on Monday last in the death of Mr. J. Forbes.

The arrangements for the present show were largely in the hands of Mr. A. D. Richardson, the secretary, Mr. McKenzie, being temporarily indisposed.

DESSERT TABLES.

This class is similar to that recently reported at the Shrewsbury Show, differing only in detail, the lesser number of dishes of fruit, &c. The tables in this case were 10 feet by 4 feet 6 inches. Not more than 16 dishes of fruit could be shown, and these had to be selected from a list of fruits published in the schedule. The 1st prize consisted of £5, and the 2nd £3 10s. Separate prizes were awarded for the decorations of plants and flowers.

There were only two exhibits in this class, one

from the Duke of PORTLAND, K.G., Welbeck, Notts. (gr. Mr. J. Gibson), and the other from the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre). The 1st prize was awarded to the Earl of HARRINGTON. The pointing was as follows:—

	Possible number of points.	Number of points awarded.
Apples (1)	7	6½
Apples (2)	7	6½
Figs	7	5½
Grapes, Black (1)	9	7½
Grapes, Black (2)	9	8
Grapes, White (1)	8	6½
Grapes, White (2)	10	8½
Melon (1)	8	7
Melon (2)	8	7½
Nectarines (1)	8	6½
Nectarines (2)	8	5
Peaches (1)	8	6
Peaches (2)	8	7
Pears (1)	8	7½
Pears (2)	8	6
Plums	6	5½
Total	127	107

The Grapes shown were Madresfield Court, Muscat of Alexandria, Black Hamburg and Chasselas Napoleon, there being one bunch of each. The Peaches were Princess and Bellegarde, the Nectarines, Elruge, Victoria and Pineapple, Plums Washington, Melons The Budget and an unnamed seedling, Figs Negro Largo, Pears Marguerite Marillat and Jules Guyot, and Apples Ribston Pippin and Cox's Orange Seedling. The 2nd prize collection was little inferior to that shown by the Earl of HARRINGTON, for the number of points awarded was 103 in place of 107. There were excellent fruits in the Duke of PORTLAND's collection. The Gascovne's Scarlet Seedling Apple, Stirling Castle Peach, Gros Maroc, Muscat Hambro, Muscat of Alexandria and Madresfield Court Grapes, Allington Pippin Apples and Marguerite Marillat Pears were all good.

For the decorative arrangement the Earl of HARRINGTON also gained the 1st prize, being awarded 18 points, whilst the Duke of PORTLAND obtained 17 points. Montbretias entered largely into both arrangements, and in that from the Earl of HARRINGTON they were associated with *Francoa ramosa*.

COLLECTIONS OF FRUIT.

Collection of twelve dishes.—Not more than two dishes were allowed of each of the following kinds, namely: Grapes, Peaches, Nectarines, Apples and Pears, and one dish each of any other kind of fruit. There were two exhibits, and the 1st prize was won by the Earl of HARRINGTON. His Grapes were Muscat of Alexandria (two bunches) and Madresfield Court (two bunches). The Muscats were very large, pointed bunches, and the berries were moderately well coloured. Excellent Apples were shown in Peasgood's Nonsuch (of great size and good colour). Other dishes included Pear Marguerite Marillat, Peaches Sea Eagle and Princess, Fig Negro Largo, Nectarines Victoria and Pineapple, Plums Kirke's and Washington, and a seedling Melon. 2nd, the Earl of WEMYSS, Gosford, Longmidry (gr. Mr. W. Galloway), and 3rd, the Marquis of AILSA, Culzean Castle (gr. Mr. David Murray).

Collection of twelve dishes of fruit (grown in an orchard house).—Of three exhibits in this class, the best was shown by the Duke of PORTLAND. His Apples were Peasgood's Nonsuch and Emperor Alexander, Pears Souvenir du Congrès and Marguerite Marillat, Peaches Diamond and Stirling Castle, Nectarines Pitmaston Orange and Humboldt, Apricot, Hemskerk, Plums Jefferson's and Kirke's, and Fig Negro Largo. The Apples were the finest fruits in the exhibit. 2nd, the Earl of HARRINGTON. The Apples, Pears and Peaches were best in this collection. 3rd, the AMERICAN AMBASSADOR, Wrest Park, Bedfordshire (gr. Mr. Geo. MacKinlay).

CHALLENGE TROPHY FOR GRAPES.

This class was for eight bunches of Grapes and not more than two bunches of one variety. The 1st prize consisted of a Challenge Trophy with £8 in cash and a Gold Badge. The Challenge Trophy is presented by Mr. W. H. Massie, and has to be won three times before it becomes the property of the winner. There were four exhibits in this class, and the 1st prize was awarded to Captain STIRLING, Keir, Dunblaney (gr. Mr. Thos. Lunt). This exhibit was of the highest merit, quite sufficient to give honour to the entire show. The names of the varieties shown and the number of points awarded each were as follow:—

Number of bunch.	Possible number of points.	Number of points awarded.
1. Cooper's Black	8	7½
2. Alnwick Seedling	8	6½
3. Mrs. Pince	9	8½
4. Muscat of Alexandria	10	10
5. Muscat of Alexandria	10	9
6. Cooper's Black	8	6½
7. Madresfield Court	9	7
8. Madresfield Court	9	7½
	71	62½

It will be seen that the maximum number of points was awarded in the case of a bunch of Muscat of Alexandria. But the pointing generally was low, owing to the high standard imposed by the judges. 2nd, The Earl of HARRINGTON, who was awarded 59½ points out of a possible number of 76 points; but the comparative nearness to the quality in the 1st prize exhibit is partly explained by the fact that the Earl of HARRINGTON included more Muscat-flavoured varieties than were shown by Capt. STIRLING. The 3rd prize was awarded to Lady ARMISTEAD, Castle Huntley (gr. Mr. Jas. Beisant). This exhibitor gained 51 points out of a possible number of 71, and J. THOMSON-PATON, Esq., Norwood, Alloa (gr. Mr. A. Kirk), who obtained the 4th prize, won 46 points out of a possible 70.

OTHER GRAPE CLASSES.

Collection of four bunches.—There was an excellent array of Grapes in this class, but the best were shown by Sir JAMES SIVEWRIGHT, Tullyallan Castle (gr. Mr. George Stewart). He showed the varieties Madresfield Court, Black Hamburg, Muscat of Alexandria, and Black Alicante. Of the four bunches, that of Madresfield Court was the best, being admirable in every detail. 2nd, Sir H. E. MAXWELL, Bart., Monreith, Wigtownshire (gr. Mr. S. Gordon), who showed Alnwick Seedling, Muscat of Alexandria, Black Hamburg, and Black Alicante. 3rd, Marquis of TWEEDDALE, Yester (gr. Mr. Jno. Hightate). There were seven exhibits.

Muscat of Alexandria.—The best two bunches of Muscat of Alexandria were shown by Capt. STIRLING, and they were certainly the two best bunches of Grapes we have seen this season. They were very heavy, shapely bunches, and the berries were large and well coloured. 2nd, The Marquis of TWEEDDALE. 3rd, — HAMILTON OGLIVY, Esq., Archerfield (gr. Mr. Thos. MacPhail). There were four exhibits. Capt. STIRLING also won the 1st prize for a single bunch of this variety.

Black Hamburg.—The best in this class were shown by Sir HERBERT MAXWELL, whilst the 2nd and 3rd prizes were won by the Earl of WEMYSS and the Marquis of TWEEDDALE respectively. There were 15 exhibits. The best single bunch was shown by Sir HERBERT MAXWELL.

SINGLE BUNCH CLASSES.

The best single bunches of Black Alicante and Alnwick Seedling were shown by Sir HERBERT MAXWELL. Sir JAS. KING, Bart., Carstairs House (gr. Mr. Jno. Shiells) had the best Gros Colmar in a small bunch of extraordinarily large berries. Capt. STIRLING won the first prize for Lady Downe's Seedling, and Sir JAS SIVEWRIGHT the 1st prize for Madresfield Court. This was a magnificent bunch. The best bunch of a black Grape, any variety, was one of Gros Maroc

shown by Lady ARMISTEAD, Castle Huntley (gr. Mr. Jas. Beisant), and the best white Grape by the Dowager Lady KINROSS, North Berwick, who had Buckland Sweetwater in very fine condition. The black Grape showing finest bloom was a bunch of Cooper's Black, shown by Capt. STIRLING. All these classes were represented by numerous exhibits.

MISCELLANEOUS FRUITS.

Melons.—The best scarlet-fleshed Melon was Sutton's Superlative, shown by H. J. YOUNGER, Esq., Bannockburn, Kilmun (gr. Mr. Robt. Greenlaw), and the best green-fleshed Melon an unnamed seedling shown by the Earl of STAIR, Oxenford Castle, Dalkeith (gr. Mr. Ben Ness).

Peaches and Nectarines.—The best collection of six Peaches was shown by the Marquis of TWEEDDALE, the variety being Royal George. 2nd, the Duke of PORTLAND, who showed the variety Bellegarde. There were 16 exhibits. Capt. STIRLING won the 1st prize for Nectarines with the variety Pineapple; 2nd, H. J. YOUNGER, Esq. There were 17 exhibits.

Figs.—One dish of Figs was shown by F. BALFOUR, Esq., Fernie Castle (gr. Mr. Brown), who was awarded the 1st prize.

Plums.—There were seven exhibits of 12 fruits of Gage Plums, the 1st prize being awarded to an unnamed variety shown by the Earl of STAIR; 2nd, the variety Golden Gage, shown by HAMILTON OGILVY, Esq. The best yellow Plums were Jefferson, shown by Col. RICHARDSON, Ballathie, Stanley (gr. Mr. Jno. Davis). 2nd, the same variety shown by Mrs. LOUGHTON, Walkinshaw, Renfrew (gr. Mr. G. Watson). In the class for 12 red Plums there were 15 exhibitors. The 1st prize was awarded to the variety Fonthill, shown by the AMERICAN AMBASSADOR. The best purple Plum was Kirke's, shown by Col. E. R. STEWART RICHARDSON. The 2nd and 3rd prizes were gained by the variety already mentioned. In a class for four varieties of dessert Plums the 1st prize was won by the AMERICAN AMBASSADOR, who showed the varieties Kirke's, Jefferson, Washington, and Transparent Gage. 2nd, R. G. SINCLAIR, Esq., Congalton Gardens, Drem. 3rd, the Earl of WEMYSS. There were four exhibits.

The 1st prize in a class for four dishes of culinary Plums was also gained by the AMERICAN AMBASSADOR, his varieties being Magnum Bonum, Diamond, Fonthill, and Belgian Purple. 2nd, R. G. SINCLAIR, Esq., and 3rd, L. BREITMEYER, Esq., Cuckfield Park, Sussex (gr. Mr. Hugh MacFadyen). There were seven exhibits.

Apples.—The best collection of four dishes of pot-grown or orchard-house Apples was shown by Mr. BELL, Forgandenny (gr. Mr. David Nicoll). His varieties were Peasgood's Nonsuch, Emperor Alexander, James Grieve, and Gascoyne's Scarlet. 2nd, the Duke of PORTLAND.

The most important class for Apples was one for a collection of 12 varieties, ripe or unripe, five fruits of each variety. There were four exhibitors, the 1st prize being awarded to Mr. RICHARD M. WHITING, Credenhill, Hereford, who showed the varieties Cox's Orange Pippin, Worcester Pearmain, Queen Caroline, Baron Wolsley, Lord Suffield, Glory of the West, Queen, Stirling Castle, James Grieve, Charles Ross, Lady Sudeley and Duchess of Oldenburgh. 2nd, the AMERICAN AMBASSADOR. 3rd, Mr. JNO. LEE, Kingscroft, Cheshire.

For a similar class, limited to Scottish cultivators, the most successful exhibitor was Colonel GORDON, Castle Douglas (gr. Mr. James Duff).

The best collection of six varieties (open) was shown by the Rev. G. H. DAVENPORT, Hereford (gr. Mr. Robt. Currie).

There were also numerous classes for single dishes of specified varieties.

Pears.—The most important class called for 12 varieties, and the best collection was shown by the Duke of PORTLAND; 2nd, the AMERICAN AMBASSADOR. The fruits were generally unripe.

The local class for a similar number of varieties was won by the Earl of HOME.

In a class for four dishes of pot-grown or orchard-house Pears, the 1st prize was won by the Duke of PORTLAND; and the 2nd prize by Mr. ADAM BRYDON, Tweed Bank, Innerleithen.

GROUPS OF MISCELLANEOUS PLANTS.

The class for a miscellaneous group called for an exhibit to be arranged on a circular space 18 feet in diameter. There was nothing very remarkable in either of the exhibits. The 1st prize was given to Colonel STEWART RICHARDSON for an arrangement having a pretty effect, but composed of plants of only indifferent quality. Better plants were to be seen in the group shown by Sir WILFRID LAWSON, whose Codiaeums especially were far superior to those in the 1st prize exhibit. Our Edinburgh friends, however, will be well advised if efforts are made to increase the importance of this class, for at present the groups compare most unfavourably with the best of those to be seen at provincial exhibitions in England.

SPECIMEN PLANTS.

The best collection of four stove or greenhouse plants in flower was shown by C. DICKSON, Esq., Lasswade (gr. Mr. Duncan Mackay), the varieties being *Acalypha hispida*, *Statice profusa*, *Oncidium incurvum*, *Bougainvillea Sanderiana*. 2nd, Sir D. E. HAY, Bart., King's Meadows (gr. Mr. H. E. Hughes).

There was only one exhibit of four Orchids, this being also shown by C. DICKSON, Esq.

The best single Orchid was a good specimen of *Cypripedium insigne* Sandera, shown by C. W. COWAN, Esq., Dalhousie Castle (gr. Mr. W. G. Pirie).

For a collection of six fine foliage plants the 1st prize was awarded to the Earl of HOME. He had large specimens of *Alocasia metallica*, *Phyllotanium Lindenii*, *Maranta zebra*, *Anthurium crystallinum*, *Alocasia spectabilis*, and *Dieffenbachia magnifica*. 2nd, Sir WILFRID LAWSON.

Another class was for six fine foliage plants in pots not exceeding 9 inches in diameter. The 1st prize was won by the Earl of HOME, who showed *Alocasias*, *Anthuriums*, *Codiaeums*, and a *Cordylina*. 2nd, Sir WILFRID LAWSON, who included a very pretty specimen of *Heliconia illustris*.

There were numerous exhibits in a class for six plants suitable for the decoration of a dinner table, but although the specimens themselves left but little to be desired, most of them were placed in such showy receptacles as to detract from their effect. The 1st prize was awarded to J. NELSON, Esq., Castle Douglas (gr. Mr. Jno. M. Stewart). His plants included *Pandanus Veitchii variegata*, two *Codiaeums*, two *Cordylines*, and one *Aralia Veitchii*. 2nd, Mrs. YOUNGER, Alloa (gr. Mr. Jas. Fairholm).

The best table Ferns were shown by Miss GILLESPIE, Hay Lodge, Trinity (gr. Mr. Alex. Johnstone). These included five varieties of *Gymnogramma* and one *Nephrolepis*. 2nd, Mr. JAS. JARVIE, Burn Brae House, Falkirk. The plants exhibited in both of the above classes were excellent.

BEGONIAS.

Tuberous-rooted Begonias were not numerous, but there were some good plants shown in classes for 24 specimens, three specimens, and one specimen. The 1st prize for six plants was awarded to Mr. ROBERT BROWN, Union Villa, Eskbank. 2nd, Mrs. DEWAR, Drylaw House (gr. Mr. W. T. Galloway).

CUT FLOWERS.

This section included a very important class for 35 vases of flowers cut from the open, each exhibit to occupy a space of 6 feet by 5 feet. The 1st prize consisted of a Silver "Centenary" Cup and 3 guineas, the 2nd prize was 5 guineas, and the 3rd prize 3 guineas. The 1st prize was awarded to a magnificent group of flowers shown by Mrs. FLEMING HAMILTON, Kirkcowan (gr. Mr. Wm. Young). We cannot enumerate all, but may remark that the *Montbretias*, *Gladioli*, *Anemones*, *Carnations*, *Lobelia cardinalis*, *Chleone obliqua*, and *Alstroemeria psittacina* were among the most attractive. 2nd, M. G. THORBURNE, Esq., Glenormiston, Innerleithen (gr. Mr. A. Dickson); 3rd, Mr. ADAM BRYDON, Tweedbank, Innerleithen. These exhibits together made an important feature of the show, and provided a great wealth of flowers.

Gladioli were shown uncommonly well in classes for 24 spikes, 12 spikes and six spikes, distinct varieties, respectively. The 1st prize in the class for 12 spikes was awarded to Mr.

JOSEPH C. FORDY, Warkworth, Northumberland. Some of the spikes bore 12 fully-expanded flowers on each, and another 12 unopened buds. The colours were selected to afford variety. Particular mention is deserved by a variety known as Sorcerer, which had flowers of extraordinary tints of purple, red, cream and white. 2nd, Mr. ANDREW BENNETT, Tile Houses, Tweedmouth; 3rd, Mr. PETER SKILLEN, Eaglesham, Renfrewshire.

The 1st prize for 24 spikes was won by Messrs. GEO. MAIR & SON, Preatwick, and the 2nd prize by Messrs. A. E. CAMPBELL & SON, Gourrock.

There were numerous classes for *Dahlias*, *Hollyhocks*, *Sweet Peas*, *Chrysanthemums*, *Roses*, *Carnations*, *Violas*, *Pansies*, *Montbretias*, *Perennial Asters*, &c., and for bouquets and other floral arrangements.

The best collection of 36 Rose blooms was shown by Messrs. ADAM & CRAIGMILE, Fernielea Nurseries, Aberdeen; 2nd, Messrs. JAS. COCKER & SONS, Aberdeen; 3rd, Mr. HUGH DICKSON, Belfast. There were numerous exhibits.

The same exhibitor also won the 1st prize for 13 H.T. Roses. Messrs. D. CROLL, Dundee, had the best collection of 18 Tea Roses.

The best garden or decorative Roses were shown by Mr. W. FERGUSON, Dunfermline.

There were two good exhibits of Roses in a class for collections arranged in spaces of 15 feet by 5 feet, to be seen from one side only, shown with buds and Rose foliage only. The 1st prize was awarded to Messrs. JAS. COCKER & SONS, Aberdeen, and the 2nd prize to Mr. WILLIAM FERGUSON, Brucefield Nurseries, Dunfermline. It was surprising so many fine Roses could be exhibited so late in the season.

Sweet Peas made a fine display in the classes for nine and six dishes respectively. The 1st prize for nine dishes was won by the Hon. Mrs. BAILLIE HAMILTON, Langton, Duns (gr. Mr. G. D. Kerr). These were very remarkable for their good size and colours. 2nd, Mr. THOS. FENDER, Cultoquhey Gardens, Crieff. There were numerous exhibits.

The 1st prize for six bunches was awarded to Mr. THOS. M. KIRKWOOD, Cultoquhey, Crieff.

DECORATED DINNER TABLE.

There were six exhibits in the class for a decorated dinner table, and the 1st prize was given to Messrs. M. CAMPBELL & SONS, High Blantyre, who had a very light arrangement of a small-flowered, yellow *Oncidium* and *Franca ramosa*. This exhibit was very dainty, but we heard some criticisms of the prevailing colour, which was yellow, this being deemed by some to be little provocative of a good appetite. The 2nd prize was won by Lord ELPRINSTONE, Carberry Tower (gr. Mr. D. Kidd), who used *Montbretias*, *Gloriosa superba*, *Roses*, *Franca*, &c. Sir WILFRID LAWSON, Bart., Brayton, Carlisle (gr. Mr. A. Knight), had the 3rd prize for an arrangement of *Spiraeas* and *Carnations*, the complexion of this exhibit being pink.

COLLECTIONS OF VEGETABLES.

The 1st prize in this class and the Centenary Cup offered for the best single exhibit in the classes for vegetables were won by the Duke of PORTLAND, Nottinghamshire, with an exhibit that well deserved these high awards. The outstanding feature was the Celery, this being most remarkable and equal to any we have seen anywhere. The varieties were Solid White and Superb Pink. Other "dishes" included Prizetaker Leeks, Autumn Mammoth and Early Giant Cauliflowers, Ailsa Craig and The Globe Onions, "Black" Beet, Superlative and Satisfaction Potatoes, Princess of Wales and Perfection Tomatos, Delicacy Cucumber, Tender and True Parsnip, Centenary and Sutton's Selected Gladstone Peas, New Red Intermediate Carrots and Best of All Runner Beans. 2nd, Lord LAUDERDALE, Thirlstane Castle (gr. Mr. R. Stuart). These exhibits were "pointed," but the list of points had been removed from Mr. Gibson's stand. In the other case, however, the exhibitor was awarded 53 points out of a possible number of 76.

In the following class, which was also for 12 dishes, 12 kinds, the competition was limited to growers in Scotland. In this competition were six exhibits. The 1st prize was awarded to the Earl of WEMYSS, Gosford (gr. Mr. W. Galloway); 2nd, J. R. S. RICHARDSON, Esq., Tullibeltoun House (gr. Mr. W. Harper). The produce shown in this class was also of excellent quality.

CENTENARY CUPS.

The Centenary Cups offered to competitive exhibitors in the various sections were awarded as follows:—

For vegetables to the Duke of PORTLAND, Welbeck Abbey, Notts. (gr. Mr. J. Gibson).

For fruit to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre)

For cut flowers to Mrs. FLEMING HAMILTON, Kirkowan (gr. Mr. Wm. Young).

For plants to Col. STEWART RICHARDSON, Balathie, Stanley, N.B. (gr. Mr. J. E. Davis).

HONORARY EXHIBITS.

Messrs. SUTTON & SONS, Reading, exhibited 16 Potato plants in pots. These plants represented seedlings from the stock of *S. tuberosum*, originally distributed from the Edinburgh Royal Botanic Gardens. It is said that this stock is not the typical *S. tuberosum*, but whether it has slight variations from the described species or not matters but little. The point is that Messrs. SUTTON claim that by selling this stock and by crossing it with commercial varieties of Potatoes they have succeeded in raising seedlings that remain perfectly immune from disease, although they are growing in the midst of Potatoes badly affected by the fungus *Phytophthora infestans*. They believe, further, that these plants will not lose this quality of immunity as they become older. It will be seen that should such hopes as Messrs. SUTTON entertain prove to be correct, the importance of these hybrids can hardly be over-estimated. It is only three years since the *S. tuberosum* bore seeds, therefore there has not yet been time to prove what cropping qualities the seedlings possess. It has to be seen whether any of them raised up to the present will crop sufficiently for commercial or garden purposes, but Messrs. SUTTON state that they have reason to believe that they will.

Rev. J. AIKMAN PATON, Soulseat, Castle Kennedy, showed a collection of wild types of Potato, including *S. tuberosum*, *S. etuberosum*, *S. Maglia*, *S. verrucosum*, *S. Commersonii* (both varieties), *S. tuberosum* var. *Borcale* and a number of hybrids of these, notably plants of *S. Commersonii* × *S. tuberosum* (wild). It is the first time this cross has been obtained, and the hybrids (nine in all) show the foliage and stems and fruit of *S. Commersonii*, with the flower of *S. tuberosum* in form and colour. The hybrids are remarkable as being crosses of distinct species, and yet are quite fertile. They form berries freely and the "selfed" seedlings should next year be of great interest to the Mendelian. Among other hybrids shown were one of *S. verrucosum* × *S. etuberosum*, in which the female parent's characters seem to dominate. Mr. PATON also showed some plants and tubers of a new "immune" strain obtained by crossing *S. etuberosum* with cultivated varieties. These show immense vigour, and no disease has been seen on the leaves last year or this year, although all other sorts of Potato growing alongside have been laid low. Many are first-rate croppers and of good flavour. The strain is exceedingly promising.

Messrs. R. B. LAIRD & SON, LTD., Edinburgh, exhibited a large group of plants, including *Caladiums*, *Codiaeums*, *Palms*, *Schizanthus*, *Roses*, stove and greenhouse plants, *Ferns*, *Liliums* and other good garden species.

Mr. JOHN DOWNIE, Edinburgh, put up a group of greenhouse *Ferns* and tuberous *Begonias*.

Messrs. LAING & MATHER, Kelso, exhibited a grand group of variegated *Ivies* in pots, also golden-leaved *Privets* and other shrubs.

Messrs. DICKSON & SONS, Edinburgh, had a group of shrubs, with a few specimen *Conifers* in tubs, some being 8 and 9 feet in height. This group contained some fine plants of *Hydrangea paniculata grandiflora* in full bloom.

Messrs. CUNNINGHAM, FRASER & CO., Comely Bank Nurseries, Edinburgh, showed a collection of hardy flowers in great bunches, and arranged on a low table, well within the line of sight. A fine bunch of *Scabiosa caucasica*, also bunches of *Pentstemon barbatus*, *Artemisia*, *Kniphofias*, *Montbretias*, and many other species were of considerable merit.

Messrs. STORRIE & STORRIE, Dundee, arranged a bank of hardy flowers, which was specially noteworthy. A bunch of *Montbretia*, named *M. rosea*, was remarkable for its colour tint, uncommon in *Montbretias*.

Messrs. THOMAS METHVEN & SONS, Edinburgh, arranged an exhibit of plants on the ground floor. It consisted of three cone-like groups, surrounded by a ground covering of dwarf plants, which connected four corner groups. The plants consisted of *Palms*, *Hydrangeas*, tuberous *Begonias*, *Liliums*, *Codiaeums*, *Gloxinias*, *Chrysanthemums*, &c. In the centre of each corner group the principal plant was a good specimen of *Roupaia corcovadensis*.

Messrs. TILLIE, WHYTE & CO., Edinburgh, exhibited a collection of vegetables, in which too great prominence was given to some large Marrows of ordinary character.

The culture of Mushrooms in the Scotland Street Tunnels, Edinburgh, has been referred to more than once in these columns. On this occasion the SCOTTISH MUSHROOM CO. exhibited a miniature bed, with real Mushrooms, apparently growing upon it, although the expert could easily detect that these had been placed in position directly the model bed had been made. Fresh Mushrooms, of excellent quality, Mushroom spawn and ketchup were shown in considerable quantities.

Sweet Peas were shown in numerous instances, as these flowers are plentiful in the north long after the main display in the London district is past. In addition to a collection of flowers from Messrs. DOBBIE & CO., another and larger collection was shown by Mr. H. ECKFORD, Wem, Salop. The flowers were small, but the colours good.

Mr. THOS. W. DARLINGTON, Warton, Carnforth, Lancashire, had also an exhibit of Sweet Peas arranged in about 40 tall receptacles.

Mr. W. G. HOLMES, Tain, exhibited Sweet Peas, and some remarkable pods of new culinary Peas, the latter being unnamed seedlings.

Messrs. WELLS, Merstham, Surrey, had a large group of cut flowers composed of border *Chrysanthemums*, *Phloxes*, *Pentstemons*, &c.

Messrs. DOBBIE & CO., Rothesay, furnished a very large table space with an exhibit consisting principally of *Dahlias* in various types. The *Cactus* varieties were displayed in the form of a cone 7 or 8 feet high, in very tall, loosely-decorated pillars, and also on flat boards. The *Pompon* varieties, arranged in sprays, were exceedingly pretty, and the sparing use of *Gypsophila* merely served to relieve them without detracting from the colour effects. The new *Pæony* type was represented by a number of varieties, and attracted considerable attention from the public. In large gardens, where space is of little account, this type gives pleasure by reason of the plant's showy and exceedingly floriferous character. The show and single-flowered *Dahlias* were represented in fewer quantities. Messrs. DOBBIE'S peculiar specialties, such as *Violas* and fancy *Pansies*, were shown in sprays and upon boards; in the latter case, each bloom was provided with the old-fashioned paper collar. *Roses* and border *Chrysanthemums* were likewise included in this great floral group, which was the largest and best of the kind exhibited. Messrs. DORRIE also exhibited about 40 varieties of Potatoes. The tubers, which represented choice varieties, were clean, shapely specimens, and arranged in baskets. Turnips, Beet, Parsnips and Parsley were also shown.

Mr. D. McOMISH, Nurseryman, Crieff, exhibited a collection of hardy flowers, in which prominence was given to varieties of perennial *Phlox*, *Pentstemon* and *Chrysanthemums*. A pink *Phlox* named *Gruppen König* was remarkable for the large size of its individual flowers. Other varieties of extra merit were *Selma*, *General Van Heute*, *Frau Von Lassberg* and *Maximilian*.

Mr. JNO. PHILLIPS, Granton Road Nurseries, Edinburgh, showed a small table group for the purpose of displaying excellent plants, 1½ feet high, of *Cordylone* (*Dracaena*) *panache*, a variety having narrow, green leaves with white and cream variegation. Some of the newer varieties of *Nephrolepis* and *Rochea falcata* were also included in this exhibit.

Messrs. JNO. MASON & CO., Jameston, exhibited border *Chrysanthemums*, fancy *Pansies* and *Violas*. The *Violas* and *Pansies* were of exceedingly good quality, but the pale-coloured sorts suffered in effect from their association with the "white collar."

Messrs. SPOONER & SONS, Honnslow, Middlesex, exhibited a first-class collection of Apples and Pears, with a few soft fruits, including Plums, Damsons, &c.

Messrs. GUNN & SONS, Olton, near Birmingham, exhibited perennial *Phloxes* and flowers of *Viola cornata*.

Mr. H. N. ELLISON, West Bromwich, contributed a group of *Ferns*, in which some of the choicest and most decorative varieties were shown in well-grown specimens of moderate size.

Messrs. THOMAS SMITH & SONS, Stranraer, had *Roses* and herbaceous flowers, the *Roses* exhibiting first-class quality for September blooms.

Messrs. M. CAMPBELL & SONS, Blantyre, N.B., had a large collection of *Carnations*, chiefly border varieties.

Messrs. J. & A. GLASS, Edinburgh, also exhibited a large collection of Sweet Peas.

From Essex, Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited a very large group of *Montbretias*, in which the varieties were numerous. Included among them were the newer, large-flowering sorts, such as *Prometheus*, *Pageant*, *Lady Hamilton*, *Germania*, *Hereward*, *E. Davison*, *King Edward*, *Lord Nelson*, and *Orion*. These flowers travel excellently, therefore they appeared as fresh and good as if exhibited in Colchester itself. A small group of *Gladiolus primulinus* hybrids and other *Gladioli* shown by the same firm were interesting.

Messrs. THOS. S. WARE, LTD., Feltham, Middlesex, exhibited one of their excellent groups of tuberous-rooted *Begonias*, the collection being easily the best in quality of those shown at Edinburgh.

Messrs. STORRIE & STORRIE, Glencarse, Perthshire, exhibited a number of fruiting trees in pots suitable for orchard-house cultivation, also gathered fruits of a number of varieties of *Gooseberry*. The same firm exhibited *Coleus*, *Fuchsias*, *Streptocarpus*, *Gloxinias*, *Salvias* and other plants; also plant frames with a patent method of fixing the lights at any angle, this being a convenience when the cultivator is attending to the plants, as it is not necessary for him to hold the light with either hand.

AWARDS TO HONORARY EXHIBITORS.
GOLD MEDALS.

Messrs. Dobbie & Co., Rothesay; Messrs. Thos. S. Ware, Ltd., Feltham; and Messrs. Storrie & Storrie, Glencarse.

SILVER MEDALS

Mr. D. McOmish, Crieff; Mr. John Downie, Edinburgh; Messrs. Thos. Methven & Sons, Edinburgh; Messrs. Jas. Cocker & Sons, Aberdeen; Mr. D. Nicoll, Forgandenny; Messrs. S. Spooner & Sons, Honnslow; and Messrs. R. Wallace & Co., Colchester.

BRONZE MEDALS.

Messrs. M. Campbell & Sons, Blantyre, N.B.; Messrs. Gunn & Sons, Olton, Birmingham; Messrs. W. Wells & Co., Merstham, Surrey; Messrs. Thos. Smith & Son, Stranraer, N.B.; Messrs. J. & A. Glass, 54, Prince's Street, Edinburgh; and Messrs. Cunningham, Fraser & Co., Comely Bank Nurseries, Edinburgh.

CLACKMANNANSHIRE HORTICULTURAL.

SEPTEMBER 3, 4.—The 75th annual exhibition was held in the Town Hall, Alloa, on these dates. Exclusive of the industrial section, the entries exceeded in number those of last year.

Flowering and foliage plants were well shown, whilst the exhibits of cut flowers generally were of average quality as seen at these exhibitions. The classes for floral decorations were well contested, Mr. F. G. SMALL being the most successful exhibitor.

Mr. L. McLEAN, Greenfield, Alloa, excelled in the class for a collection of fruits, last year's winner, Lord BALFOUR, Kennet (gr. Mr. J. J. Wann), being placed 2nd.

Mr. C. PALMER, Alloa, showed the best four bunches of Grapes, Mr. WM. SIMPSON being awarded the 2nd prize.

Exhibits of fruits by amateurs were very fine, especially Apples, shown by Mr. JAS. STEWART, Junr.

Vegetables in the open classes were considerably below the average in quality compared with former years, Tomatoes being the only exception. The best vegetables in the exhibition were shown by an amateur Mr. F. CLARK.

NATIONAL DAHLIA.

SEPTEMBER 2, 3.—The National Dahlia Society, with which is incorporated the London Dahlia Union, held its first exhibition of the season at the Crystal Palace, Sydenham, on these dates. It is unfortunate to have to record that, owing to the unfavourable season, the result was somewhat disappointing. Dahlias are so backward this year, the wonder is indeed that so good an exhibition resulted. Everywhere growers complain of their plants having few or no blooms. Even the trade exhibits were not so important or so numerous as usual. The prospects for the second show in about three weeks' time are much better, although frost has already been experienced in some parts. The failure on this occasion is all the more regrettable as, with the union of the two chief organisations devoted to the interests of the Dahlia, a record display was expected. The weather on both days of the show was all that could be desired, and there appeared to be rather a better attendance on the opening day than usual.

Several novelties were submitted for award, but only four were granted the Society's Certificate of Merit, all of them being of the Cactus-flowered type.

The arrangements, under the management of the Secretaries, Messrs. H. Hawes and H. H. Thomas, were all that could be desired.

NURSERYMEN CLASSES.

Show Dahlias.—The quality of the blooms generally in this section was much below that of ordinary years. The most important class was for 48 blooms of distinct varieties, but only two growers competed. Neither of the exhibits was of a high standard, although there were many good blooms in both groups. The 1st prize was awarded to Mr. W. TRESEDER, Cardiff, who showed Richard Dean (a fine bloom), Mrs. Every, J. T. West, Champion Rollo (a fine bold flower), Purple Prince, George Hobbs, Hon. Mrs. Wyndham, Willie Garrett, Southern Queen, T. S. Ware, Dr. Keyes, George Rawlings (a beautiful, dark variety), Lord Salisbury, William Roupell (yellow; a choice bloom); Wm. Rawlings, Gracchus, Spitfire, Florence Tranter, Shirley Hibberd, Mrs. Kendall, Henry Clarke, Chieftain, David Johnson, Burgundy, Virginal, Prince Henry (a purple sport), Henry Watson, Norma, Harry Keith, John Walker, Claret Cup (an exceedingly fine bloom), Mrs. David Saunders, Prince of Denmark, Sunbeam, Mr. Chamberlain, Duchess of York, Harbinger, Joseph Ashby, Joe James, Victor, Mrs. Gladstone (soft pink tone, a very refined bloom), Mrs. John Downie, Mrs. J. Fowler, Arthur Rawlings (exquisite flower), Merlin (fine shape and of a beautiful orange scarlet colour), T. J. Saltmarsh, Excellent, and Shottesham Hero. 2nd, Mr. S. MORTIMER, Rowledge, Farnham, Surrey, with smaller flowers. Some of the best shown by this exhibitor were Gwendoline, Mrs. C. Moyes, The Reverend, Pleasance, Glowworm, Mrs. David Saunders and Emmie Walton.

The smaller class for 24 blooms of distinct varieties was contested by three growers. Mr. JOHN WALKER, 7, High Street, Thame, Oxon, was placed first, his flowers being well coloured and shapely, although rather under average exhibition size. He exhibited Colonelist, J. Hickling, Purple Prince, Henry Clarke, A. N. Burnie, Mrs. D. Saunders, Wm. Keith, R. T. Rawlings (a fine bloom of this elegant yellow variety), Mrs. Foreman (also shown well), The Reverend, Wm. Rawlings (the rich crimson purple tone being intensely developed), Rothesay, A. Rawlings, J. Walker (a fine white flower), Richard Dean, Earl of Ravensworth, Mrs. Gladstone, J. T. West, Hon. Mrs. P. Wyndham (a big bloom, but the centre florets were scarcely developed; the colour is yellow at the base, with pink tips), Kathleen, Duchess of York (the citron and purple colouring is very pleasing); Marjorie, Shirley Hibberd, and Dr. Keyes. 2nd, Mr. GEORGE HUMPHREYS, The Nurseries, Kingston Langley, Chippenham, whose best specimens were those labelled Purple Prince, Wm. Rawlings, Miss Cannell, Mrs. P. McKenzie, R. T. Rawlings, Southern Queen, and Nubian. 3rd, Mrs. M. V. SEALE, Vine Nurseries, Sevenoaks, Kent.

Fancy Dahlias.—There were only two exhibitors in a class for 18 blooms of distinct varieties, and neither display was particularly good. Mr. Wm. TRESEDER carried off the 1st prize with Mrs. John Downie (reddish and yellow mark-

ings), Peacock (crimson and white), Frank Pearce (pink, with a few crimson stripes); Goldsmith (yellow with red tips), Mrs. Saunders (yellow, tipped with white, a pretty combination). Empress (mauve striped with crimson), and Dazzler (yellow and reddish markings).

Three competitors contested the class for 12 blooms of fancy Dahlias, viz.: Mr. GEORGE HUMPHREYS, Mr. MORTIMER, and Mrs. M. V. SEALE, who were placed in the order of their names. The best specimens in Mr. HUMPHREY'S collection were Hercules, Henry Clarke, Comte de La Saux, Watchman, Empress, Rev. J. B. Camm (a big yellow bloom striped with red), John Forbes, Mrs. Saunders, Mrs. J. Downie, Prince Henry, Sunset, and Lottie Eckford.

There was also a class for Show and Fancy Dahlias intermixed, the schedule requiring 12 blooms of distinct varieties. There were three competitors, the 1st prize being gained by Mr. J. R. TRANTER, 3, Hart Street, Henley-on-Thames, who showed small but bright flowers. His finest examples were Goldfinder, Rebecca (a fine crimson self), Goldsmith (a pretty shade of yellow suffused with reddish orange at the tip), R. T. Rawlings, John Standish, John Nicholson (a good mauve), Henry Keith, Blush Gem (pink on a white ground), Nubian, Dr. Keyes, and Miss Cannell. 2nd, Messrs. J. CHEAL & SONS, Crawley. The examples of Willie Garrett, Crimson King, Tom Jones and Dorothy (Fancy) were all shown well in this exhibit. 3rd, Messrs. W. PEMBERTON & SON, Harden Nurseries, Bloxwich, Walsall.

Cactus Dahlias.—The most important class was that in which a Silver Challenge Cup of the value of 15 guineas was offered as the 1st prize. The schedule called for 18 bunches of distinct varieties, six blooms in each bunch. There have been two similar cups offered before in this class, and these have been won outright by Messrs. JAMES STREDWICK & SON, with an unbeaten record. Again this year they outdistanced all other competitors with a collection all of their own raising, and including several new varieties shown for the first time. One of these seedlings, a fine reddish-crimson flower, named after Mr. H. H. Thomas, received the Silver Medal offered for the finest bloom of a Cactus Dahlia in the open classes. The others were J. B. Riding, Harold Peerman, Saxon Queen (new, of a pale salmon tint), Red Admiral, Penguin (flesh coloured), Wm. Marshall, Saxonia (crimson), C. E. Wilkins, Jupiter (a Fancy, yellow at the base, shaded with pink and splashed with crimson), Iolanthe, Rosette (bronze centre with rosy-red tips; new); Ruby Grinstead, Aviator (punch-mauve, new), Satisfaction, Snowdon, Rev. Jamieson, Indomitable (mauve-lilac, new).

The 2nd prize exhibit was shown by Messrs. J. BURRELL & Co., Howe House Nursery, Cambridge. This was also a creditable collection, especially considering the unfavourable season. Sorcerer (bronzy red, with white tips), Nelson, C. E. Wilkins (soft pink, with a yellowish centre), Brigadier (a fine red bloom), Rev. A. Bridge (yellow, tipped with pink), and Faunis are a selection from this exhibit. 3rd, Messrs. J. CHEAL & SONS.

There was another class in which the flowers were similarly displayed, but this was for 12 varieties only. Three entries were staged, and between the 1st and 2nd prize groups there was a good competition. Mr. G. HUMPHREYS, The Nurseries, Kingston Langley, Chippenham, was awarded the premier place, Mr. JOHN WALKER being placed 2nd, and Mrs. M. V. SEALE 3rd. The winning flowers were not the largest, but they were very refined, the colours well developed. Especially good was the red coloured Dr. G. G. Gray, and others shown finely were Harold Peerman (yellow), Mrs. Macmillan (pink), Nelson (dark red), Mrs. Gaskill (deep pink with yellow centre), and Ruby Grinstead. Mr. WALKER showed Brutus, Snowstorm, W. T. Rogers, Satisfaction, Mrs. H. Shoemith, &c.

Cactus Dahlias shown on boards.—In the largest class for 48 blooms, distinct, three exhibits were staged. Messrs. KEYNES, WILLIAMS & Co., Salisbury, won the 1st prize in a good competition with Messrs. JAMES STREDWICK & SON and Messrs. J. BURRELL & Co., who were placed 2nd and 3rd respectively.

The 1st prize exhibit contained Clincher, Great Western, Glory of Wilts (yellow), Capt. Cody (reddish), Kathleen Bryant (crimson), Evening Star, Nisi Prins (reddish on an orange base),

Thos. Parkins, The Bride (a new, big white variety), Joan of Arc (fine of form, with a golden base and pink upper florets), Dr. G. G. Gray (scarlet), and Electric.

Some of Messrs. STREDWICK'S best flowers were J. B. Riding, Advance (a big scarlet or brick-red flower), Osiris, Felicity, Red Admiral, Iolanthe, Watchword, Ivernia, Clincher, Etruria, and Romane.

Pompon Dahlias.—There were two exhibits in the class for 24 varieties, shown in bunches of 10 blooms. Exquisite little flowers were shown by both exhibitors, but Messrs. J. CHEAL & SONS, Crawley, were awarded the 1st prize. They showed Nerissa, Zerlina, Jessica, Hecla, Rosebud, Galatea, Hesperia, Girlie, Marietta, Ideal Yellow, Ganymede, Dr. Jim and San Toy.

Messrs. BURRELL & Co., won the 1st prize in the class for 12 varieties, and they were followed by Mr. JOHN WALKER and Messrs. KEYNES, WILLIAMS & Co. in this order. The struggle was keen between the 1st and 2nd prize exhibitors. Messrs. BURRELL showed Bacchus, Hecla, Midget, Darkest of All, Adelaide, Marietta, Nellie Broomhead, San Toy, Emily Hopper, Phyllis, Hesperia, Little Mary, Sylvia, Marietta, Tommy Keith and Harbinger.

Single Dahlias.—The larger of two classes provided for these pretty flowers was for 24 varieties, shown in bunches of 10 blooms. The response was poor, Messrs. J. CHEAL & SONS and Mrs. M. V. SEALE being the only exhibitors. The 1st prize was won by the former firm, who showed Leslie Seale, Miss Roberts, Columbine, Winonia, Eclipse, Polly Eccles, Eric, Hector, Mikado, Kitty, Peggy, Brilliant, &c. The 2nd prize group contained good blooms of Rosebank Scarlet, Invicta, Columbine, Cynthia and Polly Eccles.

There was only one exhibit in the class for 12 varieties; the exhibitor was Mr. JOHN WALKER, and he was awarded the 1st prize, having similar varieties to those named above.

AMATEUR CLASSES.

Show Dahlias.—The best dozen show varieties were put up by Mr. T. JONES, Ruabon, in competition with three other growers. Mr. SIDNEY COOPER, The Hamlet, Chippenham, was placed 2nd. Mr. JONES showed good blooms of Rev. J. Godwin, Mariner, Duke of Fife, John Hickling, Mrs. Gladstone, &c.

For six show varieties there were five entries, Mr. CHAS. LUCKIN, Apsley, Pulborough, winning the premier place with a good half-dozen blooms; especially fine were Mrs. W. Saunders and Diadem. 2nd, Mr. JOHN HAYCOCK, Waggoners' Inn, Gyffellin, near Wrexham.

Fancy Dahlias were best shown by Mr. SIDNEY COOPER, Chippenham, and Mr. A. P. IRONSIDE, Chippenham, in the class for twelve and six blooms respectively.

The best exhibit of Show or Fancy Dahlias intermixed was shown by Mr. SIDNEY COOPER.

Cactus Dahlias.—A Silver Challenge Cup valued at £20 was offered for six vases of distinct varieties. The result was poor. The flowers in the 1st prize exhibit hung as though top-heavy and hid themselves in the Berberis, Privet, &c., which was used for decorative relief. The exhibitor was Rev. A. BRIDGE, Worth Rectory, Three Bridges, Sussex. There were only two exhibits, the other being very dull in appearance.

The Rev. BRIDGE also excelled in the class for nine varieties in bunches of three blooms. The flowers generally were good and included Ruby Grinstead, Nelson, J. B. Riding, F. A. Havemeyer, Snowdon, Ivernia, Mrs. Marshall, Rev. T. W. Jamieson. 2nd, F. GRINSTED, Beaufort Park, Battle, Sussex, whose blooms of Harold Peerman (yellow) gained the Silver Medal offered for the best bunch of Cactus Dahlias in the amateurs' classes.

A Gold Badge, offered by Messrs. Dobbie & Co., for the best exhibit of six varieties shown in bunches of three blooms, was won by Mr. H. JACKSON, The Leys, Woburn Sands.

The best 24 blooms shown on boards was put up by Mr. JAMES BRYANT, Salisbury, and the best 12 blooms by Mr. MONTAGUE W. DANCE, School House, Abbott's Ain, Andover.

The best Pompon varieties were shown by Mr. H. BROWN, Dahlia Dene, Havelock Road, Luton, Beds., and the best single-flowered varieties by Rev. A. BRIDGE.

The finest exhibit in the decorative classes was a shower bouquet of Cactus Dahlias with

appropriate foliage, shown by Mrs. M. V. SEALE. A small bluish variety was used with Asparagus trails and variegated Nepeta glechoma

NON-COMPETITIVE EXHIBITS.

Messrs. HOBBIES, LTD., Dereham, showed Roses, Dahlias and garden flowers. (Gold Medal.)

Messrs. H. CANNELL & SONS, Swanley, exhibited Cactus and Peony-flowered Dahlias in variety. A large white variety of the Peony-flowered type named South Pole was of considerable merit. (Gold Medal.)

Mr. J. T. WEST, Brentwood, showed rows of Cactus-flowered Dahlias in vases in front of Pompon varieties with Cactus Dahlias, Palms and Grasses at the back. (Gold Medal.)

Mr. JOHN E. KNIGHT, Wolverhampton, showed Dahlias and Chrysanthemums. (Silver Medal.)

AWARDS.

Certificates were awarded to those following: *H. H. Thomas*.—A large-flowered Cactus-flowered variety, with bright-red florets.

Iolanthe.—A Cactus-flowered variety of rose-red colour with yellowish tone in the tips and centre.

Indomitable.—A Cactus-flowered variety of mauve-lilac shade.

Red Admiral.—A fine reddish-scarlet Cactus-flowered variety.

All these were shown by Messrs. JAMES STREDWICK & SON.

Obituary.

JOHN FORBES.—We regret to record the death on Monday, the 6th, of Mr. John Forbes, Royal Nurseries, Hawick, in his 68th year. He commenced business as a nurseryman in 1870, and became well known as a specialist in florists' flowers and hardy plants. He paid much attention to the improvement of such flowers as Pentstemons, Phloxes, Gaillardias, Antirrhinums, Delphiniums, Pansies and similar subjects. But his nursery firm, which was turned into a limited company last year, also engaged in general plant culture, and was the first to send out a white sport of *Begonia Gloire de Lorraine*, which was named "Caledonia." Mr. Forbes was a typical Highlander; a native of Aberfeldy in Perthshire. Except for serving three years on the Town Council of Hawick, all his time was devoted to his business. Two years ago he received the Royal Warrant as nurseryman to his Majesty the King, an honour which he appreciated highly, and which well befitted one of the oldest and ablest of Scottish nurserymen. The funeral took place at Wilton Cemetery on Thursday last.

ANSWERS TO CORRESPONDENTS.

BLACK HAMBURG GRAPES: *T. N. D.* There is no disease present in the Grapes; the failure to colour properly must be attributed to some cultural defect. It is generally an indication of loss of vitality in the vine, such as may result from overcropping or from sappy, immature wood. Endeavour to well ripen the canes this autumn by allowing plenty of fresh air in the vinery, and taking care not to provide too much water at the roots. If the border is formed outside, protect it from excessive autumn rain.

BOUARDIA UNHEALTHY: *H. H.* There is no disease present in the plant, the trouble is due to some error in treatment.

CALIFORNIAN CLEMATIS: *J. J.* This is a variety of *C. ligusticifolia*, often known as *C. californica*. *C. ligusticifolia* is allied to *C. virginiana*. The flowers are white, 3 inches in diameter, and produced in terminal and axillary panicles. It is a native of North America, extending from Missouri to North Mexico and British Columbia. The var. *californica* has no great marked difference; the leaves are somewhat smaller and perhaps more tomentose than those of the type.

FUNGUS IN LAWNS: *F. G.* The so-called "Fairy-rings" in grass are caused by a

fungus (*Marasimus oreocres*). The best plan is to dig out the affected sward, soak the soil with a solution of permanganate of potash, and replant fresh turf. If you do not wish to disturb the lawn you can get rid of the fungus by well moistening the turf to a width of 2 feet to 3 feet from the dark ring of grass with 1 lb. of sulphate of iron dissolved in two gallons of water.

GRAPES DISEASED: *G. T. B.* The berries are affected with Grape-rot, caused by *Gloeosporium ampelophagum*. The fungus is probably present on the shoots, where it forms small greyish spots. All affected canes should be removed, otherwise the disease will appear again next season. The cause of failure in the Peas is not known.

LEAVES OF LOQUAT DISFIGURED: *H. G.* The leaves are badly attacked by the fungi causing Apple and Pear scab (*Fusicladium dendriticum* and *F. pirinum*), and have probably been infected with spores from neighbouring Apple or Pear trees. Spray next spring with half-strength Bordeaux Mixture, commencing when the leaves are unfolding.

MELON: *Tunncliffe*. No disease is present; the injury is caused by a mite. Remove the affected parts, and spray the plants with an insecticide.



THE LATE JOHN FORBES.

MUSCAT OF ALEXANDRIA GRAPES: *A. H. H.* The most frequent cause of the discoloration of the berries of this variety is sulphur when used in the vinery as a fungicide. Cold draughts, hot, dry air caused through excessive fire-heat, or touching the berries during thinning operations may also be suspected.

NAMES OF FRUITS: *J. L. Land*. Plums—1, Denniston's Superb; 2, Oullin's Golden.—*E. Bennett*. Apple Irish Peach.—*W. D. S.* The seedling Apples are not fully grown. They exhibit no improvement upon varieties already in commerce.—*H. Spright*. 1, Pott's Seedling; 2, Pitmaston Duchess; 3, Lord Suffield.

NAMES OF PLANTS: *E. W.* *Hibiscus syriacus*.—*C. L.* *Impatiens Roylei*.—*W. B.* *Scabiosa ochroleuca*.—*H. S.* 4, *Tibouchina macrantha*; 5, not recognised, send when in flower; 6, *Callicarpa purpurea*.—*R. O.* 1, *Begonia manicata*; 2, *B. incarnata*; 3, *Pellionia pulchra*; 4, *Gymnogramma ochracea*; 5, *Adiantum hispidulum*.—*Leicester*. *Eriobotrya* (*Photinia*) *japonica* (*Loquat*).—*J. B. D.* *Viburnum Opulus* (*Guelder Rose*).—*F. H.* 1, *Veronica longifolia subsessilis*; 2, *Erigeron philadelphicus*; 3, *Galega officinalis* (*Goat's Rue*); 4, *Potentilla*, send when in flower; 5, *Acena millefolia*; 6, *A. microphylla*.—*W. O. W.* 1, *Onoclea sensibilis*; 2, *Lomaria procer*; 3, *Sedum carneum*; 4, *Erigeron mucronatum*; 5, *Campanula pulla alba*; 6 and 7, next week.

PALM INJURED: *F. C. S.* The portion of leaf sent shows damage by red spider, which would suggest that the atmosphere of the house in

which the plant was grown is too warm, especially at night-time, and too dry. Such appearance is also shown on plants used for decoration in the house, and especially where gas-light is used. Another cause might be foul air in the house, arising from either the stovehole or drains.

PEACHES UNHEALTHY: *Peach Leaves and P. H., Old Southgate*. Your fruits are attacked by the Shot-hole fungus (*Cercospora circumscissa*). Spray with ammoniacal solution of copper carbonate, the first time just when the leaves are expanding, and repeat the operation at intervals.

PHLOX UNHEALTHY: *H. R.* *Rhizoctonia* has destroyed the roots; treat the soil with lime.

PRIZE-MONEY WITHHELD: *R. A.* Your letter is not explicit, but we understand you exhibited fruit which you did not cultivate. This is clearly an infringement of conditions at any flower show, and we are not surprised that the committee disqualified all your exhibits in consequence.

RUNNER BEANS: *H. & Co.* There is no disease present. The discoloration has been caused by cold.

SCALE ON ASH: *R. H. L.* The tree is infested with the common Ash-bark scale *Chionaspis fraxini*. The small white elongated "scales" are the male puparia; the larger grey-coloured ones the females. This insect also occurs on the Willow. Paraffin emulsion, if applied with a stiff brush, will destroy the pests. Two applications should be given, one now and the second in early spring. Spraying has little or no effect in ridding trees of this scale.

SHANKED GRAPES: *F. E. S. & Co.* The Grapes you submit are badly shanked. This may be due to a variety of causes, but the most frequent source of the trouble is an inefficient border. During the coming season overhaul the root system and ascertain if the roots are perfectly healthy. At the same time see that the provision for drainage is adequate and endeavour to obtain plenty of young fibrous roots near to the surface. Shanking may also be caused by any cultural error that gives a check to the vines, including overcropping, destruction of the foliage by red spider, stripping off a great quantity of fully-developed leaves at one time, chills or sudden changes of the temperature of the house, planting in borders composed of too rich materials, excessive dryness at the roots, &c.

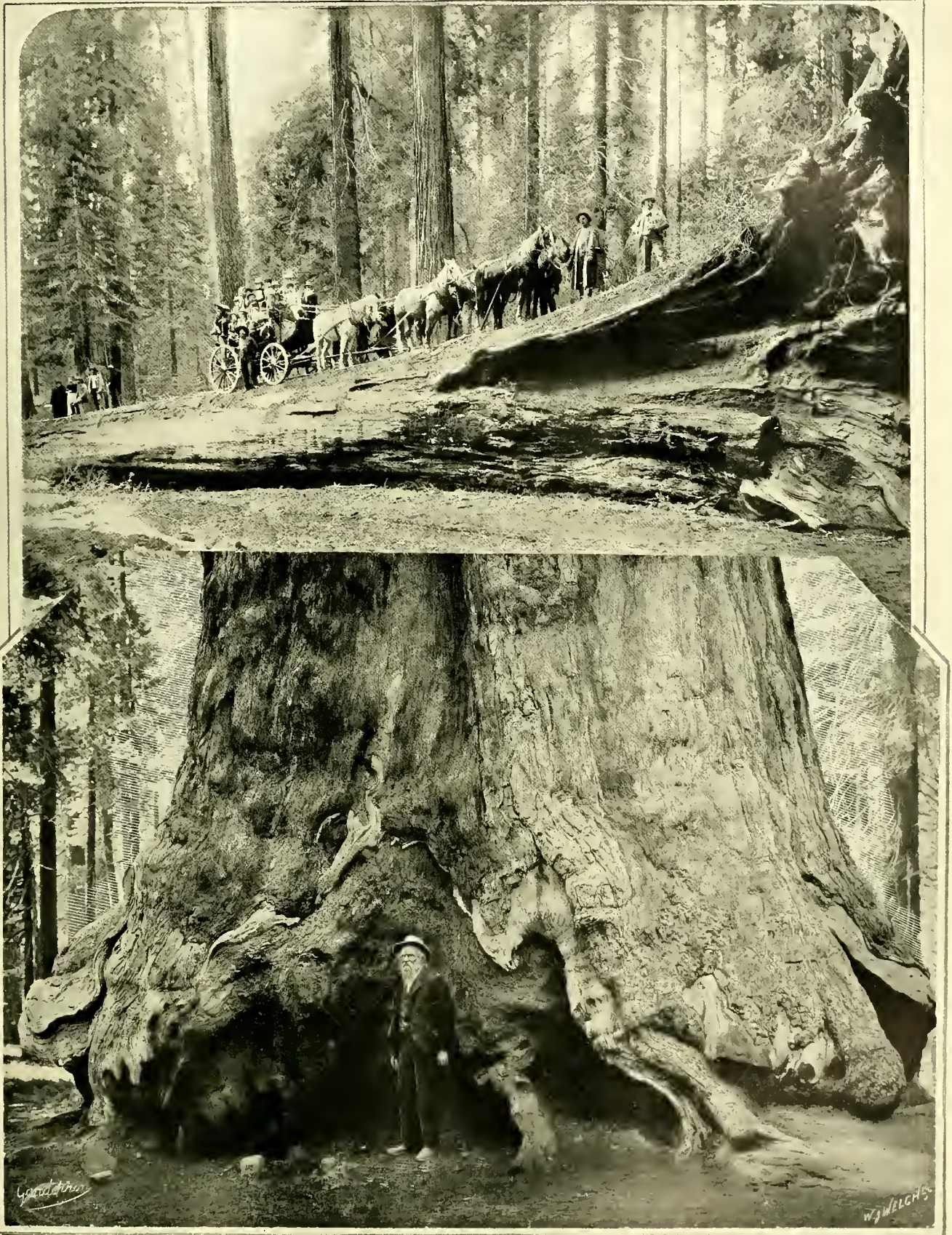
SWEET PEAS: *F. E. S. & Co.* The flower-buds have been destroyed by aphides. Spray the plants with an insecticide.

TOMATOS DISCOLOURED: *E. H.* The hard, yellow patches have been attributed to a lack of potash in the soil. When preparing fresh compost for your plants incorporate with it plenty of wood-ashes. Supply the growing plants with a little potassic manure at intervals; a small quantity of nitrate of potash dissolved in water will be beneficial.

VALLotas, NERINES AND BELLADONNA LILIES: *Amateur*. For cultural purposes the Belladonna Lily and Nerine may be classed together when grown in pots. Success in flowering them depends on resting them in a perfectly dry condition in a garden frame, or in a sunny part of the open garden during the summer. When the foliage turns yellow it indicates that the resting season has arrived. Water should be withheld until the flowering spikes appear, or until the production of new leaves indicate that the bulbs will probably not flower, when the plants should be watered and good growth secured for flowering in the next season. Vallotas are evergreen, and do not require such vigorous drying during the resting season as the Nerines. They flower best when grown in comparatively small pots.

VIOLAS DYING: *T. W. S.* The soil has become too acid for the plants. Apply lime as a corrective.

Communications Received.—Pennick & Co.—E. H. J.—H. F.—A. S.—E. A. B.—W. E. B.—E. H.—H. W. W.—G. W. G.—R. E. G.—F. W. P.—G. F.—J. C.—R. A.—O. de V. C.—R. H.—A. G.—E. A. R.—H. C.—J. W. S.—M. S.—J. D.—G. P.—E. H. J.—E. S.—E. J. A.—W. H. Y.—T. M.—W. F. G.—W. C.—D. & R.—P. M.—J. G. C.—W. F.—A. H.—J. C. S.—A.—R. I. L.—W. J. M.—W. B. L.—W. D.—T. S.—E. J. A.—O. T.—W. P. W.—W. H. L.—T. F.—H. M.—H. A.—W. W. M.—B. C. T.—F. S.—G. C.—F. E. S. & Co.—A. C. S.—E. S.—P. Y.—A. J. & Co.—G. H. P.—N. Lockyer—T. A. H.—M. C. T.—J. B., Epsom—Enquirer—R. T. H.—T. P. (many thanks.)



SEQUOIA GIGANTEA IN CALIFORNIA.

Copyright—A. Dove

THE STANDING TREE, KNOWN AS THE "GRIZZLY GIANT," IS 123 FEET IN CIRCUMFERENCE AT ITS BASE
"THE FALLEN MONARCH," IN THE UPPER PICTURE, IS BELIEVED TO HAVE BEEN UPROOTED A HUNDRED YEARS AGO.



THE

Gardeners' Chronicle

No. 1,186.—SATURDAY, September 18, 1909.

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MAKING AND PLANTING OF FRUIT TREE BORDERS.

In former years Vine and Peach borders were usually made too wide and too deep. In some instances they were as much as 15 feet to 17 feet in width and from 2½ to 3½ feet in depth, thus containing an unnecessary amount of compost, which, at the best, only became sparsely furnished with roots. Trees growing in such large borders seldom fruited well; thus showing conclusively that the extra labour involved and expense incurred were wasted.

I have satisfied myself by many years of practical experience that a border about 10 feet wide and 2 feet 3 inches deep, immediately inside or outside the front wall, as the case may be, sloping down to a depth of 18 inches at the southern limits of the border, and enclosed by a 9-inch retaining wall,

affords ample root-space for the production of heavy crops of first-rate Grapes and Peaches. This depth provides for a 4-inch layer of brickbats or clinkers, broken somewhat fine on top, for drainage purposes. The same depth of stones with a little gravel on the top would answer the purpose equally as well. The bottom of the border supporting the drainage material should consist of a few inches of concrete or "pounded" chalk, made to slope, at the rate of half an inch for every foot, to the retaining wall. A gutter brick should be embedded in, and level with, the concrete or chalk surface, covered by another placed upside down, and connected with a drain, as a means of carrying away superfluous water from the border. The drainage material should be covered with thin turves 1 foot wide and from 2 to 3 feet long, grass-side downward, so as to prevent the fine soil from getting into the drainage.

In the initial stages of Grape and Peach-growing, the cultivator should aim at securing a network of roots in the border, and then to feed them well by giving frequent surface-dressings of artificial manure during the period the Vines and Peach trees are developing their crops. These fertilisers should be afforded immediately before applying water, so that the manurial properties may be washed down to the roots as soon as possible. The same slope to the south should be given to the surface of the border as advised for the base, so as to expose the soil to the sun's rays. The roots will push into this warm layer of soil and soon reach the mulch 3 or 4 inches deep of short manure, which should be laid on all fruit borders in the autumn to be renewed in the spring. In the case of "lean-to" and "hip-roofed" vineries, I prefer planting the vines in a strip of border formed inside the house and extending about 2 feet from the front wall, this being enclosed by a 4½-inch brick wall, 9-inch piers being built into this at intervals of 9 feet for supporting the hot-water pipes. The roots will speedily extend to the outside border between the arches supporting the front wall.

In the case of span-roofed vineries, I have in my mind's eye vineyards where there are several ranges of vineries erected side by side on the pier system—that is, where half the rafters of each successive pair of houses spring from the same pier-supported plank, and in which houses the same temperature and humidity prevail throughout. The glass-covered space in each house was dug or trenched from 18 inches to 24 inches deep, and liberal dressings of short manure were incorporated with the soil in the process. Into this, in some cases pebbly, soil the vines were planted early in March. I have never seen heavier crops of fine Grapes (including Muscat of Alexandria) than those obtained from these vines.

With such evidence as this, I hesitate to advocate an unnecessary expenditure in the making of vine borders, except in the cases where the soil is unsuitable or water is present. Heretofore many people were deterred from attempting to grow Grapes by reason of the expenditure which the formation and composition of the vine border on the lines recommended at the time would incur. Should it be found necessary to concrete the border inside a span-roofed vinery or Peach-house when the roots

are confined therein, the base of such border should slope slightly from both sides to the middle, where the gutter bricks should be placed as described above.

A base of concrete or pounded chalk not only serves to prevent the roots from pushing into the substratum, but it also confines the roots in the prepared soil. But where there is a substratum of chalk or limestone, it will only be necessary to lay thereon a few inches thick of brickbats broken finely on the top and covered with turves, the provision being made, as described above, for carrying away any superfluous water that might otherwise accumulate about the roots at an undesirable time of year.

New borders should be made in sections to begin with. In the case of a lean-to vinery, in which the vines are planted 3 feet apart in the 2 feet wide inside border, a breadth of 3 feet outside will afford ample room for the roots for the first year, and the soil may be kept in position by means of a turf wall. The border may be completed during the two following years. Thus, in forming the borders in a 20 feet wide span-roofed house, make them in sections 5 feet wide each side the first year, completing the work during the two following years in sections 2½ feet wide each. In the case of a span-roofed vinery 30 feet wide, the completion of the borders might extend over a period of four years.

As regards suitable composts for vines and Peach trees, these plants are not so particular as to soil as many people suppose. Given a deep, calcareous, loamy soil into which a liberal dressing of good manure has been dug or trenched, the Vine or Peach tree will flourish and produce heavy crops of fruit year after year under judicious management. Where the natural soil is either too light or too heavy in texture for the production of good fruit, borders of prepared soil must be made. If the time-honoured top 3 inches of pasture land is not available, any good loamy soil may be substituted, with the additions of old lime-rubble, wood-ashes, and horse-droppings at the rate of one cartload of each to five loads of loam and one barrowful of soot, the whole being thoroughly mixed.

Young vines raised in heat from "eggs" inserted in sandy soil at the beginning of the year should be planted in inside borders as soon as they have made 2 or 3 feet of growth, and before the roots become matted in the pots. They should be planted in their permanent positions about 1 inch deeper in the soil than they were in the pots and from 3 to 4 feet apart. If the latter distance be allowed between the permanent vines, super-numeraries might, with advantage, be planted between them for furnishing a crop of Grapes in the following year. The plants should be watered at the roots a few hours before being turned out of the pots. In planting, pass the hands lightly round the ball of earth and roots in order to disturb the surface, thereby enabling the roots to push more easily into the new soil. Having previously removed a spadeful or two of the compost forming the border at the intervals already mentioned, and marked off by sticks long enough to reach the first wire of the trellis, insert the individual plants into the holes thus made, pressing the soil well about the roots and afterwards watering with tepid water to settle the soil. This done, tie the young vines to the sticks and apply a surface dressing

of short manure to the thickness of 2 or 3 inches. May and June are suitable months for planting vines, of the current year's raising, in outside borders, in which case the stems are taken into the vinery through holes made in the brickwork or wall-plate. Where cut-back vines of the previous year's raising are used, they should be planted a few weeks before growth begins, say, early in March, shaking every particle of soil from the roots, disentangling and shortening them and cutting off any damaged portions. The rest should be spread regularly over the soil, giving them a downward inclination southward (assuming the house and border face that direction). Cover them with 6 inches of soil and apply a surface-dressing of half-rotted stable manure of the thickness advised above, following with sufficient water to settle the soil about the roots.

Peach and Nectarine trees, obtained from the nurseries, after they have shed their foliage, should be transplanted in the manner recommended for cut-back vines raised in the previous year. As a further argument in favour of the making of narrow and somewhat shallow fruit-borders, I may add that I have cut prize Grapes even from vines growing in a 3-foot wide border. *H. W. Ward.*

ACANTHUS PERRINGII.

THE Acanthus, or Bear's Breech, as it is commonly called, is cultivated mainly on account of its handsome foliage, although the stout spikes of rose-coloured or white flowers are also attractive. The commonest species met with in gardens is *A. mollis*, which is found all over the south of Europe. It is a stately plant, the large, shining, green leaves on specimens, growing in deep, strong soil, forming handsome tufts 4 feet or 5 feet across. Other species in cultivation include *A. longifolius*, a very distinct plant, with leaves from 2 feet to 3 feet long, and narrow in proportion, bearing spikes of purplish-rose coloured flowers; and *A. spinosus*, distinguished by its very spiny, deeply cut leaves. This latter species seldom flowers except when planted in hot, dry situations at the foot of a wall facing south. Both species are natives of Southern Europe. Another less often seen is *A. hirsutus*, from Asia Minor, which produces a tuft of radical leaves close to the ground. The leaves and flower-stems are covered thickly with a hairy pubescence. It is to this latter species that *A. Perringii* is most closely related. Plants of *A. Perringii* were received at Kew in 1904 from Mr. W. Siehe, of Mersina, in Asia Minor, who described it in the *Gardeners' Chronicle*, 1905, vol. xxxvii., p. 2. Mr. Siehe there states that he discovered it in 1905 in the Cappadocian Antitaurus growing on cliffs composed of a chalky loam at an elevation of from 5,000 to 6,000 feet. The plant is very deep-rooting and spreads freely by means of underground rhizomes. The leaves are all radical, about 10 inches long, grey in colour, toothed and spiny, and, like the stem, covered with a fine, hairy pubescence. The inflorescence grows about 2 feet high, the flowers being rosy-red in colour. The specimen shown in fig. 80 is growing at the foot of a south wall at Kew; the extreme heat causes it to flower. Planted in the open beds it grows well and is quite hardy, but it does not bloom. This also applies to *A. hirsutus* and *A. spinosus*. *A. mollis* and *A. longifolius* will grow freely and flower well in the open on the borders of shrubberies or in open beds on lawns. *A. mollis* is grown in gardens under the names of *A. candelabrum*, *A. latifolius*, *A. lusitanicus*, and *A. Schottii*, while the plant sent out some years ago as *A. Caroli Alexandri* is only a form of *A. spinosus*. *W. I.*

* LOCAL GEOGRAPHICAL DISTRIBUTION OF PLANTS.

THE two books, of which the titles are given below, treat of the geographical distribution of the plants of given districts from totally different standpoints. Mr. Hamilton Davey has produced a county flora on the conventional model of drainage areas, with numerous localities for the plants under each area and the authorities for the same. Some idea of the plan and scope of the work may be gathered from the headings of the "Introduction," namely: Topography, climate, geology, history of botanical research, botanical districts, list of books, herbaria, &c., quoted, summary, and plan of the flora. This part occupies 88 pages, as against 570 pages of enumeration of the species represented in Corn-

of the author's eight districts, and nearly three-quarters of a page is taken up with localities. *Anemone nemorosa* occupies a whole page in the same manner, and there are scores of other instances. This calls to mind a remark by the late Dr. Reichenbach that we should soon have all the native plants labelled! No one surely would contend that any useful purpose is served by giving such details of the occurrence of these common plants. Of much more interest is their general distribution in and beyond the United Kingdom. On the contrary, it seems inexpedient to give exact localities of the rarer plants. An ideal county flora should include all that Hooker's *Students' Flora of the British Islands* contains concerning the plants of the county, and in addition local conditions and other facts of interest, such as associations of



[Photograph by W. Irving.

FIG. 80.—ACANTHUS PERRINGII: COLOUR OF FLOWERS, ROSY-RED.

wall and bald records of localities, the results of many years' trappings by the compiler and numerous coadjutors. The work compares favourably with other county "Floras" on the same plan; but who will have the courage to depart from this plan and give less space to localities and more space to biological facts, local conditions and traditions, the derivation of the botanical names and the general distribution of the genera, and species under consideration? Taking *Clematis vitalba*, the first plant in the list, as an example. This is recorded from all

plants and the position they fill in the composition of the vegetation.

Judging Mr. Davey's book by what it does comprise, it is only fair to repeat that it compares favourably with similar compilations, and that it will be indispensable to all who wish to become acquainted with what is known of the flora of the county; much information may be easily gathered from the introduction. It will come as a surprise to persons unfamiliar with the distribution of plants how few are peculiar to Cornwall so far as the United Kingdom is concerned, and how near the total is the same in each of the southernmost counties eastward to Kent. Of flowering plants and Ferns the author enumerates 953 native species, whilst "denizens," "colonists," "aliens," and "casuals" bring the total up to 1,180. Out of this total only a score have not been recorded from any other British county, and several of these are certainly introduced plants. As might

* *Flora of Cornwall*. Being an account of the Flowering Plants and Ferns found in the county of Cornwall, including the Scilly Islands. By F. H. Davey, F.L.S., &c. Octavo, pp. lxxxviii + 570, with six portraits and a map. (Penryn: F. Chegwidden, 1909. Price 21s. net.)

Les Aspects de la Végétation en Belgique, par Charles Bommer et Jean Massart. *Essai de Géographie Botanique des Districts Littoraux et Alluviaux de la Belgique*, par Jean Massart. One vol. large folio, 86 plates. One vol. octavo, numerous tables and maps and 82 small photographs. (Brussels: Jardin Botanique de l'Etat, 1908.)

be expected, some of the rarer plants have not been observed growing by the author, among them, apparently, *Adiantum Capillus-Veneris*, which is becoming very rare, though we have heard lately of a locality where it is fairly plentiful, but which is not to be divulged even to the author of a county flora. Interesting as the native flora of Cornwall is, it is poor in comparison with that of New Zealand, or of Chili, for example, whose members find such congenial conditions in the Duchy and constitute the chief delights of the gardens.

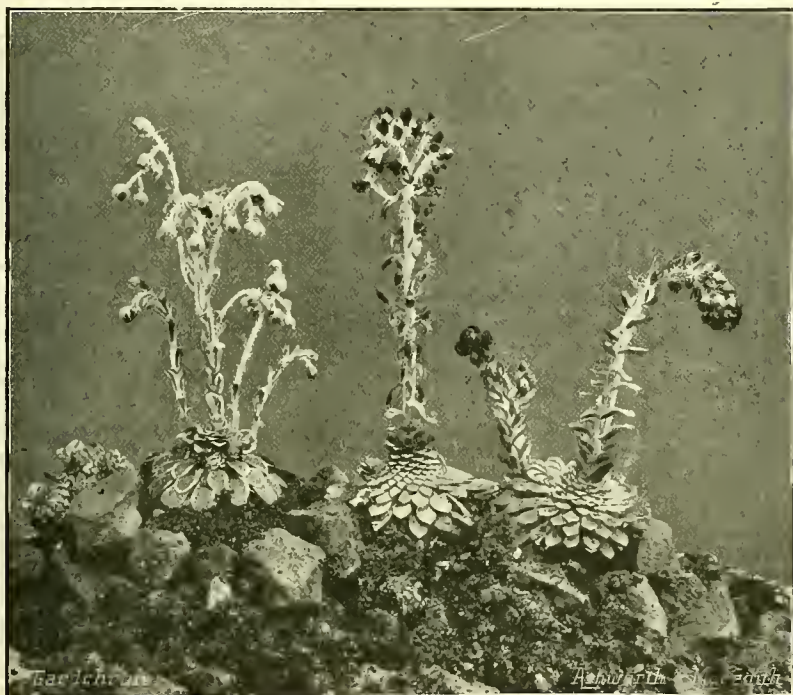
Including coves and bays, Cornwall has a coast line of about 500 miles, the vegetation of the various parts of which is not specially described by Mr. Davey. This by way of comparison.

—The second work before us deals in great detail with the vegetation of the much smaller coast line of Belgium, both of the coast and the alluvial districts behind, and of both wild and cultivated elements in the vegetation. It is the first part of a comprehensive and elaborate pictorial and descriptive account of the vegetation of the whole of Belgium, illustrated by 400 folio plates and numerous small views. As

the conservators, and an unusually severe wind-storm will often undo the work of years and alter the whole face of certain strips of land. Fortunately the very heaviest wind-storms have a narrow course.

The long series of photographic views of the natural and artificial vegetation are admirably reproduced, all the leading elements being easily recognised, and the various plant-associations under different conditions brought to view. Gregarious vegetation and mixed vegetation of two or three or few or numerous elements appear. In the more composite associations it is surprising to see such plants as *Herminium monorchis*, *Epipactis palustris*, and *Parnassia palustris* sufficiently abundant to be conspicuous in some views. The native plants, as we need not tell botanists, are the same as those inhabiting the coast of Britain. Prominent among them is the Mat Grass or Marram, *Ammophila arundinacea* (*Psamma arenaria*), which is apparently the only kind of herb that is actually planted for sand binding. Previous to planting, the naked sand dunes are prepared by deeply inserted rows of branches of thorn bushes.

rici-Augusti, all red-flowering species with crusted foliage. The most attractive of the three is *S. Grisebachii*, which is a native of Macedonia. It has silvery leaves, which are produced in handsome rosettes. The flower-stalks attain to a height of 9 inches or more when fully developed, bearing at the top the nodding inflorescence of purplish-crimson flowers. The plant on the left is *S. Stribrnyi*, a recent introduction to gardens. Seedlings of it appeared in a hatch of young plants of *S. Grisebachii* raised from collected seed. The rosettes of leaves in both species are similar, but the inflorescence of *S. Stribrnyi* is more branched. The stem, branches, and flowers of this species are covered with glandular hairs, more or less tinged with red. *S. intermedia*, as may be noticed from the figure, is intermediate between the other two species, the red flowers being borne on longer pedicels. This also came up amongst seedlings of *S. Grisebachii*. A full account of the red-flowering *Saxifragas* with crusted foliage will be found in the *Gardeners' Chronicle*, April 24, 1909, p. 258. *W. I.*



[Photograph by W. Irving.]

FIG. 81.—THREE RED-FLOWERING SAXIFRAGAS.
[*S. STRIBRNYI*, *S. INTERMEDIA*, AND *S. GRISEBACHII*.]

planned, there will be five parts: (1) Districts Littoraux et Alluviaux; (2) Districts Flandrien et Campinien; (3) Districts Argilo-sablonneux et Cretacé; (4) Districts Calcaire et Jurassique; (5) District Ardennais. This will be the final consolidation and elaboration of numerous contributions to the subject, many of which have appeared in the forty-third and succeeding volumes of the *Bulletin de la Société Royale de Botanique de Belgique*. The first part is specially interesting, inasmuch as it treats of the composition of the vegetation concerned in the preservation of the land reclaimed from the sea and precariously held by extensive breakwaters, dams and stockades. Beginning with the seaweeds on the outer face of the breakwaters, we are taken over the areas covered by every tide, over those covered by ordinary spring tides, and over others inundated by exceptionally high tides and sea-storms, on to the cultivated alluvial plains dotted with homesteads. Within the protective works of timber, stone and brick are enormous stretches of more or less moving sands, the binding of which is the great task of

Common Pines and Poplars are the first trees planted for sheltering the crops and homesteads of the reclaimed land.

The *Aspects de la Végétation en Belgique* are interesting and valuable, alike to the botanist and the practical man, and our only objection to the work from a practical standpoint is its size. For educational purposes it is unwieldy; but we are glad to learn that there is to be an issue of the plates about one-quarter the size of the present edition.

It may be added that some of the maps and photographs illustrate the conditions of 60 or 70 years ago as compared with those of the present time. *W. B. H.*

THREE RED-FLOWERING SAXIFRAGAS.

THE three red-flowering *Saxifragas* illustrated in fig. 81 are all natives of Macedonia and Bulgaria. They belong to a section of the genus which includes the Pyrenean *S. media*, the Italian *S. porophylla*, and the Grecian *S. Frede-*

ORCHID NOTES AND GLEANINGS.

SPIRANTHES ROMANZOVIANA.

IT may be of interest to record that this rare little Orchidaceous plant (the Irish *Spiranth*) was found a fortnight ago in the extreme North of Ireland. Hitherto its only recorded stations in Europe were in the South (at Bantry Bay) and West of Ireland.

HABENARIA VIRIDIS.

I HAVE never seen this *Habenaria* so plentiful as on some of the waste heaps of the limestone quarries in County Tyrone. *Orchis pyramidalis*, *O. conopsea* and *Epipactis latifolia* were also abundant. *A. D. Webster.*

DENDROBIUM SANGUINOLENTUM ALBUM.

FLOWERS of what may be regarded as an albino form of *Dendrobium sanguinolentum* have been forwarded by Mr. James Geddes, The Lodge, Red House, Ascot, who states that the flowers, on opening, are yellowish, but change to white when mature. The typical form has the segments tipped with claret purple, but in Mr. Geddes' variety no colouring is present. The flowers are developed on short racemes of from four to eight blooms. The type plant received from Ceylon flowered at Syon House in 1842, but the species is widely distributed along the Malay Peninsula, and varies considerably in different localities both in size and colour of flower. Mr. H. N. Ridley, in his *Materials for a Flora of the Malayan Peninsula*, describes the plant as having white sepals tinted with rose, and white petals, and an albino of such a section of the species might be expected more readily than from the original heavily coloured form, which, however, is the one more commonly seen in gardens. The same author also enumerates as *D. sanguinolentum* var. *cerina*, the *Dendrobium cerinum* of Rehb. f. in *Gardeners' Chronicle*, 1879, ii., p. 554. "Flowers yellowish ochre, occurs with the other"—the *D. sanguinolentum*. It is a desirable warm-house species flowering at different seasons, but generally in summer and autumn, and lasting in bloom for a long time.

CYPRIPEDIUM STONEI.

A PHOTOGRAPH of a fine specimen of this handsome old Bornean species is sent us by C. E. Franck, Esq., Hill Court, Yatton, Somerset, in whose garden the plant flowered. The photograph shows the plant bearing four spikes of two flowers each. The species was introduced by Messrs. Low & Co. in 1860. It is an attractive species having white dorsal sepals with two or three blackish lines, narrow, decurved petals and elongated rose-tinted lip. The plant requires a warm, moist atmosphere.

TREES AND SHRUBS.

SPARTIUM JUNCEUM.

By the middle of July or thereabouts, at which time the earliest blossoms of the Spanish Broom expand, most of the yellow-flowered Leguminosae of a shrubby character are past. The fact that this *Spartium* continues to bloom from July till the end of August is a great point in its favour, as at that time comparatively few hardy shrubs are in flower. It is too well known to need any detailed description, therefore it will suffice to say that it can be readily distinguished from the other Brooms by the long, green, Rush-like shoots which are very sparingly furnished with small narrow leaves. The flowers are comparatively large and borne in great profusion. This *Spartium* is of a rather naked habit of growth, for which reason it should be associated with other shrubs and allowed to overtop them. In this way the slender shoots dispose themselves in a very graceful manner, and have a very pretty effect when laden with their golden blossoms. The plant is more satisfactory in a rather poor than in a rich soil; indeed, it will thrive on dry sandy banks, but under these conditions it does not attain the same dimensions as when more liberally treated. In any selection of late summer-flowering shrubs the Spanish Broom should be given a place. The plant may be raised readily from seeds, but it does not transplant readily, for which reason it is usually grown in pots till planted permanently. When raised in considerable quantities from seed, there is a slight amount of individual variation, but the only recognised variety is the double-flowered form, which is, however, scarce in cultivation and of no great merit as a garden plant. W.

THE SYCAMORE FUNGUS.

EVERYONE interested in trees must be familiar with the conspicuous black, pitch-like spots which so mar the appearance of Sycamore leaves at this season of the year. These are due to *Rhytisma acerinum*, a fungus which, appearing as small yellowish spots on the under sides of the leaves towards the end of June, gradually increase in size and intensity of colour until they attain to fully half-an-inch in diameter and are inky-black, with a margin of dirty yellow. The attacked portion of the leaf becomes wrinkled and much thickened in texture, while all the affected foliage drops prematurely. After lying on the ground during the winter the thread-like spores are produced in large quantities at the time when the foliage of the Sycamore is appearing in May and June. The Sycamore is not the only tree affected by this fungus, for the Norway Maple and our native *Acer comprestre* are equally liable to attack, and have in some instances suffered very severely from this cause. The fungus is becoming more plentiful, and it disfigures the Maple and Sycamore leaves to a wide extent. Another fungus which infests the leaves of these trees is *Rhytisma punctata*, which may at once be distinguished from the above species by the many small black spots studded thickly together, which combine to form the large conspicuous blotches for which affected trees are remarkable. Both species are sometimes found on the same leaf. As the attacks of this fungus continue from year to year, and it causes almost every leaf to drop prematurely, the health of the trees is greatly impaired, and they become easy preys to the still more destructive coral spot fungus, *Nectria cinnabarina*. By burning the leaves affected with *Rhytisma* before the spores are liberated in spring the spread of the fungus is prevented in a simple and effective manner. The Sycamore fungus is very plentiful on trees around London. A. D. Webster.

ELMWOOD.

ELMWOOD, Lord Northcliffe's pretty country estate in the Isle of Thanet (see figs. 82, 83, and 84) has many interesting garden features. These include an old-fashioned lean-to vinery against the older part of the house, the ancient Fig trees, with massive trunks, and many other objects which tell of the gardener's art in a bygone age, and in a not less degree the improvements wrought during the eight years in which Mr. Henry Charman has been head gardener at Elmwood. Being situated close to the sea, between Margate and Broadstairs, the necessity for protection from the winds evidently prompted the original owner to provide a fine plantation of trees on one side. The trees are now dense and tall, and form a very fine feature. Large patches of hardy Ferns are planted as an undergrowth, and spring-flowering bulbs. At the end of the shady walk leading from the wood is an extensive fishpond, containing Water Lilies. Both with a view to shelter, and to display different effects in the garden, separate enclosures are arranged, each worked out on a different plan.

the house has a fine old Fig tree in the centre, the borders being planted with fragrant flowers, among which *Heliotrope* was prominent. Beside it is a Rosary arranged on the usual plan, but rendered homely-looking by the old flint wall on one side and the rustic trellis covered with Rambler Roses on the other. There are two Iris gardens, with large masses of varieties of Iris germanica, which must have looked very pretty when in bloom; and Carnation borders, the plants having produced an immense quantity of flowers this season. Some 2,000 plants of border Carnations are cultivated, the favourites being Trojan, Mrs. F. W. Flight, Raby Castle, Uriah Pike, Miss Audrey Campbell, Mrs. Eric Hambro, Helmsman, Mary Morris and Duchess of Fife.

Tennis courts are bordered by grass that is not mown. In these margins, quantities of Daffodils, Crocuses, Snowdrops, and other spring-flowering plants have been planted. Some long borders of annuals are very effective with Stocks, Larkspurs, Dianthus, and other showy flowers. Sweet Peas, also, are grown in great quantity and variety.

The houses are chiefly on the modern plan,



FIG. 82.—ELMWOOD, KENT, A RESIDENCE OF LORD NORTHCLIFFE.

In one of these spaces, with its smooth lawn in the centre, is a pretty bungalow, which Lord Northcliffe uses as a study, and which is well stocked with works of reference, as well as a very interesting collection of trophies and curiosities from many parts of the world, including rugs formed of the skins of gigantic Polar bears captured during the Jackson-Harmsworth expedition to the Polar regions. Another interesting relic is the boat "Mary Harmsworth," which formed part of the equipment of the expedition. Blue flowers and fragrant plants are favourites with Lady Northcliffe, and they appear in great variety in the open garden and also in the glasshouses. Around the bungalow is a border of Rosemary and Lavender, and on one side of the lawn is a broad, herbaceous border, densely set with bright flowers, the patches of *Montbretias* being specially effective. At the end is a border with large specimens of *Fuchsia Riccartonii*, with tall plants of *Eulalia japonica variegata* between them, and in front a row of the double-flowering salmon-pink *Pelargonium* Mrs. Chas. Lawrence, a variety which Mr. Charman considers one of the best both for borders and for pot culture. One pretty little nook near

and are well furnished with decorative plants. They include a warm tank-house, containing on the stages *Coleus* in variety and Ferns, with *Asparagus Sprengeri* and other plants suspended overhead. In the tank are several large alligators, which were obtained when very small from Florida, and which are now fully grown.

In the first division of the main block *Caladiums* are in fine condition, and with beautifully-coloured leaves. The plants of a large batch of *Calanthe Veitchii* have very strong growths, promising well for winter flowering. There are also *Codiaeums* (*Crotons*), *Cordylines* (*Dracenas*), and other decorative plants, and on the roof the red and yellow *Climbing Lily* (*Gloriosa superba*) has a profusion of its showy flowers. Here *Gymnogramme schizophylla* shows well as a basket plant, and the end wall is clad with Ferns and large-leaved *Begonias*—probably the original *B. Rex*, which is still one of the most beautiful. The next house has a fine collection of *Naegelias* of the *N. cinnabarina* class, with fine, velvety, green leaves marked with purple, and pyramidal heads of white, yellow and scarlet flowers; a batch of well grown plants of *Browallia speciosa*, covered

with bright blue flowers, ornamental-leaved *Acalyphas*, profusely-flowered *Bougainvillea glabra*, and sky-blue *Plumbago capensis* overhead.

In the greenhouse the delicate, pale blue *Ipomæa cœrulea*, which partly covers the roof, is a very beautiful object. Although the individual blooms do not last long, they are produced in succession over a long period, and few plants rival this species for the delicacy of its tints. Among the plants in bloom I noticed a pure white variety, which, however, cannot compare with the typical form in point of attractiveness. On the stages were tuberous-rooted *Begonias* of the fringed or crimped strain, with large, white, pink, yellow and scarlet flowers, all displaying the characters which constitute the section, and which have become fixed. *Streptocarpus* are well grown at Elmwood, where they bloom finely.

Souvenir de la Malmaison Carnations are favourites, and have flowered well this year. Plants of *Cyclamen persicum* are raised annually in large numbers from seeds, and young plants are found to be the most reliable for blooming. The elegant, pale blue *Trachelium cœruleum* is grown in quantity, and is now making a good show. *Chrysanthemums* are largely and well

France for cool and palatable salads. If we only had summers in England like those experienced in France, there would be no risk in starting "French" gardens all over the country!

Orleans is the centre of a great industry in trees, shrubs, Roses, Conifers, fruit-tree stocks, &c., and one of the most remarkable establishments is that of MM. Barbier et Cie. This firm has three large and quite distinct establishments. One of these, about 16 miles outside Orleans, I had the pleasure of visiting with a few friends, under the guidance of MM. L. and R. Barbier. The establishment at La Ferti St. Aubin comprises about 400 acres of rather heavy loam, devoted principally to the raising of young stocks of all kinds of trees, shrubs, Roses, and Conifers. In this nursery experiments were being carried out with certain kinds of Australian and Chilian Apple-stocks, with a view to securing one that will best withstand the ravages of the woolly aphid or American blight. One Chilian variety called "Hindobro" gave excellent results. Shoots of this variety were grafted on Apple trees smothered in American blight. They made fine growth in due course, but have remained quite immune from the blight itself. Apple "Northern Spy," which

roots of the herbaceous kinds (*P. chinensis*). The roots are cut into pieces about 6 inches long, a triangular piece is taken out of the side, and the shoot of the tree *Pæony*, cut to fit, is inserted, tied, and waxed with a dexterity only secured by long practice. Other men dibble these grafts into narrow, sandy beds, over which lights and frames are placed and kept heavily shaded. In 12 months the plants are established, and ready for sale.

In all the nurseries visited, bell-glasses or cloches are extensively used for propagating purposes. Trees and shrubs of all kinds are put under them either as cuttings or grafts, two rows of cloches being generally placed upon the narrow, sandy beds. The cuttings or grafts put in during the autumn are sufficiently established by the following spring or early summer; the cloches are then available for placing over other batches of cuttings to be rooted during the summer months. Sand is used freely, and is mostly obtained from the rivers—the Loire and its tributary, the Loiret.

It should be mentioned that at each of the towns visited a cordial reception was given to the English visitors, and the same would, no doubt, be accorded to any British nurseryman or gardener wishing to visit the different establishments. The *entente cordiale* is very much in evidence in commercial gardening, and there is a great deal to be learned by paying a visit to France. *John Weathers.*



FIG. 83.—WATER SCENE AT ELMWOOD, KENT.

cultivated. The vines and Peach and Nectarine trees are said to have given satisfactory crops this season, and there are excellent Grapes still hanging. The kitchen gardens also are in good order. *B.*

NURSERIES AND GARDENS IN NORMANDY.

(Concluded from page 178.)

ORLEANS.

LEAVING Angers on August 15, about 2 p.m., Orleans was reached about three hours later. Several nurserymen of the district met the party, and visits to some nurseries close at hand were made in the cool of the evening. The country between Angers and Orleans is very flat, but not a square yard of ground seems to be wasted. On both sides of the railway are to be seen hundreds of acres of vineyards, Wheat fields, Beet, Maize, Buckwheat, Hemp, &c., and here and there great stretches of *marais* or gardens devoted to intensive cultivation. As at Monderville, near Caen, these "French" gardens looked particularly green and refreshing in the scorching sun, and it was by no means difficult to realise from the intense heat why there is such a demand in

is reputed in England to be a great check to the American blight, has also been tried, but the results have not been altogether satisfactory.

It would be impossible to enumerate all the interesting things seen at this nursery. Attention, however, may be called to a charming little shrub—*Ligustrum Ibotia variegata*—with small oval leaves variegated with creamy-yellow and green. It is very compact in habit, and should make a good substitute for the Golden Privet.

In this nursery also it was pleasant to find quite a large lake devoted to the culture of hybrid Water Lilies, and also to great masses of the Indian Sacred Bean—*Nelumbium speciosum*. This latter plant—which one sees only in hot-houses in England—looked handsome in the open air with its huge Nasturtium-like leaves. Unfortunately the plants were not in blossom, but, judging by the number of buds upon them, they promised to provide a fine sight later.

In the town nurseries of MM. Barbier there are numerous glasshouses, and all kinds of plants are propagated here with marvellous rapidity. It was quite an interesting sight, for instance, to see several gardeners busily engaged in grafting tree *Pæonies* (*P. Moutan*) upon the tuberous

The Week's Work.

THE ORCHID HOUSES.

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

Repotting Odontoglossums.—The present is the most suitable time for overhauling the cool *Odontoglossums*, as at this season there is little difficulty in maintaining an equable moist temperature, such as is favourable to the plants getting re-established before winter sets in. This is especially important in cases of unhealthy specimens, and there are few collections that have none. These should be turned out of their pots, and, after the decayed compost, dead roots, and useless back pseudo-bulbs are removed, potted in receptacles just large enough to accommodate them for one season. Such weak plants must, for a few weeks after being repotted, be kept at that end of the house where the least quantity of fresh air is admitted. Keep the atmosphere about them as moist as possible, afford very little water to the roots, and shade them whenever necessary. Plants which flowered early in the year are now making their new growths, and roots will soon be pushing freely in all directions. No time should be lost in affording fresh rooting material to these that need it. Plants that have not yet started into growth should not be disturbed at this season, but the repotting should be deferred till new growths appear and the roots are active. Previous to repotting the plants they should be carefully examined for small yellow thrips, which are apt to escape notice till the leaves are disfigured. If only one or two are visible in the interior of the growths, the house should be vaporised on two consecutive evenings. Vaporise after sunset, first taking the precaution to well moisten the paths and beneath the stages. For an hour or two previous to the operation, maintain a moderate degree of warmth, which will entice the insects out of their haunts on to the leaves, where the vapour will soon kill them. When repotting cool-growing *Odontoglossums*, the beginner should guard against using pots that are out of proportion to the size of the plants, over-potting generally ending in failure, especially if the watering can gets into inexperienced hands. The pots should vary according to the sizes of the plants, and if room enough is left for one or two seasons' growth, that will be sufficient. That the plants may be put into pots of a suitable size, it is advisable to cut off the old pseudo-bulbs that are of no further use to the plant, leaving about two behind each leading growth. If these back pseudo-bulbs belong to special varieties or rare hybrids,

they should be carefully labelled, and if laid upon damp cocconut fibre or Sphagnum-moss, and managed much in the same way as imported plants, some of them in time will break into growth. If potted carefully into the smallest pots that will hold them they will grow into healthy plants. When repotting established plants, the back part of each should be placed as near to the edge of the pot as possible, and the base of the plant just on a level with the rim. The fresh, clean pots should contain crocks to about one-half of their depth, and, above this, a thin layer of rough Sphagnum-moss. A suitable compost for these *Odontoglossums* consists of *Osmunda* fibre, *Polypodium* fibre and Sphagnum-moss in equal proportions. Cut up the fibres moderately fine, so that the materials will pass through a half-inch sieve; if the moss is also cut up and sifted through a quarter-inch sieve it will mix better with the other materials than if used in a coarser state. Previous to using the Sphagnum-moss it should be cleaned of all rubbish and be closely examined for small slugs and snails. If it is very damp it should be squeezed and then spread in the sun to dry. Add plenty of small crocks to the compost. We pass the crocks through a quarter-inch sieve, and the dust is removed by using a sieve with a very fine mesh. Mix the materials well together, and pot each plant with moderate firmness, but not so hard that water cannot pass freely away. The critical period with *Odontoglossums*, as with many other species of Orchids, is just after potting, and any excess of moisture at the root then will cause the roots to decay and many leaves drop off. It is advisable to afford only as much water as will keep the surface of the compost moist, and this especially around the edges of the pot, which will induce the new roots to push their way rapidly through the soil to the extra moisture. In some cases after root disturbance the pseudo-bulbs will shrivel, but no extra waterings should be given with the idea of causing them to plump up quickly. Under proper treatment they will return to their normal condition, when new roots become active and plentiful.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LOOER, Bart.,
Leonardslee, Sussex.

Bedding plants.—It is time all cuttings of bedding plants were inserted. Any plants which will be lifted later should be prepared for this by cutting the soil around them with a spade. Very choice subjects should soon be brought under cover, but the general housing of outdoor plants may be left until the first week in October, unless severe frosts occur before that date. The winds and rains of autumn are liable to break many of the shoots unless the plants are properly staked. Cuttings of bedding plants should be allowed to remain in the open for as long as possible; but if the weather turns cold and wet, place them in cold frames. During fine days the lights may be left off.

Hardy plant border.—Liliums, Dahlias, *Perennial Phloxes*, Asters, and other autumn-flowering plants have grown tall this season, and, in consequence, they will need extra care in staking. Now that the plants are fully grown, it is a good time to plan any rearrangement in this border that may be deemed advisable. Although this is not the best time to renovate herbaceous borders, because many of the plants are now in flower, nevertheless new ones can be formed. *Lobelia cardinalis* var. *Queen Victoria* is particularly effective in our borders just now, and the various *Statice*s and *Pentstemons* are most decorative. Cuttings of *Pentstemons* should be inserted now. They will require the protection of a cool frame during the winter. Other plants that are at their best just now include *Chelone barbata*, *C. glabra*, *Hydrangeas* of sorts, *Salvias*, *Monardias*, and *Nandina domestica*. The leaves of the *Nandina* colour a beautiful red in autumn; the flowers are white, being borne in large panicles. The blooms are succeeded by red berries.

Boq and aquatic plants.—Many of these plants grow very rapidly at this season, and the stronger-growing kinds are liable to smother the weaker ones. Any necessary thinning should be done, so that the specimens may be kept to their allotted spaces. Flowering plants, such as *Liliums*, *Richardias* and *Spireas*,

should have their old flower-spikes removed. It is a good time to plant these subjects, for the roots soon take hold of the soil, which is much warmer now than it is in spring-time.

Alpine garden.—Weeds have been very troublesome this season, and much labour has been required to keep them in check. Propagation should be continued. Seeds should be sown and cuttings inserted. If alterations are to be effected, preparations should at once be made to obtain the requisite soil and stones, and to place these in position. By doing this now, everything will be ready and the soil well settled before planting time arrives.

Roses.—The autumn crop of *Roses* is a very good one. The ground about the plants must be kept stirred with the hoe, not only to prevent weeds, but that the land may become properly aerated. Make secure any long shoots, and, in the case of strong-growing *Tea*, *Hybrid Tea* and *Rambler* varieties, cut out all the old wood.

Lawns.—These should be mown frequently when the grass is dry, and if the weather continues showery, they will require frequent rollings. The paths and the verges must be made tidy, and if the former are weedy, a weed-killer should be used. The grass edging should be protected from this corrosive substance by means of a long plank, which can be shifted as the work proceeds.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenham House, Elstree, Hertfordshire.

Brussels Sprouts.—This has been an ideal season for this popular vegetable. The plants are strong, and give every promise of a fine crop. It is a good plan at this season to examine the bed and remove all decaying leaves and superfluous growths. It frequently happens, when *Brussels Sprouts* are planted on rich ground, that large, loose growths are formed at the base. These should be taken away, as they impede the light and air which are necessary to ripen the stems. In exposed places, and where winds from the west are prevalent, it is advisable to support the plants in some way. This is easily accomplished by driving stakes in the ground at intervals, and securing to these stout cords by which to fasten the plants.

Cucumbers.—Strong plants should now be planted on well-prepared beds in the *Cucumber house*. A bed of leaves and long litter, which should have been previously well mixed and turned, should be built up at the bottom, and on this a mixture of good light loam and leaf-soil, in equal proportions. *Cucumbers* do much better during the winter months when growing in a light rather than a heavy soil. The plants should be neatly staked until the trellis is reached, and every encouragement should be given them to grow freely. Close the ventilators early in the day, and damp the foliage with tepid water, both in the morning and early afternoon. Do not hurry the plants into bearing, and, even when they commence to bear, great care should be taken not to overtax them. Plants in full bearing need careful attention as the days shorten. Thin out the old and regulate the young growth as much as possible; give frequent top-dressings of fresh compost, and, immediately the plants appear to be losing their vigour, afford plenty of stimulants in frequent but weak doses. Never allow the fruits to remain on the plants a day longer than is necessary. If they are not wanted for immediate use, place the ends in a little water, by which plan they will keep fresh and good for several days. Plants in heated pits will require much the same kind of treatment. Portable frames on hot-beds employed for *Cucumber* culture will need to be lined frequently with fresh manure: all the sun-heat possible should be conserved, and the lights opened only during the hottest part of the day. Cover the glass at night-time with mats or similar materials. If careful attention be paid to these details, and the plants are kept free from insect pests, they will continue to fruit in favourable seasons until the middle or end of October. Where plenty of glass is available, and fresh *Cucumbers* are required all through the year, another sowing should be made. Place the seed singly in small pots, and let them germinate in strong heat. Prolific, short-fruited varieties should be selected

for this sowing. Such are *Lockie's Perfection* and the old *Syon House*.

Endive.—Continue to blanch *Endive* in the open, tying the leaves when they are quite dry. Or the plants may be lifted and placed, not too thickly, in a dark building to blanch.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Pot fruit trees.—The cultivation of fruit trees in pots is rapidly extending. They are not only valuable for furnishing high-class dessert fruits, but they are also useful for decorative purposes. The fruits may not be equal in size to those grown on permanent trees, but their flavour and colour are all that could be desired. Where the means for growing *Peaches* and *Nectarines* in borders is limited, a few dozen trees in pots are extremely valuable, and especially for early forcing. A number of pot trees of *Cardinal Nectarine*, which we have forced very early for the past eight years, show no signs of deterioration and give even better results each year. All the yellow varieties of *Nectarines* do well in pots, but *Pineapple* and *Humboldt* are the two best. Of *Peaches*, *Hale's Early*, *Royal George*, *Stirling Castle*, *Bellegarde* and *Dymond* are all suited for this system of culture. Plum trees are extremely adaptable for fruiting in pots. The varieties *Early Transparent Gage*, *Denniston's Superb*, *Jefferson*, *Greengage*, *Kirk's* and *Coe's Golden Drop* will furnish a supply of fruits over a long period. Of *Apples* the following are excellent for this purpose: *Cox's Orange Pippin*, *Ribston Pippin*, *James Grieve*, *The Houblon*, *Peasgood's Nonesuch*, *Emperor Alexander* and *Gascoyne's Seedling*. *Pears* may be represented by *Triomphe de Vienne*, *Souvenir du Congrès* and *Doyenné du Comice*. If a stock of pot trees is to be obtained, no time should be lost in purchasing the trees, as they will need repotting.

Repotting fruit trees.—Preparations should be made for repotting the main batch of these trees. Prepare a sufficient quantity of soil and place it under cover so that it will be in a good condition for use. It is preferable to have the compost a little too dry rather than too wet. Some cultivators do not advise repotting the trees every year, but unless they are growing in very large pots which they have not filled with roots the best results are obtained by repotting annually. For *Peaches*, *Nectarines* and *Plums* the compost advised in a previous Calendar will be suitable, but for *Apples* and *Pears* a more substantial compost should be used, and less lime rubble included. Young, well-rooted trees should be afforded a slightly larger pot, but over-potting must not be practised. Pot firmly and be careful to fill up the whole of the space between the ball and side of the pot, using a thin rammer for this purpose. Apply water carefully till the roots are again active.

Tomatos.—Should the plants intended for autumn fruiting still be out-of-doors they should be placed in a house without delay. When three or four trusses of fruits have set, give the plants a top-dressing of loam and well-decomposed horse manure, and later when the roots have taken hold of this top-dressing give them an occasional sprinkling of some fertiliser. Stop the leading shoot when sufficient fruits have set, and remove all side growths. Water must be applied with care. Keep the plants near to the glass and permit a free circulation of air by opening the ventilators whenever the weather is favourable. Place them into their fruiting pots as soon as they are sufficiently well rooted—9-inch pots will be large enough—and employ a lighter compost than that which was used for the main crop. The flowers must be pollinated every day. Fumigate the house occasionally with a nicotine compound to keep white fly in check.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell
Park, Kent.

Apricots.—After the trees have been cleared of their fruits, late growths should be entirely removed and the necessary pruning attended to without delay. The object in pruning at this time is to remove any shoots that are not required, so that those which will furnish next year's crop may be fully exposed to sunshine and thus become thoroughly ripened before the end

of the season. If the pruning is done now, no winter pruning will be necessary. Give the trees a good washing with the garden engine, and afford water to the roots if required. Note any trees that have made gross growth with a view to root-pruning them next month.

Preparations for planting fruit trees.—If much planting is contemplated this season, it will be advisable to make an early start in preparing the ground. An ideal soil for fruit trees is a deep fertile loam. If the land is naturally poor in quality, it should be enriched with fresh loam at planting time. A compost suitable for mixing with the soil is formed of three parts good loam, and one part burnt soil and wood-ashes, with some old mortar rubble or lime; in the case of stone fruits a good quantity of this last material should be used. If the soil is already sufficiently rich, it should be deeply dug,

Pears, manure should not be used at the time of planting, as it encourages a gross, unfruitful growth, often necessitating root-pruning. The cultivator should encourage his trees to produce firm shoots of moderate size which will develop into fruit-bearing wood.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Violets in frames.—The plants should be transferred to their flowering quarters so as to become established before the winter sets in. Before lifting them see that they are thoroughly moist at the roots. Frames for Violet culture should face to the south, and be well screened from east and north winds. Partially fill the frames with stable litter and leaves or manure

the frames for at least a fortnight, or the foliage will become drawn and weak. The single-flowered varieties are not so amenable to frame culture as the double kinds. In cold districts it is advisable to plant, at least, a few lights of the single varieties. In this case afford 3 or 4 inches more space between the plants. Very fair results can be obtained by placing shallow frames over Violet plants in the borders where they are permanently planted. A few specimens in pots are useful for decorative purposes in the house or conservatory. For this purpose use relatively small pots, pot firmly, and stand the plants in the open for a short time before placing them in their winter quarters.

Preparations for winter.—As frost may now occur at any time, arrangements should be made to safeguard such tender plants as Euphorbias, Cinerarias, Primulas and Salvias, which have



FIG. 84.—BORDERS OF HARDY FLOWERS IN THE GARDENS AT ELMWOOD, KENT.

(See p. 196.)

or bastard trenched, thoroughly breaking up the bottom of the trench; on no account bury the top spit of soil to replace it with the inert sub-soil. If the soil is not naturally well drained, provision must be made for the removal of surplus moisture. Clear the ground of all perennial weeds and burn them, or they will prove a source of trouble later on. Leave the soil rough for the present to allow of weathering. The mistake is often made of digging in rank animal manure previous to planting fruit trees. This applies more particularly to Apples, Pears, and all stone fruits. In the case of small fruits, such as Raspberries and Gooseberries, manure may be used at planting time, as these fruit on shoots of the previous season's growth. In the case of large trees, such as Apples, Plums and

from a Mushroom-bed, treading the litter well, or the plants will sink after they have been planted a few weeks. A layer of soil about 6 inches deep should be placed on the manure and leaves; when the plants are in position they should be just clear of the glass. A suitable compost is one formed of three parts loam, one part each of leaf-soil and decayed manure, and a sprinkling of silver sand. If red spider is suspected, the foliage of the plants should be dipped in an approved wash as they are lifted from the open ground. Allow ample room between the plants and plant them firmly, keeping the crown just above the level of the soil. For a time no water will be needed at the roots, but the foliage should be sprayed towards the close of dry afternoons. Do not place the lights on

been, for some time past, growing in the open on beds of ashes or in cold frames. Moving plants to a fresh position affords a good opportunity for inspecting them for insect pests, tying the growths, or washing the pots.

Miscellaneous bulbs.—Besides the customary Hyacinths, Tulips, Narcissus, &c., such bulbs as Ixia, Babiana, Sparaxis, Camassia, and Chionodoxa are very valuable, when gently forced, for the spring decoration of conservatories, and for use in the house. Their requirements are very similar. The bulbs should be potted moderately closely together in 5-inch pots in a mixture of good soil, with a plentiful addition of sand. Throughout the winter they must be grown under cool conditions, admitting air to the frames as freely as conditions permit.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 20—
Nat. Chrys. Soc. Executive and Floral Coms. meet. at Essex Hall, Strand.

TUESDAY, SEPTEMBER 21—
Nat. Dahlia Soc. late Exh. at Roy. Bot. Gardens, Regent's Park (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty years at Greenwich—65.9°.

ACTUAL TEMPERATURES.—
LONDON.—Wednesday, September 15 (6 P.M.): Max. 62°; Min. 48°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 16 (10 A.M.): Bar. 30; Temp. 61°; Weather—Sunshine.

PROVINCES.—Wednesday, September 15: Max. 50° Cambridge; Min. 52° Scotland E. coast.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulls, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

THURSDAY—
Clearance Sale of Greenhouse and other Plants, two Horses, Greenhouses, Piping, Sheds, Furniture, and effects, at the Elms, Gardens, Golders Green Road, Hendon, by order of Messrs. Morle & Co., by Protheroe & Morris, at 12.

FRIDAY—
A Private Collection of Established Orchids and others, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Many years ago a deputation of silk-worm cultivators waited upon Louis Pasteur, who was engaged in the investigation of the silk-worm disease, then causing much havoc and loss to an important French industry. Pasteur endeavoured to explain to the members of the deputation that the disease of the worms was due to a parasitic microbe, and showed them how the disease could be detected by means of the microscope. To the objection that the microscope was too complex an apparatus for ordinary man to use, Pasteur replied by pointing to his little daughter of 12 years of age, who was acting as a skilled assistant to him in his investigations. Since that time this instrument has come more and more into use, not only in the laboratory, but also in the workshop, and it is certain that, in the near future, the ready assistance which it can render to all kinds of industries will be yet more fully recognised.

Already it is one of the chief agents in use for detecting adulteration in food stuffs: a suspected Tea-leaf may be interrogated by its means in a minute or two and by reason of the peculiarly-shaped

cells or idioblasts which Tea-leaves contain the suspicion justified or dismissed. The structure of dead things, of iron and steel, for instance, is found to be no less extraordinary than that of living tissues, and the changes which dead structures undergo are investigated by its means. It is scarcely an exaggeration to say that the modern industry of brewing is based on the use of the microscope. By its use Hensen, of Copenhagen, was able to show that brewers' yeast as formerly employed consisted of many varieties of Saccharomyces, and that the brewer, in using ordinary yeast, was behaving like a cultivator who used for bread-making purposes all the plants growing in a corn-field. By means of the microscope and modern methods of microbe-cultivation, his pupils were able to weed out undesirable forms of yeast and to obtain pure cultures of those which set up the desired forms of fermentation.

It may be predicted surely that what has been done for beer will be done for cider. The use of the microscope in medicine, in the discovery of new worlds of microscopic organisms, is too well known to need more than passing mention. Now, according to an interesting article by Mr. J. E. Barnard in a recent issue of *Nature* it appears that the microscope is coming into general use in the dairy, the mineral-water factory, in paper-making, printing, and in the cotton and silk industries. The architect is beginning to use it before deciding on the stone for his buildings; the great laundries, dyeing and cleaning establishments are finding in this instrument a precious ally. Not only may the nature of the "dirt" to be removed be determined by its means, but also that of the fabric—whether silk or cotton, for example. By the examination of a thread the nature of the fabric may be discovered, and thus the cleaner or dyer may safeguard himself when an article, reputed to be of pure silk, but which he determines by microscopic examination to be of very mixed nature, is put into his charge.

In horticulture, too, the value of the instrument is coming into more general recognition. With but a very small amount of skill a gardener may detect with certainty many of the fungus and insect pests with which he has to contend. As we all know full well, it is of the first importance to identify these pests at the earliest moment: a few days' delay, and the damage is done. When gardeners recognise how easy it is to use and how valuable a tool it is, they will carry a lens as they carry a pocket-knife, and will provide themselves with a microscope as they provide themselves with a fumigating or spraying outfit, and at very little cost. From being a toy for the leisured, the microscope has become a tool for the busy man.

Artificial Manure.

We are glad to see the issue of a new edition of Ville's *Artificial Manures*, which almost a generation ago was recognised as the standard treatise on these important adjuncts to good culture. M. Ville was one of the world's most eminent pioneers in educating the agriculturist in the use of what were formerly called chemical manures,

* By M. Georges Ville. Translated by Sir William Crookes, D.Sc., F.R.S. New edition revised by Sir W. Crookes and Prof. John Percival, M.A. (Longmans Green & Co.)

and his exposition of the nature and part played by the latter in the nutrition of crops in general still stands unrivalled for clearness and accuracy. The translation by Sir Wm. Crookes has lost none of the good qualities of the original.

Part I. is concerned with the composition of plants, the assimilation of carbon, oxygen, hydrogen and nitrogen. In regard to the last element it may be mentioned that Ville's experimental work was ahead of his time, and that his conclusions, based upon careful research in respect of the fixation of free atmospheric nitrogen by leguminous plants, although formerly disputed, have been amply corroborated by more recent workers.

The nature of the mineral constituents of plants is discussed in subsequent chapters, and their function in the economy of crop production is emphasised. In chapters 4 and 5 the composition of farmyard manure, its origin and cost in comparison with that of artificial manure, are thoroughly dealt with. After an exposition of the principles underlying the use of typical fertilisers, old and new, Ville devotes the rest of his treatise to the discussion of the best and most economical means of applying them to farm practice. He kept careful accounts of the results and cost of his own farming operations, and obtained similar figures from other sources. Perhaps it is this part of the work which will appeal most forcibly to men on the land, and although the farmer rarely trusts figures which concern the cost and ultimate return from isolated farm operations, he will find carefully marshalled facts and figures which show the economic value of the right application of artificial manures in the growth of all the more important agricultural crops.

The volume has been revised, in the light of discoveries made since Ville's time, without interfering with the work as it was originally presented. Substitutions have been made in the formulæ of mixtures of manures for Wheat, Barley, Mangel, Bean, and other crops where cheaper materials have become available, and additional matter has been added upon the nature and use of basic slag, basic superphosphate, nitrate of lime, and other fertilisers which have come into use in recent years.

An excellent and up-to-date chapter has also been written by Sir William Crookes upon the fixation of the nitrogen of the air for manurial purposes.

We heartily recommend the volume as a classic which should be upon the shelves of all who are interested in the raising of crops and the maintenance of the fertility of the land.

M. VIGER, who has recently been appointed an honorary corresponding member of the Royal Horticultural Society, has for many years past occupied the position of President of the National Horticultural Society of France. Wherever French horticulture is represented, either at home or abroad, M. VIGER is to be found in his official capacity. Formerly, when Minister of Agriculture, he gave many proofs of his great interest in the sister industry. English visitors to French horticultural shows are well aware of M. VIGER's kindly courtesy and hospitality. There are many honoured names among those comprised in the list of honorary and corresponding members of the Royal Horticultural Society, but we find only two other names of Frenchmen, namely, M. ANDRÉ and M. GEORGES MANTIN.

SECOND DAHLIA SHOW.—The second show of the National Dahlia Society, which was formerly held under the auspices of the London Dahlia Union, will take place on Tuesday and Wednesday next, September 21 and 22, at the Royal Botanic Gardens, Regent's Park, N.W. Full particulars of the show may be obtained from Mr. E. F. HAWES at the above address.

LEGACY TO A GARDENER.—Under the will of CAROLINE, Lady SAYE and SELE, Hereford, a number of legacies are bequeathed to servants. These amount to about £3,000, and they include a sum of £200 left to her ladyship's gardener, Mr. WILLIAM CLARKE.

MR. J. BENNETT.—Friends of Mr. J. BENNETT, gardener to the Hon. C. H. WYNN, Rûg, Corwen, N. Wales, will learn with regret of the recent bereavement he has suffered in the death of his wife after a prolonged illness.

MESSRS. DICKSON & ROBINSON'S ONION SHOW.—This Manchester firm held a competition on Wednesday last for the finest Onions grown by its customers. Competitors were required to send four bulbs, the judge being Mr. BEN. ASHTON, Lathom House Gardens, Ormskirk. Ten prizes were offered, and nearly 120 exhibits were judged. We are informed by telegraph of the names of the principal prize-winners, which are as follow:—1st, Mr. EDWIN BECKETT, Aldenham House Gardens, Elstree, with four bulbs weighing 8 lbs. 5 ounces; 2nd, Mr. BOWERMAN, Hackwood Park Gardens, Basingstoke, 8 lbs. 10 ounces; 3rd, Mr. WILKINSON, Tyntesfield Gardens, Flax Bourton, 8 lbs. 6 ounces; 4th, Mr. JOHNSON, Duffield House Gardens, Slough, 8 lbs. 4 ounces; 5th, Mr. DUNCAN, Merstham House Gardens, Merstham, Surrey, 8 lbs. 7 ounces; 6th, Mr. AVERY, Loudwater House Gardens, Rickmansworth, 7 lbs. 3 ounces; 7th, Mr. FOLKES, Amptill, Beds., 7 lbs. 10 ounces.

"HORTICULTURAL DIRECTORY."—We are asked to state that the Editor of the *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street, London, will be obliged if head gardeners will notify him of any changes of title or address that have occurred since October, 1908.

THE CULTIVATION OF INDIGO IN INDIA.—The progress which synthetic Indigo is making may be inferred from the returns published by the Government of India with respect to the areas under different crops. Though, as compared with 1897-8, the areas under cultivation in 1906-7 show, in the case of all other crops, a considerable increase and a total increase of 18 million acres, the area under Indigo cultivation has diminished by about 900,000 acres. Whether improved methods of cultivation will enable the natural product to compete successfully with that prepared in the laboratory remains to be seen.

DRY ROT OF POTATOS.—The evidence that the fungus of dry rot of Potatos may attack not only the stored tuber but the growing plant, appears now to be fairly conclusive. Beside the evidence of SMITH in America, and of Miss LONGMAN in this country, we have that published by Mr. POLE EVANS in the *Annual Report of the Transvaal Department of Agriculture*. Mr. EVANS finds that, in the Transvaal, the fungus attacks the tubers in all stages of their growth, and sets up in them a putrid rot whilst they are still in the soil. It is noteworthy that, whilst the Transvaal does not admit infected Potatos—or, rather, such as can be discovered to be infected—into the country, the other colonies of S. Africa have adopted no such prohibitive measures. When the Union is an accomplished fact, it is probable that uniformity of legislation with respect to the control of horticultural and agricultural pests will be adopted.

LIGNUM NEPHRITICUM.—Those who have been interested in the correspondence concerning the origin of Lignum Nephriticum which was published recently in these pages will find an admirable and conclusive article on the subject from the pen of Dr. OTTO STAFF in the *Kew Bulletin*, No. 7, 1909. The account refers to the attention which, by reason of its medical and physical properties, Lignum Nephriticum attracted in the 17th century, and points out that the suggestion due to Linnæus that it is the wood of the Horse-radish tree (*Moringa pterygosperma*) is erroneous. After full investigation Dr. STAFF found that the old Mexican vernacular name for Lignum Nephriticum, namely, Coatli, is mentioned in Mexican literature relating to plant names as referring to *Eysenhardtia amorphoides*. It was then discovered that specimens of the timber of *Eysenhardtia* exist at Kew, and that one, obtained from the International Exhibition at Paris in 1900, was marked Cuatl. On infusion with water the wood of this specimen gave the blue colour characteristic of Lignum Nephriticum. In the course of his researches, Dr. STAFF obtained a great deal of interesting information on the history of our knowledge of the properties of this wood, which knowledge he has brought together in the pages of the *Bulletin*.

THE BOTANICAL GARDEN OF JOHN HOPKINS' UNIVERSITY.—Like the Berlin Gardens described in a recent issue, the gardens of JOHN HOPKINS' University have been established primarily as an aid to research and instruction. Of the four sections into which the gardens are divided (see *University Circular* No. 217), two are devoted to the cultivation of plants illustrating the vegetative and reproductive organs of plants. The third serves to illustrate plant relationships, species, genera, &c. The fourth is divided into two parts, for economic and cultivated plants respectively. The three genera, *Dianthus*, *Rosa* and *Chrysanthemum*, have been chosen to illustrate the origin of horticultural varieties.

PUBLICATIONS RECEIVED.—*The Forest Flora of New South Wales.* (Vol. IV., Part 5.) By J. H. Maiden.—*Hints and Wrinkles on Tomato Culture for Market*, by "Observer." (J. Stoddart.) Price 1s. net.—*Hunter's Improved System of Mushroom Cultivation in the open air during the summer and fly seasons.* (Elt & Co., British and Foreign Patent Office, 14, Bedford Row, London, W.C.)—*Imperial Department of Agriculture for the West Indies.* Cotton Gins. How to erect and work them, by E. Y. Connell. The Grafting of Cacao, by Joseph Jones. (London: Dulau & Co., 37, Soho Square, W.) Price 4d. each.—*Agricultural Bulletin of the Straits and Federated Malay States.* (August.) (Singapore: The Methodist Publishing House.)—*The Agricultural Journal of the Cape of Good Hope.* (August.) (Cape Town: The Cape Times, Limited.) Price 6d.—*The Royal Ordering of Gardens*, by Major Reginald Rankin. (London: Thomas Nelson & Sons, Paternoster Row, E.C.)—*The Estate Magazine.* (September.) Price 6d.—*British Rainfall, 1908*, by Hugh Robert Mill. (London: Edward Stanford, 12, 13, and 14, Long Acre, W.C.) Price 10s.—*Sylloge Floræ Congolanae*, by Theophile and Hélène Durand. (Bruxelles: Albert De Boeck, Rue Royale, 265.)—*Sir Joseph Banks, "The Father of Australia."* by J. H. Maiden. (London: Kegan Paul, Trench, Trübner & Co., Ltd.)—*Catalogue and Field Book of British Basidiomycetes*, by M. C. Cooke, L.L.D., M.A., A.L.S., V.H.M., &c. (London: John Wheldon & Co., 38, Great Queen Street.) Price 2s. 6d. net.—*Journal of the Board of Agriculture.* (September.) Agricultural Statistics, 1908. Price 84d.—*Board of Agricultural and Fisheries' Leaflets:* No. 222, Meadow Saffron; No. 224, Narcissus Cultivation; and No. 226, Broom-Rape. Free from the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London.—*Agricultural and Horticultural Preparations*, by F. Pilkington Sargeant. Edited by John Humphries. (The Pharmaceutical Press, 72, Great Russell Street, London.)

VIOLAS FOR BEDDING.

(See Supplementary Illustration.)

As a lover and cultivator of Violas for nearly 30 years, I rejoice at the renewal of interest in these charming flowers. In looking over reports of trials made many years ago at Chiswick Gardens and at Regent's Park, I was impressed by this fact—how completely the old rayed type of flower has been superseded in recent years. The late Dr. Stuart, of Chirnside, Scotland, was one of the first to raise a perfectly rayless Viola. He informed me that a friend remarked to him in his garden one day, "If you could only get that white variety without rays in the centre it would be a great improvement." Dr. Stuart kept a sharp look out amongst his seedlings, but it was 10 years before he succeeded in finding a rayless flower. It was in 1887 that he first found a pure white variety without rays or markings of any kind.

Failures with Violas in the south largely arise from planting the wrong varieties. If Violas can be grown in the Royal Horticultural Society's Gardens at Wisley, they can be grown anywhere in England. The last trial of Violas at Wisley was in 1904-5, and the superintendent, Mr. Wright, in his report, published in the *Society's Journal*, said, "All the varieties made excellent growth, and with a mulch of well-decayed leaf-mould to keep the roots cool and moist the plants blossomed freely and continuously from May to the late autumn." With a view to discovering those varieties which would grow and flower best in the south, I formed at Mark's Tey, Essex, in October, 1907, a large collection from all the leading growers and raisers. The same plants have survived two winters and flowered splendidly during two summers. I have noted the following particulars respecting those which have drawn up the following data on those which have done best:—*White:* Snowflake, a beautiful, pure-white, rayless flower of excellent substance, and a strong grower; Seagull, a charming rayless flower of fine form, the plant is compact and rather dwarf; Peace, similar in form and habit to Seagull, but shows lavender shading in continued damp weather, rayless; Sylvia (Dr. Stuart's), a fine, rayless, creamy-white variety; White Empress, a large-flowered, rather taller-growing, cream-coloured variety, rayless; Pencaitland, white, with yellow blotch and rays, dwarf in habit, and very effective as a bedder. *Yellow:* Kingcup, a clear-yellow rayless flower, the growth is rather tall; Royal Sovereign, dwarfer than the last-named, golden-yellow, rayless; Redbraes Yellow, a splendid yellow variety of medium habit, rayless; Mrs. E. A. Cade, a fine flower medium in shade and habit, rayless; Bullion, very bright and dwarf, early in blooming, rayed; Walter Welsh, a tall, deep-coloured, yellow variety, with rays, excellent for a back row in a bed of Violas. *Primrose:* Primrose Dame, a clear-primrose colour, rather tall, rayless, a most effective variety; Sulphurea, dwarf in habit, very free in flowering, the large flowers are slightly rayed. *Light blue and lavender:* Blue Duchess, a distinct variety, pale blue, rayed like Duchess of Fife, from which it is a sport; Kitty Bell, lavender, hardy and free, rayless; Florizel, similar in colour to Kitty Bell, rayless; William Niel, rosy lavender. *Dark Blue:* Blue Rock, extremely hardy, a most effective variety; Royal Scot, similar in a mass to Blue Rock, but not such a fine flower; Archd. Grant, deepest violet, a strong grower, rather late in blooming; Edina, deep purple-violet, with blotch, really a bedding Pansy. *Crimson-purple:* Jubilee, this proved the hardiest of the crimson-purple varieties, medium in height and most floriferous. All the foregoing were propagated by root cuttings in the summer of 1907, and were planted out in open beds in October of that year on a stiff, clay soil. William Cuthbertson.

CENTENARY OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

A SUMMARY OF ITS HISTORY.

The origin of the Royal Caledonian Horticultural Society takes our mind back to December 5, 1809, and to a place called "The Physicians' Hall." A meeting held on that date was composed of the following 17 gentlemen:—Sir James Hall, Bart., Alex. Gibson Hunter, James Hare, Dr. Andrew Duncan, sen., Dr. James Home, Dr. Andrew Coventry, Thomas Dickson, Andrew Dickson, James Macdonald, George Whittit, John Fletcher, John Hay, Thomas Shade, Edward Sang, Patrick Lyon, Walter Nicol, and Patrick Neill.

The Last Post has long been sounded over the graves of these men, but we should do honour to their memory, because it was those 17 gentlemen who met together 100 years ago and who formed the society. Dr. Duncan was elected to the chair, and the meeting resolved to constitute itself a society for encouraging and improving the cultivation of the best fruits, flowers, and most useful culinary vegetables. It was moved and seconded "that Sir Joseph Banks, Bart., Thomas Andrew Knight, Richard Anthony Salisbury, each of whom have distinguished themselves as patrons of the English Horticultural Society, be enrolled as honorary members of the society."

The meeting then made choice of the following office-bearers for 1810:—President, the Right Hon. the Earl of Dalkeith; vice-presidents, Sir James Hall, Bart., of Douglass, Dr. Rutherford, Dr. Coventry, and Alex. G. Hunter; secretaries, Mr. Walter Nicol and Mr. Patrick Neill; treasurer, Mr. Andrew Dickson.

The first council was composed as follows:—Professionals: Thomas Dickson, James M'Donald, Edward Sang, Thomas Somerville, John Fletcher, and John Hay. Amateurs: Dr. Duncan, sen., Dr. James Home, R. Hodshon Cay, George Bruce, Thomas Hutchison, and James Smith. This was the first council, and were we to call the roll we should again find none to answer to their names.

Mr. Andrew Dickson was empowered to receive subscriptions and annual payments, and to discharge all debts incurred by the society.

Sir James Hall, Bart., first vice-president, having taken the chair, the thanks of the meeting were unanimously given to Dr. Duncan, sen., for the zeal and activity displayed by him in promoting the institution and for the suitable manner in which he had conducted the business of the day.

Such is the history of the inauguration of the Caledonian Horticultural Society.

The next business was to form committees to draw up schedules, and what was termed "Prize Questions," which was duly done.

The first exhibitor of the society was Mr. M'Donald, Dalkeith Gardens, who showed a quantity of blanched Seakale shoots, and at the same time he read an account of how these had been produced. The first judges were:—Walter Nicol, Robert Liston, Thomas Hutchison, George Bruce, Thomas Dickson, and James M'Donald.

The first prize that was offered was a silver medal for the best Radishes raised in the open ground and offered for sale in the Edinburgh market. This medal was awarded to Mr. James Thomson, gardener, Duddingston, for 300 Radishes brought to market from the open borders. The first communication read to the society was a paper by Dr. Duncan, entitled "An Account of a Method of Preparing a Soporific Medicine from the White Juice of the Lettuce." The second was from Mr. John Sheriff, "On the Curle Disorder in Potatoes," and in connection with this lecture the following extract seems to have been almost a prophecy:—

It may perhaps be alleged that Potatoes in particular situations never become diseased or curled. To this it may be replied that the contrary fact has been ascertained by experience, for it is apprehended that not a

single healthy plant of any sort of Potato that bears apples or berries, and that was in culture 20 years ago, can now be shown.

It may also be said that Potatoes which have become diseased or curled have been restored to health for several seasons. To this it may be answered that vegetables as well as animals may be sick and recover, and that from unknown as well as known causes.

Mr. Knight restored the wood of the languishing Golden Pipita and enabled it to produce fair flowers and fine fruit by protection and a favourable soil, but this was only a temporary renovation, as the health of an aged valetudinarian is preserved for a few years by the aid of cordials and the general influence of a milder climate.

It is well known that Potatoes cultivated in situations where the plants annually ripen their berries soon become diseased or curled, while plants from the same individual seedling in upland situations, where there is not sufficient warmth any season to mature their fruit, continue for a longer time comparatively healthy. In the first case premature old age seems to be brought on by excessive annual seed bearing. In the last case the plants, or rather bulbs, as they make less exertion continue longer vigorous. The maximum of the duration of the life of every individual vegetable, as well as animal, is predetermined by Nature under whatever circumstances the individual may be placed. The minimum, on the contrary, is entirely determined by these very circumstances. Admitting, then, that a Potato might reproduce itself from bulbs for a considerable number of years in the shady woods of South America, of which it is a native, on the mountainous regions of Europe, we find it soon becomes abortive in the cultivated champaign of Britain. That some particular sorts of Potatoes are longer lived than others cannot be doubted, but surely it is not much more philosophical

the expense of the society, and that the committee be also empowered to make application to Government for aid if such a measure shall seem to them to be advisable." They were afterwards allowed a Government grant of £200 a year.

The first bunch of Grapes of the variety Black Hamburg, was shown on September 3, 1811, of which the largest berry weighed 170 grs., and measured 3.3 inches in circumference. In this instance an extraordinary medal was awarded.

In 1813 awards were made for home-made wines, nearly all the prizes being gained by ladies. In 1814 exhibitors were allowed to choose prizes for themselves, and it is related that some selected spectacles, and others umbrellas, teapots, dessert spoons, mirrors, fruit knives, writing desks, and such like articles. Meanwhile the society continued to offer medals for seedling Apples, Pears, Plums, plants, and flowers, adding to the number of its members and altering its rules and regulations as the exigencies of the times rendered necessary.

In the year 1815 it was proposed by Sir John Sinclair that the society obtain a horticultural survey of the Netherlands made by intelligent men, and it was imagined that this might be



FIG. 85.—GENTIANA FREYNIANA, A NEW SPECIES FROM ASIA MINOR.

to expect that the horticulturist should be able to give everlasting vigour to individuals than that the physician should be able to do so to those of the human race.

Reasoning from what we know, there appears little doubt of the Potato in a cultivated state being a short-lived plant, and therefore, though it may be preserved longer healthy by growing it in elevated or shady situations, and perhaps by cropping the flowers and thereby preventing the plants from exhausting themselves by annually maturing their seeds, yet we have every reason to expect that disease will sooner or later, according to circumstances, make its attack. The obvious inference is that to obtain vigorous plants and secure productive crops, recourse must frequently be had to varieties newly raised from seed.

The third communication was from Mr. MacMurray, on the Gooseberry caterpillar and the maggot which infests Onions. The fourth was from Mr. Wighton, Melville House, on destroying insects and canker in fruit trees, all work which, at the end of 100 years, still occupies our attention.

At a meeting held on March 28, 1811, a committee was appointed "to look out for a proper place for a garden in the neighbourhood of Edinburgh in which experiments on horticulture may be conducted under the direction and at

executed at the expense of £100, but as the ordinary funds of the society could not afford it, a particular subscription was set on foot for this purpose. In 1817 the council signified its wish that the survey should be undertaken in that year. In this year also Messrs. Cunningham, of Comely Bank Nursery, were awarded a silver medal and five guineas for their Mushroom beds, "from which the inhabitants of Edinburgh may now be supplied with fresh Mushrooms during nearly all the year, and with genuine ketchup."

A medal was also offered in this year to the gardener who had served for the longest period the same master or family to the satisfaction of his employer. The medal was awarded to Mr. Alex. Greig, who had been gardener in the family of Colonel Blair, of Blair, for 45 years.

The Report of the deputation sent by the society to Flanders, Holland, and the north of France was now produced, but, being too voluminous to be read, was meanwhile left over, and was published in book form in 1823 under the title *Journal of a Horticultural Tour Through*

Some Parts of Flanders, Holland, and the North of France. Mr. Neill, who, along with Mr. John Hay and Mr. MacDonald, Dalkeith, formed the deputation, was the author of the Report.

In June, 1818, it is reported how, at one of the meetings, Sir George Mackenzie, Bart., stated that several highly respectable members had suggested the propriety of the society interesting itself to procure the establishment of a commodious permanent and regular fruit and flower market in Edinburgh, the want of which deprived the inhabitants of many comforts and luxuries which in other circumstances would pour into the city from the numerous gardens which surround it. After some observations by the Earl of Wemyss illustrative of the importance of such a market, this business was referred to the council.

On September 4, 1823, the 14th anniversary of the society was celebrated, on which occasion 120 members sat down to dinner. The dessert consisted of 80 dishes of Grapes, 40 of Peaches, Nectarines, Plums, and Apricots, 30 of Apples and Pears, and 20 of Gooseberries, 22 Melons, and 10 Pineapples.

Referring to the meeting held on March 28, 1811, when the advisability of having an experimental garden was broached, we find the matter again brought up on January 13, 1824, when a committee was formed to raise funds for securing and maintaining an experimental garden. On July 15, 1824, the society obtained possession of ground at Inverleith, and Mr. William M'Nab was engaged to provide a plan for laying out a garden, for which he was duly awarded a gold medal. In this year also the Royal Charter was procured. James Barnet was at this time brought from London to be the first superintendent of the gardens, but some years afterwards he was dismissed for mismanagement. Mr. M'Nab was appointed his successor in October, 1836, and he was succeeded in 1850 by Mr. Evans.

The first big flower show was held in the gardens on August 7, 1828, when there was shown amongst other things 35 seedling Gooseberries by Mr. White, of White Hill Gardens, Lasswade.

On July 3, 1830, another flower show was held, and a musical promenade, where refreshments were supplied, proved extremely popular.

The meeting of July 3, 1837, was postponed, owing to the death of King George. *David W. Thomson, Edinburgh.*

(To be continued.)

TWO NEW GENTIANAS.

ANY addition to this beautiful family of rock-garden and border plants is welcome, especially those that are easily grown. During the late summer and early autumn one of the most effective displays in the rock-garden is furnished by a bank of the Willow-leaved Gentian (*G. asclepiadea*), in both blue and white varieties. Although difficult to transplant, this species comes up freely from self-sown seed in damp, shady corners, but, on the contrary, if the seed is gathered and allowed to become dry it takes a long time to germinate. Another late-flowering species is the well-known *G. septemfida*, a native of the Caucasus. This latter is a most variable plant, and three different forms have been figured in the *Botanical Magazine*.

In habit and appearance the new species *G. Freyniana* (see fig. 85) most nearly resembles *G. septemfida*, but differs chiefly in having much larger flowers. These are more inflated towards the mouth, while the fringed crest which intervenes between the larger segments of the corolla is not so prominent. During July and August the beautiful dark blue flowers, with a paler throat, are produced in terminal heads, in which the blooms are closely packed together; each flower lasts in perfection for nearly a fortnight. This Gentian, like most of the other members of the family, prefers a half-shady posi-

tion; the group shown in fig. 85 is growing in a north-western aspect, where the sun's rays only reach in the late afternoon. Planted in deep well-drained, loamy soil, each plant produced several procumbent stems about 9 inches or more in length, each terminated by a head of flowers. *G. Freyniana* is a recent introduction from Asia Minor, the plants illustrated having been received in 1906. Other late-flowering Gentians include the North American *G. Andrewsii*, with blue flowers having a contracted mouth tipped with white, and the Japanese *G. scabra* var. *Buergeri*, a tall-growing, autumn-flowering plant also having blue flowers.

GENTIANA CORYMBIFERA.—All the New Zealand Gentians are somewhat similar in habit and appearance, and were formerly included in one comprehensive species under the name of *G. saxosa*. Cheeseman, however, in the recent *Flora of New Zealand*, admits 16 different species which are described with well-marked characters. Whilst our gardens contain many representatives of the genus from all over the northern temperate regions, so



FIG. 86.—*GENTIANA CORYMBIFERA*, A NEW SPECIES FROM NEW ZEALAND.

far as I am aware, the new species *G. corymbifera* (see fig. 86) is the only one in cultivation from the south. Seeds were received from New Zealand under the name of *G. pleurogynoides*, which is a Tasmanian species, but which name has been applied by botanists to some of the New Zealand plants. *G. corymbifera* is found on the mountains of the south island at elevations ranging from 1,000 to 4,000 feet. The plant is said to be abundant and flowers there from January to March. It grows from 12 to 18 inches high, with usually simple stems branching toward the top and bearing corymbs of white flowers from $\frac{3}{4}$ inch to $1\frac{1}{2}$ inch in diameter. Like many New Zealand plants it did not survive the winter in the open, all those planted out-of-doors being killed. The plant shown in the illustration was grown in a cold frame at Kew. Before sending up the inflorescence it produced a tuft of narrow, strap-shaped leaves about 4 inches long. *W. I.*

PLANT NOTES.

OURISIA COCCINEA.

MR. ARNOTT'S note on this plant (see p. 417) leads me to describe my experience with this beautiful but capricious native of Chili. About six years ago I made a long bed on a ledge about 18 inches above the ground level, which was only exposed to the sun for under three hours in the day. It was composed entirely of sandy peat mixed with small fragments of charcoal. Having obtained several plants of *Ourisia coccinea*, I set them out in this bed and watered them well. The spot is intensely dry, and unless moisture is artificially supplied, none but drought-loving plants can exist. The *Ourisias* grew well, and the second year I had over 40 flower-spikes about 18 inches in height, and congratulated myself that the plants were permanently established. However, the next year their ranks were thinned, although copious waterings were frequently given, and in four years not a plant was left. Last year I wrote to Mr. Walpole, of Mount Usher, where I knew the plant was a weed, and asked him if he could spare me some specimens. He most generously sent me a small hamper full, and these were carefully planted in the same bed and well watered. This was in October, but during the winter they all died, and there is now not one left. I noticed that these plants had been grown in loam, but, seeing that the first lot did so well in sandy peat for a time, I thought that a change to another soil would not affect them injuriously. The first batch was also planted in October and commenced to grow at once, and did splendidly for two years, but those from Mr. Walpole never made any growth. I am wondering if the soil had become sour, and if they would have done better if I had made up a fresh bed of sandy peat. I am very vexed at this failure, especially after having succeeded so well for two years, and, as I am very fond of the plant, am disappointed at being unable to induce it to thrive, though I fear it is useless to persevere in the endeavour. Undoubtedly, the extreme dryness of the garden is much against it, as watering can never satisfactorily take the place of natural moisture. *Wyndham Fitzherbert.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CURE FOR SHOT-HOLE FUNGUS.—I enclose a fair sample of Peaches and Nectarines grown in a cool Peach-house. After a severe attack of shot-hole fungus (*Cercospora*), I sprayed the trees with liver of sulphur, at the rate of $\frac{1}{2}$ ounce to one gallon of water, but this did not stamp out the disease. On June 21, the trees were completely stripped of their foliage. Thinking I had got some other disease, I sent some leaves for your examination, and you recommended me to spray them with powdered sulphur and lime, with excellent results. The trees have carried an average crop, and the foliage now is very clean. I have sprayed them with the sulphur and lime five times, and you will see the fruit is not damaged in any way. The Peaches are *Violette Hative* and the Nectarine *Rivers' Orange*. *Thos. Pateman.* [The following specific was recommended:—Put 8 lbs. of good quicklime into a barrel, add one gallon of water, and when the lime begins to slake add 8 lbs. powdered sulphur. Stir well until the lime is thoroughly slaked, then add water to make 50 gallons of the mixture. This should be kept stirred during its application to the trees. The specific is most efficacious just when the leaves have first expanded, but its use should be continued at intervals.—Eds.]

STRAWBERRY LEADER.—Permit me to thank *R. G.*, p. 187, for correcting my statement respecting *Leader Strawberry*. I have known the variety only for the last four or five years. It was an error to place the note under the heading of a late Strawberry, as my note stated that *Leader* is quite as early in fruiting as *Royal Sovereign*. *W. H. Y.*

VEGETABLE EXHIBITION AT LOWFIELD NURSERY, CRAWLEY.—Messrs. J. Cheal & Sons last year offered prizes for vegetables, the result being so satisfactory that a second exhibition was arranged this season. The show took place on Wednesday, the 8th inst. Sixteen classes were provided and suitable prizes offered in each. The exhibits were accommodated in a large tent erected in the nursery. The chief class was for eight kinds of vegetables, four prizes being offered; the first prize was won by Mr. J. Sparks, of Horsham, in competition with eight exhibitors. There was a similar class restricted to amateur growers, eight exhibits being staged. There were also classes for Potatoes, Turnips, Onions, Parsnips, Celery, Cabbages, Leeks, Brussels Sprouts, and Carrots. In some cases no fewer than 23 persons competed. Large numbers of visitors attended the show, and many also inspected the nurseries. Some 20 members of the Crawley and District Gardeners' Debating Society paid a visit to the exhibition, and were entertained to tea by Messrs. Cheal. *A. D.*

THE ROYAL BOTANIC SOCIETY.—As I have for many years taken an interest in this Society, I would like to say a word on the suggestions that have been made with regard to the future of the Botanic Gardens. These suggestions are: (1) That the gardens should be thrown into Regent's Park, and (2) that the gardens of the Zoological Society should be enlarged with a view to uniting the two Societies. There are many objections to the second proposal. The objects of the two Societies are wholly different. The new buildings that would have to be erected would cost thousands of pounds. The adoption of the first proposal would, in my view, be most unfortunate. London cannot afford to lose the one ideal place still available for flower and horticultural exhibitions and for outdoor receptions by public bodies and societies. Regent's Park is already one of the largest and most attractive in London, covering, with Primrose Hill, some 470 acres, and, except in the principal avenues, the frequenters over acres are few and far between. I favour an amalgamation with the Royal Horticultural Society, a well-managed and consequently flourishing body. Under enlightened control the Botanic Garden would, I am sure, soon become what it should be—one of the brightest and most useful places in London. *J. S. Rubinstein.*

ROBINIA PSEUDACACIA AS A STREET TREE.—As stated by your correspondent Mr. A. D. Webster on p. 187, no tree is more useful for street purposes than the False Acacia and the varieties grafted on it. It is not generally recognised that the conditions under which street trees grow are very different from those which obtain in parks and gardens. In the making of a new street the engineers almost always remove the soil and get to what they call the hard bottom—the subsoil. The tree is expected to live in this subsoil, a solid mass almost devoid of nitrogenous food. Trees on the False Acacia root, being well equipped with nitrifying bacteria, do not suffer through this dearth of nitrogenous food, and, consequently, maintain a healthy green colour and vigorous growth when other trees are starved and withered. The vigorous habit and great brittleness of the growth must be borne in mind by those who use the Robinias in streets and exposed places. The head and side growths should have an annual pruning during the first few years to encourage a stocky growth. If this is neglected the long branches, having a great leverage, break in a most disappointing manner. Those who have dry, hot, sandy banks to deal with, will find a useful friend in the common False Acacia. Taking a lesson from the Belgian railways, where many of the sandy railway banks are held together by False Acacia, I planted a few thousand seedlings on a dry roadside "cutting" three years ago. This cutting was through a loose, sandy gravel. To-day it is a mass of vigorous green bushes, and the moving face firmly fixed by the mass of roots. The Belgians every winter mow the shoots as low as possible with a scythe-like chopper, and the resulting growth is a dense mass of sturdy shoots, often attaining, even on dry, sandy banks, a length of 6 feet by midsummer. One of the best forms I have found for streets is the variety *Bessoniana*. *Inermis* is a variety which lends itself magnificently to archi-

tectural effects—to form a trim line in the front of a bold building. Probably one of the best effects to be seen from *Inermis* is at Leamington, where a row of magnificent trees is to be seen. *Pem.*

—From what Mr. Webster says on p. 187, respecting the capacity of Robinia and certain varieties of it, to withstand heat and drought, I fully expect these trees would be more successful than some species in our towns, for what with the paths being either paved or asphalted, and the roads tarred, very little moisture can get to the roots of trees. Species that love moisture do not have a very ideal existence, especially if extra watering to make up the necessary amount is forgotten. *Alec D. Berney, Leamington Spa.*

THE CULTURE OF LILIES.—I am particularly interested in the remarks of *A.*, on p. 163, on the deplorable custom of the Japanese of denuding the bulbs of Lilies of their roots prior to packing them for shipment to England. I have repeatedly called attention to the matter during the past 25 years. This practice appears almost universal among the Lily exporters of Japan. During the past 40 years or so many consignments of *L. auratum* have been worthless. The bulbs being rotted or affected with fungus. Of the sound bulbs which are received, a large number quickly perish when placed in contact with the soil; whilst the few that flower fail to succeed in the following year. The reason of the failure is not far to seek. The Lily makes but two sets of roots each year—the basal and the fibrous. The basal roots are formed when the flowers are fading, and are generally cut away with any old roots that remain. Hence, for any subsequent growth or flowering the plant is dependent upon the stem roots so abundantly produced above the bulb, and the latter usually collapses when the flower-stem is approaching its full height. This is the brief history of many thousands of Lily bulbs that reach England each year, the great bulk of them failing to produce a basal root at all. Were it otherwise, there would be no difficulty whatever in establishing many kinds in large numbers. This state of things is extremely disappointing, and it is time that purchasers demanded that the bulbs be shipped with the full complement of their roots as dug from the soil. Such a proceeding would naturally do away with the existing system that obtains in Japan of moulding the bulbs in tempered clay, and, in place of the now plump-looking and rather heavy bulbs, with rootless base and fungus-affected core, we should see a less plump, fresh-looking bulb, somewhat shrivelled it may be, so far as the outer scales are concerned, but with roots intact and capable of immediate resuscitation when replanted in the soil. To what extent shrivelling would take place would largely depend on the system of packing, though, for Liliums generally in the dormant state, ordinary packing between thin layers of rather dry soil would suffice. In this connection, it is instructive to recall the fact that Mr. E. H. Wilson, when collecting Lily bulbs in China, made a point of retaining all the root-fibres to the bulbs, and no trouble was subsequently experienced in establishing the plants. An alternative plan to importing bulbs would be the raising of seedlings on a large scale, and this, in conjunction with the raising of home-grown stocks of Lilies from scales and bulbils, is well worth attempting in this country. An important point to remember in this work is that many species of Lilies require to be treated not as perfectly hardy subjects, but rather as cool greenhouse plants during their two first seasons of growth. At first sight it may appear a little illogical to accord greenhouse treatment to a perfectly hardy subject, but the disappointments, failures and losses of either open-air or cold-frame treatment are known to all who have engaged in the propagation of the Lily by these means. Frequently in the case of *L. auratum* and *L. speciosum* in all their forms, and, indeed, many other species of Lilies that do not produce bulbiferous growths on the more exposed parts of their stems, there will be found near the base and just below the ground level a number of bulbils that will furnish useful stock. Your correspondent speaks of *L. rubellum* as a comparatively free seeder from imported bulbs, and says "seed may readily be obtained and ripened" if the blooms be pollinated. That, however, is not my experience, inasmuch as a large percentage of

the bulbs do not reach the flowering stage at all. But where flowers are produced, there is no better way of increasing this delightful plant. In the note on p. 169, referring to the home-raised Lilies shown in the Supplementary Illustration, the concluding sentence is as follows: "Being a stem-rooting Lily, the bulbs should be planted 3 to 4 inches deep." I believe, however, that all stem-rooting Lilies may be buried much more deeply than this to their advantage. It is also important, too, that these stem-rooting kinds be given a rich food supply, renewed or augmented annually at the surface. *E. H. Jenkins.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 14.—Exhibits in the fruit and vegetable section formed the principal feature at the meeting on Tuesday last, held in the Society's hall, Vincent Square, Westminster. The most important display was a collection of fruit trees in pots, shown by Messrs. GEO. BUNYARD & Co., LTD. This was awarded a Gold Medal. There were also fine exhibits of Melons, Grapes and other hothouse fruits; also vegetables, including a large collection of Potatoes. A variety of Strawberries received an Award of Merit from the FRUIT AND VEGETABLE COMMITTEE.

Exhibits before the FLORAL COMMITTEE consisted mainly of Dahlias and hardy perennials. This Committee recommended 12 Awards of Merit to novelties.

There were several interesting displays of Orchids, and the ORCHID COMMITTEE recommended awards which included one Botanical Certificate and one Award of Merit.

At the three o'clock meeting in the lecture room an address on the "Physiology of Pruning" was delivered by Mr. Edward A. Bunyard.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Drury, H. B. May, Jno. Green, A. Kingsmill, J. F. McLeod, Jno. Jennings, W. Howe, Jas. Walker, W. Bain, Chas. Dixon, Arthur Turner, Herbert J. Cutbush, H. J. Jones, Wm. Cuthbertson, Chas. E. Pearson, E. H. Jenkins, W. J. James, W. Y. Baker, George Paul, R. C. Notcutt, R. Hooper Pearson, and R. W. Wallace.

A large and representative exhibit of Bamboos was staged by Mr. L. R. RUSSELL, nurseryman, Richmond. It was arranged as a floor group adjacent to the wall opposite the entrance door, and was as effectively displayed as is possible with a group of this character. The front was undulating in outline, and in the centre was a pool planted with coloured Nymphaeas. The Bamboos were excellent specimens, some being very large. The more noteworthy were *Bambusa palmata*, a variegated form of *B. disticha* named *Alphonse Karri*, *B. tessellata*, *Phyllostachys Castellonis*, *P. mitis*, *P. violascens*, the specific name being in allusion to the coloured stems; *Arundinaria fastuosa*, *A. anceps*, *A. nitida*, and *A. Simonii*. The Water Lilies were very large, especially fine being the white variety *Wm. Doogue*. (Silver-gilt Flora Medal.)

Messrs. PAUL & SON, Old Nurseries, Cheshunt, showed a collection of ornamental shrubs and trees as sprays. The group was filled with interesting subjects, and it was a pity they were so crowded, which caused much of their beauty to be overlooked. The autumn tints of the various species of *Acer*, *Berberis* and *Quercus* were very pretty. *Quercus Albertii* has very large foliage, which, when young, is tinted with reddish-brown. Another fine Oak is *Quercus dentata*. *Lonicera Hildebrandtii* is a giant amongst Honeysuckles, the flowers are 6 inches or more in length, the stem being stout and woody. *Paulownia imperialis* was noticed, with its massive leaves; also *Rhus typhina* that assumes such pretty tinting at this season. Berried subjects, including a large-fruited, crimson form of *Pyrus aucuparia* named *fructii dulcis* and *Hippophae rhamnoides* with Crab Apples in variety added a touch of colouring, and the display was further brightened with hardy Fuchsias, Hydrangeas and Hibiscus in flower. (Silver-gilt Flora Medal.)

Messrs. H. B. MAX & SONS, The Nurseries, Upper Edmonton, showed beautiful specimens of

both golden and silver varieties of *Gymnogrammes*. The genus is an extensive one, and the plants represented the finest for decorative purposes. None was more elegant than *G. chrysophylla*, of which several forms were shown, including *G. c. grandiceps superba*, *G. c. Reginae*, and *G. c. Alstonii*. Others equally beautiful were *G. peruviana* var. *Mayeri*, with silvery farina; *G. flavescens*; *G. schizophylla*, and its variety *elegans*; *G. pulchella Wettenthaliana*; and *G. p. W.* var. *superba*, with crested fronds. In addition to the Ferns, Messrs. MAY showed varieties of large-flowered *Veronicas*. (Silver Flora Medal.)

A very large exhibit of Dahlias was displayed by Messrs. CARTER, PAGE, & Co., 52 and 53, London Wall, London. It embraced Cactus, Single, Pompon, and Pæony-flowered varieties, there being no fewer than 120 distinct kinds of the Cactus type. The majority were displayed in baskets, but vases and tall epergnes were also utilised, the flowers being arranged with grasses, Asparagus, and other greenery. The flowers were in excellent condition, and represented the best in commerce. (Silver-gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited Dahlias, including a selection of the Pæony-flowered type, of which *Yellow Colosse*, *Souvenir de Gustave Douzon* (red), *Madame Van den Dael* (pink, with white centre), and *F. Grinstead* (with striped florets) were prominent. Of the Cactus-flowered varieties, one labelled *Progenitor* had cut florets suggesting tasselling. (Bronze Flora Medal.)

Messrs. T. S. WARE, LTD., Feltham, showed Dahlias and perennial Asters, the latter including *Beauty of Colwall* (heliotrope) and *Feltham Blue*, both excellent varieties. (Bronze Flora Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, staged many fine blooms of show Dahlias and an assortment of choice Cactus-flowered kinds. (Silver Flora Medal.)

Messrs. J. T. WEST, Brentwood, also made a fine display with these seasonable flowers, having blooms of all the types. (Silver Flora Medal.)

Other exhibitors of Dahlias were Messrs. JAMES STREDWICK & SONS, St. Leonards; Messrs. J. CHEAL & SONS, Crawley; and Messrs. J. BURRELL & Co., Cambridge. (Silver-gilt Banksian Medal.)

Messrs. J. CHEAL & SONS showed single and pompon varieties in great assortment, besides many of the finest of the show and Cactus types. (Bronze Flora Medal.)

Mr. AMOS PERRY, Enfield Chase, Middlesex, showed named varieties of Delphiniums, of which *Lemartin* (light blue), *Pluto* (dark blue), *Mrs. Creighton* (dark blue with purple centre), and *King of Delphiniums* (opal) were the more noticeable. Interspersed amongst these were spikes of large-flowered Pentstemons, also *Valloia purpurea* (flowering well in small pots), *Amaryllis Belladonna*, and other hardy subjects.

Messrs. R. HARKNESS & Co., Hitchin, showed *Gladioli*, and an extensive group of these flowers was displayed by Messrs. BURRELL & Co., Cambridge. (Silver-gilt Banksian Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, N., showed a floor group of hardy flowers, in which were large bunches of Pentstemons, Liliiums, Tritomas, Delphiniums, Erigerons, Phloxes, Gaillardias, and other seasonable subjects in the choicest varieties. (Bronze Banksian Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, exhibited a collection which included hybrid *Kniphofias*, the type and coloured varieties of *Anemone japonica*, many pretty *Phloxes*, *Gaillardias*, *Coreopsis grandiflora*, *Actea alba* in fruit, also early bulbous flowers, amongst which *Sternbergia lutea* was prominent. Adjoining the hardy flowers Messrs. BARR showed 50 varieties of *Eucalyptus* as seedlings. (Bronze Banksian Medal.)

Mr. FRANK BRAZIER, nurseryman, Caterham, displayed a bank of hardy flowers as a corner exhibit, in which were noticed Pentstemons, *Phloxes*, *Antirrhinums*, *Scabiosas*, early *Chrysanthemums*, and *Carnations*.

Mr. MATRICE PRICHARD, Christchurch, Hants., displayed seasonable hardy flowers. *Crinum Powellii*, *Gaura Lindheimeri*, *Lythium roseum superbum*, *Antholyza crocosmiiflora*, *Delphinium Dwarf King*, *Montbretias* in variety, and many others were finely shown. (Silver Banksian Medal.)

THE GUILDFORD HARDY PLANT NURSEY also exhibited hardy flowers

Messrs. Wm. WELLS & Co., Merstham, Surrey, showed decorative varieties of *Chrysanthemums*, also *Pentstemons*, *Michaelmas Daisies*, and other flowers.

Mr. W. LEGGETT, West Bergholt, Colchester, exhibited *Rose* blooms, amongst which we noticed *Elizabeth Barnes* (rose-red with silvery reverse) and *Mme. Leon Pain* (a pretty bluish variety of pleasing shape).

Messrs. JOHN PLED & SONS, West Norwood, displayed a small rock-garden exhibit largely planted with succulents.

Three large pans of *Vallota purpurea* were shown by Mrs. MATTHEWS, Chesham Park, Anerley (gr. Mr. C. Trower). They were remarkably well-flowered plants. (Cultural Commendation and Silver Flora Medal.)

AWARDS OF MERIT.

Chrysanthemum Leslie Wells.—This early-flowering variety has rich, yellow flowers of decorative size. The plant is said to possess an unusually good habit. (Shown by Messrs. W. WELLS & Co.)

Dahlia Little Bescwing.—A most charming Pompon variety of neat form and small size. The florets have a yellow base and red margins. (Shown by Messrs. KEYNES, WILLIAMS & Co.)

Dahlia Edward Mawley.—A brilliant crimson Show variety of the best exhibition form. (Shown by Mr. C. TURNER, Royal Nurseries, Slough.)

Dahlia Jupiter.—This is a large flower of the Cactus type, in which the florets are yellow at the base, the rest being pink splashed with crimson. (Shown by Messrs. STREDWICK & SONS.)

Dahlia Prima Donna.—This is a first-class Cactus variety, with long florets, not so white as *Snowdon*, but having a cream tint. (Shown by Mr. H. SHOESMITH.)

Cactus Dahlias.—Awards of Merit were recommended to the following Dahlias, which were described in the last issue, p. 192, col. 1:—*H. H. Thomas*, *Iolanthe*, *Indomitable* and *Red Admiral*, all from Messrs. J. STREDWICK & Co., St. Leonards.

Helium "Riverslea Beauty".—Apparently a variety of *H. autumnale*, this plant has bright yellow flowers that would be very effective in a border. (Shown by Mr. M. PRICHARD, nurseryman, Christchurch.) A similar variety with rather deeper tint was recently shown by Mr. Hudson from Mr. de Rothschild's garden at Gunnersbury House.

Potentilla atrosanguinea Gibson's Scarlet.—This is not a new plant, but somewhat rare. The flowers are very brilliant in colour.

Rhus sinica.—A small plant of this species was shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt. Its large, pinnate leaves were coloured brilliant scarlet. It is obviously an excellent decorative shrub for the lawn or shrubbery, the colour developing in autumn.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (Hon. Sec.), Sir Jeremiah Colman, Bart., Harry J. Veitch, H. Little, W. Boxall, J. Forster Alcock, R. G. Thwaites, J. Charlesworth, W. Cobb, F. Sander, C. H. Curtis, W. P. Bound, W. H. White, W. H. Hatcher, H. Ballantine, Gurney Wilson, J. Wilson Potter, and Stuart Low.

Messrs. SANDER & SONS, St. Albans, staged an effective and interesting group, for which a Silver Flora Medal was awarded. There were excellent examples of *Cattleya Iris* and its finer variety *inversa*, a number of which occupied the centre. Around them were brightly-coloured *Lælio-Cattleya Ella*, *L.-C. Carissima*, *L.-C. Nysa*, *L.-C. Phoenix* (*C. Dowiana aurea* × *L.-C. Hy. Greenwood*), *L.-C. Blethleyensis*, *L.-C. Baroness Schröder*, *Cattleya Pittiana*, and other hybrids. *L.-C. Phoenix*, a very pretty hybrid, with light, buff-coloured sepals and petals, the latter tinged with rose, and claret-purple lip with a golden base; plants of special interest were *Cynoches Egertonianum viride*, with a long raceme of green male flowers, and two erect spikes of large, fleshy female flowers, which were also green, with ivory-white labellums. Each spike bore two flowers. Also *Rhynchostylis retusa*, with two flower-spikes; the pretty little *Sigmatostalix radicans*, and *Polystachya Leonensis*.

Messrs. CHARLESWORTH & Co., Hayward's Heath, were awarded a Silver Flora Medal for an attractive group, in the centre of which was a fine selection of their original strain of the beautiful *Cattleya Iris* (bicolor × *Dowiana*), the flowers varying from bronzy-orange, with magenta-crimson lip, to reddish-brown, with ruby-purple lip. All the forms are brightly coloured and last a long time in bloom. Among hybrids of *Sophronitis grandiflora* were *Sophro-Cattleya eximia*, with bright red flowers; *Sophro-Lælia Heatonensis*, rich scarlet, with yellow base to the lip; *S.-L. Gratrixie*; *Sophro-Lælio-Cattleya Leda*; and *S.-L.-C. Marathon* (*S.-L. Psyche* × *C. Enid*), of *Cattleya* shape, and with very richly-coloured flowers. Other fine subjects noted were *Cattleya Venus*, bright yellow, with a broadly-expanded, ruby-coloured lip, veined with gold; *Cattleya St. Gothard*, a large and finely-formed hybrid; *Cattleya Gaskelliana alba*; and *Oncidium ornithorhynchum album*.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for a select group of well-grown specimens, containing both interesting species and good hybrids. Among the former were two specimens of *Cynoches maculatum*; the pretty little *Walnawa pulchella*; *Sigmatostalix radicans*; *Physosiphon Loddigesii*, with many racemes of reddish-orange flowers; *Cirrhopetalum refractum*; *Oncidium unicorn*; *Celia macrostachya*; *Cynoches chlorochilon*; *Angræcum distichum*, &c.; a row of tall, yellow spikes of *Oncidium oblongatum* being at the back of the group. Among the hybrids were two very dissimilar plants of *Sophro-Lælio-Cattleya Danæ* (*C. Harrisoniana* × *S.-L. Leta*), with, in the one case, cream-white flowers, tinged and marked with rose, the other having yellow-tinted sepals and petals. *Lælia pumila delicata*, a pretty, white form, tinged with lavender, and with violet markings on the lip; *Cattleya Haroldiana* var. *Hildegarde*, white, with violet marbling on the front of the lip; and *Brasso-Cattleya Pocahontas alba*, a pretty, white, fragrant flower, were also interesting.

Mr. EDWARD V. LOW, Orchid Nursery, Vale Bridge, Hayward's Heath, staged a small group of *Cattleya Iris*, *C. Adula*, and a plant of a distinct variety of *C. conspicua* (bicolor *Grossii* × *Gaskelliana*), with dull, rose-tinted sepals and petals, the base of the lip being white and the front rosy-lilac. Others shown by Mr. LOW were *Cypripedium Maudie*, *C. Lord Ossulston*, and *C. Nandii*. (Silver Banksian Medal.)

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), showed the new *Cattleya Roupelliana* (*superba* × *Hardyana*), a pretty and distinct flower, of a bright, deep rose colour, the lip being rose-purple on the outside of the tube, and claret-crimson in front; also *Sophro-Lælia Ortonii* (*S. grandiflora* × *L. Diana*), scarlet, with a yellow base of the lip; and several good plants of *Cattleya Adula*.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), sent *Dendrobium Phalaenopsis* Gatton Park variety, a large, white form, slightly tinged with lavender, and marked with violet on the lip; and the pure white *D. P. album*.

Messrs. J. & A. A. McBEAN, Cooksbridge, staged a pretty group, in the centre of which was a good specimen of *Vanda Sanderiana*, with two spikes. The exhibit also contained *Cattleya Iris*, *C. aurea*, two elegant examples of the white *Oncidium incurvatum album*, *O. Schlimii*, *Dendrobium Dearei*, *Cypripedium insigne Sanderianum*, *C. Jas. H. Veitch*, and *C. Rothschildianum*.

Messrs. STANLEY & Co., Southgate, showed seven plants of *Cattleya iridescens* (bicolor × *Eldorado*), the variety *splendens* securing an Award of Merit. All had the labellums with an orange-coloured isthmus, the fronts varying in tints of rose and purple; the sepals varied from green to gold colour and buff.

Sir TREVON LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed the pretty *Sophro-Lælio-Cattleya Danae*, *S.-L.-C. pum-eximia* (*L. pumila* × *S.-C. eximia*), and two rare *Angræcums*. (See Awards.)

Mr. H. A. TRACY, Twickenham, sent a specimen of *Cirrhopetalum maculosum* (syn. *Bulbophyllum umbellatum*), with several umbels of pretty white flowers spotted with purple.

J. FORSTER ALCOCK, Esq., Exhims, Northchurch, sent *Cypripedium Wiertzianum* Exhims variety.

AWARD OF MERIT.

Cattleya iridescens splendens (bicolor × *Eldorado*), from Messrs. STANLEY & Co., Southgate. A pretty hybrid, in shape resembling *C. Iris*. Sepals and petals cream-white, slightly tinged with yellow and rose colour. Base of the lip and column white; isthmus orange coloured, the expanded front mottled with purple.

BOTANICAL CERTIFICATE.

Angræcum stylosum, from Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White). An elegant species, allied to *A. articulatum* and *A. Ellisii*. The plant bore a pendulous raceme of 12 pure white flowers; the long filiform spurs are greenish and slightly tinged with brown.

CULTURAL COMMENDATIONS.

To Mr. W. H. White, Orchid grower to Sir TREVOR LAWRENCE, Bart., K.C.V.O., for a noble specimen of *Angræcum Kotschyi*, with eight spikes of white flowers, with long spurs, tinged with cinnamon brown, and spirally twisted on the apical halves. The plant was illustrated in the *Gardeners' Chronicle*, June 16, 1906, p. 379. The largest spike bore 15 flowers.

To Mr. Collier, gr. to Sir JEREMIAH COLMAN, Bart., V.M.H., for a fine plant of *Angræcum Eicherianum*, nearly 3 feet in height, and bearing 13 large flowers, produced singly from the bases of the leaves, and distributing the flowers over the greater part of the plant. In growth it resembles *A. infundibulare*. The sepals and petals are greenish; the lip large and white.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. J. Cheal, A. H. Pearson, J. Willard, W. Bates, A. Dean, G. Kelf, F. Perkins, Thos. Coomber, A. R. Allan, H. Markham, H. Hooper, G. Hobday, G. Reynolds, J. Jaques, J. McIndoe, C. Foster, O. Thomas, W. Poupard, H. Parr, J. Davis, and W. Fyle.

Rarely has there been seen at these exhibitions a finer display of pot-grown fruit trees than that shown on this occasion by Messrs. G. BUNYARD & Co., LTD., Maidstone. The group occupied the entire width of the Hall, and included 70 trees, all heavily fruited, and 50 dishes of picked fruit. Apples were largely represented. Peasgood's Nonesuch, Gascoyne's Scarlet, Emperor Alexander, Bountiful, James Grieve, Baumann's Red Reinette, Rival, Cox's Orange Pippin, and Charles Ross were represented by admirable specimens. Of Plums, President, Coe's Golden Drop, Golden Transparent, and Belle de Septembre were very heavily fruited, being amongst the most remarkable specimens. Peaches included Sea Eagle, Princess of Wales, Duchess of York, and Thos. Rivers. Pears, Doyenné du Comice, Marguerite Marillat, Princess, and many others. The picked fruit was equally fine. (Gold Medal.)

Messrs. STUART LOW & Co., Bush Hill Park, staged a collection of some 30 Apple trees, including Peasgood's Nonesuch, Newton Wonder, Bismarck, Gascoyne's Scarlet, Pott's Seedling, and Charles Ross. (Silver Banksian Medal.)

Mr. W. MILLER, Wisbech, exhibited a large number of Red Victoria Apples. It is a roundish, slightly-flattened variety of an intense blood-red hue. The fruits are of good size, and would no doubt sell well in shops.

A small plant of the Wonderberry was sent by Mr. C. H. PIKE, Malmesbury, Wilts. With it, provided from open ground at Kingston, was a strong plant of the wild *Solanum nigrum*, showing the growth, leaf, flowers, and berries to be identical with the Wonderberry in the estimation of the committee.

M. DRUMMOND, Esq., Welwyn, Herts. (gr. Mr. G. Kelf), staged in boxes capital samples of 12 varieties of Plums, of which Pond's Seedling, Victoria, Late Orange, Monarch, Sultan and Transparent Gage were especially fine. (Silver Banksian Medal.)

Mr. NICHOLLS sent from Maidstone 18 dishes of pot-grown Pears, many of them superb specimens. Specially good were Pitnastou Duchess, Nouveau Poiteau, Marie Louise D'Uccle, Beuré Bachelier, Marguerite Marillat, St. Lézin, Vicar of Winkfield, Beuré Baltet, Souvenir du Congrès, and Triomphe de Vienne. (Silver-gilt Banksian Medal.)

Lord LLANGATTOCK, The Herdre, Monmouth (gr. Mr. T. Coomber), exhibited 16 fine bunches of Grapes in variety, viz. (black), Appley Towers,

Gros Maroc, Black Alicante, Lady Downe's, and Alnwick Seedling; (white) Muscat of Alexandria and Foster's Seedling. The same exhibitor showed eight beautiful fruits of Melon Hendre Seedling, all being finely netted and richly coloured. (Silver-gilt Knightian Medal.)

W. WALDORF ASSOR, Esq., Cliveden, Bucks. (gr. Mr. Camm), showed six bunches of Black Alicante Grapes from vines three years planted in half paraffin casks. (Silver Banksian Medal.)

H. B. BRANDT, Esq., Nutfield, Surrey (gr. Mr. T. Heron), displayed 30 bunches of excellent Grapes, including good samples of Prince of Wales, Appley Towers, Black Alicante, Gros Maroc, and rather small Diamond Jubilee, Golden Queen, and Muscat of Alexandria. (Silver Knightian Medal.)

Lady WANTAGE, Lockinge Park, Berks. (gr. Mr. W. Fyle), arranged a large collection of hot-house fruits, charmingly decorated with branches of Crab Apples and coloured foliage. In the background were fine bunches of Muscat of Alexandria, Foster's Seedling, Black Hamburg, Madresfield Court, Black Alicante, and Gros Maroc Grapes, 22 bunches in all. On dishes were fine fruits of James Grieve, Gascoyne's Scarlet, Charles Ross, Peasgood's Nonesuch, Lady Sudeley, and Miller's Seedling Apples; Crimson Galande, Hale's Early, and Dymond Peaches; Lord Napier Nectarines; Kirke's, Lawson's Golden Gage, Magnum Bonum, Jefferson, Washington, Victoria, and other Plums; with numerous other fruits. (Silver-gilt Knightian Medal.)

C. F. RAPHAEL, Esq., Porters Park, Shenley, Herts. (gr. Mr. A. Grubb), staged a remarkably fine and representative collection of vegetables, filling a table 30 feet in length. He had capital red and white Celeries, superb Leeks, several pyramids of Cauliflowers, and Onions, the latter including Giant Rocca and Ailsa Craig; good Conference, Perfection, and Sunrise Tomatos; Autocrat and Gladstone Peas. Several dishes of fine Runner Beans, Potatos, Marrows, and other produce. (Silver-gilt Knightian Medal.)

Messrs. DOBBIE & Co., Rothesay, displayed a collection of 41 varieties of Potatos set up handsomely in baskets. The varieties included Lady Llewellyn, White City, The Factor, Midlothian Early, Favourite, British Queen, and Epicure; and of coloured varieties Eightyfold, Rouge Royale, King Edward VII, Crimson Beauty, Queen of the Valley, and Royal Purple. (Silver-gilt Knightian Medal.)

AWARD OF MERIT.

Strawberry Laxton's Perpetual.—This variety resulted from crossing Monarch and St. Joseph. It is a heavy fruiter, the trusses showing 20 fruits on each. The flavour is excellent, the fruits being of good size, roundish, and of a deep red colour. Shown by Messrs. LAXTON BROS.

COMPETITIVE CLASSES.

Of the eight classes in the schedule seven were represented by exhibits. In the class for four dishes of early Pears, Sir MARK COLLETT, Sevenoaks, Kent (gr. Mr. M. Nicholls), won the 1st prize with fine samples of Triomphe de Vienne, Marguerite Marillat, Beurré Mortillet, and Souvenir du Congrès. M. H. PRICE, Esq., Welwyn, Herts. (gr. Mr. T. Bateman), was placed 2nd.

In the class for two dishes of Pears, Mr. F. W. CHURCH was placed 1st with Clapp's Favourite and Souvenir du Congrès. 2nd, Mr. W. AVERS, Rayleigh, Essex.

In the class for four dishes of dessert Apples, assumed to be early, Mr. BATEMAN won the 1st prize with Cox's Orange Pippin, Lady Sudeley, Washington, and Charles Ross, all good. Mr. CHURCH was placed 2nd.

In the class for two dishes of dessert Apples, Mr. NICHOLLS had very fine house-grown fruits of Wealthy and Lady Sudeley. 2nd, Viscount ENFIELD, Wrotham Park (gr. Mr. H. Markham), with Lady Sudeley and capital Worcester Pearmain.

In the classes for culinary Apples, Sir MARCUS SAMUEL, Maidstone (gr. Mr. W. H. Bacon), was awarded the 1st prize for very fine fruits of Grenadier, Peasgood's Nonesuch, Lord Grosvenor, Stirling Castle, Emperor Alexander, and Ecklinville Seedling.

Mr. MARKHAM also excelled in the class for three dishes of cooking Apples, having Peasgood's Nonesuch, Queen, and Ecklinville Seedling. 2nd, Mr. CHURCH, with Warner's King, Belle du Bois, and Lord Derby.

In the trade classes, Messrs. SEABROOK & SONS, Chelmsford, were the only competitors. They filled their allotted space of 9 feet by 3 feet with many baskets of fine Apples and Pears. Specially good Apples were Lord Suffield, Duchess of Oldenberg, Red Bietigheimer, Jas. Grieve, Peasgood's Nonesuch, Stirling Castle, Ecklinville Seedling, Emperor Alexander, Langley Pippin, and Lady Sudeley.

VEGETABLE TRIALS AT WISLEY.

A deputation from the Committee visited Wisley gardens last week to inspect the trials of Runner Beans, Cauliflowers, and late Potatos. Of Runner Beans, the smooth-podded section was first seen, and from these were selected Count Zeppelin, of the old case knife form, stringless pods 12 inches long, singularly tender and delicious eating when cooked (HEINEMANN, Erfurt). Dark Dun, a selection of the climbing French type, very prolific pods, short but fleshy (JAS. CARTER & Co.). Climbing Bean, selected, Tender and True form (CARTER & Co.); and Princess of Wales, a very fine, smooth-podded Bean and a heavy cropper (SUTTON & SONS). Also of the Scarlet or Dutch Runner, all selected splendid croppers. Scarlet Emperor, pods long and deep green in colour, and Red Giant, pods long, narrow, and of pale hue (JAS. CARTER & Co.). Also Prizewinner, certificated in 1892.

Mr. E. BECKETT had sent from Aldenham gardens a white-flowered variety named White Emperor. This was the heaviest cropper of all, and the pods were as long and as handsome as any. All these received three marks, and these awards were sanctioned by the full Committee on Tuesday last.

A large trial of Cauliflowers was inspected, and most of the varieties, so far as they had turned in, produced very fine white heads. The old Early Snowball was the earliest (BARR & SONS), a capital stock. Good successions were King of the Cauliflowers (BARR & SONS), Magnum Bonum (SUTTON & SONS), Dwarf Mammoth (CARTER & Co.), and Conqueror (VILMORIN ET CIE, Paris). All these stocks received three marks, and this was confirmed by the full Committee.

Of Potatos, Up-to-Date seedlings generally predominated. Those selected and placed before the Committee on Tuesday were Duchess of York (W. HOLMES, Tain, N.B.), long, white; Vera O'Brien, flattish oval (TULLINS, Kildare); Widecombe Intermediate, round (PICKERING, Ashburton), and Scottish Chief, large flattish round tuber (BARR & SONS). Each of these varieties received three marks.

THE LECTURE.

At the afternoon meeting of Fellows on Tuesday last, Mr. Edward A. Buyard, in an interesting address on the subject of the physiology of pruning, emphasised the importance of the pruner approaching his work with a knowledge of plant physiology, thus enabling him to vary his treatment according to the different needs and conditions of the subject.

A series of lantern slides was used to show the structures of leaf, stem, and root. The lecturer pointed to the difference between the ascending inorganic sap and the descending organic or elaborated sap. The development of buds was considered, and the difference between wood buds, dormant buds, and fruit buds plainly shown by diagrams. One of the points elucidated under this head was that the nature of all buds in the embryo stage is the same, the differences being a question of development. The formation of fruit spurs was next considered. Some excellent slides showed the slow addition of buds until finally the fully-developed spur is produced. The lecturer expressed the hope that pruners would study the physiological aspects of their trees, and thus obtain a knowledge which will enable them to prune with intelligence.

Scientific Committee.

AUGUST 31.—*Present*: Mr. G. Massee, F.L.S., V.M.H. (in the chair); Messrs. J. W. Odell, W. Cuthbertson, W. Hales, J. Fraser, G. Saunders, and F. J. Chittenden (hon. sec.), and Messrs. E. Alexander, E. H. Wilson, and F. N. Meyer (of the U.S.A. Dep. Agr.), visitors.

Malformations in Trifolium.—Mr. J. FRASER, F.L.S., showed specimens of *Trifolium*

hybridum with the pedicels elongated, the calyx with elongated teeth, the petals widely separated and the stamens exposed, and the pistil developed into a trifoliate leaf consisting of a stalk bent in the part where the style usually begins, and carrying the leaflets above this. Mr. FRASER remarked that, according to this evidence, the ovary is made up of the base of the petiole with its stipules, the top of the petiole forms the style, and the leaflets form the stigma of the normal flower. He also showed *T. pratense* with the primary capitulum having two opposite bracts at its base, above these a calyx with many teeth, springing from the inside of which were the pedicels, unusually elongated, then a second calyx enclosing a corolla of five petals, sometimes partly affected with chloranth, and exposed stamens, then a leafy bract, and, in the centre, numerous flowers. The central flowers have a well-formed calyx, are apetalous, with exposed stamens and a small pistil in the centre. The chairman remarked that the occurrence of virescence such as was exhibited in the specimens shown was the result of the attack upon the base of the plant of a small grub belonging to the family Diptera.

Hybrid Radicula.—Mr. FRASER also showed specimens of what he considered to be a hybrid between *Radicula (Nasturtium) palustris* and *R. sylvestris*. The plant had occurred in company with both its supposed parents, and had imperfect flowers. In most of its characters it appeared midway between the two plants named, although perhaps nearer to *R. palustris*.

The Wanderberry.—Mr. CUTHBERTSON showed a specimen of the American "Wonderberry," said to have been raised by Mr. BURBANK (see fig. 73 in *Gardeners' Chronicle*, September 4, p. 172). He also showed *Solanum nigrum* for comparison. The plant, though differing in some few details from the specimen of *Solanum nigrum* shown, is apparently only a form of that very widespread and variable weed of cultivated land. Mr. MEYER remarked that the fruit of *S. nigrum* was frequently made into pies and eaten in different parts of the States, and he was unable to distinguish the plant exhibited from the spontaneously occurring plant.

Spencer Sweet Peas.—Mr. CUTHBERTSON also made some remarks regarding the reasons why the Spencer type of Sweet Pea is shy in producing seed, showing photographs and flowers in illustration of his remarks (see fig. 78 in *Gardeners' Chronicle*, p. 185, September 11). The reasons he considers to be as follow:—

1. The keel is not constricted or clamped, and consequently the anthers and stigma are not compressed together as in the old type of flower.

2. The open keel tends to allow the pollen to drop into the base of the keel without coming in contact with the stigmatic point. In the old type this was hardly possible.

3. In many of the waved forms the style grows beyond the anthers before the anthers dehisce, and the point is thus never brought into contact with the pollen.

4. In some, notably salmon and orange-coloured varieties, the anthers are nearly sterile.

5. The large waved standard does not act as an umbrella in bad weather. The hooded standard did deflect the rain from the vital parts of the flower.

Note.—The Unwin or moderately waved type of flower is a good seeder. It follows the old type very closely in the formation of its keel.

Chinese plants.—Mr. E. H. WILSON showed an interesting series of photographs of some of the plants he had met with in his last travels in China. Among them were pictures of—

1. *Pinus Bungeana*, taken in S.W. Ichang, at an altitude of 3,500 feet, showing the white bark of the stem and exposed parts of the root. Mr. Wilson said he regarded this Pine and *Pinus sylvestris*, which has in certain parts of the world a very light bark, as the two most picturesque of the Pines.

2. *Cunninghamia sinensis*, a picture of a solitary tree 130 feet in height and 20 feet in girth. This tree forms pure forest in China at an elevation of 5,000 feet, and is the commonest timber tree in Central China, where it is very valuable. The photograph was taken in S.W. Taitien-lu.

3. *Ginkgo biloba*. Mr. WILSON remarked that it had recently been stated that this tree occurred truly wild in China, but although he had traversed the whole of the land where it

was said to occur, he had found only cultivated trees. The photograph was taken at Kiating, and depicted a tree 90 feet high and 24 feet in girth.

4. *Actinidia chinensis*, a beautiful shrub producing green fruit with a russet tinge, of excellent flavour as a dessert fruit, and making good preserves. This plant has flowered in France and England (see Supplementary Illustration and fig. 32 in *Gardeners' Chronicle*, July 31, 1909), but so far only staminate flowers have been produced. Hermaphrodite flowers are borne by some plants, and, perhaps, rarely, pistillate flowers only.

5. *Cypripedium tibeticum*. This is one of the commonest herbaceous plants in open places at an altitude of 11,500 feet to 12,000 feet. It was figured in *Gardeners' Chronicle*, June 2, 1906, p. 347.

Sport in *Phlox decussata*.—From Mr. DOUGLAS came an inflorescence of *Phlox decussata*, some of the flowers of which were white with the faintest tinge of violet, and others (the greater number) were white with broad stripes of violet-mauve. The plant had for 15 years borne only white flowers, but last year and this year it has produced some coloured flowers.

Winter-rot in Potatoes.—Mr. WIGLEY sent from Hartridge, Gravesend, specimens of Potato badly affected with winter-rot, due to *Fusarium solani*. The variety, Midlothian Early, had been lifted as soon as the tops died down, and some tubers selected for seed next season; these were placed in the sun to "green," and had "sweated with dark liquid drops at the eyes, and had softened on that side and then shrivelled." None of the stored Potatoes (kept cool) showed signs of the disease at present, while 50 per cent. of the portion saved for seed were affected.

Large Larch sawfly.—Mr. E. M. HOLMES sent specimens of the larvae of this destructive insect (*Nematus erichsoni*) collected in the Lake district, where the Larch is being defoliated by them on Lattrigg and Skiddaw. This insect seems likely to destroy the Larches in the district unless some natural enemy should prove effective.

Malformed *Cypripedium*.—Mr. R. W. RICHARDS, of Usk Priory, sent a flower of *Cypripedium insigne* in which the two lateral petals had a slight tendency towards the form of the lip, and the bract was green and leathery instead of membranous.

Aster diseased.—From Patcham, Sussex, came specimens of Asters attacked by a species of *Fusarium*. This fungus attacks the plants by the roots, which are killed, and the plant wilts through lack of water. It is unsafe to plant Asters in soil where they have previously been attacked. The soil in which Asters are grown should be limed.

ROYAL SCOTTISH ARBORICULTURAL.

SEPTEMBER 4.—The members of the Aberdeen and North of Scotland branch of this society enjoyed an excursion to Fasque Estate, Kincardineshire, on the above date. Most members of the party met at Aberdeen Station, and thence journeyed to Laurencekirk, where brakes were in waiting to convey the company to Fasque, some five or six miles distant. On arriving at Fasque the party was met by Mr. Alexander Dewar, factor on the estate, and the business of the day was at once entered upon. The visitors were conducted through a plantation to inspect the serious damage done to young Larch trees by attacks of aphid. So bad was it that many of the trees appeared to be almost dead. The complete immunity from disease shown by the Japanese Larch, as compared with the common Larch, was the subject of comment. Japanese Larches appeared also to be entirely free from attacks of aphides. The party was joined by Sir John Gladstone, who drew attention to two very fine Larch trees, one on either side of a drive. They are approximately 80 feet in height, one especially being a very fine specimen, perfectly straight, and having a magnificent bole. A fine Beech tree on the lawn in front of the castle measures 15 feet 6 inches in circumference at a height of 5 feet from the ground. It was planted with others in 1707 to commemorate the Union of England and Scotland. A visit was next paid to the gardens. Luncheon was served in the castle.

DERBYSHIRE AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 7, 8.—The forty-eighth annual exhibition was held under adverse weather conditions. The horticultural tents were well filled with exhibits of flowers, plants, fruit and vegetables. The number of entries was larger than in 1908, the total for this year being over 1,100. The competition in all classes was keen; in the majority of cases the number of entries ranged from 12 to 24. Four magnificent competitive and two non-competitive groups filled the centre of the large round tent, while on the stages around the sides were arranged several large collections of cut flowers, including Roses, early-flowering Chrysanthemums, Dahlias, Sweet Peas, Gloxinias, Violas, &c. In the fruit classes nearly 100 bunches of Grapes were staged, besides large quantities of Apples, Pears, Peaches, Melons, &c. The vegetable classes were keenly contested, while the quality of the exhibits showed high-class cultivation throughout. Floral table decorations formed a pleasing feature, there being no fewer than 18 tables. The principal competitive class was for a group of plants occupying an area of 300 superficial feet. The 1st prize was won by Sir GEO. KENRICH, Whetstone, Birmingham; 2nd, Mr. W. A. HOLMES, West End Nurseries, Chesterfield. The principal prize-winners in the fruit classes were Messrs. W. PARKER, Market Rasen; J. FRITH, Foston Hall; S. BARKER, Clumber; Mr. WADESON, Doveridge Hall; Mr. H. D. SMITH, Alvaston; and Mr. J. DRAKE. Important prizes in the vegetable classes were won by Messrs. H. D. SMITH, S. BARKER, J. WOODWARD, G. WADESON, A. SHAMBROOK and F. A. BRACE.

Non-competitive exhibits included a large group of Gladioli shown by Messrs. KELWAY & SON, Langport. (Gold Medal.)

Messrs. SEAGRAVE & Co., Sheffield, exhibited Dahlias, Chrysanthemums and Carnations. (Gold Medal.)

Messrs. CLIBRANS, Altrincham, staged an extensive exhibit of vegetables. (Gold Medal.)

Mr. J. KNIGHT, Wolverhampton, showed Cactus Dahlias and Chrysanthemums. (Gold Medal.)

Messrs. W. & J. BROWN, Stamford, staged an imposing group of Roses. (Gold Medal.)

Mr. WM. SYDENHAM put up a remarkably good group of herbaceous Phloxes, Pentstemons, Helianthus, &c.

Sweet Peas were staged in great variety by Mr. EDMUND COLE, Derby.

In the centre of the large tent were fine groups of foliage plants exhibited by Mr. WM. VAUSE, Leamington, and Messrs. WM. BARRON & SONS, Barrowash; the latter firm had a large group of ornamental shrubs in the open.

DUTCH BULB GROWERS.

The following Awards were recently granted by this society:—

FIRST-CLASS CERTIFICATES.

Tulip van Tubergen.—A new double-flowered variety with golden-yellow flowers, raised from double-early Tulip Couronne d'Or.

Tulip Yellow Queen.—A clear yellow variety recommended for forcing. Apparently raised from the White Pottbakker variety.

AWARDS OF MERIT.

Tulip King of the Scarlets.—A dark-red variety with large flowers; a good variety for bedding.

Tulip President Taft.—A variety with large flowers, the long segments being white, feathered with rose. This variety received an Award of Merit at a former meeting, when it was exhibited as Joost van Vondel.

Gladiolus Lemoinei Pink Beauty.—An early-flowering variety, with dark rosy flowers, with a striking dark-red blotch.

Gladiolus gandavensis Lily Lehmann.—A seedling variety with pure white flowers, shaded with rose.

Gladiolus gandavensis Pure White.

Gladiolus gandavensis Mida Geotride.—A seedling variety with creamy-white flowers, feathered with rose in the centre.

Phlox decussata Nymph.—A large flowering variety, of soft rose colour, white in the centre.

ORSETT & DISTRICT AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 9.—The above society held its 15th annual show on this date in the grounds of Orsett Hall in fine weather. Exhibits of hardy fruit are always a leading feature at this show, and this year the fruits of Worcester Pearmain, Warner's King, Stirling Castle, and Peasgood's Nonesuch Apples, in the classes for 12 specimens of these varieties, were remarkably fine, especially those shown by Mr. T. RUDGWELL and Mr. F. KEMP-SMITH, both of Orsett.

The most successful exhibitors in the fruit and other open classes were Mr. T. RUDGWELL, who won six first and three 2nd prizes; Mr. C. BUTCHER, Grays, six 1st and seven 2nd prizes; F. H. B. C. WHITMORE, Esq., Orsett Hall (gr. Mr. E. Neighbour), six 1st and six 2nd prizes; Mr. F. E. BELCHER, Mr. W. SUTTON, Mr. T. SUTTON, and Mr. J. IBBS, Cbadwell-St.-Mary.

The vegetable, plant and cut flower classes were fairly well filled, and the exhibits generally were commendable. The same remark applies to the dinner-table decorations and the other decorative classes.

BRITISH GARDENERS' ASSOCIATION. (LONDON BRANCH.)

A MEETING of the London branch took place at Carr's Restaurant, Strand, on Thursday, September 9. Mr. E. F. Hawes occupied the chair. Several applications for membership were accepted. Mr. Vincent Cockram was elected to the post of branch secretary. A discussion followed a resolution put forward by Mr. North to the effect that, in view of the forthcoming borough and county council elections, that this meeting urge upon the executive council the need for drawing up a programme of the hours of labour and rate of pay of the gardeners employed by municipal authorities, and of ascertaining the views of prospective candidates with regard to the programme submitted. Mr. Friend seconded. Mr. Frogbrook suggested that a sub-committee be appointed to collect evidence and enquire into the varying rates of pay adopted by the municipal authorities throughout the country, with a view to placing the results of the enquiry before the executive council. A sub-committee was then appointed by the meeting for this purpose.

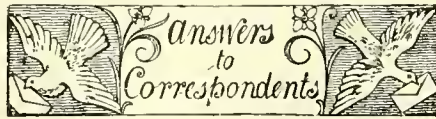
UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

SEPTEMBER 13.—At the monthly meeting of this Society, six new members were elected. The death certificate of the late Mr. J. H. Wilson was produced, and the amount standing to his credit in the Society's books (£65 17s. 3d.) was passed for payment to his nominee, Mrs. Wilson. The amount paid for sickness since the last meeting was £47 6s. The annual dinner will be held at the Waldorf Hotel in October.

Obituary.

WILLIAM FOWLER.—We regret to announce the death, on Sunday, September 12, of Mr. William Fowler, who was for a long period gardener to the present and the late Lord Polwarth, at Mertoun House, near St. Boswells. Mr. Fowler was 81 years of age. He retired from service at Mertoun three years ago, and resided at St. Boswells in a cottage kindly placed at his disposal by his late employer. Mr. Fowler had considerable knowledge of Coniferous plants, and he was well known as a hardy fruit grower. He leaves a widow older than himself, a daughter, and three sons, two of whom have long since resided in America. Mr. Henry Fowler is gardener at Bilanerne, near Duns.

THOMAS G. BISHOP.—We regret to record the death of Mr. Thos. G. Bishop, for 21 years manager at Messrs. Daniels Bros., Ltd., Town Close Nurseries, Norwich. Mr. Bishop journeyed to London with Mr. Daniels on Monday last to attend the autumn sales. On the same evening, after parting with Mr. Daniels at Liverpool Street Station, he proceeded to his hotel alone and was taken suddenly ill in the street, expiring almost immediately. Mr. Bishop was about 60 years of age; he leaves a widow and one son, to whom much sympathy will be extended in their sudden bereavement.



CALCEOLARIA: F. E. S. & Co. There is no trace of disease in the plants. The trouble is probably due to the unfavourable season.

CHRYSANTHEMUM: G. H. P. No disease is present. The root is decayed owing to the soil being soddened with water.

COST OF TRENCHING LAND: Reader. The approximate cost of trenching light soil two spits deep is 10d. per rod. This works out at £6 13s. 4d. per acre.

CYCLAMEN FAILING TO FLOWER: H. W. The buds have been injured by mites. Spray the plants with, or dip them in, an insecticide.

DIANTHUS SHOWN AS ANNUALS: Exhibitor. You do not state which species was exhibited. Most Dianthus are biennials or perennials, and these would not be permissible.

GOOSEBERRIES DISEASED: J. B. The foliage is badly attacked by *Gleosporium ribis*. Collect and burn all the fallen leaves. Spray the bushes next spring, when the fruit is set, with Bordeaux mixture.

GUMMING IN CUCUMBERS: E. M. The gumming in your Cucumbers is owing to the soil being too wet. When the fruits are young give plenty of ventilation early in the day.

MELONS UNHEALTHY: F. C. The plants are affected with the Cucumber-leaf blotch. Spray them with sulphide of potassium. The Begonias have been kept too wet at the root. The Chrysanthemum has no disease on the part sent. The trouble is due to some error in culture.

MILDEW ON OAK LEAVES: H. D. W. W. The leaves are attacked by a fungus, *Erysiphe guttata*. This mildew has been very common on Oak trees this season. The fungus can be destroyed by flowers of sulphur, but you can do nothing in the case of large trees.

NAMES OF PLANTS: Rev. T. A. H. *Lonicera Halleana*.—H. A. T. *Tropæolum speciosum*.—R. T. H. Probably *Bulbophyllum Watsonianum*. No flower found.—E. C. *Horley* 1, *Polypodium aureum*; 2, *Lomaria* (*Blechnum*) spicant.—*Enquirer*. 1, *Erica vagans*; 2, *E. cinerea*; 3, *Mentha sylvestris*.—S. *Calluna vulgaris*.—W. O. W. 6, *Alyssum argenteum*; 7, abnormal growth of *Gentiana Pneumonanthe*.—M. C. T. *Helichrysum petiolatum*.—I. B. *Campanula persicifolia*.—W. L. (*Greenhill Park*). *Prunus Padus*, the Bird Cherry. The fruits are eaten by birds. Though nauseous to most persons, yet in Siberia they are commonly eaten.—K. B. 1, *Hibiscus rosa sinensis*; 2, H. Cooperi; 3, *Rondeletia speciosa*; 4, *Hoffmannia Ghiesbreghtii* variegated form; 5, *Acalypha Macfearana*.—F. D. *Trent*. 1, *Dracæna rosacea*; 2, D. *intermedia*; 3, *Dieffenbachia Bausei*; 4, *Dracæna congesta*; 5, D. *fragrans*; 6, D. *indivisa*; 7, *Pteris cretica albo-lineata*; 8, *Scolopendrium vulgare*; 9, *Rhœ* (*Tradescantia*) *discolor*.—O. B. C. 1, *Epidendrum fragrans*; 2, E. *cochlearatum*; 3, *Oncidium pubes*; 4, *Ada aurantiaca*.—*Cheltenham*. 1, *Nicotiana glauca*; 2, *Veronica tetragona*; 3, probably a *Pitcairnia*.—*Torbay*. *Santolina incana*.—W. G. M. *Epilobium angustifolium*.

ORCHID LEAVES INJURED: Gardener. The injury has probably been caused by some error in the cultivation of the plants, or in the management of the heating apparatus causing an irregular temperature. The greatest danger is when the temperature of the houses is excessive at night-time. A frequent reason for unsightly foliage on evergreen Orchids is allowing the plants to retain their leaves under cultivation much longer than they would in their native habitat.

PALM SEED: James Burns. *Attalea Cohune*, the kernels of which are said to yield an oil used by the natives of British Honduras for lighting and cooking. The oil is thought to resemble that of the *Coccolnut*.

PEACHES DISEASED: N. B. The fruits were thoroughly decayed and covered with mould when received. Under these circumstances, the cause of the trouble could not be determined.

PEAR LEAVES DISEASED: E. Smith. The trouble is caused by the Pear-leaf blister mite. Hand-picking the injured leaves and fruit in June is the only means of exterminating the pest, which harbours in the buds during winter.

PRUNING APRICOTS: Amateur. You will find a note on this subject in the weekly Calendar on "The Hardy Fruit Garden," p. 198. If fruit buds have formed on the bases of the shoots you refer to, do not prune the latter. In course of time they will become established as fruit spurs.

PRUNING BUSH APPLE TREES: Reader. Bush Apple trees may be pruned any time from the middle or end of November up to the middle or end of January, but the sooner the trees are pruned after they have shed their foliage the better. Bush Apple trees only require knife pruning once in the year—at the time indicated above—in addition to the summer pinching of the young growths early in July. It is also advisable to go over the trees again towards the end of August and pinch back all extra-strong growing secondary young growths that may have pushed from the more even-sized shoots, in order to promote a balance of growth. The foregoing remarks apply equally to bush, pyramid, standard, and espalier-trained trees of Apple, Pear, Plum and Cherry. During the present year young trees have generally made an unusual quantity of strong secondary growths, which necessitated the shoots being pinched back in August, as recommended above.

RED SPIDER ON PEACHES, &c.: Peaches. (1) If a good supply of water is available in your Peach houses so that the trees can be thoroughly watered at the roots and washed overhead on bright afternoons with sufficient force to dislodge any red spider or other insect that might effect a lodgment on the foliage, there should be no difficulty experienced in keeping your trees clean and healthy, providing you have sufficient labour at command to do the work. (2) During the wet and cold weather which we have experienced during the last three or four months, you could not reasonably expect to succeed in growing good crops of Melons and Cucumbers in unheated glass-houses. Had the weather conditions been more favourable no doubt you would have secured satisfactory results. We have known excellent Melons to be grown year after year in unheated pits during favourable summer weather, but the sashes of the pits were covered with mats and shutters on cold nights. (3) Plantations of young fruit trees, generally, have suffered from attacks of aphid and caterpillars this year during the spring and early summer months, owing to uncongenial character of the weather experienced at the time when the trees were developing young and tender growths. The trees have recovered from the check and are now making satisfactory growth. We should advise you to stop the extra strong growths at once (see answer to *Reader*); the weather conditions you refer to afford an additional reason for stopping the young shoots now, as this will result in more light and air reaching the remaining portions of the shoots.

STORING FILBERTS: E. H. Mundford. The best place in which to keep Filberts and Cobnuts fresh and plump during the winter months is a cool room or cellar, but not a damp one, or the Nuts will go mouldy. Spread the Nuts on the floor, or on shelves. If the place where the Nuts are stored is dry, they should be placed in layers of dry sand in a tub or other receptacle. On no account store Nuts on bay, chaff, or straw, which may become musty and taint the Nuts.

TOMATO: A. J. & S. We do not recognise the variety. As it appears to be immune from the disease which has attacked the rest of your plants, it would be advisable, provided its cropping qualities are good, to save the seed with a view to cultivating it next season.

Communications Received.—J. J. T.—D. R. W.—J. W. M.—F. M.—M. C. A.—W. F. G.—W. H. Y.—E. H. J.—S. A.—E. S.—W. D.—G. M. Ltd.—J. W. M., Ltd.—J. T. B. P.—H. S. T.—W. W., Liverpool—T. H., Ireland—L. V., Berlin—E. A. B.—F. J. C.—W. H.—E. G. L.—D. W. T.—W. T.—W. A. C.—J. G. W.—Reg. Farrier—C. T. D.—J. O'B.—Amateur—W. Trusler—F. S.—Admiral G.—W. I.—L. H.—S. McG.—& Son—Rev. H.—S. & S.—K. B.—Zola.



SOME CHOICE BEDDING VIOLAS.

ABOVE, SULPHUREA AND PRIMROSE DAME; ON THE LEFT, WHITE EMPRESS (WITH YELLOW EYE);
ON THE RIGHT, BLUE ROCK; BELOW, SNOWFLAKE.



THE

Gardeners' Chronicle

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HARDY CYPRIPEIDIUMS.

OF the hardy Orchids, the Cypripediums have undoubtedly the most attractive flowers. The species vary so greatly in stature that the handsome North American *C. Reginae* has stems 2 feet to 3 feet in height, whilst the Japanese *C. debile*, with its Tway-blade-like leaves and small, greenish-white flowers, is a mere pigmy. Although hardy plants they frequently fail owing to unsuitable conditions, but with a little care and attention in choosing the right situation and allowing them a free-rooting medium, they may be grown with success. Cypripediums prefer a cool, sheltered and shady place; they are generally seen in a wild state in open woods, with their roots ramifying amongst the decayed leaves. In the rock-garden suitable places may be found for them in the low-lying, shady parts, provided the soil has plenty of drainage and is well prepared. They are not deep-rooting plants, therefore, all that is necessary is to take out the original soil to the depth of about 1 foot. If the soil

is heavy, plenty of material for drainage should be placed in the bottom of the hole; but if the subsoil is sandy, this will not be needed. The most suitable compost consists of equal parts rough peat and well-decayed leaf-soil, with plenty of sand and some charcoal; a little Sphagnum-moss incorporated with the rooting medium is helpful in retaining moisture in the soil. Most of the species will grow well in this compost, but our native *C. Calceolus*, also *C. macranthum*, and *C. ventricosum* are exceptions. These require soil of a calcareous nature, and if lime is deficient it should be supplied by adding old mortar rubbish to the loam.

The best time to plant hardy Cypripediums is in the autumn as soon as the crowns can be procured. Do not allow the plants to become dry when planting, as the fleshy roots soon shrivel when out of the ground. As the roots grow in a horizontal direction it will be necessary to make a wide hole when planting,

although only about six or seven are common:—

C. ACAULE (see fig. 87) (syn. *C. humile*).—This remarkable-looking plant comes from North America. It has a pair of broad, hairy leaves, from between which it pushes up a flower-stem over 6 inches long, surmounted by a green bract in which a single flower develops. The sepals are whitish, while the large pouch is of a bright-rose colour veined with crimson. This species is distinct from the others in having the pouch split right down the front, giving it the appearance of a two-lobed flower. *C. acaule* is one of the oldest of cultivated species, having been introduced into this country in 1786.

C. ARIETINUM [*Bot. Mag.*, tab. 1569].—This is a beautiful little plant from the damp woods of North America, but it is less easy to cultivate than most of the other kinds. The sepals are greenish-white, while the lip is white suffused with rose. The species was introduced into this country in 1808.

C. CALCEOLUS (see fig. 88).—A native of this country, and an excellent subject for naturalising in woods, especially where the soil is of a heavy and calcareous nature. In positions where it is suited it soon forms large tufts, and the stems, about 2 feet high, each produce one to three flowers. These have deep-brown sepals, while the lip or pouch is yellow. The plant is also found wild over a great part of Europe, and as far north as Siberia.

C. CALIFORNICUM (see fig. 89).—A charming little plant with stems about 9 inches high, bearing a raceme of four to six flowers, having tawny yellow sepals and a bluish-white lip, obscurely spotted with brown. It is a native of California, and has been in cultivation in Europe since 1888.

C. CANDIDUM [*Bot. Mag.*, tab. 5855].—This is similar in habit to *C. californicum*. The flowers have a white lip and greenish-brown sepals. Introduced from North America in 1826.

C. DEBILE [*Bot. Mag.*, tab. 8183].—An interesting little plant from Japan, whence it was introduced some three or four years ago. It has a pair of leaves like our native Tway-blade (*Istera ovata*), from which springs a slender, drooping stem, bearing a small, single flower. The sepals are green, and the greenish-white lip has purplish lines near the mouth.

C. FASCICULATUM [*Bot. Mag.*, tab. 7275].—This species develops several flowers on each stem, which grows about 1 foot high. The sepals are greenish, as is also the lip, which has a purple-brown margin. Plants were introduced from North America in 1888. The species is still somewhat rare, as it has proved difficult to keep in cultivation for any great length of time.

C. GUTTATUM [*Bot. Mag.*, tab. 7746].—Introduced into cultivation as long ago as the year 1829, this species is one of the prettiest, but, at the same time, one of the most difficult to establish. It is remarkable for its wide-distribution, being found in Russia, Northern Asia, and North-western America. It prefers soil of a light, open nature, with plenty of moisture when actively growing, but requires to be kept rather drier in the winter. The handsome flowers are of relatively large size, the sepals and lip being white, spotted and blotched with crimson-purple.



FIG. 87.—CYPRIPEIDIUM ACAULE. SEPALS, WHITE; LIP, ROSE COLOURED.

so that the roots may be spread out carefully, placing the crowns about 2 inches below the surface of the ground. Soil should then be worked well in between the roots and the whole made moderately firm.

Hardy Cypripediums are also well adapted for culture in wide, shallow pots or pans; indeed, it is advisable to adopt this method of culture in the case of some of the smaller, less easily-grown species. The same compost as advised for planting out-of-doors may be employed, and the surface of the pot should be covered with fresh Sphagnum-moss except in the case of those species requiring calcareous soil. The plants succeed best in a north frame with the pots plunged to the rims in ashes or other suitable plunging material. They may be fully exposed during the summer months, but should be protected during severe weather in winter.

The following species are to be seen in culti-

C. JAPONICUM.—This Japanese plant is remarkable for its pair of broad and distinctly ribbed leaves, from which one or two flowers are produced singly on short stalks. They are large and handsome, striated, and blotched with green, white, and rose-purple. A full-page illustration is given in *Gardeners' Chronicle*, June 6, 1903, p. 355, fig. 138. The plant grows freely in the shade, but frequently, for some reason undetermined, strong crowns fail to flower. Introduced in 1874.

C. MACRANTHUM (see fig. 90).—This Siberian species is one of the most handsome members of the group, growing about 1 foot high and bearing large, almost uniform, rose-purple flowers. It requires a more loamy soil than most of its congeners, and succeeds best under the same conditions as *C. Calceolus*, with which species it is often found growing wild. It is an excellent plant for pot culture, as it grows freely and forms good turfs in pans. Wide pans are necessary in order to allow the roots to spread laterally. Introduced in 1829. *W. I., Kew.*

(To be continued.)

NURSERY NOTES.

SWEET PEAS AT MARK'S TEY, ESSEX.

I RECENTLY visited the seed farm of Messrs. Dobbie & Co., at Mark's Tey, to inspect the Sweet Peas that are largely grown both for trial and seed purposes. Of the standard varieties there were seen row after row, each line one hundred or more feet in length, and all alike covered with blossoms. The splendid new lavender-coloured variety, *Masterpiece*, which will be placed in commerce this autumn, was represented by a large stock; it is one of the most floriferous varieties. Mrs. Henry Bell, and the improvement on that variety which will be distributed under the name of Mrs. Hugh Dickson, were both in excellent condition. The rich crimson variety named *The King* is a notable flower alike in colour, size and substance, but it was found that the colour does not withstand the sun's rays. A somewhat similar variety, named *Sunproof Crimson*, does not possess this defect.

The bicolor Mrs. Andrew Ireland is one of the best Sweet Peas in cultivation, whether it is regarded as an exhibition, or garden variety. At Mark's Tey it develops a mass of flowers, and the plants are singularly persistent in flowering. I was pleased with a pink variety named *Edrom Beauty*, which is in the way of Helen Lewis, but is richer in colour and superior in substance. In addition to these novelties, all the standard varieties of Sweet Pea in commerce are represented in the collection. The seeds are sown in pots each season, and the plants are transplanted outside in April.

Many new varieties are raised each year in this nursery; these are carefully inspected, and those which show promise are saved for growing again the next season. At present there are many seedlings of merit. *W.*

WARREN NURSERIES, HAYES.

THIS nursery, devoted principally to the culture of Carnations, has but recently been established by Mr. Charles Blick, for many years gardener to the late Mr. Martin R. Smith. The nursery embraces some four acres of meadowland, and already four spacious span-roofed greenhouses have been erected. These houses contain the entire stock of novelties and seedlings in the Hayes collection at the time of Mr. Smith's death. There are upwards of 20,000 flowering plants in pots, exclusive of 10,000 specimens planted out-of-doors, whilst about half an acre of land is allotted to seedlings. A robust habit of growth

appeals very strongly to raisers of these flowers, and in this direction it is satisfactory that a weakly grower is now rarely seen. In former times the yellow-ground fancies and the edged class were not infrequently weak; to-day such weakness is superseded by a strength which amounts to vigour. Good varieties of a heliotrope shade are not numerous. The variety *Silver Fox* of this shade surpasses anything seen in this very extensive collection for size, form and substance of petal. Other self-coloured novelties not yet in commerce include some very handsome scarlet-flowered varieties, of which *The Chartist*, *Royal Scarlet* and *Redskin* are of exceptional merit, the two first-named varieties being possessed of a particularly strong fragrance. *Black Douglas* belongs to those of the maroon-crimson shade, and is in every way excellent. *Maharajah*, with flowers of glowing crimson, may be regarded as the gem of the crimson set. *Selim* is of crimson-scarlet and of faultless form. *Snowdon*, *Honey-moon* and *Magdalene*—the last-named notable for its dwarfness—are a trio of pure white varieties of exquisite beauty and purity. *Waverley* is of pink-cerise shade. *Lady Bury*, a deep rose-coloured variety, is of especially good form and very distinct. Amongst the "selfs" not yet in commerce is *Solfaterre*, a large, clear-

the petals are marked with deep rose-scarlet. *Böth Nicon* and *Harmony* are of buff-yellow with rose suffusion, varying in degree: the latter is the lighter toned. *Rhea*, *Marjory Devas*, *Deer-slayer*, *Miss Dalhina Baring*, and *Tantalus* are others of great beauty.

The collection of Picotees is likewise a notable one. Her Majesty, the premier heavy purple-edged variety both in 1908-9, was conspicuous. F. W. Goodfellow, a heavy rose-edged seedling, obtained a Certificate at the National Carnation show this year. Other new Picotees here include *Peter Pan*, *John Ruskin*, *Dora Spellow*, *Exquisite*, *Regal* and *Peg Woffington*—all meritorious varieties. There is also a large collection of standard sorts, the whole, at the time of my visit in August, making a charming display. *E. H. J.*

NOTES FROM A "FRENCH" GARDEN.

THE first hatch of Cauliflowers has been sown in frames. During wet weather the frames will be covered with lights, but ample ventilation allowed day and night. The plants must not be coddled, or they will show flower-buds early in March.

Ox-Heart Cabbages are doing well, but we had to put the lights on the frames to prevent their damping-off. In 12 or 15 days they will be pricked out 3 inches apart, rejecting indifferent and blind plants. They must be planted deeply to encourage the development of roots and to strengthen the "collar," which is the weakest part of a Cabbage plant.

The planting of Onions in their final quarters has been deferred until rather late, owing to bad weather having delayed the growth of the seedling plants. We have, therefore, covered the soil with an inch of finely-sifted decayed manure.

Batavian Green and Endives planted in the middle of August require bright weather. When blanching in November, we shall cover them with dry hay or straw, as we fear the usual plan of tying them would cause decay this damp season.

The Carrots sown in the old manure beds will be ready for pulling within a fortnight. This crop has not required much attention, beyond the occasional waterings and thinning in August.

Lettuces sown late in August are now to be placed in their final quarters. After removing the decayed leaves, they will be planted at the rate of four to each cloche. We do not set them too deeply in the soil, as this causes the lower leaves to rot. When well established, the plants may be afforded a little ventilation during the day. The sowing of Lettuces for next spring commences early in October. On October 2, *Little Black Gott* will be sown, and this will be followed by sowings every two days. *Cos Lettuces*, the *Flat of Paris*, the *Grey of Paris*, and the *White of Paris* will be sown in the order named, beginning on October 6. The strong-growing varieties, the *Passion* and *Palatine Lettuces*, will be inserted on or about the 10th of the same month. The *Palatine*, although a very old variety, is not much grown, but it forms a good head, travels well, and has a very fine flavour. We have prepared the winter quarters for the Lettuces, and the beds will receive a top-dressing consisting of 3 inches of fine, decayed manure. Care is taken to see that only good material is used for this purpose, as, owing to the damp weather, it is very possible that mildew will be prevalent during the winter. As a rule, gardeners do not make use of manure from old beds for growing Cabbage Lettuces late in the summer, for it frequently happens that, as the nights become colder in September, mildew attacks the roots, and the disease spreads during winter or early spring, when material from the old beds is used.

As the crops are being cleared off the ground, it is dug and heavily manured ready for next season. In this way time is saved early in January, when the making of hot-beds is commenced.



FIG. 88.—CYPRIPEDIUM CALCEOLUS.
COLOUR OF SEPALS, BROWN; LIP, YELLOW.
(See p. 209.)

cut, yellow flower. It is unique among the yellow selfs, and in its own set marks considerable progress. The collection of yellow-ground Fancies and Picotees is remarkable. Some 19 Fancy varieties are to be placed in commerce this year, and the display of the whole is a great tribute to the skill of the British florist. The Hayes garden has been renowned for its yellow Fancy Carnations. Some of the more notable varieties are as follow:—*King Coffee*, a large flower with reddish markings. The *Justice*, delicate rose, suffused over the yellow ground, flower of superb form; habit of growth, dwarf. *Jason* has petals suffused with rose and purple, the flower being of great size. *Hengist*, with crimson markings, is remarkable for its fine petals. *Hercules* is a magnificent flower some 3½ inches across. *Flamingo* is a scarlet flower of great beauty. *Father O'Flynn*, a seedling from *Douce Davie*, is lined and feathered with scarlet markings. *Criterion*, a beautifully refined flower, is also tinged with scarlet, while *Claude Egerton*, a large, perfectly-formed flower has crimson-scarlet markings. *Annie Thompson*, a flaked and striped flower, is probably the largest of the set. *Hera* has a rose suffusion over a buff-yellow ground. *Defiance* is notable for its exceptional dwarfness;

THRIPS.

In the first volume of the *Gardeners' Chronicle* may be found a description of an attack by the small insects known as thrips on Melons and Cucumbers in frames. Whilst this shows that the destructive habits of so minute an offender have been known to gardeners for a long time, it is by no means the first reference in scientific literature to the possibility of such an attack. It is safe to say that all gardeners now know their thrips, but it is only the occasional farmer who is familiar with the insect, although it occurs just as commonly on his crops, and does much more damage than he generally suspects. The itching sensation produced by thrips as it runs over the face is due to the peculiar structure of the animal's feet, as shown in 1744 by Von Geer, who christened it "bladder-footed"—a name it retains in Germany to this day. The Potato thrip was described by Linnaeus in 1752, but there is another form of attack which we fear it is not possible to credit. John Hill, in his quaint quarto published in London in 1773 and entitled *A Decade of Curious Insects*, is undoubtedly referring to a species of thrips in his description of a "studious gentleman very subject to the headache" discharging vast quantities of an insect whilst sneezing! Other early references are by Bjerkander in 1790, who ascribes damage to Corn by thrips, and by Mars-ham, who gives a full description of a thrips' plague on Corn in England in 1795. Nevertheless, it was still considered an open question by C. A. Dobson in 1847 whether any real damage was done to the Corn by the insect. In 1834 there was a plague of thrips on Olives in Italy investigated by Passerini, and another in 1842, according to Tamburin, who also considered methods of treatment and prevention, whilst Regel records swarms of thrips in the hot-houses of St. Petersburg in 1858. The annual reports of Miss Ormerod are generally a fair index of the ebb and flow of noxious insects of her time, but she only records thrips in her report for 1884, where it is alleged that in one case 25 per cent. of an Oat crop was destroyed by the pest. She merely mentions it again in 1894 as on the same plant.

Thrips are usually much in evidence during hot, sultry weather, when they migrate in large numbers, and are hence known as "thunder fly." The Germans have a useful distinction between black fly (Thripidae)—black in the mature condition and green fly (Aphidae or plant lice). It is usually a species of Thrips that gets into the eye during the summer, and their irritating effect on the skin has been already referred to. They are all very small, and vary from 1-50th to one-third of an inch in length, the latter constituting relatively giant forms not found in Britain. Examined under a magnifying glass, they are easily identified by their four long narrow wings with a conspicuous fringe at the margin. Some species, however, are never winged, and others again are winged according to sex, time of year, or food conditions. The larval form is similar to the adult and has the same food habits, but it is never winged, and in some species is either yellow, orange, or blood red in colour. A kind of pupal stage precedes the adult winged form, which is usually motionless, and in which no food is taken. Thrips feed probably by suction, like green fly, but this is a point difficult to determine, and which has not yet been finally settled. They pump up the juices both of the foliage and of the flower, and in Oats, for example, cause the straw to become deformed and twisted, and the grain to shrivel. Pea and Bean thrips often do very great damage, attacking the plant just as it is about to flower. This species is described in the Board of Agriculture Leaflet No. 43, 1905. On the contrary, one species is said to be even beneficial, and to suck green fly, whilst the thrips themselves are attacked by certain mites, bugs, beetles and thread worms.

The species of thrips of the greatest interest

to gardeners are those which may be referred to generically as the greenhouse thrips. This form has been recently investigated by H. M. Russel (U.S. Department of Agriculture, Bull. 64, 1909), to whose results it is of interest that attention should be drawn. Our knowledge of the greenhouse thrips dates from 1833, and is due to Bouché. The insect punctures the tissues of the food plants and sucks out the plant juices, chlorophyll, &c., immediately about the puncture. It then proceeds to attack another part, with the result that the plant becomes covered with pale spots corresponding to the centres attacked and somewhat resembling a form of red spider attack. With the progress of the attack, and, according to the number of insects present, these spots tend to run together and to form

pupal stage 10 to 15 hours, pupal stage four to five days). Each female lays only a few eggs, probably from 10 to 20, and under favourable conditions 12 generations may be produced each season.

Fortunately, the pest may be controlled by a variety of remedies. Fumigation with nicotine papers gives good results. This should be done at night and in a moist atmosphere, using two sheets of the paper for every 1,000 cubic feet of space. Early in the morning the house should be well ventilated, having been allowed to remain closed all night. This fumigation may, of course, also be effected by nicotine liquid extracts. Spraying with nicotine liquids, however, is only effective in so far as the spray actually reaches the offenders, those remaining often soon re-popu-



FIG. 89.—CYPRIPEDIUM CALIFORNICUM: COLOUR OF SEPALS, YELLOW; LIP, NEARLY WHITE. (See p. 209.)

larger blotches, so that finally the foliage in bad cases is entirely destroyed. Not only, therefore, is the vitality of the plant drained by the withdrawal of its sap and the destruction of its chlorophyll, but the plant becomes useless for ornamental purposes. The eggs are laid singly in the tissues of the food plant, preferably on the fresh young leaves rather than on the limp attacked ones, and the larva when it hatches out settles down on the same leaf to feed. One leaf may contain as many as 250 larvae in addition to pupae and adults. The comparatively simple metamorphosis is effected in situ on the under side of the leaf. The entire life history extends over probably from 20 to 33 days (egg stage, four to eight days, larval stage 12 to 20 days, pre-

lating the plant. Fumigation with hydrocyanic acid gas is very fatal to all thripidae. There should be no difficulty in the necessary preliminary of estimating the cubic capacity of the house, and with ordinary precautions the remedy is a perfectly safe one. The work should be done at night and with the foliage dry. Use from 1-100th to 1-20th of a grain of potassium cyanide per cubic foot of space for a period varying from two hours to all night, varying the strength and exposure according to the circumstances of the particular case (lightness of house, variety of plant, &c.). In all cases the treatment should be repeated from seven to ten days after the first application, as the eggs will produce fresh larvae. C.

NOTES FROM LA MORTOLA.

CULTURE OF EPIPHYTES.

A FEW trials have been made at La Mortola to establish epiphytic plants in the open. The late Sir Thomas Haubury was the first to try experiments in this direction by hanging up three plants of *Tillandsia xiphioides* on a piece of wire in the Pergola some 35 years ago. The plants have grown well, and they flower frequently, though they receive little more than rain water. To these a few other similar Bromeliads were added in later years. *Tillandsia dianthaidea* now seems quite at home on the branches of a small Lemon tree. *Tillandsia stricta* has just finished flowering. *T. Duratii* also does well in a very sunny position on a branch, and is very conspicuous with its pure white, scaly leaves.

Tillandsia usneoides was brought from Mexico three years ago by Dr. Ross, of Munich, and sent to us. It has grown very well, and occasionally flowers. It does equally well in the shade and in sunny situations, though the latter may be more to its liking.



FIG. 90.—CYPRIPEDIUM MACRANTHUM: COLOUR OF FLOWERS, ROSY-PURPLE.

(See p. 210.)

Several *Billbergias* are doing very well on trees, for instance, *B. nutans*, which grows easily and flowers in great profusion in spring. *Billbergia vittata*, with its large, drooping, highly-coloured flower-spike, forms a large tuft on the stem of a *Cocos capitata*. *Billbergia Binotii* and *B. Limoniana* are just now very fine in flower on the stem of a *Phoenix canariensis*. The large bases of the leaves of these Palms furnish ample opportunity for epiphytic gardening. One may often notice that, behind these leaf bases, a number of plants germinate, and not infrequently little Fig trees (*Ficus Carica*) arise and send their roots down, just as their great cousins do in the Tropics.

The most magnificent epiphytic plants, Orchids, have also been tried in a small number in the open. Prof. Penzig has grown in the Genoa Botanic Garden a plant of *Oncidium bifolium* for many years. Six years ago a few pseudo-bulbs were brought to La Mortola by Sir Thomas Haubury, and have been established, some on a little Lemon tree and others on the stem of a large *Ficus macrophylla*. The plants continue to

grow without any Sphagnum, and send their roots up and down the stem. They flower every year in July, sometimes in great profusion, and are the best proof that epiphytic gardening on the Riviera is well worth trying. There must be a good number of Orchids which will grow as easily as *Oncidium bifolium*. The difficulties only consist in getting the right species and in ensuring that the plants have not been weakened by long cultivation under glass. A few years ago I procured a few species from South Brazil. They are growing well, and some have already flowered several times, for instance, *Leptotes bicolor*, *Oncidium longipes*, and *Sophrontis violacea*. *Cattleya citrina* has just now one flower open. A few other Orchids have been planted this year on trees; it remains to be seen whether they will succeed. They get an occasional watering, and are exposed to wind and cold in winter. The only, yet sufficient, protection during the very cold days of last winter consisted in a few newspapers, loosely wrapped over the plants. *Cattleyas*, most of the *Dendrobiums*, *Stanhopeas* and other tropical Orchids

THE ALPINE GARDEN.

POTENTILLA TONGUEI.

THIS very beautiful Cinquefoil is referred to in the *Index Kewensis* as *P. nepalensis*, but the *Kew Handlist* confirms my opinion that it is of garden origin. In all probability it is one of the set of hybrid *Potentillas* which was raised about the middle of the last century, some of which were very beautiful, although the taste for the double-flowered *Potentillas* caused the single varieties to be overlooked. Whatever the cause, *P. Tonguei* has never been extensively grown in gardens, and not infrequently it has been difficult to procure from the nurserymen. Now, however, it is not so rarely met with in commerce, so that those who wish to own it should have no great difficulty in securing plants.

The habit of growth makes it more adapted to the rockery than to the border, inasmuch as it looks at its best when trailing over rocks, whilst it has long, naturally drooping flower-stalks. The blooms show much better on a rockery than on the level; in fact, it is of little use in the border unless it is planted near the front and allowed plenty of room to develop. When cultivated in the border the flower-spikes should be supported by stakes, as is done in the case of the double-flowered varieties, but the plant is much prettier when supports can be dispensed with.

This Cinquefoil will grow in any ordinary garden soil. On the rockery the roots should be planted on a flat terrace, so that the rain will percolate readily into the soil, and placed so that the stems will hang over the stones in front, where, when its beautiful red and yellow flowers are expanded, it will prove most ornamental. In its general aspect it differs greatly from the ordinary class of summer-flowering rock plants, and its duration of bloom is so prolonged that its worth is all the greater. I have not found it produce seeds, but propagation is easy by divisions of the plants in early autumn, rooting the pieces carefully in pots, as it is difficult to take them off with many roots attached.

GERANIUM FREMONTII.

HARDY Geraniums are somewhat numerous, yet there is still room for new ones of a really distinct character, as it must be admitted that there are several perennial Crane's Bills which are too much alike. There is, therefore, a welcome awaiting *Geranium Fremontii* from those who like the genus and who desire to have a representative collection. This species has been introduced for two or three years, but is rarely catalogued for sale. It forms a pleasing border subject and may also be grown on the rockery, its stature (1 foot or 1½ foot) not being too great for the larger rock-gardens.

With me it thrives satisfactorily in a rather dry and sunny border, producing purple-lilac, dark-veined flowers which are larger than a half-crown, and are somewhat starry in form. The foliage is of a soft, light green, lighter underneath, and prettily veined. It is, I believe, a native of Colorado; in any case, the plant is quite hardy in my garden. *S. Arnott.*

PLANT NOTES.

LANTANAS.

THE true species of *Lantana* are very limited in numbers, but the list of garden varieties is lengthy. In many parts of the tropics *Lantanas* are troublesome weeds, but in this country they are exceedingly useful for the embellishment of the greenhouse during the summer months, and also for bedding out, especially in the arrangement of some of the mixed beds of flowering subjects which are so popular nowadays. This year the months of June and July were so wet and cold that many bedding plants proved unsatisfactory, but the *Lantanas* gave plenty of colour throughout the whole of that time, and they are still blooming with the

greatest freedom. For bedding purposes the larger-growing forms are often grown into good-sized specimens and employed as dot plants or associated with other subjects that attain about the same height. The dwarf-growing varieties, on the contrary, are frequently used for edging purposes. A generation or more ago a great number of varieties were in cultivation; indeed, in the catalogue of Messrs. E. G. Henderson & Son, of St. John's Wood, for the year 1876, no fewer than 54 varieties are offered. It would not, I think, be possible to obtain that number at the present time, nor are so many desirable. A marked peculiarity common to the different *Lantanas* is the great change that takes place in the colour of the flowers after expansion, of which a popular free-growing variety, *Ne Plus Ultra*, furnishes a good illustration. In this the flowers are yellow when first expanded, changing afterwards to bright pink. Other good varieties are *Chelsea Gem*, of an exceedingly rich crimson and amber; *Drap d'Or*, a dwarf variety with bright yellow flowers; *Incendie*, reddish-crimson and orange; *Distinction*, orange and scarlet; *Gogol*, amber-orange; *Magenta King*, magenta-purple; *La Neige*, white; *Raphael*, yellow and maroon; and *Rayon de Soleil*, deep yellow. I have left the mention of one of the most popular kinds till the last, since some confusion prevails with regard to its nomenclature, and also because it is especially valuable as a greenhouse climber.

Treated in this way, the *Lantana* in question has for many years formed a notable feature in the greenhouse at Kew, where it is trained up one of the supports and carried along the roof. Thence the slender shoots hang down and form a living curtain, which from spring till autumn is plentifully sprinkled with its little rounded clusters of lavender-coloured flowers. At Kew it is grown as *Lantana salviaefolia*, but in the parks and other public places where it is so frequently seen it is almost invariably known as *Lantana delicatissima*. Out-of-doors and fully exposed to the sunshine the flowers acquire a somewhat deeper tint than they do under glass and in a shaded structure.

The propagation and cultivation of *Lantanas* are in no ways exacting. The treatment given to *Fuchsias* will suit them well, as they will, in a greenhouse temperature, remain inactive throughout the winter. In the spring they start freely into growth, and should be repotted at that season. The young shoots so plentifully borne at that period will strike as readily as those of *Fuchsias*. Grown altogether in pots they are benefited by an occasional stimulant during the flowering season. W.

THE ROSARY.

ROSE MRS. F. W. FLIGHT.

In the gardens of Mrs. T. F. Blackwell, The Cedars, Harrow Weald (gr. Mr. J. Dinsmore), Pillar and Rambler Roses are effectively displayed around the flower garden and along the grassy walks through the extensive naturally-arranged garden of flowering shrubs and old-fashioned herbaceous plants. The *Wichuraiana* hybrid Roses are very beautiful, the old *Noisette Aimée Vibert* having masses of white, fragrant flowers. *Lady Gay* is one of the prettiest and most graceful, but the handsome and floriferous *Rose Mrs. F. W. Flight*, illustrated in the *Gardeners' Chronicle*, September 28, 1907, is one of the best, its branches being terminated with large bouquets of rose-pink flowers, each bunch perfect in itself, and the whole bush making a fine sight. In point of effect the old *Crimson Rambler* holds its own, its masses of bloom being visible at a greater distance than any other. B.

ST. GILES'S HOUSE.

ST. GILES'S HOUSE, the Dorsetshire seat of the Earl of Shaftesbury, is situated some 16 miles from the cathedral city. It is approached by a pleasant drive of three miles from Verwood station, on the London and South-Western railway. The mansion (see fig. 91) stands in a beautifully-timbered park of 430 acres. It dates from the 16th century, being a large, solid pile of Elizabethan architecture, erected on the site of a former house. On the south side is an ornamental lake of about 7 acres. This is fed by the river Allen, which divides near the mansion, part running under the house, through what was once a moat, into the lake. From the lake, the river continues its course through the adjacent village of St. Giles.

the chalk subsoil removed to a depth of 4 or 5 feet. Broad gravel paths intersect this garden, being in the form of a cross, and in the middle, where the paths cross, is a fountain, surrounded by a water basin, containing varieties of *Nymphæas*. On either side of the path, and at the same level, is a margin of turf of some 6 feet in width, and then the sunken portions are formed, also in grass, these being about 18 inches below the surroundings. This garden was designed by Lord Shaftesbury, the work being carried out by Mr. W. E. Axford, the gardener. In each of the four excavated quarters large beds have been cut in the turf. These are planted in summer-time with *Heliotropes*, *Antirrhiums*, *Pelargoniums*, &c.

Stretching from this garden, as far as the eye-

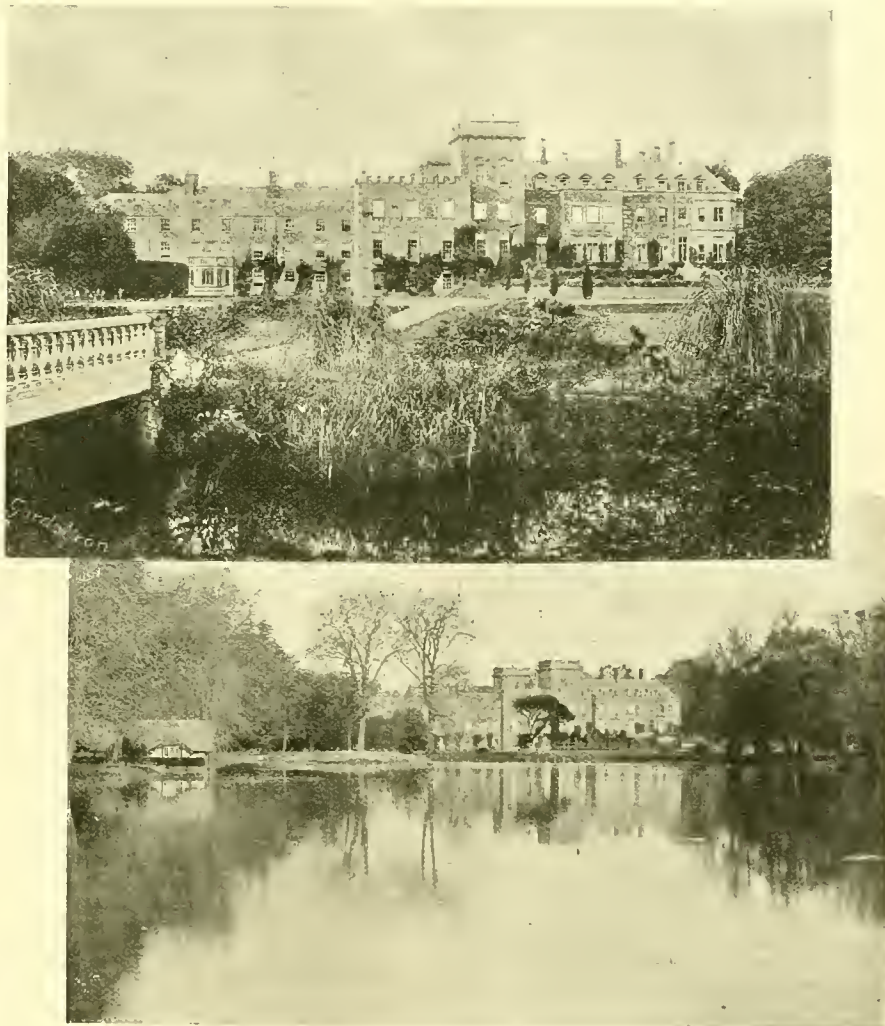


FIG. 91.—ST. GILES'S HOUSE, THE SEAT OF THE EARL OF SHAFTESBURY.

Near to the lake are some very large trees of the London Plane, also particularly fine specimens of *Pinus pinea*, the Stone Pine.

On the north side of the house, on either side of a gravel path leading to the village church, is a row of Lime trees. These form a pretty avenue, which, in years to come, will add considerably to the beauty of the surroundings. The village church was entirely destroyed by fire last October, and is now in course of reconstruction.

On the south side is a terrace garden, which, at the time of my visit (the first week in August), was gay with summer bedding plants.

On the east side is a sunken garden. This was constructed some four years ago, the necessary land being taken from the park, and

can discern, and on rising ground, is a long double avenue of Beech trees.

Within a short distance of the mansion is a walled-in garden of about 7 acres. This was formerly devoted to vegetable culture, but within the last few years it has been converted into a fruit and flower garden. It includes a pergola, the pillars or uprights of which are built of bricks, and the top cross-pieces of massive Larch poles. It is clothed with *Roses* in variety, *Ceanothus azureus*, *Polygonum Baldschuanicum*, *Vitis* species, and other climbers. Looking through on either side as one passes beneath this pergola, *Roses* are seen in profusion, planted in beds in their several varieties. Surrounding these *Rose* beds on the outer sides are hedges of *Cupressus macrocarpa*. The

yellowish appearance of these Conifers denotes their dislike of the chalk subsoil. Beyond the pergola and in another division of the garden are two small orchards of Apple trees; whilst another part has been transformed into two very pretty formal Rose gardens. Surrounding the Rose gardens, and backed by Yew hedges, 5 feet high, are long borders of herbaceous plants. On the walls are trained trees of Peach, Apricot, Pear, Plum, Cherry, cordon Gooseberries and Currants, all of which have borne heavy crops of fruit this season.

Many improvements have been carried out by the gardener, Mr. Axford, who has had charge of these gardens for the past 10 years.

The glasshouses are devoted to flowering plants exclusively, and among a general assortment of decorative subjects was a fine, healthy collection of *Souvenir de la Malmaison Carnations*. At the time the alterations were made in the walled-in gardens, new vegetable quarters, some 5 acres in extent, were formed in a field situated some distance from the older garden. In these quarters I noticed large crops of vegetables, their condition, as that of the gardens generally, denoting care and attention on the part of the gardener and his staff. *Wilmot H. Yates.*

VEGETABLES.

CABBAGES.

For the past few years I have sown Cabbage seeds in ordinary soil, which is of a sandy nature, and, when large enough, transplanted the seedlings in the heaviest ground in the garden, on a border with a south aspect.

By this system I find that the plants do not have the same tendency to "clubbing" which they had when grown from start to finish in the ordinary soil.

Another aid to the prevention of "clubbing" in Cabbages is to preserve the roots from being broken when lifting the young plants preparatory to planting them out in their permanent quarters, therefore, the trowel should always be used so that the plants can be lifted with a good ball of soil and with the roots intact. It is obvious that in transplanting a good ball of soil can be kept around the roots if lifted from heavy ground, whereas this would not be possible if lifted from gravelly or sandy soil.

When the plants have rooted well, nitrate of soda is applied sparingly between the rows, about once a fortnight, and the soil is afterwards hoed. Before the plants get too large and the roots run too much, the soil is drawn well up around the stems.

When the plants are growing tall and leggy, which has been the case this season, owing to the wet weather, many resort to the practice of plugging, i.e., making a slit with a sharp knife in the lower part of the stem and inserting a plug of wood or cork to keep the wound open. This may delay a plant running to seed, but I have never found it check the length or growth of the stem.

If a plant is inclined to grow leggy, and its own weight causes it to incline to one side, thereby exposing some of the roots, a spadeful or two of soil placed on the exposed roots is all that is required. *Winningstadt* is a good summer Cabbage, as firm as a cannon shot and almost as heavy.

St. John's Day is a profitable variety and a good one for any purpose. Incomparable *Winter* is a good, compact, round Cabbage, and where there is a large demand, as in public institutions, it should always be grown, especially for use during early winter, as it will withstand a considerable amount of frost.

For autumn sowing one of the best is "First and Best." *Meins No. 1* and *Ellam's Early* are also very suitable for this planting. *Thos. Francis, Wednesbury, Staffs.*

The Week's Work.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Coleus.—Insert cuttings of desirable varieties to provide stock for propagating purposes next spring, remembering, however, that, as *Coleus* seeds give a good proportion of excellent varieties, it is unnecessary to save stocks of merely ordinary sorts. With the approach of dull days and cold nights, plants growing in all but the hottest houses will cease to be ornamental. These should be discarded to afford accommodation for the now more valuable winter-flowering plants.

Euphorbia pulcherrima (Poinsettias).—When housing these plants, do not transfer them immediately from cool frames to a hot-house, for such a sudden change of temperature will cause an undesirable burst of activity, resulting in weak "heads." Should the plants have been kept during the summer in pits fitted with hot-water pipes, it would be as well to let them remain there for the time being, for, as the weather turns colder, artificial heat, in gradually increased quantities, can readily be afforded them. Weak applications of chemical manure, alternated with manure water, will now be of benefit.

Schizostylis coccinea.—This valuable bulbous plant only flowers satisfactorily in the open ground in the warmer parts of the country. In most gardens, therefore, it is necessary to pot up, or plant in boxes, a number of early plants in the autumn. Keep them close in a frame for a short time, and the plants, when well established, will flower well in a greenhouse or warm pit. Some excellent cut blooms may be obtained if a temporary frame is placed over the plants when they are growing.

Winter-flowering plants.—Allow ample room to such subjects as *Jacobinia*, *Peristrophe speciosa*, *Thyracanthus rutilans*, *Coleus thyrsoides*, *Reinwardtia*, *Eranthemum*, etc. They will only need shade from the sun's rays for a short time on the hottest days. Winter-flowering plants will now require regular supplies of manure. Keep the surface soil free from weeds, and lightly stir it occasionally with a pointed stick.

Auricula.—Winter is usually a critical time for *Auriculas*, and, unless every care is taken, the most valued forms often dwindle away. Throughout the winter season the frames should face to the south, and the plants should be either stood on a good layer of cinders or gravel, or arranged on a temporary staging. During fine weather the lights should be entirely removed, but the plants must not be exposed to cold rains, for, if water is allowed to remain in the heart of the plants, decay results. At this season, and until growth recommences, *Auriculas* must be kept on the dry side; but, at the same time, do not let them become quite dry. The essentials for successfully wintering these plants are to keep them as hardy as possible without exposing them to frost, and to water them only when necessary.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Late vinery.—Every effort should be made to get the latest Grapes to ripen perfectly, this being an absolute necessity if they are intended to be kept for a long time before they are cut. The varieties *Lady Downes Seedling*, *Gros Colmar*, and *Lady Hutt* require a longer period for ripening than most other late Grapes, and for this reason they should be grown in a house by themselves. In the case of the variety *Lady Hutt*, the bunches need to be well exposed to the light. This Grape, when properly finished, will last in a good condition until March. Ventilation must now be practised with great care, and the temperature in the vinery must not be allowed to drop below 60 degrees until the Grapes are quite ripe. If wasps are troublesome, the ventilators must be covered with hexagon wasp-proof netting. Remove all new lateral growths and examine the bunches carefully for diseased berries, which must be cut out and burned. Watering will also need to be done very carefully. On no account must the borders be made sodden, and, when water is applied, see that it is the same temperature as the atmosphere of the house. Outside borders, especially where

the subsoil is cold and heavy, are generally in a very soddened state, owing to the frequent rains. If they are covered with a dressing of stable manure, or other mulch, it is advisable to remove this and lightly fork up the surface of the border. When rains are frequent the borders should be covered with boards or lights, to carry off the water, but they should be removed whenever it is fine, so that the soil may receive the full benefit of sunshine.

Young vines.—Vines planted last spring have made satisfactory growth, but it is essential that the shoots should become thoroughly mature before it is time to prune them. For this reason, assist the vines to ripen the wood by allowing a free circulation of air at all times, and, if the weather is very damp, allow a little heat to circulate in the water pipes. Although the roots must be given a sufficiency of moisture, do not apply too much water; damping and syringing may now be discontinued. The lateral growths may be allowed to grow freely.

Mid-season vines.—Remove all lateral growths and shorten the side shoots, if this is necessary, to allow light and air to reach the main stem. Vines which have ripened heavy crops of Grapes should be given a soaking of farmyard manure water before the leaves fall. This liquid manure should not be used in the case of vines whose roots are in an unsatisfactory condition. Such vines should be given the treatment recommended in a previous Calendar.

Melons.—At this season of the year artificial warmth must be freely employed for maturing the fruits. Great care will be needed in the culture of the plants, and especially in watering. If too much water is given, it affects the flavour of the fruit, and it is also liable to cause canker in the stem. Stimulants also must be applied with more consideration than hitherto, and it will be better to withhold liquid manure entirely. A little artificial manure sprinkled over the surface of the bed or placed in the watering-can will be best, but this also must be discontinued when the fruits commence to colour. Do not syringe the plants; all that is necessary in this direction is to damp the walls and paths occasionally. When the fruits are ripening, the atmosphere should be kept quite dry, and a little air admitted by the top ventilators.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Damping and watering.—Owing to the unfavourable summer, the growths of most tropical Orchids are much softer in texture than in ordinary seasons, but the cooler-growing species have benefited by the mild, damp weather. The amount of moisture in the atmosphere must be regulated with great care until fire-heat is more extensively employed. In the present weather it is a mistake to maintain so much moisture in the house as is usual during a dry, warm autumn. The *East Indian*, *Cattleya*, and *Mexican* houses will require to be damped to a moderate extent only in the mornings and afternoons. In the case of the intermediate and cool houses, where fire-heat is not at present required, one good damping in the morning will be sufficient, although on very bright days it may be advisable to sprinkle the paths, &c., again during the afternoon. Keep the houses comparatively dry during the middle of the day, especially the *Mexican* house and those in which *Dendrobiums* and *Cattleyas* are cultivated. Afford plenty of ventilation whenever the conditions outside will permit, but not such as to cause great fluctuations in temperature. During sunny periods advantage should be taken to admit an increased quantity of air, as this will assist the ripening of the pseudo-bulbs, of such genera as *Dendrobium*, *Catasetum*, *Cynoches*, *Mormodes*, *Cattleya*, *Lælia*, *Cyrtopodium*, *Lissochilus*, *Chysis*, *Schomburgkia*, *Calanthe*, *Epidendrum*, *Odontoglossum citrosum*, and *O. Londesboroughianum*. These plants are more benefited by direct sunshine now than at any other time of the year, but there are other species of Orchids that are liable to injury if exposed to strong sunlight during autumn. Of these may be instanced *Phalaenopsis* (especially those species with green foliage), *Aerides*, *Angraecum*, *Vanda*, *Anæctochilus*, *Phaius*, evergreen *Calanthes*, *Zygopetalum*, *Cypripediums*, *Oncidiums*, *Masdevallias*, and *Odontoglossums*. *Dendrobiums*

now resting require very little fire-heat, but they delight in plenty of sunshine and an abundance of fresh air. Cold draughts must not be permitted, and damping should be reduced to a minimum. The plants will not get dry so quickly as they did a month or two ago, therefore greater care must be exercised in affording water. The cultivator must be guided principally in this matter by the condition of the plant, whether it is in active growth, or at rest, or approaching the flowering stage. In any case, it is necessary to remember that this is a specially wet season, and those who water by rule of thumb and who give the same amount as they have given in other years will probably find later that many of the more tender plants have decayed or the leaves have become spotted and diseased.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Celery.—Advantage should be taken of fine days for the earthing up of the stems. This work requires great care, for good Celery is often spoilt through the earthing up being entrusted to unskilled persons. All offsets, decaying, or split leaves should be removed before the soil is placed in position. On the day preceding the operation the plants should be given a copious watering. Make a good sprinkling of soot between the plants. It is advisable to employ three pairs of hands for this work, one to hold the leaves together and place the soil tightly round the base of the plant, and one on either side to break up and supply the soil. The great secret in the proper blanching of Celery is to apply but little soil at one time and make frequent additions. At this season from seven to nine weeks will be required to complete the blanching. If the work has to be done single-handed, each plant after cleaning should be securely tied round with a piece of raffia, and the soil added at one side at a time, cutting the raffia as the work proceeds. This, however, is a slow process, and is not to be recommended if it can be avoided. Earth must not be added to the later batches for some time to come, bearing in mind that late Celery is likely to keep in a more satisfactory condition through severe weather, when not too early or severely blanched.

Tomatos.—The season is now too far advanced to allow the fruits to remain longer in the open, unless protected by a sunny wall or building. All those that have already attained a moderate size should be cut with long stalks attached and suspended under glass to finish. Although these fruits may not be of the highest quality, they will be found useful for sauces and such-like purposes. Plants fruiting in houses will require a little fire-heat, but, at the same time, it must be remembered that too much will be equally as bad as none at all. Endeavour to keep a free circulation of air night and day, and the atmosphere as dry as possible. Watering should be done early in the morning. Remove all surplus growths and shorten the largest of the leaves. Tie up and expose the bunches as much as possible to the sun. As soon as the fruits show signs of colouring let them be gathered. Plants intended for winter fruiting should be placed in their final pots and grown on near to the glass in an intermediate house. Encourage the plants to make short-jointed, sturdy growths by admitting air freely whenever the weather permits. Avoid excessive fire-heat, and with regard to water at the roots, it is better to keep the plants moderately dry than to apply too much moisture.

Lettuce.—Prick out into cold frames the young plants which have been raised for supplying salad in winter. Varieties suitable for this purpose are Hick's Hardy White, Improved Brown Cos, and Hardy Hammersmith Cabbage. Make one more sowing of these varieties in a cold frame.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Filberts and Cobnuts.—In common with all fruits this season, these are much later in ripening than usual. They will soon be ready for gathering, and this must be given attention or they will drop and many be lost. Nuts should be well dried before storing, and they must be stored in a place where rats and mice cannot reach them.

Walnuts.—In the case of Walnuts it is often best to allow them to fall from the trees and to gather them up daily. The husks should be removed and the nuts partially dried previous to storing them in sand or in tubs in a cool cellar. If Walnuts are kept in a dry atmosphere the kernels will shrivel and rapidly deteriorate.

Raspberries.—If the old canes have not been cut out, this should be done at once. The young canes should be thinned to the required number, remembering that better crops of Raspberries are obtained, and the berries themselves are of better quality, when the shoots are allowed plenty of space. The unfavourable weather has retarded the ripening of autumn-fruiting Raspberries, but, in the event of a sunny period, there is still plenty of time for them to mature. In order to assist the process, the fruits should be exposed to the sun by removing any shoots that are not required. When the canes and foliage hang over the fruits, the latter have little chance of ripening in a season such as the present.

Mulberries.—Mulberry trees are usually planted on lawns; in such cases it is best to allow the fruits to ripen to such a degree that they will fall when the tree is shaken gently, as the fruits are superior in colour and flavour when fully ripe. If the trees are growing on cultivated ground, this practice can also be adopted if clean straw is spread beneath them.

Strawberries.—The planting of Strawberries should be completed without delay, so that the plants may become established before the winter. It is too late now to plant Strawberries for fruiting next season, but they may be put out in permanent quarters for supplying an early batch of runners next summer and furnishing early fruits in 1911. It is a great advantage to have special "layer plants" where large quantities of Strawberries are forced annually, and where home-grown runners are required for the purpose. Remove the runners from established plants and stir the ground with a Dutch hoe whenever it is dry enough. Weeds have grown rapidly this autumn, and every effort should be made during favourable weather to destroy them.

General work.—When the various fruits have been gathered and the nets are no longer required, they should be thoroughly dried for storing. See that they are properly labelled, and place them where mice cannot injure them, as these vermin often cause great damage to nets during the winter months. They are best suspended from the rafters of a dry loft or shed. It will be advisable to remove all mulchings placed about fruit trees, so that the ground may be exposed to the sun's rays.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardlee, Sussex.

Bedding plants.—Tender plants necessary for stock purposes should now be lifted and placed in pots or boxes, and stood in frames where heat can be used when necessary. If any variety of Pelargonium has not produced sufficient cuttings for next year's stock, the old plants can be lifted and placed either in pots or baskets. The top shoots may be taken off, inserted around the sides of pots, and placed in a warm pit. Such plants as Streptosolen and Plumbago should be lifted from the beds, potted, and placed under glass. In cold districts, cuttings and stock plants of bedding subjects should be shifted from cold frames to a greenhouse or heated frame, the atmosphere of a cold frame being too moist during dull weather and liable to cause damping in the plants. Water the plants only when it is absolutely necessary.

Polyanthus and Primrose.—These should now be planted in their permanent positions, adding plenty of manure and leaf-mould to the soil. Old plants need a top-dressing of decayed manure. They bloom very early in the spring, and a succession of flowers may be obtained over a long period if some are placed in warm, sheltered positions.

Bulbs.—Eranthis hyemalis (Winter Aconite) should be planted without delay. It forms an effective combination with Chionodoxas and Scillas, or interspersed with Snowdrops. The Eranthis is a fine subject for planting in the shade of trees, or on the hardy plant border. Bulbocodium vernum should

also be planted. The ground should be prepared for the planting of Crocuses. Among the best varieties are Queen Victoria (pure white), Caroline Chisholm (white), purpurea grandiflora, Louis d'Or (yellow), and Baron von Brunon (blue). Hyacinths and Tulips should be planted as soon as the beds have been cleared of their summer occupants. The following is a selection of bedding Hyacinths:—Single white: La Grandesse, Mont Blanc, Mme. Van der Hoop. Double white: Avalanche and Florence Nightingale. Red: Von Schiller, Orange Brilliant, Etna, Roi des Belges, Gigantea. Blue: Masterpiece, King of the Blues, Electra, Grand Maitre, Pieneman, Czar Peter. Yellow: Ida, King of the Yellows, La Citronniere, MacMahon. Mauve: Mauve Queen, Haydn, and L'Esperana. When Tulips are planted in the same beds as Hyacinths, a succession of flowers is maintained, as the Tulips flower after the Hyacinths are past. The Tulips should be of different colours to the Hyacinths. For instance, if white Hyacinths are used over a groundwork of blue Myosotis, they can be followed by red or yellow Tulips. It is now time that all orders for bulbs were sent to the nurserymen. On receipt, the bulbs should be taken from the packets and spread out in a cold store until required for planting.

Bulbs for the Alpine garden.—Many of the small-flowering Narcissi, including Narcissus minimus, N. cyclamineus, N. juncifolius, N. triandrus alba, N. citrinus, and N. odoros, are suitable for the rock-garden. They are best planted in clumps, and a quantity of rich soil should be incorporated with the ordinary soil. Other bulbous plants suitable for the rock-garden are Chionodoxa, Camassia, Erythronium, Galanthus, Ourisia, Anomatheca, and Calochortus. These should all be planted in light, sandy soil, and, if the soil of the rock-garden is of a cold nature, it will be better to place them all in a layer of sharp silver sand. The following Anemones are suitable for the rock-garden:—A. blanda, A. alpina, A. narcissiflora, A. pulsatilla, and its variety alba.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

The use of flowering trees and shrubs.—There are few better or cheaper methods of enhancing the beauty and charm of public parks during the spring and early summer months of the year than by the judicious planting of flowering trees and shrubs in beds and borders. Evergreens in the form of Laurels, Bays, Aucubas, Hollies, and the commoner types of Coniferae have undoubtedly their place and use in the formation of shrubberies, but it must be admitted that the planting of these in most of our parks has been done to the exclusion of many equally suitable but more beautiful subjects. The majority of us who deal with this kind of work have to plead guilty to an excessive use of evergreens in park plantations, and have to confess to finding it difficult to overcome this unfortunate prejudice in their favour. This is all the more regrettable since there is now such a wealth of varied and beautiful material at our command for the purpose. Even when it becomes necessary to hide an object, or block out a view from some standpoint, it is quite possible to attain the desired end without resorting to the use of the usual sombre-looking evergreens. For instance, few plants make a denser growth than does Berberis stenophylla, yet what a graceful habit it has, and what a wealth of bloom it produces in the spring, and how infinitely superior to the Common Laurel as a hedge! Under suitable soil conditions, Rhododendrons, too, though slow growing, make a delightful substitute for ordinary evergreens. To obtain the best results from the use of flowering trees and shrubs, it is advisable to plant them in bold groups and to have them arranged so that different species keep up a succession of bloom for a considerable time in the same border. Shrubberies containing groups of such plants as Almonds, Peaches, Double-flowering Cherries, Pyrus floribunda, Brooms, Double Gorse, Hawthorns, Guelder Roses and Mock Oranges are objects of beauty and interest until such time as the herbaceous border attains its full glory and claims the whole of the attention of visitors. It is needless to point out that the variety to select from is so great that no one combination such as indicated need be repeated frequently in any given park.

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 EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 28—
Roy. Hort. Soc. Coms. meet. (Masters' Memorial Lecture on the "Production of Varieties," by Prof. Hugo de Vries at 3 p.m.).

WEDNESDAY, SEPTEMBER 29—
Michaelmas Day. Quarter Day.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—54.6°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, September 22 (6 P.M.): Max. 68°; Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 23 (10 A.M.): Bar. 30.0; Temp. 60°; Weather—Heavy mist.

PROVINCES.—Wednesday, September 22: Max. 62° Cambridge; Min. 53° Scotland E. coast.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—
Trade Sale of Bulbs, in variety, Lilliums, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5. 25,400 d. & s. Begonias, at the Cambria Nursery, New Eltham, by Protheroe & Morris, at 1.

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

By the death of Peter Barr in his 85th year horticulture loses one who, in the last century, contributed largely to its enrichment.

Some men so outlive their contemporaries, however, that their names, though not unfamiliar, have nevertheless something of the nature of an echo. So it must seem to the younger generation in respect to Peter Barr, notwithstanding his extraordinary personality, his energy, enterprise, and his devotion to floriculture.

He appeared never to be satisfied with any plant as he found it, but, on the contrary, saw in everything the possibility for development and improvement. Peter Barr was not content to increase plants which were already plentiful and popular, but selected those which others passed unnoticed, or failed to realise what they would become under special cultivation. Those whose memory can recall the history of floriculture in the middle of the last century will remember how he worked upon group after group of plants, collecting as many species and varieties as was possible in each group. With the enthusiasm of a true florist, he would regard certain characteristics in a particular flower as worthy of development, and other features which in his opinion should be eliminated. His patience in carrying out persistent and minute observations was inexhaustible.

Some readers may remember how he collected all the species of *Helleborus* he could discover for cultivation in his trial grounds, which, in those days, were at Tooting. No one had hitherto given these plants special notice, therefore visitors to the trials were impressed by the variety, diversity and beauty exhibited in them. Peter Barr had

a great love for Irises and Paeonies, and these were greatly improved and popularised under the cultivation he afforded them. Eventually his attention became concentrated on bulbs. He first studied Tulips, an interest probably inherited from his father, who had a collection of florists' varieties. But even Peter Barr was unable to make these popular, although he greatly advanced the interest in garden Tulips, and especially late-flowering and decorative types. He worked for a considerable time upon Lilliums, and devoted his attention to tracing the origin of varieties with a view to correcting the nomenclature of this genus. It was mainly through his persistent efforts that the Royal Horti-

of them had vanished from gardens. Barr refused to believe that all these varieties were lost, and he at once began a search for them, which was carried into every part of the country. He succeeded in discovering many, and his chief rewards were in finding the collections of Mr. Wm. Backhouse, of Darlington, and Mr. Edward Leeds, at Manchester. These two men, with assiduous care, had been cultivating collections of Daffodils for a quarter of a century. Peter Barr eventually secured both collections, and classified the varieties according to their parentage and structural characters. Later, in 1884, came the Daffodil Conference under the auspices of the Royal Horticultural Society. At this



THE LATE PETER BARR, V.M.H.

cultural Society was induced to hold a conference upon Lilies, which was the means of bringing many species to the knowledge of the public.

But the name of Peter Barr will for ever be primarily connected with the development of the Narcissus. If an account of his work in collecting Narcissi and tracing the identity of particular varieties for purposes of classification were written, it would afford remarkable testimony to his irrepressible energy and zeal. In regard to the Narcissus his imagination was stirred by reading Parkinson's statement, written in 1629, that there had been nearly 100 sorts, but most

conference his classification was discussed and in the main accepted. The conference was the means of lifting the Daffodil into a position of greater prominence. Its cultivation increased in a remarkable manner, and the tendency has continued until the present day. A glance at the list of plants certificated by the Royal Horticultural Society will show what a large number of excellent varieties of Narcissus has been introduced by the firm of Barr. One of the finest trumpet varieties ever raised was named after Peter Barr, and was figured in these columns May 3, 1902.

We have not referred to his travels, but it will be remembered that after exploring most

of the Daffodil habitats in Europe, Mr. Barr, when about the age of 70 years, commenced, with all the energy and enthusiasm of a youth, a tour round the world which lasted about seven years. He toured through Canada, and afterwards visited the chief cities and parks in the United States, gradually working towards San Francisco, taking Colorado, Utah, and Nevada on his way. He then proceeded through Oregon and Washington, to British Columbia, and finally started from Vancouver for Yokohama. Leaving Japan, he proceeded to China, to Australia and New Zealand, eventually breaking his voyage home at Cape Colony for the purpose of spending 21 months in South Africa. He was interviewed time after time upon his favourite subject—the Daffodil—occasionally delivering lectures on this plant. In most civilised parts he was hailed as "The Daffodil King"—a name which we believe was first applied to Peter Barr by the late Dr. Masters. Many interesting letters from the traveller were published in these columns.

It need scarcely be said that Peter Barr's name was included in the original list of those selected for the Victoria Medal of Honour in 1897, and no man more richly deserved the honour.

On returning to Britain he settled at Kirn, near Dunoon, on the banks of the Clyde. Although already approaching his 80th year, he acquired a garden and recommenced his trials of hardy flowers, making specialities of Helleborus (a group of plants which, as we have seen, occupied his attention almost at the commencement of his career) and Polyanthuses. His death, even at his advanced age, was quite unexpected. Less than a fortnight ago he was present at the Centenary Exhibition of the Royal Caledonian Horticultural Society in Edinburgh, apparently as vigorous in mind and body as ever. A week later he conversed with the present writer at the Royal Horticultural Society's Hall, at Westminster. He had come south on a visit to his relatives, and was staying at the house of his son George. On the day of his death Mr. Barr spent a very busy time in calling upon friends in London, and in the evening dined with members of his family and friends. He was taken ill during the night, and died of heart failure in the early hours of Friday, the 17th inst. The funeral took place on the following Tuesday at Islington Cemetery at East Finchley.

Deceased was born in Scotland in 1825, near the former village of Govan, which has long since been incorporated in the city of Glasgow. He was the son of a Scottish millowner, who was also an amateur florist. He left his father's weaving factory whilst still a boy, and obtained a situation as message lad in Thynne's seed establishment, where he became a seedsman, remaining there until he was 20 years of age. He then removed to Newry, and was engaged in the business of Daly, Drysdale & Co., leaving after a year for Worcester, in which city he served for a few years in Mr. Richard Smith's seed business. Eventually Mr. Barr and a friend from Scotland commenced a business in Worcester, but mainly owing to the indifference of the other partner the business was given up. Mr. Barr proceeded to London and was engaged in the business of Butler & McCulloch, Covent Garden. In 1862 he again

commenced business, with a partner, in the premises of the present firm of Barr & Sons, under the title of Barr & Sugden. The business of Messrs. Barr & Sons will be unaffected by the death of the founder, he having retired from the firm in 1896.

OUR SUPPLEMENTARY ILLUSTRATION shows a group of Eremuri growing in Mr. BEAMISH's garden at Ashbourne, Co. Cork. Planted informally in a nook with a background of trees, against which the flower-spikes appear in relief, they form a pleasing group. The specimens in flower are principally *E. robustus* and its variety *Elwesianus*. Mr. BEAMISH's garden is filled with interesting plants, and tender subjects find the situation genial. A description of the garden at Ashbourne is given in the issue for June 19, 1909. Those who are specially interested in Eremuri will find much information in Madame FEDTSCHENKO's note on the genus, published in the issue for September 11, p. 181.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, the 28th inst. In the afternoon Pro-



THE LATE PETER BARR WHEN 22 YEARS OF AGE.

fessor H. DE VRIES will deliver a lecture on "The Production of Horticultural Varieties," being the second Masters Memorial lecture.

—A special Exhibition of Forced Spring Bulbs will be held at the Royal Horticultural Hall on March 8 and 9, 1910. The object of this show is to demonstrate the varieties best suited for gentle forcing, and exhibits of small and large collections are invited from amateurs and the trade. R.H.S. Medals will be awarded according to merit. At this exhibition, the Council also offer (subject to the general rules of the Society) the following prizes, presented to them by the GENERAL BULB GROWERS SOCIETY at Haarlem:—Division I.—FOR AMATEURS AND GENTLEMEN'S GARDENERS.—*Eighteen Hyacinths, distinct*: 1st prize, £6 6s., and six other prizes. *Twelve Hyacinths, distinct*: 1st prize, £5 5s. and four other prizes. *Six Hyacinths, distinct*: 1st prize, £2 2s., and three more prizes. *Four pans containing Hyacinths, ten roots of one variety in each pan.* The bloom of each pan to be of distinctly different colour to those of the other three pans: 1st prize, £4 4s., and three other prizes. Division II.—FOR TRADE GROWERS.—*Collection of 200 Hyacinths, in at least 36 varieties, grown in pots or glasses.* Prize, the Gold Medal of the General Bulb Growers' Society at Haarlem. *Collection of 200 Hyacinths in 20*

varieties in pans, 10 roots of one variety in each pan. Prize, the Gold Medal of the General Bulb Growers' Society at Haarlem. Regulations: For Classes 3, 4, and 5 each bulb must be in a separate pot, size optional. Classes 3, 4, 5, and 6 must all be single spikes: no spikes may be tied together. Exhibitors may only compete in one of the classes numbered 3, 4, and 5. All bulbs must have been forced entirely in Great Britain or Ireland. BULBS GROWN IN MOSS FIBRE, ETC.—Subject to the general rules of the Society, the Council offer the following prizes, presented to them by Mr. ROBERT SYDENHAM:—Bulbs grown in moss fibre or similar material (not earth) and without drainage.—AMATEURS AND GENTLEMEN'S GARDENERS.—Six single Hyacinths, in separate vases, not exceeding 6 inches in diameter, to be selected from any of the following varieties: Innocence, Isabella, Jacques, Johan, King of the Blues, Koh-i-noor, Ornamente Rose, Princess May, Queen of the Blues, Roi des Belges, Rose à Merveille, Schotel. 1st prize, 25s., and four additional prizes in each class. Six vases of Tulips (vases not exceeding 7 inches in diameter), no restriction as to the number of bulbs in a vase, to be selected from the following varieties: Duchesse de Parma, Duzart, Fabiola, Joost van Vondel, Keizerskroon, Montrésor, Prince of Austria, Rose Gris de Lin, Thomas Moore, Van der Neer, Vermilion Brilliant, White Pottebakker. Six vases of Narcissi (vases not exceeding 7 inches in diameter), no restriction as to the number of bulbs in a vase, to be selected from the following varieties: Beatrice, Beauty, C. J. Backhouse, Emperor, Frank Miles, Glitter, Horace, Leonie, Lillian, Lulworth, Madame de Graaff, Phyllis, Victoria, and White Lady. If there are more than seven exhibits in either of the classes, an extra prize of 7s. 6d. will be awarded.

FLOWERS IN SEASON.—We have received blooms of an improved strain of Papaver nudicaule (Iceland Poppy), from Messrs. STORRIE & STORRIE, Glencarse, Perthshire. The flowers are larger than usual and exhibit many delightful shades of colour. The raisers have given the name Excelsior to the strain.

BRUSSELS INTERNATIONAL EXHIBITION.—An International Horticultural Congress will be held in conjunction with the great International Horticultural Show at Brussels, 1910. The proceedings will extend over four days, viz., April 30, May 1, 2, and 3. The subjects to be dealt with are numerous, and have been grouped into seven principal sections. They are, briefly: I.—Floriculture. II.—Fruit Tree Culture. III.—Market Gardening. IV.—Scientific and Educational. V.—Horticultural Economy. VI.—Horticultural Mechanics. VII.—Special Processes, such as Electricity and Etherisation as applied to Plant Culture. Programmes of the Congress may be obtained from the Secretary, Congrès International d'Horticulture, 28, rue Ste. Catherine, Brussels.

ROYAL BOTANICAL SOCIETY.—The seventieth annual meeting of this society was held on the 21st inst at Regent's Park. The Council's report stated that the visitors to the gardens during the year under review numbered 20,000 more than in the previous year. The financial crisis was again discussed, and Mr. J. S. RUBINSTEIN proposed that the Society should seek for an equitable amalgamation with the Royal Horticultural Society. The Chairman, Mr. C. BRINSLEY MARLAY, stated he could not accept the proposal. He doubted whether the Royal Horticultural Society was as enthusiastic about the matter as Mr. RUBINSTEIN tried to make out. The Council of the Royal Botanic Society had not come to Mr. RUBINSTEIN's conclusion that the Society was utterly bankrupt.

MR. A. HERRINGTON.—We note in one of the American papers that Mr. A. HERRINGTON, who has hitherto held the position of Parks Superintendent on the Florham estate, has been appointed landscape architect for the purpose of carrying out important alterations. The Florham estate, belonging to Mr. H. MCKAY TWOMBLY, is one of the finest in the United States. As many of our readers knew Mr. HERRINGTON before leaving this country some years ago for America, they will be interested to learn that he is regarded in the United States as a landscape gardener of great ability.

ACREAGE OF HOPS.—A preliminary statement has been compiled by the Board of Agriculture and Fisheries from the returns collected on June 4 last, showing the acreage under Hops in England, with a comparative statement for the years 1908 and 1907. In Kent, the premier Hop county, the total acreage is 19,636, compared with 23,975 acres in 1908 and 28,169 acres in 1907. For the other counties the details are as follow:

	1909.	1908.	1907.
	Acres.	Acres.	Acres.
Gloucester ...	25	45	46
Hants. ...	1,414	1,636	1,842
Hereford ...	4,997	5,572	6,143
Salop ...	94	113	129
Surrey ...	544	648	744
Sussex ...	2,775	3,579	4,243
Worcester ...	3,054	3,353	3,622

The total area in England is 32,539 acres, as compared with 38,921 acres in 1908 and 44,938 acres in 1907.

DR. JEAN MASSART, the distinguished director of the Botanical Institute founded by the late LEO ERRERA, and Professor at the University of Brussels, has just been awarded the Decennial prize for botanical science, given by the Belgian Government. This prize is worth £200. The jury appointed to award the prize was composed as follow: M. MALAISE, of the Academy (president), M. MICHELLE, Professor at the Atheneé Royal of Liège (secretary), and Professor JEAN CHALON, of Namur, TH. DURAND, Director of the State Botanic Garden, Brussels, and Mons. GRAVIS, Professor at the University of Liège. It is the third time that this prize has been awarded. Twenty years ago it was given to Canon CARNOY, and 10 years ago to Professor COGNIAUX. The prize was awarded on the present occasion by three votes given for Dr. MASSART against two given for Prof. DE WILDEMAN. The jury was called upon to examine all the botanical works published in Belgium during the last 10 years, with the exception of those written by jurymen themselves, whose acceptance of office placed them outside the competition.

ATTEMPT TO DEVELOP BULB CULTURE IN SCOTLAND.—A consignment of 120,000 bulbs of *Narcissus bicolor grandis*, weighing over 3 tons and destined for Fareham, in Hampshire, was recently despatched from Leith by Mr. JAMES W. SCARLETT, Sweethope, Inveresk. A further consignment of the same variety for Inveraray, Aberdeenshire, to be despatched on an early date will bring to a close an attempt which has been made to extend the season of Daffodil blooms and Irises in the markets, principally those of London, Manchester, Leeds and Newcastle. Everyone knows that bulbs can be grown at less expense in the open garden than under glass, therefore advantage is taken of climatic conditions for cultivating them both early and late. Supplies are obtained from Algeria, France, the Scilly Isles, Jersey, Guernsey, Cornwall and other places. The season of cut blooms from outdoor plants commences shortly after the commencement of the year and continues without a break until the latest localities have reaped their harvest. For the purpose of further extending the season Mr. SCARLETT was asked by an eminent London firm eight years ago to cooperate in cultivating bulbs in Scotland. Mr.

SCARLETT spared no time or trouble in carrying out the idea. An area of 5 acres was ultimately planted with Iris (English and Spanish), *Gladiolus Branchleyensis*, *Narcissi Emperor*, *Horsfieldii*, *grandis*, *Barrii conspicuus*, *Poiteucus ornatus*, *Grand Monarch*, and others. Unfortunately it was found that the blooms were ready for market too early, for those grown in Lincolnshire being just in their prime, the market was glutted. It is to be regretted that such an industry, already giving employment to a considerable number of persons, should have to be discontinued owing to an over supply at a particular season.

GENTENARY OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

A SUMMARY OF ITS HISTORY.

(Concluded from page 203.)

On July, 1838, Queen Victoria was petitioned to become patroness of the Society, but Lord John Russell refused the request on the ground that the Caledonian Horticultural Society was merely a local institution. The secretary (Dr. Neill) replied to this letter, and the following is an extract:—

I trust being excused for calling your special attention to the great mistake implied in the above answer—in ranking the Cal. Hort. Society as a "local institution." Our Society is in every respect a national one as much as is the Highland and Agricultural Society of Scotland—being incorporated by Royal Charter—in the receipt of £200 a year from the Treasury towards the carrying on of its experimental garden and nursery—distributing its premiums and roots and seeds over the whole kingdom of Scotland from the most southerly counties to the Islands of Orkney and Shetland (to which last we voted a premium only a few months ago)—and being the single and only gardening society of Scotland that possesses these characters.

It will be obliging if you will state these facts to Lord John Russell, as they doubtless remove our Society out of the category of institutions to which His Lordship must be understood as alluding when he characterizes them as *local* and *numerous*.

To S. M. Phillips, Esq. (Under Secretary of State).

The following reply to Dr. Neill's letter was received from the Hon. Fox Maule, Under-Secretary of State:—

Whitehall, July 13, 1838.

Sir,—I am directed by Lord John Russell to acknowledge the receipt of your letter of the 11th instant and to inform you that from the reasons therein stated His Lordship concurs with you in opinion that the "Caledonian Horticultural Society" does not belong to those institutions which are denominated "local institutions," and His Lordship has therefore again submitted your application for patronage to Her Majesty.

And I have the satisfaction to inform you that Her Majesty has been graciously pleased to consent to be the Patroness of "The Caledonian Horticultural Society."

I have the honour to be, &c.,

(Signed) F. MAULE.

Dr. P. Neill, Secretary, Canonmills.

Among the prizes offered in 1839 was one for the best bulbs of Hyacinths produced in Scotland, either as off-sets from bulbs of not less than three years growth in Scotland or from seed ripened in the country. The first Society's medal was awarded to Sir John Robertson for presenting a collection of French Roses to the gardens.

In 1840 a proposal was made to issue a monthly periodical called the *Scottish Gardener*, of which Dr. Neill was the first editor.

Dr. Neill died on September 3, 1857, and by his will left £500 sterling for the purpose of the interest thereof being applied to furnish a medal or other award every second or third year to a distinguished Scottish botanist or cultivator, to be voted by the Society, consideration to be had to the productions exhibited by such individual at the Society's competitions.

In May, 1841, there was another great show held, and a band of music was brought from Glasgow by swift canal boat. At this show there were seven exhibitors of Cape Heaths; Mr. Stirling, Melville Castle, gained the first prize. In December of the same year it was decided to build a horticultural hall, and the treasurer was instructed to collect subscriptions for this purpose. Plans and estimates were provided by George Consins, architect, Edinburgh,

the estimates amounting to £557; he was instructed to proceed with the building. In May, 1843, the first meeting was held in the new hall. Among other exhibits were six *Calceolarias* from Archerfield, which had been carried all the way by two men on a handbarrow, a distance of 21 miles. Each man was awarded 5s. for his trouble! In 1834 a *Camellia-house* was added to the garden, and Lord Murray offered to build a Mushroom-house at his own expense. An orchard-house was also built in this year, and a great Hollyhock and Dahlia show was held in 1845.

Mr. James M'Nab, having been appointed his father's successor in the Botanic Gardens in 1849, resigned his position in the Society's gardens, and was succeeded by a Mr. Evans. In 1850 I notice the first mention of John Lamont's name and that of Mr. Thomas Methven as showing at the exhibitions, but Messrs. Dickson & Co. and Dickson & Sons were frequent exhibitors previous to that year.

In April, 1853, it was suggested to build a Crystal Palace at a cost of £16,000, in which to hold an Industrial Exhibition, and to retain the building as a permanent fixture in the garden. In 1856 the Society found itself in financial difficulties, and turned the garden into a nursery, which, however, was not a success. An endeavour was then made to get the Government to take it off their hands, which, though at first refused, was ultimately agreed to, the Government paying the Society £1,000 for the buildings they had erected. The garden now forms part of the Botanic Gardens.

There are only two persons now living, so far as I can trace, who used to exhibit at the shows held in these gardens. One is Mr. David Thomson, who showed Muscat Grapes from Archerfield, and the other Mr. John Paterson, late of Millbank, now of Salton, who showed Heaths in the year 1858—51 years ago.

Contemporary with the Caledonian Horticultural was another society, called the Edinburgh Horticultural Society, which at this time was in a prosperous condition. On December 6, 1865, the suggestion was made to unite the two Societies, as it was superfluous to have two doing the same work. It being agreed that the union would be altogether beneficial, the Edinburgh Horticultural Society was incorporated with the Royal Caledonian Horticultural Society. Mr. John Stewart, W.S., was secretary. Mr. William Young, assistant secretary, and Mr. Cumming, treasurer. I would here express the hope that history will repeat itself, and that once more we may see horticultural societies uniting to make one strong national society for Scotland.

The first meeting of the united Societies was held on December 7, 1865, at which all the then councillors of both Societies retired, and the opportunity was afforded of remodelling the council to suit the views of both Societies.

The first president was His Grace the Duke of Buccleuch.

Vice-presidents.—The Duke of Argyll, Earl of Dalkeith, Earl of Stair, and Earl of Haddington.

The first councillors were:—Sir W. Gibson-Craig, Professor Syme, Alex. James Adie, C.E., David Smith, W.S., Thomas Methven, John Downie, Andrew Lawson, John Lamont, W. Thomson (Dalkeith), Alex. M'Leod (Newbattle), W. Melville (Dalmeny Park), and John Currie (Grange Road); and the secretary, John Stewart, W.S.; assistant secretary, William Young; and treasurer, Charles Cumming. And yet again, as in 1809, the "Last Post" has been sounded over the graves of this band of workers.

No history of this Society would be complete without a few remarks about Mr. Young.

Extract from *The Gardeners' Chronicle*, of September 12, 1891.

Mr. William Young, Assistant Secretary to the Royal Caledonian Horticultural Society, is an amateur gardener of more than local fame. Reared in the town of Haddington, the centre of East Lothian gardening in

the earlier decades of the century, he carried with him to Edinburgh, where he eventually settled, his taste for florists' flowers, particularly Auriculas, in the culture and breeding of which he is a specialist. His knowledge of florists' flowers and his aptitude for managing flower shows, quickly brought him into notice with all interested in gardening progress. For the past 50 years he has been a foremost figure in horticultural movements. He was 15 years Treasurer to the Scottish Pansy Society, for seven years he was Secretary to the Edinburgh Horticultural Society, and for 30 years he has acted as Assistant Secretary to the Royal Caledonian Horticultural Society, twenty years of that time *con amore*, and without salary or any pecuniary benefit whatever. In short, he is an enthusiast whose enthusiasm increasing years in no way lessens.

PRESENTATIONS TO THE LATE ASSISTANT SECRETARY.

In 1865 the Edinburgh Horticultural Society and the Pansy Society recognised his services to horticulture by the presentation of a gold watch and chain, and a marble timepiece for his efficient and gratuitous services as secretary. The Pansy Society, at the same time, presented him with a writing desk.

1884.—Royal Caledonian Horticultural Society presented him with the Neill Prize.

1893.—His friends in horticulture presented him with £100 and a silver salver suitably inscribed in recognition of his 50 years' services to the cause and advancement of horticulture.

1897.—Last act: R.C.H.S. erected a monument over his grave in Warriston Cemetery. His death occurred in November, 1896, and followed close on his resignation in the same year.

Amongst the first acts of the reconstituted Society was the calling of a meeting, at the request of Mr. W. Thomson, to consider the propriety of holding an international show in 1869. The show was held on September 15 and 16, 1869, and is described as follows in the gardening papers of the day. "It must be confessed, in every sense of the word, that it was one of the grandest exhibitions of Grapes ever held. One of the most singular features of the show was the bringing to the fore in such a conspicuous manner of an entirely new exhibitor, Mr. Johnston, of Glamis Castle, who took all the leading prizes in the Grape classes. The fruit was cut from three-year-old vines and grown in aerated borders. The exhibition of plants was also very fine, the Heaths in particular."

One thousand five hundred gardeners visited the show on the first day between the hours of 9 to 11, previous to the public being admitted. A dinner was held in the Douglas Hotel, the Earl of Dalkeith being in the chair, at which 150 gentlemen were present.

In 1875 another international show was held, and it was described as being one of unusual magnitude as regards both the quantity of fruits and the number of plants, which, it may be said, were literally crammed into the Assembly Rooms, the Music Hall, and its side rooms. There were fruit, and plants, and vegetables enough to have set off to splendid advantage a place at least three times the size; but, unfortunately, there was no such place available.

The next incident of importance occurred in 1882, one which many will remember. The Music Hall being too small for our exhibitions, we resolved to rent the Waverley Market, though in fear and trembling lest we might not get enough exhibits to fill that great space. We were agreeably surprised to find that the exhibits had become so numerous that they taxed the capacity of the Market to the utmost. This was also an international show, which has been described as follows:—"This show could scarcely have been a greater success. The place of exhibition is almost perfect for a gathering of the sort, and the exhibits were very numerous and, as a rule, of high merit. The management was excellent, and the number of visitors exceeded 15,000, and there was £1,000 offered in prize money. Plants were never more numerous shown in Edinburgh before, nor was the quality ever better."

In the year 1891 another great international show was held, which was, without doubt, the finest and most extensive flower show held in

Scotland, £1,300 being offered in prize money. Our last international was held in 1905. The Centenary show on September 8 and 9 last compared favourably with those of former years. *David. W. Thomson, Edinburgh.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE LATE PETER BARR, V.M.H.—It was with a deep sense of sorrow I learned of the death of Peter Barr. He was a figure in horticulture that will not be easily replaced. His reputation was entirely of his own making. From humble conditions he gradually climbed to prosperity and repute. Endowed with perseverance and energy, he yet had in him the warmest of human instincts, joined to the richest fund of humour. Few men had a heartier hand-grip for friends, a cheerier or more joyous laugh. May his peaceful end be that of all of us, and may we be able to look back in our last hours with that deep sense of satisfaction which marked the closing days of our old and dear friend. *A. D.*

—The somewhat sudden death of Peter Barr will come as a painful surprise to a large number of those who saw him on the previous Tuesday at the Royal Horticultural Hall, when the "Daffodil King," strong-voiced and with much of his usual vigour of speech, appeared in fairly good health. Mr. Barr led a most strenuous life until he retired from the firm which he founded. Upon hundreds of occasions have I seen him at 6 a.m. speeding away towards the trial grounds at Tooting, there to put in a couple of hours or so prior to a hurried breakfast and away to the shop in Covent Garden, where he remained very often until quite late at night. At Tooting the whole of the stocks of seed trials came under his personal observation, though without doubt he displayed his greatest zeal when working among the Hellebores, Paeonies, Lilies, Colchicums or Irises, and, indeed, it may be said of him that he acted as a pioneer in popularising these groups of plants. At that time, too, Mr. Barr had in the late Robert Parker a near neighbour and contemporary worker in the same field. Tulips and Daffodils, the latter particularly, took up much of his time, and when engaged in separating and roughly grouping and describing the "Edward Leeds" Daffodils on their first flowering at Tooting, his zeal and enthusiasm knew no bounds. It was in this superb lot of early seedlings that were found such well-known sorts as Grandee, Frank Miles, Wm. Goldring, Katherine Spurrell, Cynosure, John Nelson and others. I had the privilege of seeing many of them on their first flowering in the early 'seventies at the Tooting trial grounds. It is interesting to recall that at one time Mr. Barr was the most ridiculed man who came to the South Kensington shows, because he persistently exhibited his flowers in blacking bottles. To-day, however, the most approved exhibition vase for other flowers besides Daffodils is but a modification of the blacking bottle of former years. From the very narrow beds of Daffodils as first seen at Tooting to the acres of these flowers at Surbiton and elsewhere to-day, is a great stretch, but this vast industry, giving employment to thousands of people, is the result of Peter Barr's labours, and he lived to see it in its full development. *E. H. Jenkins.*

VIOLAS FOR BEDDING (see p. 101).—In an interesting and instructive communication on these plants, Mr. Cuthbertson remarks that, "if Violas can be grown in the Royal Horticultural Society's garden at Wisley, they can be grown anywhere in England," and many will be inclined to agree with him. For my own part, however, I have long since regarded the very shallow, light, loamy and gravel-drained soils of this portion of south west Middlesex a more severe test to Violas, inasmuch as directly under the 15 inches or so of top soil there are several feet of roughish gravel and sand through which all moisture percolates as through a sieve. In soils

such as obtain at Wisley, there is usually a great depth of the material present, and this, whilst of a hungry nature, is not of a dust-dry character. Having obtained an unequalled success with Violas even in my own district, and knowing also of the Wisley success, I unhesitatingly say that there is no occasion for failure even in the South of England and on very light or sandy soils. My method of procedure was as follows. The stock was increased by means of freshly-rooted cuttings and not by division, this being essential to success. The ground was dug as deeply as circumstances permitted, a little lime being worked in and a heavy dressing of cow manure placed deeply in the soil. The cow manure was useful as a moisture-conserving agent. Planting was done in October. Firm planting is essential; I believe Violas resent loose soils about their roots as much as dryness. The surface of the beds were kept as low as possible, and rather deep trenches were drawn the full width of a 6-inch wide hoe, the young plants being firmly bedded in the centre. The object of the trench was to admit of earthing-up the plants to the level of the bed, and the young plants being stopped, growths quickly appeared from the base. By drawing the soil about them in this way a greater number of roots was secured. This method is strongly recommended to those having to deal with light soils. In ordinary bedding arrangements a far greater measure of success may be secured by similar means and by arranging the surface of the bed in a slight depression or level with the surrounding soil instead of being mounded as so often seen. The list of varieties given by Mr. Cuthbertson is of great value, and appears at a most opportune moment. *E. H. Jenkins, Hampton Hill.*

DAMAGE BY THUNDERSTORM.—I have never before witnessed such a severe thunder and hail-storm as that which occurred here on the afternoon of Friday, 17th inst. The storm was at its height for three-quarters of an hour, during which time rain fell to the amount of 1.85 inch. The total rainfall during the whole of the storm was 2.12 inches. Hailstones of unusually large dimensions fell and covered the ground to the depth of nearly 3 inches. Much damage was done in gardens. The ground beneath Apple and Pear trees was covered with fruits and leaves, and most of the fruits that did not fall are badly bruised. Great damage was also done to Chrysanthemums, much of the foliage being stripped off, and the buds badly damaged. Kitchen garden crops, including Celery, Lettuces, Beet, Cauliflowers and Winter Greens have the appearance of being riddled with shot. Several Oak trees on the estate and the adjoining one of West Hall, were struck by lightning. *J. B. Lowe, Broadoaks Gardens, West Byfleet, Surrey.*

OURISIA COCCINEA.—On p. 203 Mr. Fitzherbert relates his unfortunate experience with this plant. He need not, however, despair of being able to grow it successfully. For many years I have cultivated the species and studied its habits. I should think that when grown in an elevated, sunny position it would be necessary, during hot weather, to stand over it with a watering-can to keep the plant from wilting. It does best with me on the ground level and in partial shade. I have plants in a position where they get scarcely any sun; they have grown well, but they produce very few flowers. Mr. Fitzherbert speaks of it doing well in one place for one or two years and then going off. Such an experience with herbaceous plants is not uncommon, and is mainly due, I think, to the condition of the soil. Most of the Achilleas, for instance, grow and flower abundantly here on the same site for two years. In the spring of the third year it is only round the edges of the group that living portions are found. I have come to the conclusion that in such cases the plants exhaust the soil of the particular kind of food they require, and the more generous the cultivation the sooner do the plants suffer exhaustion. In porous soils the plants are the shortest lived, whilst in retentive, heavy loam they succeed longest. The shoots of Ourisia, which are always pushing out in search of food, indicate their need for fresh soil. As soon as the plants have flowered they should be lifted and replanted in good turfy soil with a little leaf-mould and manure added. Treated thus, they have given me excellent results. *Michael Cuthbertson, Rothsay.*

HYDRANGEAS AT RUFFORD ABBEY GARDENS.

—During a recent visit to Rufford Abbey Gardens I was much impressed with a number of plants of *Hydrangea hortensis* flowering in tubs. The plants were ranged each side of a broad terrace walk. They were uniform in size, being nearly 6 feet in height and 21 feet in circumference. Each plant carried, on an average, 100 well-developed trusses of bloom, which, in spite of the cold, inclement weather, looked remarkably fresh and of a good colour. *A. Bullock, Copped Hall Gardens, Epping.*

PROPAGATION OF CLIANTHUS DAMPIERI.

F. M. (p. 182) fails to indicate that this plant, which is known as the Glory Pea, is of a climbing or trailing habit. It can be grown easily as a cold, greenhouse climber trained to the rafters, but its best effects are obtained as a basket plant. The basket should be not less than 18 inches in diameter and of corresponding depth. Well-grown specimens drape the sides with their trailing shoots 4 or 5 feet in length, bunches of vivid scarlet and black flowers being produced from every node of the previous year's wood. The variety tricolor has red, white and black flowers, but is not so brilliant as the type. There is some difficulty in growing the seedlings to a suitable size for grafting if the seed is sown in felt or blotting paper as recommended. They will germinate quite well in a porous, sandy compost. As a stock, and especially for plants intended for outdoor culture, I prefer them worked on stocks of *Colutea arborescens* raised from seed. This stock is much harder, and has a tendency to dwarf slightly, the growth of the scion. Side or veneer grafting is preferable to wedge grafting when the stock and scion are so small and tender. All that is necessary is to bare the cambium layer on one side of the stock and on the corresponding side of the scion, binding the stock and graft firmly together with soft wool. No trouble will be experienced with growths from the stock if the latter is cut off below the seed leaves or cotyledons. The *Colutea* seedlings may be slightly drawn to produce a longer stem for grafting, but care must be taken not to overdo this. When sowing *Colutea* seed for stocks, two seeds should be placed in a 2½-inch pot filled well up to the rim with soil. For grafting select the stronger plant, removing the other. The "Glory Pea" likes a dry atmosphere, and the hairy foliage should not be wetted. When repotting, keep the point of union well up out of the soil. It is useless to attempt to graft shoots of *Clianthus Dampieri* when they have attained their full dimensions and are clothed with the woolly tomentum. No matter what stock is used, the scion wilts or rots. Seedlings, however, treated as described, grow together quite readily. The soil in which established plants are growing should be kept on the dry side in winter. *H.*

MAKING AND PLANTING OF FRUIT TREE BORDERS.

—Mr. Ward's article on this subject (see p. 193) is very opportune, as the season is near when the making of borders will demand attention. I have formed many fruit borders during the last decade, and experience has proved that a small border well filled with fibrous roots is far preferable to a wide, deep border containing roots of a whip-thong character. I am a firm believer in concreting the bottom of all fruit borders, and in enclosing the borders within brick walls, so that the roots are strictly confined and the cultivator knows where they are. As regards the size, I would give less area than Mr. Ward advocates, and I prefer the bottom to have a sharper incline than he states in order to afford a more perfect drainage. The question of soil for the borders requires consideration; in selecting the time-honoured top spit, care should be taken that such loams do not contain an excess of iron. I have handled a top spit from a deer park in which every kind of fruit tree (except vines) produced first-class crops, but in the same kind of soil Muscat vines dwindled away. The sectional preparation of the border is undoubtedly the best, but I prefer stout planks for supporting the sections and keeping them in position rather than turf walls, and would only add another section to the border when the first one was well filled with roots. When the necessary loam for the border has to be bought in, the section system spreads the expense and labour over a number of years. *T. H. Slade, Horsham.*

SOCIETIES.**ROYAL HORTICULTURAL.****Scientific Committee.**

SEPTEMBER 14.—*Present:* A. W. Hill, Esq., M.A. (in the Chair); with Dr. Voelcker, and Messrs. J. Fraser, W. Hales, J. W. Odell, and Geo. Gordon, V.M.H.

Prunus Chaproni.—Mr. ODELL submitted the fruit and leaves of a *Prunus* growing in a plantation at Henley. A comparison with the description and plate of the *Revue Horticole*, 1881, p. 467, of *Prunus Chaproni*, showed apparent agreement except that the fruits of the sample were a little smaller. Mr. HILL undertook to see whether he could determine anything further regarding it from the Kew records.

Enothera sp., etc.—Mr. FRASER showed a specimen of *Enothera Lamarckiana* in flower which he had found in his garden, and was self-sown. He took the form to be that of the primitive species named *E. rubrinervis* by DE VRIES. Last year the veins of the leaves were reddish, whilst this year they were almost white, due possibly to the sunless season. The fruits, however, were streaked with red. Mr. FRASER thought that this variety was taking the place of *E. biennis* in Surrey in both the garden and the wild state.

A flesh-coloured specimen of *Echium vulgare*, collected in 1901 by Mr. FRASER, was shown still retaining the flesh colour. Mr. FRASER showed further sprigs of *Calluna vulgaris*, var. *glabrescens*, and *Erica cinerea*, gathered in Surrey growing on a chalk cliff at an elevation of 700 feet. The difficulty of growing Heaths and Rhododendrons on chalky soils is generally known, and Mr. FRASER was surprised to find the present specimens. The soil was about 18 inches deep, with a further 6 inches of decayed chalk. As 5 inches of soil would be a sufficient depth for the *Ericas*, it was thought possible that the upper stratum was free from lime, and Dr. VOELCKER undertook to analyse a sample if sent to him.

Diseased Pears.—Mr. WIGLEY, of Whitehill, Gravesend, sent some Pears attacked by the fungus *Gloeosporium fructigenum*. The trees should be winter sprayed with copper sulphate solution (1 lb. to 25 gallons of water), and with Bordeaux mixture in summer.

Lettuce dying.—Cos and Cabbage Lettuces, both young and old plants, were received from Mr. HASKINS, of Bonnemouth, the leaves of which were browned and decayed at the edges. Mr. GORDON said that he had experienced the same trouble, and he thought it was due merely to the excessively wet season and cold weather, and was not attributable to either soil conditions or disease.

NATIONAL ROSE.

SEPTEMBER 16.—The autumn exhibition was held on this date in the Horticultural Hall, Westminster. It was not expected that the show would prove remarkable, as all classes of garden flowers have been more or less adversely affected by the unfavourable summer. Nevertheless, the Hall was well filled with exhibits, and, although the quality of the blooms generally was below average, from a spectacular point of view the show was a great success and the attendance satisfactory. The feature of the exhibition was the splendid exhibits shown by nurserymen in the classes for displays of Roses.

NURSERYMEN'S CLASSES.

There was excellent competition in the class for 36 blooms of distinct varieties shown on boards. Scottish and Irish exhibitors won all the prizes, their blooms being larger and much brighter than those shown by southern growers. The 1st prize was won by Messrs. J. COCKER & SON, Aberdeen, with large, well-coloured blooms, showing generally little damage from weather. The varieties were as follow:—J. B. Clarke, *Caroline Testout*, *Annie Wood*, Mrs. D. McKee, *Marie Baumann* (fine bloom), *Gustave Piganeau*, Mrs. T. Roosevelt, S. M. Rodocanachi, Mrs. John Laing, Mme. E. Verdier, A. Ricotard, Gladys Harkness, Alfred Colomb, Mme. Melanie Soupert, Hugh Dickson (extra large, finely-coloured bloom), Lyon Rose, Frau Karl Druschki, Duke of Edinburgh (a fine dark Rose), Capt.

Hayward (exquisite in shape), Bessie Brown, Louis Van Houtte, Mme. Wagram, Richmond, Lohengrin, Duc de Rohan, Countess of Gosford, Carola, Lady Suffield, Marquise Litta, Freiherr von Marschall, A. K. Williams, and Farbenkönigin. 2nd, Mr. HUGH DICKSON, Royal Nurseries, Belfast, with a fine exhibit. Notable blooms were those labelled *Caroline Testout*, Hugh Dickson, Mme. Haussman, Mrs. Stewart Clark, Mme. Wagram, Comtesse de Strenne, Countess of Caledon, Gladys Harkness, and Mme. Eugene Verdier. 3rd, Messrs. ADAM & CRAIGMILE, Aberdeen; 4th, Messrs. ALEX. DICKSON & SONS, Newtownards.

In the class for 18 blooms of Tea and Noisette varieties, Messrs. ADAM & CRAIGMILE were placed 1st, followed by Mr. GEO. PRINCE, Longworth, with Mr. J. PIGG, Royston, 3rd. The blooms generally were below average quality, many showing traces of damage in the basal petals.

BLOOMS SHOWN IN VASES.

The class for 36 distinct varieties, the blooms shown in trusses, all types of the flower being admissible, was represented by four good displays. Each group measured 10 feet by 3 feet, the vases being arranged on a terraced staging, with a dark cloth background and base.

The 1st prize was won by Messrs. FRANK CANT & Co., Colchester, who showed Hugh Dickson, Lady Ashtown (pink), Mme. Melanie Soupert (a buff-tinted H.T. variety), Rainbow, Betty (very fine), Princess Marie Merchertsky (pale pink), Sulphurea (yellow), Mme. Abel Chatenay, Gustav Grünerwald, Mme. Ravary (small, but of beautiful form), Clara Watson, &c. 2nd, Mr. JOHN CROSSLING, Penarth, with an exhibit containing many fine examples, notably Mamam Cochet, Mrs. Sharman Crawford, Mamie, Betty, Victor Hugo, Mme. Jean Dupuy, J. B. Clarke, and Mme. Abel Chatenay. 3rd, Mr. J. MATTOCK, New Headington, Oxford, who followed Mr. CROSSLING closely.

Five growers competed in the class for 12 distinct varieties, seven blooms each, shown in a space not exceeding 6 feet by 1 foot. The 1st prize was won easily by Mr. HUGH DICKSON, Belfast, but the use of elegant zinc vases did not enhance the beauty of the display. The flowers of Mrs. John Laing, Hugh Dickson (magnificently coloured), Frau Karl Druschki, Princess Marie Merchertsky (soft pink), W. E. Lippiatt, Gladys Harkness (especially good), Ulrich Brunner, Dean Hole, Mme. Wagram, J. B. Clarke (deep red), and Mrs. Stewart Clark were all of excellent quality. 2nd, Messrs. JAS. COCKER & SONS, Aberdeen, with smaller blooms. They appeared rather stiff, being wired, but their colours were finely developed, notably in Hugh Dickson, Gustav Grünerwald, A. K. Williams, and Alfred Colomb. 3rd, Messrs. ALEX. DICKSON & SONS.

Very keen competition resulted in the class for 12 blooms of any variety of Rose, to be shown in a vase. The pink Mrs. John Laing, finely shown by Mr. JOHN MATTOCK, Headington, was adjudged the best, although we preferred a vase of Hugh Dickson which was unplaced. The 2nd prize was also awarded to Mrs. John Laing, shown by Mr. W. FERGUSON, Dunfermline; 3rd, Frau Karl Druschki, shown by Messrs. D. PRIOR & SON, Colchester. There were nine exhibits.

DECORATIVE ROSES.

In this section all H.P., H.T., T., and Noisette varieties mentioned in the Society's *Arrangements for 1909* were not admissible. The schedule required the bunches to be arranged so as to show the foliage and habit of growth of each variety.

The largest class was for a group measuring 8 feet by 2 feet, and embracing 24 distinct varieties. Not fewer than three, nor more than seven, trusses of each variety were required. There was good competition amongst four exhibitors, all staging bright and pretty displays.

The 1st prize was won by Messrs. FRANK CANT & Co., Colchester. The more prominent varieties were *Trier*, *Irish Glory*, *Edu Meyer*, *Rainbow*, *La Tosca*, *Georges Nabonnand*, *Apricot*, and *Ecarlate*. 2nd, Messrs. PAUL & SON, Old Nurseries, Cheshunt, with *General McArthur*, *Mme. Ravary*, *Betty*, *Le Progrès*, *Mrs. E. G. Hill*, and other pretty sorts. 3rd, Mr. JOHN MATTOCK. Not much difference was observable between these three exhibits.

There was a class for 12 varieties, other conditions being similar, and in this the prizes were won by Mr. CHAS. TURNER, Slough, Mr. J. CROSSLING, Penarth, Mr. W. FERGUSON, and Mr. GEO. PRINCE, Longworth. Mr. CROSSLING and Mr. FERGUSON were bracketed equal 2nd, Mr. PRINCE receiving the 3rd prize. Mr. TURNER, who was awarded the premier place, showed Betty (rose on creamy yellow, fine, big blooms), Irish Elegance (big, pink single), Le Progrès, Liberty, Mme. Ravary (soft apricot), Mme. Abel Chatenay, Gustav Grünerwald, &c.

Pernet Ducher, Betty (rose on pale lemon), Gruss an Teplitz (fine, dark, fragrant rose), Viscountess Folkestone, Mme. J. Grolez, and Mrs. H. Cutbush (Polyantha). 2nd, Mr. J. MATTOCK, who showed Laurette Messimy (a pretty, small variety, a shade of gold shot with rose, and tinted deeper at the edges), Irish Elegance, Bardon Job, &c.

DWARF POLYANTHA OR POMPON ROSES.

There were five exhibits in a class for 12 varieties of these charming little Roses, shown in

GROUPS OF ROSES.

For a group of Roses arranged on the floor, in a space not exceeding 100 square feet, there were two competitors, Messrs. HOBBIES, LTD., Dereham, Norfolk, and Messrs. PAUL, Cheshunt, the prizes being awarded in the order given. Both were corner exhibits, Messrs. HOBBIES having a number of rambler varieties, which lend themselves admirably for grouping. Intermixed with these there were choice blooms of H.T., T., H.P., and other large-flowered kinds. Messrs. PAUL filled baskets with large blooms, amongst which we noticed Mrs. George Laing, Fisher Holmes, Mrs. R. G. Sharman, Crawford, Mme. Abel Chatenay, Richmond, Irish Glory and La Tesca.

The best efforts were seen in the class for a representative group of cut Roses arranged on tables in an area of 18 feet by 6 feet. Mr. G. PRINCE, Longford, won with a splendid exhibit, in which good blooms were shown. It was a bower of Roses arranged with the skill of an artist, nothing appearing obtrusive or overcrowded. 2nd, Messrs. W. & J. BROWN, Peterborough, also with an elegant exhibit; 3rd, another fine display shown by THE KING'S ACRE NURSERY CO., Hereford.

Mr. F. M. BRADLEY, Peterborough, excelled in the class for a group of Roses occupying 60 square feet, this being the fourth time in succession he has won the 1st prize in this class; 2nd, Messrs. HARKNESS & Co., Hitchin.

AMATEUR CLASSES.

The quality of the flowers shown by amateur growers was generally much below that in the nurserymen's exhibits. For 18 blooms of distinct varieties, M. E. B. LINDSELL, Bearton, Hitchin, was placed 1st with Frau Karl Druschki, Alf. Colomb, A. K. Williams, Hugh Dickson, Gladys Harkness, Beauty of Waltham, Maman Cochet, S. M. Rodecanachi (a fine bloom), Comtesse de Raimbaud, and Caroline Testout, &c.; 2nd, Mr. CONWAY JONES, Hucelecote, Gloucester, who showed good flowers of the varieties W. E. Lippiatt, Hugh Dickson, Victor Hugo, and Mrs. W. J. Grant.

Nine exhibitors competed in the class for 12 blooms of distinct varieties, Mr. W. O. TIMES, Hitchin, winning the 1st prize with a very bright lot, but some blooms showed evidence of damage by unfavourable weather. We noticed Mrs. John Laing (a remarkably fine bloom that was awarded a Silver Medal), Horace Vernet, Frau Karl Druschki, White Maman Cochet, Bessie Brown, Hugh Dickson, Prince Arthur, Helen Keller and Duchess of Bedford. 2nd, Mr. G. SPEIGHT, Market Harborough, with an even lot, very fine being Gustav Grünerwald, Chas. Graham and George Harkness.

In competition with two other exhibitors, Mr. W. UPTON, Claremont Street, Leicester, showed nine good blooms in Class 18, having Caroline Testout (very big), Horace Vernet, W. E. Lippiatt (very dark), Maman Cochet, Ulrich Brunner and Mrs. J. Laing as his best examples. Those in the 2nd prize group, shown by Mr. C. F. LESLIE, Hertingfordbury, were large, but rather over-blown.

In Class 19, for six blooms, the 1st prize was won by the Rev. H. S. ARKWRIGHT, Binfield Rectory, Berks., with six excellent flowers, including Gustave Piganeau, Frau Karl Druschki, Earl of Warwick (this gained a Silver Medal), Mrs. David McKee, Kaiserin A. Victoria and La France; 2nd, Mrs. C. M. BARNES, Rochford, Essex.

Mr. H. R. DARLINGTON, Potters Bar, excelled in the class for 12 distinct varieties shown in trusses with an excellent display; and the 2nd prize group, shown by the Rev. J. H. PEMBERTON, Havering-atte-Bower, was also good.

Tea and Noisette Roses were generally of inferior quality. The 1st prize for 12 blooms was won by Mr. CONWAY JONES; whilst Mr. W. WHITTLE, Leicester, showed best in the class for six varieties.

Considerable space was devoted to decorative classes, one annexe being filled with decorated dinner tables, the 1st prize being awarded for an arrangement in which silver bowls and vases were filled with Mme. Abel Chatenay Roses, relieved with greenery.

PREMIER BLOOMS.

Nurserymen's Classes.—H.P. Mrs. John Laing, H.T. Earl of Warwick, both shown by



FIG. 94.—ANGRÆCUM KOTSCHYI: FLOWERS, WHITE.

[Shown by Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White) at the meeting of the R.H.S. on September 14. A Cultural Commendation was awarded. See p. 206.]

There was a class for 12 varieties, shown in as many Bamboo stands, each stand having accommodation for nine blooms. Three growers entered, the 1st prize being awarded to Mr. CHAS. TURNER for a smart display, more noticeable for its general effect than its high-quality blooms. We noticed Papa Gontier, Mme.

trusses. Much the best collection was staged by Messrs. FRANK CANT & Co., who had Martha (rose), Philippine Lambert (flattish, but elegantly shaded blush with a golden base), Eugenie Lamesch, Perle d'Or, Leonie Lamesch, &c. 2nd, Messrs. B. R. CANT & SONS, with pretty sprays of Leonie Lamesch, Perle d'Or, and White Pet.

MESSRS. ADAM & CRAIGMILE; T. Souvenir de Pierre Notting, shown by Messrs. S. M'GREY & SON.

Amateurs' Classes.—H.P. Mrs. John Laing, shown by Mr. W. O. TIMES; H.T. Earl of Warwick, shown by the Rev. H. S. ARKRIGHT; T. Maman Cochet, shown by Mr. E. B. LINDSELL.

GOLD MEDAL ROSES.

Claudius H.T.—A very fragrant variety, the tone being bright rose, suffused with purple. Shown by Messrs. B. R. CANT & SONS.

Miss Cynthia Forde H.T.—Somewhat after the type of Lady Ashtown: a big, round bloom, bluish pink, with paler colour on the upper surface of the petals. The colour is more pronounced in the infolding petals. Shown by Mr. HUGH DICKSON.

Mrs. Edward J. Holland.—A more elegantly-shaped flower than those already described, the petals recurving pleasingly. The colour is pale rose, lighter at the edges. Shown by Messrs. SAMUEL M'GREY & SONS, Portadown.

STIRLING AND DISTRICT HORTICULTURAL.

SEPTEMBER 14.—The monthly meetings of the above society were resumed on the above date. The President, Mr. Geo. Petrie, occupied the chair. The subject for the evening was "Roses," the essayist being Mr. Geo. Shearer, manager at Messrs. Wm. Drummond and Sons' nurseries, Stirling. The lecturer treated his subject in an exhaustive manner, and was accorded a well-merited vote of thanks. The evening was also observed as "Hospital Night," the members bringing floral contributions which were afterwards distributed to the local hospitals. Mr. Chapman, Torbrex Nursery, has offered a prize for the best paper, limited to 1,500 words, on the society's summer excursions.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 20.—A meeting of the Executive Committee was held at Carr's Restaurant, Strand, on this date; Mr. T. Bevan presided.

Mr. Curtis reported on the forthcoming conference to be held at the Essex Hall, on October 6. Papers on the following subjects will be given: "Chrysanthemums as Annuals," "Early Single Chrysanthemums," "Late Market Chrysanthemums," and "The Best Chrysanthemums for Cut Flowers." There will be two sittings, at each of which two papers will be read and discussion invited: the first sitting will be held from 3 o'clock to 5 p.m., and the second from 6 o'clock to 8 p.m.

To increase the interest of this gathering, exhibits not exceeding 20 feet by 3 feet are invited. It was arranged, subject to confirmation, that the annual dinner be held at the Holborn Restaurant on November 29.

The chairman and Mr. Harman Payne gave some particulars concerning the representation of British horticulture at the Brussels International Exhibition, 1910.

NATIONAL DAHLIA.

SEPTEMBER 21, 22.—The second show held this season by the above Society took place in the Royal Botanic Gardens on Tuesday and Wednesday last. The exhibition ranks with the finest held by the National Dahlia Society. All types of Dahlias were well represented, competition being keen in most of the classes. The attendance was satisfactory, the day being beautifully fine. The Society is now encouraging the culture of decorative Dahlias, as distinct from those valuable for show purposes only. There was a record number of entries.

OPEN CLASSES.

In the class for three vases of Cactus Dahlias, of distinct varieties, put into commerce for the first time in 1907-8, Mr. JOHN WALKER secured the leading honours with Harold Peerman, C. E. Wilkins and Helium; 2nd, Messrs. KEYNES, WILLIAMS & Co., Salisbury; 3rd, Mr. M. V. SEALE, Sevenoaks.

In the class for 12 Cactus varieties arranged in six's, Messrs. J. STREDWICK & SON, Silver-

hill Park, St. Leonards, secured first honours, staging magnificent blooms of Harold Peerman, Red Admiral, C. E. Wilkins, Dawn, Indomitable, W. Marshall, Satisfaction, Quimbo, Snowdon, W. H. Wenham, Ruby Grinsted and H. H. Thomas; 2nd, Messrs. J. BURRELL & Co., Cambridge; 3rd, Messrs. J. CHEAL & SONS, Crawley.

Messrs. STREDWICK & SON also excelled in the class for 24 Cactus varieties, distinct, arranged on boards, being closely followed by Messrs. J. BURRELL & Co., and KEYNES, WILLIAMS & Co., in the order named.

Mr. M. V. SEALE obtained the first prize in the smaller class for 12 Cactus varieties, having choice blooms of Mrs. T. W. Willis, Imperial, Lady Kenmare, Chincer and Diadem; Mr. S. MORTIMER, Rowledge, and Messrs. J. CHEAL & SONS were placed 2nd and 3rd respectively.

The best six blooms of one variety of Cactus Dahlia were staged by Messrs. KEYNES, WILLIAMS & Co., the variety being Glory of Wilts.; 2nd, W. Marshall, shown by Mr. JOHN HICKS.

The best nine bunches of Pompon Cactus varieties, in not fewer than six varieties, were shown by Messrs. J. BURRELL & Co., Cambridge, who showed a fine, even set of flowers, including Wm. Marshall, Lena, Nora, Martha, Argus, Cheerful, Minima, Alwyn and Mary; Mr. M. V. SEALE followed closely, and Messrs. J. CHEAL & SONS, Crawley, were placed 3rd.

The class for 24 show and fancy Dahlias brought a fair competition. Mr. JOHN WALKER was awarded the 1st prize, having well-finished blooms of T. Pendered, S. Mortimer, Kathleen, R. T. Rawlings, Mr. J. Downie, Blush Gem, Duchess of York, J. T. West, and Chieftain; 2nd, Mr. S. MORTIMER, Farnham, with bright but slightly smaller flowers; 3rd, Mr. M. V. SEALE.

In the smaller class for 12 show and fancy varieties, distinct, Mr. R. BURGIN, Bedford, was placed 1st, Messrs. J. CHEAL & SONS being awarded the 2nd, and Mr. S. H. COOPER the 3rd prizes.

Pompon Dahlias were shown splendidly in a class for 12 varieties, by Mr. CHAS. TURNER, Slough; Messrs. J. BURRELL & Co. being placed 2nd; and Mr. M. V. SEALE 3rd.

Single Dahlias.—For 12 varieties, Messrs. J. CHEAL & SONS took the leading honours, followed by Mr. JOHN WALKER.

The best vase containing three varieties of a Pæony-flowered Dahlia was shown by Mr. CHAS. TURNER; and this exhibitor also won the premier prize for six bunches of garden Cactus Dahlias.

AMATEURS' CLASSES.

In the class for nine varieties of Cactus Dahlias Mr. F. GRINSTED, Battle, was placed 1st; Mr. CHAS. LUCKIN 2nd; and Sir JOHN KENNEDY, K.C.B., Holmhurst, St. Leonards (gr. W. E. Peters), 3rd.

The best six blooms of white or pink varieties of Cactus Dahlias were shown by the Rev. A. BRIDGE; 2nd, Mr. A. TOFIELD, New Malden.

Mr. H. JACKSON obtained the 1st prize for six varieties of Cactus Dahlias in bunches of three blooms; Mr. E. MAWLEY, Berkhamsted, following.

Other prize-winners in the classes for Cactus varieties were Mr. JOHN HICKS, Mr. F. H. CURRY (Palmer's Green), Mr. H. BROWN (Luton), Mr. H. JACKSON, Mr. F. GRINSTED, Mr. GEO. DAVIDSON (Thornton Heath), Mr. THOMAS JONES (Ruabon), and Mr. A. H. BURGESS.

Show Dahlias were best shown by Mr. S. H. COOPER and Mr. CHAS. LUCKIN, who were awarded the 1st prizes in the classes for 12 and six varieties respectively.

First-class Certificates were awarded to Prima Donna (Cactus), shown by Mr. H. SHOESMITH, and Tristan (Pompon), exhibited by Mr. CHARLES TURNER.

NON-COMPETITIVE EXHIBITS.

Dahlias were shown by Messrs. DOBBIE & Co., Rothesay (Gold Medal); Messrs. HOBBIES, LTD., Dereham (Gold Medal); Messrs. T. S. WARE, LTD., Feltham (Gold Medal); and Mr. J. WEST, Brentwood (Gold Medal). Messrs. J. BURRELL & Co., Cambridge, staged a group of Gladioli (Gold Medal); Messrs. R. HARKNESS & SON, Hitchin, exhibited cut Roses (Gold Medal); and Messrs. WEBB & BRAND, Saffron Walden, showed Hollyhocks in variety (Silver-gilt Medal).

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending September 22.

A cool, dry and gloomy week.—The present spell of unseasonably cold weather has now lasted five weeks, during which period the highest temperature in the thermometer screen has on only six days exceeded the average for the time of year, while on four of the nights the exposed thermometer indicated readings slightly below the freezing point. Both at 1 and 2 feet deep the ground is now 1° colder than is seasonable. A light fall of rain took place on the first day of the week, but since then the weather has been quite dry. No measurable quantity of rainwater has passed through either of the percolation gauges for more than a fortnight. The sun shone on an average for only 3½ hours a day, which is 1½ hours a day short of the usual duration at this season. Calms and light airs have alone prevailed during the week. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 4 per cent. E. M., Berkhamsted, September 22, 1909.

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. W. GREEN, 14 years Foreman at Kings Weston House, Bristol, previously 2 years at Greenham Lodge, Newbury, as Gardener to A. J. PELL, Esq., Wilburton Manor, Ely, Cambridgeshire.

Mr. W. J. GUISE, for 7 years Gardener to JAMES PORTER, Esq., Berthlywyd, Conwy, N. Wales, as Gardener to A. BRADBURY, Esq., at the same address.

Mr. S. J. MARTIN, Gardener to FRANK TAYLOR, Esq., Craig House, Menai Bridge, Anglesey, as Gardener to Mrs. SANDEMAN, Dan-y-Park, Crickhowell, Breconshire.

Mr. R. E. WRIGHT, recently in the Gardens at Brightleigh Outwood, and previously at Chartreuse, Thun, and Prény, Geneva, as Gardener to W. MALING GRANT, Esq., Sandhurst Grange, Send, near Woking, Surrey. (Thanks for contribution to R.G.O.F. box.—Eds.)

Mr. JAMES WIGGINS, late of Northwood Cottage, Hindhead, as Gardener to J. WEBSTER, Esq., Tower Lodge, Sandown Park, Tunbridge Wells, Kent.

Mr. S. G. SMALLBRIDGE, for the past 8 years Gardener to Mrs. R. D. HILLS, Holfield Grange, Coggeshall, as Gardener to the Rt. Hon. Sir HUDSON KEARLEY, Bart., M.P., Wittington, Marlow, Bucks.

Mr. THOMAS TEMPLETON, for nearly 5 years Foreman in Skibo Castle Gardens, Dornoch, N.B., as Gardener to Mrs. HOBHOUSE, Hadspey House, Castle Cary, Somerset.

Mr. CHARLES A. HEATH, for the past 4 years Gardener to Mrs. ALFREDO LODER, Aldwickbury, Harpenden, Herts, as Gardener to LOCKETT AGNEW, Esq., Hallingbury Place, Bishops Stortford, Herts. (Thanks for 2s. received for R.G.O.F. Box.—Eds.)

CATALOGUES RECEIVED.

DOBIE & MASON, 22, Oak Street, Manchester—Bulbs. STUART LOW & Co., Bush Hill Park, Middlesex—Orchids. C. R. SHILLING, Hartley Nurseries, Winchfield, Hants.—General. H. CANNELL & SONS, Swanley Junction, Kent—Bulbs, Roses, Strawberries, and Violets. HAYES & SONS, Keswick, Cumberland—Hardy Plants. DICKSONS, The Nurseries, Chester—Roses.

FOREIGN.

F. DELAUNAY, 100, Route des Ponts-de-Cé, Angers (France)—Trees, Shrubs, Roses, Fruit Trees, &c. J. M. THORNBURN & Co., 33, Barclay Street, New York, U.S.A.—Seeds of American Trees and Shrubs. PETER HENDERSON & Co., 35 and 37, Cortlandt Street, New York—Bulbs. WILHELM PFITZER, Stuttgart, Germany—Roses and Bulbs. GEORG ARENDS, Ronsdorf (Rheinland), Germany—Hardy Plants.

DEBATING SOCIETY.

BATH GARDENERS.—The first meeting of the winter session was held on Monday, September 13, at the Forester's Hall. Mr. W. Grant (vice-chairman) presided over a good attendance. Unfortunately the lecturer appointed for the evening was prevented from attending through illness. The vacancy was filled by the secretary, who read extracts upon the French system of Intensive Gardening. A. B.

MARKETS.

COVENT GARDEN, September 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.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices. Includes Asters, Carnations, Dahlias, Enchiridiums, Gaillardias, Gardenias, Gladioli, Lilies, and various other flower types with their respective prices per dozen or bunch.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices. Includes Adiantum, Agrostis, Asparagus, Berberis, Croton, Cycas, Ferns, and various grasses with their respective prices per dozen or bunch.

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

Table listing various potted plants and their prices. Includes Ampelopsis, Aralia, Aspidistra, Asparagus, Campanula, Chrysanthemums, Clematis, Cocos, Coleus, Crotons, Cyperus, Dracaena, and various other potted plants with their respective prices per dozen or pot.

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

Table listing various potted plants and their prices (continued). Includes Marguerites, Pelargoniums, Selaginella, Spirea, Verbena, and various other plants with their respective prices per dozen or pot.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices. Includes Apples, Bananas, Damsons, Figs, Grapes, Lemons, Limes, Mushrooms, Peaches, Pears, Plums, and various other fruits with their respective prices per bushel, case, or dozen.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices. Includes Artichokes, Beans, Broccoli, Cabbages, Cardoons, Carrots, Cauliflowers, Celery, Chicory, Cucumbers, Endive, Horseradish, Lettuce, Mint, Mushrooms, and various other vegetables with their respective prices per dozen or bunch.

REMARKS.—There is a slight improvement in the Apple trade, especially for large culinary varieties. Plums have not been plentiful, but are now arriving on the market in increased quantities: their prices are low, except for selected fruits. There are large quantities of English Pears on the market, but they are selling slowly. There has been a good demand for Californian fruit, which doubtless will continue. Supplies of French William's Box Chretien Pears are practically finished: a few crates only are coming from the Paris district. Lemons are selling freely, but consignments are short. Home-grown Tomatoes are much cheaper owing to larger supplies. E. H. R., Covent Garden, Wednesday, September 22, 1919.

Table listing various potato varieties and their prices. Includes Bedford's, British Queen, Epicure, Eclipse, Blacklands, Lincoln's, and various other potato varieties with their respective prices per cwt.

REMARKS.—There is no alteration in either prices or consignments. Edward J. Newborn, Covent Garden and St. Pancras, September 22, 1919.

COVENT GARDEN FLOWER MARKET.

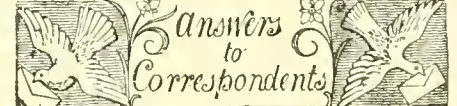
One of the most difficult matters connected with these notes is the quoting of prices. If they are placed at a low estimate the country buyer complains he is overcharged, but if they are given high those who sell on commission grumble. There is a surplus of most subjects. This morning, after the close of the market, large supplies were left unsold. Good specimen blooms of Chrysanthemums were obtainable at 2s. per dozen; yet 9s. to 4s. might be regarded as an average value; a few of extra special quality make fancy prices, but ordinary blooms are very cheap. Asters are remarkably good, and since the foreign grower found it unprofitable to send blooms, English growers have been doing better. Dahlias do not make the prices they did in former years, and it is only the best quality blooms that sell at remunerative prices. Roses of best quality have been selling better. Supplies of Carnations have fallen off a little, but flowers will soon be available from plants housed early. Blooms which sell one morning at 1s. per dozen are offered worth 2s. a day or two later. Lily of the Valley is down in price again. Gardenias are more plentiful and are not cleared except at greatly reduced prices. Of hardy flowers many are of inferior quality.

POT PLANTS.

There is not much that is new in this department. Chrysanthemums are the leading feature in flowering plants, and it is difficult to give their prices, which range from 9s. to 30s. per dozen, but 9s. to 12s. per dozen is an average quotation. Ericas have not been selling readily. Marguerites are well-flowered and have good foliage, but since Chrysanthemums have been available they are not wanted. Pelargoniums, Fuchsias, Heliotropes, and other summer flowers are not quite finished. Growers of Hardy Evergreens, Climbers, etc., have already commenced to send in supplies. Wall-flowers and various other hardy plants are seen. A. H., Covent Garden, September 22, 1919.

ENQUIRIES AND REPLIES.

HYDRANGEA.—We have in these gardens two plants of Hydrangea hortensis growing in tubs. One plant is carrying 201 flower-trusses and the other 198. The tubs are about 2 feet in diameter. Is this a record? H. S., Alice Holt Gardens, Farnham. [We have no records in this matter (see also p. 220).—EDS.]



** The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

AMATEUR EXHIBITOR: H. F. According to the Code of Rules for Judging, issued by the Royal Horticultural Society, no person is allowed to compete as an amateur who sells plants (except when giving up possession of the place where they grow, or in the case of new seedlings or sports), grafts, cuttings, or buds for budding, nor any person in the employ of a nurseryman. A further paragraph states that the rule does not necessarily exclude a person who occasionally sells surplus produce arising from an over-abundant crop, but who, in the judgment of the officials of the show at which the question arises, does not intentionally grow crops for sale. An amateur, therefore, is a person who grows his produce solely for his enjoyment or domestic use, and not with the object of pecuniarily benefiting by it. Assuming the circumstances are exactly as stated in your letter, we think the accepted rules on the question would permit the committee to regard you as an amateur.

BELLADONNA LILY: Amateur. In order to cultivate Amaryllis Belladonna successfully in pots liberal treatment is necessary. The best time to pot the bulbs is about midsummer, or in early winter, after they have finished flowering. Place one large bulb in a 6-inch pot, or three bulbs in a 7-inch pot, using a compost consisting of six parts fibrous loam, one part leaf mould, one part dried cow manure and sufficient coarse sand to make the whole porous. During winter the bulbs may be grown in a cold frame, affording ventilation on favourable occasions and covering the glass with mats or litter during severe frosts. When the plants are growing freely in late winter and early spring give a little weak manure water occasionally. It is not advisable to repot the bulbs for several years provided the drainage of the pots is good and the soil sweet. Remove a little of the surface soil after the flowering period, replacing this with equal parts fibrous loam and cow manure. Feed liberally with

manure water when the plants are growing. For the culture of the plants in the open air, select a south border preferably in front of a greenhouse, or at the foot of a south wall, as the Belladonna Lily is not perfectly hardy. Take out the soil to a depth of 2 feet, and in the trench thus formed put a 4-inch or 6-inch layer of brick rubble for drainage; over this spread a layer of manure, filling up with good fibrous loam intermixed with a little leaf-mould. Plant the bulbs 6 inches to 9 inches deep, placing coarse sand around each as it is planted. During severe weather it is advisable to protect the young growths with Fern bracken or similar material. Mulch the border annually with well-decayed manure, and water liberally if the weather is dry during the season of active growth.

BOOK-KEEPING: *Anxious.* You will find J. Thornton's *Primer of Book-keeping* (Macmillan & Co.; 1s.) useful for your purpose, or *First Lessons in Book-keeping* (Macmillan; 2s. 6d.) by the same author. Evening classes on such subjects are now commonly held in most districts; enquire if there is not one within easy reach of your neighbourhood.

CULTURE OF VALLOTAS AND NERINES: *Kensington.* The secret of success with these bulbs is not to disturb them while the soil remains in a good condition. Some of the finest plants are found in cottage windows in country districts, where they remain in the same pots for many years. During summer, when growth is active, Vallotas require an abundance of water, with occasional applications of liquid manure. Unlike most bulbous plants, Vallotas should never be kept dry for a resting season. Repotting, when necessary, is best done in September after flowering. Use a compost of fibrous loam, mixing with it a little leaf-mould, dried cow manure and coarse sand. Nerines flower best when pot-bound, so that it is not advisable to repot them till the bulbs almost crowd each other out of the pot. Potting should be done in July, or immediately after flowering, about the end of October. As Nerines make their growth during the winter, they should be grown close to the glass in a pit or house facing south. Maintain a temperature not lower than 45° to 50° at night-time, rising to 55° during the day. Never allow the soil in the pots to become dry during the growing season. Liquid manure is very beneficial when the pots are full of roots. In spring, when the foliage shows signs of decay, gradually withhold water and place the pots in a frame where the bulbs will receive a thorough baking from the sun. In August or September, when growth is starting, soak the soil with water, after which the flower-spikes will soon push forth. For a potting compost use the following mixture: three parts fibrous loam, one part leaf-mould, one part dried cow manure, and plenty of coarse sand. (Gladiolus next week.)

CYCLAMEN: *G. H.* When once the plants are so badly infested with thrips, as those you describe in your letter, it is difficult to eradicate them. The pest gets down in the crown, between the leaf and flower stalks, consequently fumigation is not perfectly effective. Your best plan will be to thoroughly wash the plants in a solution of nicotine emulsion, prepared for use according to the directions supplied by the makers. This washing should be repeated at frequent intervals before the plants bloom. Keep the Cyclamen apart from any other infested plants. If they are not thoroughly clean at the time they bloom, the plants must be fumigated with a nicotine compound. Read the article on thrips on p. 211.

EXHIBITIONS: *R. E. G. 1.* The Law Reports only quote decisions in cases which are heard in the High Court of Justice, and we cannot find any case reported which covers the precise facts to which you refer. Technically, we see no reason to prevent your prosecuting by issuing a summons for "attempting to obtain money under false pretences," where the fraudulent intent is obvious. However, the jury would, of course, make up their own minds in each particular case as to whether the defendant really intended to defraud, or whether he honestly thought the rule was one which would not be strictly adhered to. Case No. 1 seems to be the most flagrant. In case No. 2 the defendant would probably urge that he thought there would be no objection to his representing the

family combined. (2) Under the circumstances, we do not think anyone would blame you for totalling disqualifying the exhibitor. Steps of this kind are often taken in competitions of another nature.

GRAPES MOULDY AND SPOTTED: *E. W.* The bunches are infested with mealy bug and they are in a very dirty condition generally. There is no disease present. Mealy bug can be eradicated by means of a brush and methylated spirit.

INSECT IN POTATO: *F. Y. M.* The decayed Potato is swarming with one of the spring tails (*Lipura fimetaria*). This is a very abundant insect, and often swarms in soil heavily charged with manure or other rotting vegeta-



FIG. 95.—AN ABNORMAL HELENIUM.

tion. Remove decayed vegetable matter and burn it. Give the land a good dressing of gas lime and use artificial manures as far as practicable.

MUSCAT GRAPES DISEASED: *H. N.* The berries are affected with the fungus *Glaeosporium fructigenum*. Apples are often attacked with the same disease. Cut out and burn all diseased berries and spray the vines with Bordeaux mixture or Potassium sulphide. Diseased Apples should also be burned.

NAMES OF FRUITS: *W. L. S. 1.* Beauty of Bath; 2, Kerry Pippin; 3, Lane's Prince Albert.—*K. Beaton.* The fruits were not numbered. The large Apples are Ecklinville Seedling, and the smaller ones Dumelow's Seedling (syn. Wellington).—*Zola.* The Plums received were covered with mould.—*J. B. H. 1.* Lane's Prince Albert; 2, Manks Codlin; 3, Tower of Glamis; 4, Harvey's Wiltshire Defiance.—*Groves.* Pear Beurré d'Amanlis, Apple Lane's

Prince Albert.—*Gordonston.* 1, Manks Codlin; 2, Lane's Prince Albert; 3, Dumelow's Seedling; 4, Black Diamond; 5, Lord Sniffled; 6, Lord Grosvenor.—*Hodgins.* 1, Beurré Sterkmans; 2, Beurré Diel; 3, Louise Bonne of Jersey; 4, Glacé Morceau; 5, Beurré Hardy; 6, Conseiller de la Cour; 7, not recognised; 8, Beurré d'Amanlis; 9, Chaumontelle; 10, Doyenné du Comice.

NAMES OF PLANTS: *S. McG. & Son.* *Pittosporum tenuifolium* var. *Mayi*.—*Rev. J. A. Hyde.* *Ilex Cassine*.—*E. F. 1.* *Mesembryanthemum spectabile*; 2, *Lastrea spinulosa*; 3, *Polystichum aculeatum*; 4, *Athyrium Filix-femina cristata*.—*C. 1.* *Staphylea pinnata* (Bladder Nut); 2, *Polygonum cuspidatum*; 3, *Colutea arborescens* (Bladder Senna); 4, *Cypripedium nortkatensis*; *R. T. 1.* *Odontoglossum gloriosum*; 2, *Oncidium prætextum*; 3, *Brassia varucosa*; 4, *Oncidium flexuosum*.—*A. M., Barnett.* 1, *Didymochlana lunulata*; 2, *Asplenium Belangeri*; 3, *Codiaeum* (*Croton*) *angustifolium*; 4, *C. Johannis*; 5, *C. Evansianum*; 6, *Ruellia macrantha*.—*D. M.* *Sempervivum tortuosum variegatum*—the type form is figured in *Botanical Magazine*, t. 296.—*W. D. B.* *Asclepias curassavica*.—*Worcestershire Young Gardener.* *Catalpa bignonioides*.—*Y.* *Phlomis fruticosa*.—*F. A. C.* *Ligustrum lucidum salicifolium*.—*J. O. S.* Both forms of *Cattleya Harrisoniana*.—*W. L. 1.* 1, No flowers, probably *Coronilla glauca*; 2, 3, 4, garden varieties of *Montbretias crocosmiflora*; 5, *Antholyza paniculata*; 6, a *Salvia*, probably *S. involucrata* (Bethellii); send when in flower.

PROLIFIGATION IN HELENIUM AUTUMNALE: *K.* (See fig. 95.) This is a case of proliferation. The whole capitulum and the proliferations in your specimen are virrescent, the branchlets appearing to arise from the centre of the flower. Proliferation in this species is not to be seen frequently, but nevertheless specimens have been sent us previously, and we now reproduce the figure.

SEQUOIA GIGANTEA: *G. C.* Your tree is not so large as many specimens to be found in different parts of the country, some of which are upwards of 100 feet in height. It certainly had not reached its full limit in 50 years, which is only a short time in the life of the Sequoia, and has probably died through the soil being too cold and wet, as this tree requires a deep but moderately dry and warm soil. The wood is of little value except for firewood and rough fencing, being soft, cross-grained, and stringy.

TREE PLANTING ON DISUSED PIT BANKS AND RUBBISH HEAPS: *W. P.* Several pit banks in the Black Country have been planted with trees during the past five years. The best plan is to dig fairly large holes and to put some fresh soil, say, half-a-bushel basket-full in each. The best trees for planting are those not taller than 12 or 18 inches, as the situation on these mounds is an exposed one, and taller trees are liable to damage by wind. Trees of Scotch Fir, Austrian and Corsican Pines, Spruce, Alder, Birch, Wych Elm and Turkey Oak succeed best. Larch, Oak and Sycamore do not grow so freely as the other kinds named. The Scotch Fir, Birch, and Alder grow rapidly after two years' planting.

VALLOTA: *A. T.* We can only suppose that the firm overlooked the condition stated in your first letter. At any rate, it is a commercial transaction that we cannot discuss in these columns, for it is governed by ordinary trade usage.

WONDERBERRY: *D. M. L.* See fig. 73 in the issue for September 4, p. 172. Information on this subject appeared in the *Gardeners' Chronicle*, March 27, 1904, p. 204. See also report of the Scientific Committee in the last issue, p. 207.

Communications Received.—*F. W.* (We are glad you have found the treatment satisfactory.)—*H. G. K.* (We have published similar reports from your county.)—*H. Dew* thanks for 2s. received for the R.G.O.F. box)—*D. C. Fiskeville, U.S.A.*—*H. A. M. D.*—*F. S. M. N. S. M.G. & Sons*—*George Bunyard*—*A. B. (Pear Slug)*—*J. F. M. J. W. P. W. H. S. E. P. F. C. P. O. M. U. N.* (thanks for 1s. for the R.G.O. Fund)—*H. T. A. H. B. J. W. W. H. B. F. J. C. C. F. B. T. H. J. S. H. R. W. P. & S. T. M. N. A. S., Germany*—*W. H. D. C. E. L. W. F. C. H. P. J. J. T. H. W. J. U. A. D. W. D. M. C. A. G. C. A. D. W. H. W. W. W. K. R. Farrer*—*R. R. B. H. G. L. S. Dr. E. W. W. P. L. F. C. F.*



A GROUP OF EREMURI IN FLOWER IN MR. BEAMISH'S GARDEN, ASHBOURNE, CO. CORK.



THE
Gardeners' Chronicle

No. 1,188.—SATURDAY, October 2, 1909.

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THE AMPEZZO DOLOMITES.

THE Ampezzo Dolomites are not, I believe, genuine Dolomites at all. But, anyhow, they are strangely beautiful, and, of their beauty-spots, Misurina is certainly the most marvellous. A large and hideous, but delightful, hotel stands on the ridge at the end of a little emerald lake, and beyond it the ground goes falling into unimaginable depths, on the far side of which towers gigantic the back wall of the Cortina Mountains—Marnarole, Antelao, and the Pfalzgau stone slopes up among the wastes at the back of Sorapiss. Then, immediately above Misurina to the right, looking up the water from the hotel, stands the gaunt and ghastly mass of the Cadinenspitze, which from Misurina seems only a long rampart of naked jags; on the left the ridge and high round tower of Popena hides Cristallo. The lake itself is deep-bosomed in woods, and its shores artistically wave in and out, with as much appearance of design as any Chinese pool. At the end, mirrored in the green water, placed uncannily at precisely

the right point, rise the three tremendous peaks of the Drei Zinnen, huge pyramids of naked dolomite, golden, peach-coloured or apricot by day, beneath a blue film of detritus: and on a lucky evening (preferably in September) glowing to an incandescent scarlet at the moment of sundown.

And the actors are worthy of their stage. On the grassy lawn by the roadway abound huge ancient clumps of *Gentiana asclepiadea*; the woods and copsy slopes are thickly starred with exquisite *Anemone trifolia*, a magnified counterpart of *A. nemorosa*, but flushing far more commonly to a celestial blue. *Atragene* flops and flounders over every bush, and the air is sweet with the pallid clusters of *Daphne striata* laxly wandering among the poached-egg-like butterflies of *Polygala chamæbuxus*. On many banks the white *Pinguicula* grows fine and fair as my *Haberlea rhodopensis virginialis*. Here and there on high knolls in the woodland the visitor is surprised by clumps of *Gentiana acaulis*, and sometimes, on a boulder, by strayed seedlings of *Saxifraga squarrosa*. I even found, by the very lakeside, a truant bush or two of *Rhodothamnus Chamæcistus*, still covered with its wide salvers of pink.

The Col di Varda is that neck of broken cliff at the far south end of the Cadinenspitze, just above the hotel. Thither I made my first expedition from Misurina. Up and up through that delightful forest as undergrowth, was *Bellidiastrum Micheli*, like drifted snow, and the *Anemone*, with the *Atragene* lavishing everywhere its tone of purple. Commoner plants abound, *Arenarias*, *Saxifraga rotundifolia*, *Pinguicula*, and masses of delicate *Silene pusilla*, virginal in the purity of its little flowers, so daintily notched at their edge. But lovely as is the type, it can never hope to rival the rose-red form, which I found at Heiligenblut (too late to write about in my last letter—see p. 67, July 31, 1909). This lived in running water, forming wide tufts all covered with sprayed blossom of the purest and most brilliant salmon-rose. Fortunately it has arrived safe at home, where I hope its beauty may as bountifully continue.

The path now wanders towards open places, and stone slopes are seen coming nearer. *Polygala* and *Daphne* cover the ground, the bushes of *Alpenrose* are rich with blossom. And then, on the first stony bank, of cliff and scree, *Rhodothamnus* begins to come by its own. Here and there one has already seen it, but the cliffs and crannies are clearly its real home. For *Rhodothamnus Chamæcistus* is, to my great surprise, one of the most passionately saxatile of rock-plants, haunting microscopic chinks even more inseparably than *Potentilla nitida*, and almost as exclusively as *Phyteuma comosum*. Further, though what soil it has is vegetable humus, all the rock in which it grows is clearly limestone of the most limy character. On these bone-white cliffs, now that one has come up above the Pine woods on to the open slopes, everywhere, high and low, are flaunting bushes of *Rhodothamnus*, all aglow with their wide rosy cups. The only hope of getting sound roots is from small seedlings, which, when gently tugged at in their cleft, may possibly come out with fibres intact, or by a rare blessing, the sandwiching slabs may be lifted or prised away, and thus the whole plant secured.

Under one's feet in the screes, *Saxifraga cæsia* and *S. squarrosa* occur in inseparable brotherhood. I started, last year, admirably clear and definite theories as to the distribution of these two *Saxifrages*, so distinct and yet so near. I made up my mind that one occurred in one region and one in another. Well, now I have all my mind to unmake again. I confess I can trace no sort of a rule to judge the distribution of *cæsia* and *squarrosa*. I daren't even say that *cæsia* begins lower and that *squarrosa* goes higher; as soon as I think I have settled this I am sure to find *squarrosa* abundant at a low level and *cæsia* at a high elevation. But this perversity is nothing compared with their habit of growing together. Why, in the name of goodness, should the two separate species have ever been evolved if their only result is to form combined colonies? And they are so very close together. Surely the only possible reason for such a clear, though minute differentiation should be a differentiation of habitat and requirement? And yet, apparently, they have gone to all the trouble of forming two separate species with no other motive than to go on living together as if they were one. True it is that often, in other ranges, *Saxifraga cæsia* occurs alone, and in the mossy gorges of Sotto Agudo *S. squarrosa* holds sole sway; but here, on these stony slopes, it is first one and then the other, until at last one grows perfectly bewildered and unable to tell one from the other.

Higher still, and higher, among big naked cliffs and over shingly slopes which offer the best chance for strayed seedlings of *Rhodothamnus* or *Potentilla nitida*. For this silvery jewel now clusters densely in all the rock rifts, though I will not yet treat of her in detail, until we come to the high ridges of the Drei Zinnen, where it forms sheets of flower. Among the fallen stones grow other things—a white *Silene acaulis*; here and there a rare tuft of *Papaver rhæticum*, an exquisite hairy, blue-leaved form of alpinum, with big lemony blooms; *Gentiana Clusii* (probably), smaller in flower but far more brilliant in blue than the big, dingy goblets of *acaulis* in the woods below; *Rhodothamnus* everywhere now, in sheets of rosy glory; and, under one damp rock, in a barren scree, the fragrant lilac tufts of *Iberidella*, with big, fringing white bells of *Soldanella* growing in the mossy dells of shadow. But there are no more *Saxifrages* now except the silver stars of the dingy-blossomed *S. crustata*, which in these limy Alps seems wholly to displace what one had believed to be the universal *S. aizoon*. *Reginald Farrer*.

NEW OR NOTEWORTHY PLANTS.

BERBERIS GAGNEPAINII.

THIS elegant Barberry is one of a number of closely-allied forms, or species, inhabiting the mountains of Northern India and Western China, several of which have been raised by Messrs. J. Veitch & Sons from seeds collected for them by Mr. E. H. Wilson. *B. Gagnepainii*, C. K. Schucider (*Bull. Herb. Boiss.*, 2me série, vol. viii., 1908, p. 196) (see fig. 96), first flowered in Messrs. Veitch's nursery in 1907, and was then identified at Kew with *B. acuminata*, Franchet (*Bull. Soc. Bot. France*, vol. xxxiii., p. 387), and figured in the *Botanical Magazine*, t. 8185, under

that name, and described by Dr. Stapf as differing from the Indian *B. Wallichiana*, D.C., in having narrower leaves with a longer tapering tip and longer, more numerous, stronger marginal spines. Typical *B. acuminata* has also larger, coarser, thicker leaves, armed with stouter spines than those of *B. Gagnepainii*; this is also under cultivation by Messrs. Veitch. How far these differences in foliage and habit are due to local conditions is uncertain; but they do not correlate with obvious floral modifications. Schneider founded *B. Gagnepainii* on Wilson's No. 3,148, collected at an altitude of 10,000 feet, and the specimens in the Kew Herbarium bearing that number have smaller leaves than the present plant. The specimen figured in the *Botanical*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT LYTHAM HALL.

THE collection of Orchids in the gardens of J. Talbot Clifton, Esq., at Lytham Hall, Lytham, has become one of the most important and interesting in Europe. So rapidly has the collection increased, that a new block of houses has been constructed, which accommodate the plants comfortably, there being separate houses or divisions for each important section. The beneficial results following this provision are already to be seen. The main block of commodious, span-roofed structures are fitted internally with the latest improvements in

species which are just establishing themselves were collected by Mr. and Mrs. J. Talbot Clifton on their tour in the East this year, when they visited Ceylon, Java, the Malay district, the Philippine Isles, and Burmah, from most of which districts plants were collected, Mrs. Talbot Clifton finding *Phalænopsis tetraspis*, a feat which no other European lady has yet accomplished.

In the first house entered on a recent visit to Lytham, we found a remarkable collection of *Aërides*, *Vandas*, *Saccolabiums*, *Angræcums*, and allied plants. Every species obtainable was present, and some of the rarest, including both the white and yellow forms of *Vanda Dearei*, had been personally collected or imported direct. The fine spikes of *Vanda corœulea*, the white, fragrant sprays of the plant known in gardens as *Saccolabium Harrisonianum*, *Angræcum Eichlerianum*, and some others were in bloom. An enormous mass of *Vanda Roxburghii* attracted attention, also some grand specimens of *Angræcum sesquipedale*, now developing flowers, *Angræcum inbricatum*, and the yellow *Vanda spathulata*, collected in Ceylon. In the next division was a remarkable collection of *Cœlogynes*, including recently-imported plants of *C. Rochussenii*, and some undetermined species lately collected; also a number of species of *Catasetum*, some of the plants being in bud. There were many *Eulophias* and *Microstylis*, including the low-growing *M. commelynaefolia*, covering the surface of the pot in which it is grown; *Cynorchis purpurescens*, and other *Cynorchis* in flower; also *Calanthe Masuca*, *Chytroglossa Marileonia*, *Signatostalix radicans*, *Polystachya campyloglossa*, with singularly-formed flowers, and a number of other species of botanical interest.

In the next warm house, a quantity of *Calanthe vestita* varieties, *C. rosea*, and other Orchids brought from Singapore were well established, and *Acanthophippium bicolor*, and many rare species were showing flower.

THE ODONTOGLOSSUMS.

Included in the collection of *Odontoglossums* was a very fine lot of *O. crispum*, among which were many choice varieties and spotted forms. The plants were in splendid condition, but the show of flowers was made chiefly by the hybrids, which are grouped at the ends of the houses. In one of the groups of plants in bloom was a distinct hybrid with finely-formed flowers, the sepals of which were cowslip-yellow evenly blotched with red-brown, the broad petals, which are white at the base and canary-yellow on the margins and tips, being without spot. Another hybrid of unknown parentage had white flowers, prettily spotted with purple, and resembling a large, spotted *O. Pescatorei*. At the end was a healthy lot of *Disas*, *D. grandiflora* having recently flowered. This house, like most of the others, has the staging arranged with the lower tier spread with shingle for giving off moisture, the plants being arranged on the open woodwork stage above. In another cool house there is no lower, moisture-holding stage, but the moisture evaporates from the somewhat raised natural earth base of the house. This arrangement overcomes the difficulty often experienced where the lower staging for giving moisture is arranged, and which interferes with the equal distribution of the heat from the water pipes.

In the next cool house, containing *Odontoglossums*, *Cocliodas*, and *Odontiodas*, the arrangement of plants in bloom, included the rare *Odontoglossum crocidipterum*, a very fine variety of *Odontoglossum Uro-Skinneri*, *O. Rolfeæ*, *O. Cooksonii*, *O. grande*, several good *O. Adrianeæ*, and other species and hybrids. A large specimen of *Odontoglossum coronarium* suspended overhead promised well for bloom.

The large, new, span-roofed house had in the main division a very complete collection of *Dendrobiums*, some of the rarer plants having special



FIG. 96.—*BERBERIS GAGNEPAINII*: FLOWERS YELLOW.

Magazine is numbered 1503, and recorded as a shrub 3 to 6 feet high, from elevations of 5,000 to 6,000 feet. So it is a little uncertain whether they are really the same. The flowers of this species are of a delicate yellow, and the fruit is of a pale, glaucous green, changing to glaucous purple. Seedlings of the plant now figured are 3 feet in height in Messrs. Veitch's nursery, and it is estimated they will grow to 6 feet. The habit is compact, and the plants flower and fruit freely. The group of species to which *B. Gagnepainii* belongs is characterised by having four seeds in each berry, or at least by having four ovules in the ovary, for sometimes only two or three develop into seeds. They are attached by relatively long stalks or funicles to the base of the ovary. *W. Botting Hemsley.*

staging, and ample provision is made for the storage of rain-water, without which Orchids seldom thrive for any length of time. A beautiful feature on the outside of the main block is made by a broad rockery, extending along the end and sides of the block, and planted with a great variety of Alpine and herbaceous plants.

Good hybrids, fine varieties of showy species, and pretty, curious, and interesting Orchids alike find a place in the Lytham Hall collection; but the natural species are the special favourites, as might be expected, seeing that Mr. Talbot Clifton, during his many years exploring in all parts of the world, is familiar with them in their native habitats. Many of the plants have been obtained on these journeys, and some rare and probably new

interest to their owner as being his own introductions. These included an interesting lot of Burmese species, of which *D. ciliatum* had many plants in flower. So also had the well-grown batch of *D. formosum giganteum*, whose large, snow-white flowers showed great variation in the tint of the yellow on the labellum, some of them being red at the base. A batch of the typical *D. Phalaenopsis*, generally called *D. Statterianum* in gardens, had many sprays of rose-purple flowers, quite distinct from the *D. Phalaenopsis Schröderianum* flowering beside it, and with a good number of the graceful, rose-coloured *D. bigibbum*. Others noted in bloom were *D. Fytchianum*, *D. glomeratum*, *D. crystallinum album*, *D. cariniferum*, *D. longicornu*, *D.*

Cattleyas, some of which were in flower, the superb *B.-C. Cliftonii*, which secured a First-class Certificate on December 8, 1908, was in excellent condition, and Mr. Float, the gardener at Lytham Hall, has succeeded in establishing a duplicate plant. In these houses we noticed a considerable number of *Cattleya Iris* in flower; a very dark *Lælio-Cattleya Gottoiana*; several good *L.-C. Nysa*, of which Clifton's variety was much the best; some hybrids of *Sophronis grandiflora*, including the new *Sophris-Lælio-Cattleya de Vere Beauclerk* (*L.-C. Bletchleyensis* × *S.-L. heatonensis*), with a three-flowered inflorescence of *Cattleya*-shaped, rose-purple flowers, with ruby-red veining on the lip. The collection contains a full set of species and hybrids of *Cymbidium*,

large, white flowers. There were also wonderful collections of *Bulbophyllums*, *Cirrhopetalums*, and *Megacliniums*, all the varieties available in cultivation being included, as well as some recently-collected species, which are thought to be new. *Cirrhopetalum pulchrum* var. *Cliftonii* was a very fine plant; *C. ornatissimum*, *C. Thoursii*, and others bear pretty umbels of flowers; all the large-growing, eastern, evergreen *Bulbophyllums* and *Trias picta*, and other allies of *Bulbophyllum* were in excellent condition.

Cypripediums are not favourites at Lytham, but a small collection is cultivated, and some specimens were in flower.

WIGTONSHIRE GARDENS.

DURING the past month I had the privilege, through the kindness of the Earl of Stair, Mrs. McDouall, of Logan, and Lady Augusta Orr-Ewing, of visiting some of the most beautiful gardens in the south-west of Scotland. Notwithstanding the recent unfavourable weather, with its constant "sound as of an abundance of rain," Logan Gardens, when I saw them on September 4, were full of interest, likewise of promise for abundant autumn bloom. The Carnations, Roses, Begonias and Sweet Peas were especially effective. A new rock-garden has been recently created by Mr. Findlay, the gardener, and it already shows features of floral fascination, especially in the direction of Alpines and miniature campanulate flowers. Conspicuous among recent additions to the herbaceous borders have been a luminous scarlet *Salvia* and the distinctively-coloured *Astilbe Davidii*. The Solanums, Allamandas and Bougainvilleas in the conservatories have been glorious, so also have the magnificent "Malmaison" Carnations. Logan Gardens, in which both Mr. and Mrs. McDouall take a practical interest, are at this season extremely picturesque, and they have in addition this peculiar charm, that at every turn unexpected beauties are suddenly and radiantly revealed.

At Corsewall Gardens, which I visited on the invitation of Mr. Carrick Buchanan's capable gardener (Mr. McColin), who has of late effected some striking transformations there, I was greatly impressed by the vista of the herbaceous border which, immediately on entering, illuminated the gaze. The floral combinations are, in deed, supremely attractive. They have an exquisitely beautiful background of *Wichuraiana* Roses, and the choicest Sweet Peas. The flower garden fronting the mansion, which looks out upon Loch Ryan, has also much fascination, and the *Hydrangeas* in the surrounding woodlands are the grandest I have seen, *H. paniculata* being especially impressive. Mr. Findlay (of Logan Gardens) tells me that this variety is strikingly effective when grown upwards through the dark, contrasting branches of *Prunus Pissardii*, the Persian Plum.

Lady Augusta Orr-Ewing's garden, situated above a very famous Glen near Port Patrick, is also highly interesting from various points of view, and under the supervision of her ladyship's gardener (Mr. Jowett), has been greatly improved. He receives every encouragement from Lady Augusta, who is a daughter of the Earl of Glasgow. Lord Glasgow's garden at Kelburne is exquisitely illustrated in Sir Herbert Maxwell's latest book. Lady Augusta is especially attracted by the culture of Ferns, Sweet Peas, Roses and Oriental Lilies, which are grown with wonderful success. *Lilium giganteum*, in the gardens at Dunskey, is a veritable giant, and worthy of its name.

I had not the pleasure of seeing the fruit under glass at Castle Kennedy, inasmuch as, by the time I cycled there, it was growing late in the day, and the gardener, Mr. Cruden, was absent; but Viscountess Dalrymple, who was residing at Lochinch Castle, showed to me all the objects of chief interest in the private flower garden, which was looking its loveliest in the sunlight of a tranquil and exquisite day. Especially



FIG. 97.—*CYPRIPEDIUM PARVIFLORUM*.

Sepals and petals, brown-purple; lip, yellow. (See p. 228.)

secundum, *D. eriaeflorum*, *D. lamellatum*, and other rare species. When the wide range of the natural habitats of the various species grown together in this house is considered, it is surprising that all should represent such fine condition. A cooler, drier house is used for the deciduous varieties after the flowering period.

The next large intermediate house range contained, in the first division, a good selection of *Cattleyas* and *Cattleya* hybrids, with a noble specimen of the Dove Orchid (*Peristeria elata*) as a central plant at the entrance. This plant had four very strong spikes of its large, fragrant, white flowers. Around this specimen were grouped hybrid *Lælio-Cattleyas* in bloom, of which there is a very rich collection. Among a batch of *Brasso-*

Lycaste, *Masdevallia*, and other important sections, each of which had an interesting series in bloom, and especially the *Masdevallias*, *Miltonias*, *Pleurothallis*, and *Oncidium*. *Stenoglotis longifolia*, *Ancistrochilus Thompsonianus*, *Catasetum fimbriatum*, some *Cyanoches*, a well-flowered lot of *Vanda Kimballiana*, *Zygopetalum Roeblingianum*, a bright lot of *Epidendrum vitellinum*, the singular and extremely rare *Chondrorhyncha Ledyana*, some *Pleiones*, and many other pretty and rare plants were also in bloom.

The *Phalaenopsis* house contained a vigorous collection of most of the best species, the *P. amabilis Rimestadiana* having been brought from Java on the last visit, and these have flowered well for a long time, bearing still many sprays of

charming were the Roscs, Nymphæas, herbaceous plants (including the Gentians and Anchasas), and flowering trees, of which there is a good collection at Lochinch, as of Pines, and Cedars and Araucarias at Castle Kennedy. The "wild garden" of the Viscountess, situated in a sheltered wood behind the castle, in which she cultivates several Japanese Lilies such as *Lilium auratum* and *L. speciosum*, with gratifying results, is exceedingly interesting. If, as I conceive, environment means inspiration, then the proud owner of Lochinch and Castle Kennedy should unquestionably be the most inspired of men. For that renowned region of terraces and lakes, and gardens, set in a frame of grandly-wooded hills, may be described as Nature, glorified by Art. *David R. Williamson, Manse of Kirkmoiden, Wigtownshire, Scotland.*

HARDY CYPRIPEDIUMS.

(Concluded from page 210.)

C. MONTANUM (*C. occidentale*) [*Bot. Mag.*, tab. 7519].—A beautiful and distinct little species introduced from North-western America in 1883. Three or four flowers are borne on each stem. The sepals are brownish-purple; the lip is white, striped with red inside. This is one of the easiest of the smaller kinds to cultivate, and it is quite hardy.

C. PARVIFLORUM (see fig. 97).—As may be seen from the accompanying illustration, this North American species is eminently suitable for pot culture, as well as for growing out-of-doors. The stems are leafy, about 18 inches high, and bear usually two flowers. These are fragrant, with yellow lips, and brown-purple sepals and petals. This species is sometimes considered a variety of *C. pubescens*, but although there are intermediate forms connecting the two, for garden purposes they are quite distinct. Introduced in 1759.

C. PUBESCENS [*Bot. Mag.*, tab. 911].—This is a robust species which was introduced in 1790 from North America. The plant grows about 2 feet high, and it is one of the hardiest for the shady rock-garden. The large flowers are borne two or three on a stem; they have pale yellow lips and twisted yellow sepals spotted with brown.

C. REGINÆ (syn. *C. spectabile*) [*Bot. Mag.*, tab. 216].—This is one of the finest of the genus and the easiest to grow. It will thrive well in a shady border and form large tufts, with many stems 2 feet to 3 feet high, two or three flowers being borne on each stem. These are pure white, with the greater portion of the lip suffused a rich rose colour. This species is known as the Moccasin flower. A pure white variety has been in cultivation, but is probably lost. The type has been in cultivation since 1731.

C. THUNBERGII (see fig. 98).—This is the Japanese form of *C. macranthum*, with rather smaller and paler-coloured flowers. It is quite distinct from a garden point of view.

C. TIBETICUM (see fig. 139 in *Gardeners' Chronicle*, June 2, 1906, p. 347).—A handsome species from Western China and Tibet, whence it was introduced by Messrs. Veitch & Sons through their collector, Mr. Wilson. It was awarded a First-class Certificate by the Royal Horticultural Society in 1907. It somewhat resembles *C. macranthum* in habit and form; the flowers, however, are larger, with sepals tessellated dark purple, and a chocolate-purple coloured lip.

C. VENTRICOSUM (see fig. 99).—A natural hybrid from Siberia, where it is found growing in company with its two parents, *C. Calceolus* and *C. macranthum*. It is intermediate in habit between the two parents.

In planting Cypripediums, it should be borne in mind that they dislike open situations and drying winds. The places they prefer are moist, well-drained rockeries facing to the north or west, the shady banks of small streams and the hardy fernery. *W. I.*

PLANT NOTES.

LILIUM SULPHUREUM.

Of the remarkable Lilies introduced from Upper Burmah about 20 years ago this has proved the most amenable to cultivation. It flowers in late summer and early autumn, and is, therefore, particularly valuable for the decoration of the conservatory at that time.

Within the last two or three years considerable importations of this Lily have been made, and its large, compactly-formed bulbs can now be purchased at a moderate rate. *Lilium sulphureum* may be either grown in pots or planted in a prepared bed, this latter method being preferable.

In favoured parts of the country the plant may be regarded as hardy, but in other districts, even if protected from the winter's frost, it flowers so late that many of the blooms fail to develop, hence the species must be regarded generally as a greenhouse subject.

Good examples of this Lily will attain a height of 5 feet to 10 feet, the long wand-like stem



FIG. 98.—CYPRIPEDIUM THUNBERGII.
Flowers, pale purple.

being very thickly clothed with narrow leaves which when young are tinged with reddish-brown. As in many other Lilies, the leaves widen considerably towards the top of the stem. The flowers are amongst the largest of the trumpet-flowered section, being creamy-white tinged on the exterior with reddish-brown and suffused inside with rich yellow.

A notable feature is the production of comparatively large bulbils in the axils of the leaves, such as occur in the Tiger Lily (*L. tigrinum*). These bulbils afford a ready means of increase, though, of course, they are some time before they attain the flowering size.

Lilium sulphureum (see Supplementary Illustration, *Gardeners' Chronicle*, July 7, 1900) was first shown in flower by Messrs. Low at a meeting of the Royal Horticultural Society on June 25, 1889, when a First-class Certificate was awarded it under the name of *Lilium Wallichianum superbum*. Though Mr. Baker, of Kew, was responsible for this name, it aroused a good deal of controversy on the

ground that the Lily in question was specifically distinct from Wallich's Lily. After a year or two, Mr. Baker raised it to specific rank and named it *Lilium sulphureum*.

The latter part of the '80s was remarkable for the introduction of several striking Burmese Lilies; in 1888 *Lilium nepalense* was received, the next year *Lilium sulphureum*, followed soon afterwards by *Lilium primulinum*, shown under the specific name of *claptonense* (now, I believe, lost to cultivation), and, lastly, *Lilium Bakerianum* or *Lowii*. *W.*

TREES AND SHRUBS.

CLETHRA.

THE Clethras are as a rule at their best during the latter part of August and September.

C. alnifolia, the Sweet Pepperbush of the United States, deserves a place amongst the best of flowering shrubs.

It forms a freely-branched, rather upright-growing deciduous shrub, that reaches a height of 3 feet to 5 feet. The flowers are borne freely in spike-like racemes, being white and very fragrant. Though it does not flower till the latter part of August in the open, this Clethra readily lends itself to forcing, and good examples have before now been noted at the Temple Shows.

There are four varieties of *Clethra alnifolia*, but the most marked is that known as *tomentosa*. Apart from its decidedly tomentose character, this variety does not flower till two or three weeks after the type, for which reason it is particularly valuable.

Other species are the larger-growing *Clethra acuminata*, also a native of North America, and the Japanese *Clethra canescens*. This last is said to attain the dimensions of a small tree in its habitat, but it flowers freely in Britain as a bush. The blossoms, however, are for the most part over before those of *Clethra alnifolia* are expanded.

Clethras delight in a cool, moist soil of a peaty nature, such as *Rhododendrons* thrive in; indeed, it is useless to plant them in dry or chalky soils.

A member of the genus widely removed from the preceding species is *Clethra arborea*, a small evergreen tree native of Madeira. Good examples may sometimes be met with in conservatories. The spikes of waxy-white flowers somewhat resemble those of the Lily of the Valley; they are produced freely during the autumn months. *W.*

FOREIGN CORRESPONDENCE.

ACTINIDIA CHINENSIS.

SEVERAL members of this Department were greatly interested in the Supplementary Illustration of *Actinidia chinensis* and the account of its flowering in England, as given in the *Gardeners' Chronicle* for July 31 last. Some of your English readers might likewise be interested to know that the vine has already flowered for three consecutive years, beginning in 1907, at the Plant Introduction Garden of the United States Department of Agriculture, at Chico, California. The plants belonging to the department were secured from the American Consul at Hankow, China, in 1904, from Chung-king, and were said to have been from the same lot which was secured by Mr. E. H. Wilson on the borders of Yunnan, when in the employ of Messrs. James Veitch & Sons.

Although flowering profusely, the plants at Chico have not produced fruit. An observer at the garden reported that the flowers were apparently perfect, and that he pollinated some by hand, but that in each case the stigmas withered and died. Plants propagated from the original importation and seedlings grown from a later one have been widely distributed in the Pacific and Gulf States of the Union. It is hoped that this beautiful plant may soon be found fruiting, especially near the Gulf of Mexico, where the climate is probably much better suited to it. The plant is a very rapid grower. *Walter Fischer, United States Dept. of Agriculture (Bureau of Plant Industry), Washington, D.C.*

THE FERNERY.

THE POLYSTICHUMS.

THE shield Ferns of Great Britain embrace three species, viz., *P. Lonchitis*, the Holly Fern, *P. aculeatum*, the Hard Shield Fern, and *P. angulare*, the Soft Shield Fern, all of which display that peculiar mitten or fingerless glove-shaped segmentation characteristic of the genus. They obtain their popular name from the fact that the spore heaps are protected, not by a kidney-shaped indusium or cover as in the *Lastreas* (*Nephrodiums*) attached to the frond at the indentation, but by a perfectly round or shield-shaped cover attached, Mushroom fashion, at the centre. A further peculiarity which facilitates identification of the species early in the year, when the fronds arise, is that after the tip has uncoiled to some extent the coil turns over backwards, while in the *Lastreas* it merely loosens so as to form a long hook, pendulous in front of the frond. The mitten-shaped sub-divisions are serrate with acute points, a pointed, thumb-shaped, secondary subdivision projecting at an angle from the base on the upper side, thus imparting the resemblance to a fingerless glove. In the Holly Fern (*P. Lonchitis*), which in this country is a true mountain Fern, being rarely found below 2,000 feet (I have found it at 1,100 feet), the frond is only once divided, the pinnae or side divisions being somewhat leathery and of the shape described throughout, a point to be borne in mind since young plants of *P. aculeatum* strongly resemble this species, but always have the pinnae sub-divided again. *P. Lonchitis*, reported to have been found at lower levels, have frequently been misnamed, owing to neglect of this characteristic. The fact, however, that this undivided feature constitutes the main difference between *P. Lonchitis* and *P. aculeatum* involves a difficulty in the direction of variation. Both *P. aculeatum* and *P. angulare* vary considerably, and often in the direction of extra division, their normally bipinnate fronds becoming tri- and even quadripinnate. Hence, it is obvious that any sport in this direction in *P. Lonchitis* would lead to its acceptance as *P. aculeatum*, and, in point of fact, the writer found among a colony of *P. Lonchitis*, on Ben Lawers, a plant which exactly resembled *P. aculeatum*. It is, moreover, a fact that unaccountable plants of *P. aculeatum* have cropped up in *P. Lonchitis* spore sowings. Whether such plants represent decomposite sports of *P. Lonchitis* or the results of stray spores of *P. aculeatum*, it has been impossible to ascertain. One thing is certain, however, and that is that if *P. Lonchitis* be removed from its natural high-level habitats to ordinary low-level situations, it persistently retains its mountain once-divided character. Crested forms of this have been found several times, so in this direction it may be considered as amenable to variation, as its very protean congeners. *P. aculeatum*, the Hard Shield Fern, grows to a much larger size than *P. Lonchitis*. Its fronds are bipinnate, have a shiny, hard surface, and are somewhat narrowly lance-shaped in outline. It is intermediate between *P. angulare* and *P. Lonchitis* both in texture and habitat, being found in abundance in Scotland, especially in the glens. *P. angulare* is rare in that country, occurring only sparsely on the border counties, though the writer found a solitary plant in Perthshire, where it had not previously been recorded. It was growing amid a colony of *P. aculeatum*, and thus forms a sort of parallel with the plant of *aculeatum* found among *Lonchitis* above alluded to. It is difficult to draw a hard and fast line between the three species, since, although *P. angulare* is much softer, it has not the lucent character of *P. aculeatum*, and differs somewhat in the outline of the frond. I have found examples with *angulare* characters combined with *aculeatum* toughness and lincency, so that it was impossible to determine to which species they should be allocated. The idea

has been suggested that in more southern parts *P. aculeatum* becomes transformed into *P. angulare*; but this is certainly wrong, since quite recently, in Devonshire, I found, in one and the same lane, plants of *P. aculeatum* and *P. angulare* side by side, with their differentiating characters fully displayed. In their varietal or sportive capacity, both the Hard and the Soft Shield Ferns have shown great versatility. The latter species especially has yielded a very large number of distinct forms to the Fern hunter, no fewer than 233 being described in Mr. E. J. Lowe's *British Ferns*, and 25 of the former species, while the results of selective sowings have been simply wonderful. At the time of the publication of that list (1891) there were respectively 151 and 9 forms recorded, to which a number of others from subsequent finds and raisings might now be added. Most of these varieties are characterised by much finer and more extended dissection or division of the fronds, accompanied by such a lengthening and widening and piling up of the delicate subdivisions as to utterly transform the Ferns so affected and rank them among the most



FIG. 99.—CYPRIPEDIUM VENTRICOSUM.
A hybrid from *C. Calceolus* × *C. macranthum*.
(See p. 223.)

beautiful types extant. *P. aculeatum* has recently provided a new section, or, rather, two sections, both of extreme and unique beauty. In one, the "gracillimum," or slender type, the normal half-inch long pinnule has been lengthened into delicate filaments nearly 3 inches long, with finely-fringed sub-tassels on their tips, while in the other, the "plumose" section, the variation has taken the decomposite form, the said pinnules being greatly widened and divided again and again. Curiously enough, a batch of about a score of such varieties originated from *P. aculeatum pulcherrimum*, found nearly 40 years ago by a farm labourer in Dorset, and which has only once furnished spores. These, when sown, gave rise to the batch of plants alluded to, a number of plants closely resembling the parent and a few which reverted rather more in the direction of *P. angulare* than *P. aculeatum* being more or less intermediate. The Polystichum family (classed with the *Aspidiums* botanically) is a fairly large one, and it is somewhat curious that while we have so many variants of wild origin, those of exotic species of the same family are few. *Chas. T. Drury*, *V.M.H.*, *F.L.S.*

THE ROSARY.

CULTURAL NOTES FOR OCTOBER.

THE weather having been so unsettled, the ground generally is thoroughly moist, and trenching and manuring should be commenced at once, so that the soil will be in a suitable condition for planting by the end of the present month or early in November. Trench the soil to a depth of 18 inches, incorporating plenty of fresh turfy loam and manure, also some half-inch bones. If the ground is waterlogged it should be drained. Roses are fine subjects for planting on lawns. Oval or rectangular-shaped beds, varying in size according to the extent of the lawn, should be cut in the turf. The beds can be planted with varieties of Roses in one or more colours, but the best plan is to employ distinct colours for each bed. The planting of Standards of a distinct colour, intermingled with dwarf plants of dissimilar varieties, form a pleasing bed when the colours are properly blended. Standard and China Roses can be employed for this system of bedding. The China varieties are constant bloomers. Some of the old varieties are amongst the best for the purpose, including Old Blush, Louis Philip (crimson), Laurette Messimy (pink and bronze), Eugène de Beauharnais (amaranth), Cramoisie Supérieure (scarlet), Mme. Fabvier (dark crimson), Hermosa (pink), and Grüss an Teplitz (brilliant scarlet). These can be planted 1½ feet to 2 feet apart, according to their habit of growth. Both half-Standard and Standard plants, 3 feet to 4 feet high, should be employed; being of varying height they will break up the uniformity of the bed. The following varieties, all white flowering, are suitable: Margaret Dickson, Mme. Lacharme and Frau Karl Druschki. In smaller beds the taller plants could be placed 3 feet apart. Dwarf Hybrid Tea varieties are also suitable for a groundwork. Of these, Kaiserin Augusta Victoria (sulphur-white), Gustave Regis (canary-yellow), Vicomtesse Folkestone (creamy-pink), Bessy Brown (creamy-white), and Mme. Hoste (lemon colour) may be employed with Standards of Ulrich Brünner (rich carmine), Dupuy Jamain (bright red), and General Jacqueminot (brilliant crimson). Another pleasing combination is (Dwarfs) Senateur Vaisse (bright crimson), Charles Lefebvre (bright scarlet), Duke of Edinburgh (scarlet crimson), Sir Garnet Wolseley (bright crimson), Victor Hugo (crimson), and Prince Camille de Rohan (velvety crimson), with Standards of Captain Christy (rose), La France (blush), Mrs. Sharman Crawford (pink), and Countess of Rosebery (salmon).

Climbing and Pillar Roses trained to arches, walls or fences should be trimmed and made tidy. Groups of the old-fashioned summer-blooming Roses such as the White Provence or Unique, Cabbage Crimson (damask), Crested, (pink), Maiden's Blush (moss), White Bath, Blanche Moreau (white), Old Pink and Crested (moss), and Lanci are a pleasing feature dotted about in odd corners of the garden. To these may be added Hybrid China Roses such as Charles Lawson (rose), Mme. Plantier (white), and Paul Ricaut (crimson). The Japanese Roses (*Rosa rugosa*) are very showy, as much for their sweet-scented flowers and handsome, nearly ever-green foliage, as for their pretty hips; *rugosa alba* (single white), *rugosa fimbriata* (pink and blush), *Blanche de Coubert* (double white), and *atropurpurea* (rich crimson) are some of the best of this class.

October is the best month for planting Rose cuttings in the open. Well-ripened shoots about 9 inches long should be taken off with a portion of the old wood. The ground should be well trenched, mixing plenty of sand or grit and leaf-mould in the bottom of the trench. Cut out a sloping trench, place the cuttings in two-thirds of their length and make them firm by treading the soil. They can be planted either in lines or in beds 4 feet wide. Place them 2 inches apart, allowing 1 foot

between the rows. They are best planted in a position facing due north. Apply a mulch of waste fibre over the beds as a protection during winter, and to prevent evaporation of moisture in the summer. Tender varieties should be inserted under frames or handlights. The soil in the frames should be mixed with plenty of road grit, burnt earth or wood-ashes, with a layer of sand placed on top. Before placing on the lights, well water the cuttings.

Vacant ground should be reserved for planting Standard Briar and other Rose stocks. In the meantime the ground should be well manured and trenched. It is always useful to have a supply of healthy stocks for budding, so that new and desirable kinds can be increased at a trifling cost.

PEGGING SHOOTS IN AUTUMN.

The following statement may not appear orthodox, but the results in my experience perfectly justify the treatment. I have found, where long, ripe shoots are available on dwarf plants during late autumn, it is a more satisfactory time for pegging down than in the spring, as it causes a more regular and earlier break over the entire length of the shoot and a more even distribution of the sap. Besides, with the exception of shortening the shoot a few inches to a sound eye, it obviates the severe cutting back of shoots that have been damaged either owing to the severity of the weather or because the growth was made too early. This seems to be a loss of vital force, and in some cases could well be avoided. It is much easier to protect the wood of tender varieties from severe frosts by covering them with litter or Fern when bent horizontally.

Newly-planted Standard and Dwarf Roses must be secured to stakes. When planting place the roots not deeper than they were originally, and finish by placing a good mulch of fermented manure on the surface. Established plants will also be benefited by this treatment, but the ground should be lightly pricked up with a fork before applying the mulch, so that the manurial properties will be washed into the soil by the autumn rains.

Established Roses in pots that were forced last season, and repotted and top-dressed last month, may be brought into a cold house or frame. Early H.P.s, Noisette, China and Tea varieties should be allowed ventilation both day and night for several weeks to come, but the amount of fresh air should be gradually reduced as the nights get cooler. After the first watering, keep the plants rather drier at the roots, and, on bright days, give a light overhead syringing in the morning. The scented Tea varieties should be lightly pruned, but the Hybrid Perpetuals may be pruned a little more severely, although not nearly so much as when the season is more advanced. The plants should be well fumigated when brought into the house. Thoroughly cleanse the glasshouse, including the stages, so as to destroy spiders and other injurious insects. The Tea, Hybrid Tea and China Roses respond to gentle forcing much better than the Hybrid Perpetual varieties.

If the stock of Pot Roses requires renewal, October is a good time to hit and pot the maiden plants from the open ground. Preference should be given to those of the Tea section where cut flowers are in request. Select and take up carefully those plants which have three or more well-ripened shoots and plenty of fibrous roots, as these, when finally pruned back in the spring, will break into six or more shoots and form a bushy and compact head. When the potting is completed, they may be plunged in ashes outside until required. The remainder of the Pot Roses propagated during winter and spring and plunged outside, which are now in bud and flower, may be removed carefully and brought into a cool house. But before this is done, the plants should be well vaporised and lightly pruned. The ventilators should be left open for the present both night and day. If the plants

are rooted through the pot, it will be better to stand them on the stage, slightly plunging them in fibre, or some light material. This will keep the plants going until they have finished flowering, until the end of November.

Planted-out Roses under glass are now breaking freely, and the wood being thoroughly ripened, they may be given plenty of moisture at the roots. A sprinkling of freshly-slacked lime lightly forked in the surface of the bed will serve to keep the ground sweet and free from grubs. The top-dressing given to the borders last month should have enabled the plants to make a vigorous growth, and the foliage will occasionally require to be well cleansed with water applied from the garden engine. After this month less fresh air will be necessary, admitting just a little during the night at the top of the house, accompanied by a little heat in the hot-water pipes. *J. D. Godwin.*

TOWN PLANTING.

CATALPA BIGNONIODES.

FOR various reasons this fast-growing tree is to be recommended for planting in smoky localities. It grows with vigour in many situations, such as in the Middle Temple Gardens, near the Houses of Parliament, and at Chiswick, Lambeth and Camden Town. It is a tree of handsome proportions, and, when fully established, flowers freely. The violet-white of the petals is well set off by the purple and yellow of the throat. A valuable trait in the character of the Indian Bean is that, should accident befall it, and the stem get injured, numerous strong suckers are produced, which, as they grow with great rapidity, soon restore the dimensions of the tree. It succeeds in almost any sort of soil. Amongst remarkable trees of this kind in London is that known as Bacon's Catalpa. This fine old tree, which is said to have been planted by Bacon, grows near the centre of Gray's Inn Gardens. It is of unusual appearance, owing to having been partially uprooted many years ago. The stem, which is about 18 inches in diameter, rests on the ground for about 9 feet of its length, and has, fortunately, been well preserved by filling up the hollow portions with cement, while the far-spreading, heavy branches have been supported by props, and thus prevented from breaking away from the main stem. Though there are many dead and dying branches on the tree, yet its general health is good, and, should no accident befall it, it will live for many years. It produced flowers freely in the season 1900. Perhaps it may be of interest to state that the Gray's Inn Gardens were laid out under the direction of Bacon towards the close of the 16th century. *A. D. Webster.*

The Week's Work.

THE ORCHID HOUSES.

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

The new potting materials.—In large and varied collections of Orchids there are, at all seasons of the year, some species or hybrids that require repotting. A few remarks, therefore, to amateurs now beginning to interest themselves in Orchids, as well as to those who have had considerable experience, may prove useful. For a great number of years past fibre of peat has been largely used for potting the plants, being considered the best material. Unfortunately, however, when mixed with Sphagnum-moss, this decayed very rapidly, and it was necessary to repot the plants frequently. Although various materials, such as Belgian leaf-soil, English Oak and Beech leaves, &c., have been tried for the purpose of superseding peat, none has proved so acceptable and lasting to many English growers as the American Osmunda and Polypodium fibres. My experience shows that the majority of plants, when properly potted in these materials, cut up and mixed together, have benefited. Therefore, I am anxious to encourage those who are not quite satisfied as to the value of these new potting materials. Growers complain that, after the plants have been turned out of their old material and repotted into the new mixture, the new pseudo-bulbs or growths do not attain to the strength or size they did in the old soil. This, in many instances, I know by

my own practice to be quite true, especially in the case of Cattleyas, Laelias, Dendrobiums, and Odontoglossums. But the grower will find that the second and subsequent growths will be double or treble the size of those which were formed immediately after the plants had been repotted, that the flower-spikes are stronger, and the flowers of greater substance, also that they will last much longer both on the plants and when cut than they did in the old potting mixture. After making a first small growth in the new soil, it is advisable to remove the flower-spike for next season. By so doing, the plant will make the next growth earlier. When repotting becomes necessary, Cattleyas and Odontoglossums, in particular, need not be disturbed at the root nearly so much as was necessary when the old materials were used. The latter having become worn out in a year or two, it had to be removed, and, in most cases, this could not be done without causing considerable injury to the roots. On the contrary, the lasting qualities of Osmunda and Polypodium fibres afford the operator every facility to repot the plants without unduly disturbing their roots, especially those in front of the leading growths or pseudo-bulbs, and which are of the greatest consequence to every plant. As regards Odontoglossums and Oncidiums, I find that, if the plants, as is generally the case, are repotted soon after the current season's bulbs have flowered, new growths appear from the base of these growths, and the pseudo-bulbs shrivel to such an extent that it takes a very long time to bring them round to their normal condition. Therefore, after having produced a strong inflorescence, it is advisable to allow the plant to remain in the old soil, provided, of course, that it has not become sour or decomposed. But immediately a flower-spike appears low down in the axils of the leaves or growths, it should be removed. When the next growth is about 2 or 3 inches high, the plant may be repotted without fear of deterioration. Beginners in Orchid culture, who generally commence with small, imported pieces of Odontoglossum crispum, and are naturally anxious to see their plants flower, would do well to remember that the practice of allowing these tiny plants to produce a spike of bloom has the effect of weakening the plants for a very long time. It is, therefore, desirable to take the future into consideration and to remove the flower-spikes for a season or two. Let the sole object of the cultivator be to grow the plants stronger and stronger until they have become so thoroughly established that they can develop to perfection yearly, without distress, spikes of from 10 to 20 flowers, all of good form, size and substance.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Figs.—The cold and damp weather early in the summer retarded the growth of Fig trees, the result being that very few good fruits have been gathered in this locality. The trees have since made a considerable amount of growth, therefore care should be taken to see that the shoots are thinly trained, in order that they may be exposed to the autumn sunshine. It will need every care to get the lately-formed shoots sufficiently well-ripened to withstand winter frosts. Fig trees growing in situations where the roots are allowed to extend into rich soil are seldom satisfactory. In such cases steps should now be taken to restrict the rooting space. Trees may often be seen bearing satisfactory crops from season to season, whilst their roots are confined to very small borders close to a hard path or roadway. Such trees make only a little growth, but this is short-jointed and it matures well. If a Fig tree has its roots extending into rich soil, such as that which has been heavily manured for vegetable crops, a trench should be taken out about 3 feet from the wall on which the tree is drained, and the trench should be made to the depth of the drainage material. All strong roots that are found crossing the trench should be cut off. The best thing to do afterwards is to build a small wall to entirely restrict the roots from entering the vegetable garden. A wall, however, may not always be practicable, in which case the trench should be filled with clinkers, brick-bats, or chalk, ramming these materials thoroughly firm as the work proceeds. After such treatment the trees may make but little growth in the following season, but it will

be of such a character as tends to fruitfulness. Fig trees already growing in restricted borders and carrying crops of fruit require copious waterings and plenty of stimulants during dry weather. When Fig trees have to be planted, care should be taken to provide, in the first instance, means for restricting the roots. This will save much time, and prevent disappointment.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Chrysanthemums.—Although it is advisable to keep the plants out-of-doors as long as this can safely be done, at this date all must be housed, except, perhaps, the very latest-flowering varieties. Before the plants are removed indoors, cleanse the pots and spray the foliage with a fungicide, such as a solution of sulphide of potassium or weak paraffin emulsion. When more plants are grown than can be properly accommodated in the houses, there arises the temptation to overcrowd them. This should be resisted, as overcrowding always leads to disappointment. In such cases, only the best plants should be placed in the show house. It is too often thought that the leaves have served their entire purpose when the flower-buds are in course of development. On the contrary, if the leaves are sacrificed by overcrowding directly the plants are removed to the houses, the flowers are bound to suffer in consequence, and this notwithstanding the fact that occasionally one sees good flowers developed on shoots that, in the absence of foliage, appear to be mere sticks. For some time after the plants are removed indoors they should be given liberal ventilation by night as well as by day, taking care, at the same time, to prevent cold draughts and drips of water from the ventilators. It will doubtless be necessary to fumigate, or vaporise, the plants on several occasions at intervals of five or six days to make certain that thrips and aphids will not disfigure the flowers. Watering must now be carried out with great care, and the strength of manure water or other stimulants be decreased gradually. Let any plants which are still left out-of-doors be made thoroughly secure against gales.

Doronicum plantagineum.—In gardens where large, cool houses have to be kept bright in spring-time, a batch of this *Doronicum* should be potted into 5-inch pots for wintering them in cold frames. These plants will flower in advance of those in the border out-of-doors if given very gentle forcing.

Codiaeum (Croton).—At this season there are plenty of good, well-coloured cuttings, and it will be found that they will root more readily now than cuttings will in spring. As soon as they have made roots, they should be kept growing steadily in a position as near to the glass as possible.

Schizanthus.—Seeds should be sown now in pans of light, sandy soil and placed in a cool house. The plants will flower early in spring. As soon as the seedlings can be handled, prick them off into 5-inch and 6-inch pots, using a compost of loam, leaf-soil, and sand. Three plants will be sufficient to put in a 5-inch pot, and five may be placed in a 6-inch pot. These receptacles will be quite large enough for the plants to flower in. Shade the seedlings for a few days after transplantation, and afterwards place them on a shelf in a cool, well-ventilated house.

THE KITCHEN GARDEN.

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

Onions in the store.—Take advantage of wet days to perfectly clean and rope the Onions. This simple way of preserving them in a good condition until next spring is still the best known to me. The bulbs should be kept distinct in respect to variety, and roped according to size. Reject any bulb which appears unlikely to keep well, especially those with thick necks, which may be utilised for immediate use. The smallest of the bulbs can be used for pickling purposes, although those of the Silverskin variety are to be preferred on account of their better appearance. The ropes of Onions should be suspended in the coolest shed available, for, even an open shed is sufficient for well-ripened bulbs which merely require to be kept dry.

Autumn-sown Onions.—Use the Dutch hoe frequently between the rows, and pull out any weeds that are found amongst the plants. Apply an occasional dusting of fresh soot. Make another liberal sowing in an unheated frame for supplying young plants for winter salads.

Radishes.—If these are in much demand, it will be well to make frequent small sowings in slightly-heated pits. The beds should be formed as near to the glass as practicable. Air should be admitted to the pits whenever outside conditions will allow.

Cabbages.—Plant out the latest batch of Cabbages in well-prepared ground. Let the rows be made 20 inches to 24 inches apart, and set the plants at distances of 1 foot in the rows. Fill up any vacancies there may be in the earlier plantations, and use the flat hoe frequently amongst these latter. Prick out any surplus plants from the seed beds into small beds where protection can be afforded during the winter.

Cauliflowers.—Autumn-sown plants should now be pricked out into cold frames on beds which will support the plants within a distance of about 12 inches from the glass. If the soil is very rich, the plants will make more growth than is desirable during the winter. Put the plants at distances of 3 inches to 4 inches apart all ways, and make each plant very firm at the root. Examine Cauliflowers which are now becoming fit for use, and keep them thoroughly protected in case of frosts by bending some of the leaves over the flower. Directly the heads are of a satisfactory size, lift the plants and place them thickly together in an open shed. In such conditions they will remain good for many days.

Cardoons.—This crop is now ready for its final blanching. Place brown paper around the plants first and hay bands afterwards. Earth up plenty of fine soil on either side of the plants and make it firm about them.

Celeriac.—Let this crop be lifted and stored in sand or ashes, cutting off the top growths and roots.

Chicory.—This is a most useful and convenient plant for furnishing salads in autumn and winter. Lift a few roots as required, cut back the foliage close to the crown, and place the roots in the darker end of the Mushroom-house or cellar.

Beetroot.—This crop should be lifted and stored, for winter use, either in the root room or under the shade of a north wall.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Pot vines.—In order to have ripe Grapes at the end of April or early in May, the vines must be prepared for starting early in November. Assuming that these are thoroughly matured, they may be shortened to the desired length, and afterwards scrubbed with a solution of soft soap and sulphur. Let them be placed in an exposed position until it is necessary to remove them to the forcing house. More than ordinary care will be needed in selecting the vines for early forcing this unfavourable season, for, unless the growths are thoroughly matured, the best results cannot be expected. First-class vines are those which have made short-jointed growth of medium strength. Before placing the vines into the forcing house, remove a portion of the surface soil by means of a pointed stick, and afterwards apply a top-dressing, consisting of rich loam and a liberal quantity of fresh bones and wood-ashes. This top-dressing should be made firm by means of a wooden rammer.

Early vines in borders.—If these vines are to be started at the beginning of November, the wood should now be sufficiently matured to admit of the pruning being carried out. It is not good practice to prune severely old vines which have been subjected to early forcing for a number of years. In such cases as this, the cultivator should make sure of at least two or three good prominent buds on a spur. Such long spurs should be tied closely in to the old rods, or they will look unsightly. In cases where there is room to lay in a little young wood, this should be done, for thereby a better and more even crop will be obtained. After the pruning is finished, the cleansing of the rods and the house must be given attention. Where mealy bug has been present, the cleansing operations must be done the more thoroughly. The glass, woodwork, and

trellis should all be well scrubbed with soft-soapy water, and afterwards the trellis should be painted with paraffin, well working the liquid into any holes there may be in the trellis. Next remove carefully all the loose bark from the vine, paying particular attention to any holes and crevices in which insects pests might secrete themselves. Spread a sheet of canvas under the vines to catch all that is scraped from them, as this refuse should be promptly removed and burned. The next operation will be to wash the vines two or three times with the Gishurst Compound, or a solution of soft soap and sulphur. Then apply a good coating of limewash to the walls. Lightly fork the surface of the borders to the depth of 2 or 3 inches, and remove all the loose soil that can be got away without injuring the roots, next applying a top-dressing consisting of fresh loam, lime rubble, wood-ashes, and crushed bones. Should the borders require water, this should be given them before the house is closed. After that time, water must not be applied until the vines have made some growth.

Strauberrys in pots.—If these plants are crowded, they should be given more room, especially those which will be required for forcing early, it being particularly necessary, in their case, that the crowns should get thoroughly mature before the plants are removed to the forcing house. Liquid manure may now be given more frequently and with increased strength, as the pots are full of roots. Remove all runners and side growths. Should the leaves be affected with mildew, they must be syringed with some weak fungicide.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir Edmund G. Loder, Bart., Leonardslee, Sussex.

Flower beds.—As soon as the summer-flowering plants have been removed from the beds, the soil should either be deeply dug or trenched. In either case a liberal application of manure is usually necessary, especially in those beds which are utilised for the stronger-growing plants. When this has been done, the beds should at once be planted with spring-flowering subjects, selecting dry weather for this operation. Some of the more popular plants for the purpose are Wallflowers, *Silene*, *Myosotis*, Canterbury Bells, Primroses, Polyanthus, and various sorts of bulbs. Hyacinths should be planted about 5 inches deep. If the bed is composed exclusively of bulbs, a mulching of short, decomposed manure or fibre should be applied; but, in the case of beds that are in close proximity to the dwelling-house, it is better to plant a few dwarf, berry-bearing shrubs, or even Wallflowers, Canterbury Bells, or *Myosotis*, in order to give to the beds a moderately-furnished appearance during winter. Crocuses need only be put 2 inches deep in the soil, and 2 or 3 inches apart from each other. Scillas and Snowdrops should be planted 4 inches deep and 3 inches apart.

Narcissi.—Large beds intended for *Narcissi* need shelter from the prevailing winds, and the soil should be well trenched. If there is a path on the sunny side, so much the better, because the flowers, being drawn slightly towards the sun, will be seen at their best. A trowel should be used in planting, in order that each bulb can be placed on a proper base. There is always the danger, if dibbles are used, of "hanging" the bulb, which means that a hollow space would be left under its base. *Narcissi* in borders should be planted in clumps, each clump consisting of one variety. They also make an excellent ground-work for beds containing shrubs. Some of the erect-growing varieties may be advantageously planted amongst hardy Ferns. Notwithstanding all the new yellow varieties, it is exceedingly difficult to beat *Maximus* and *King Alfred*.

Senecio.—*Senecios* form admirable subjects for the sides of lakes or other moist positions. In August and September they are indispensable. If grown in moderately rich soil and preserved from the attacks of slugs and other insects, the foliage and flowers are equally handsome. *Senecio Veitchianus* grows 6 to 7 feet in height. *S. Wilsonianus*, 7 to 8 feet in height, is probably the best in the group. *S. Tanguticus* has a peculiarly graceful appearance, owing to the form of its inflorescences; whilst *S. Clivorum*, with its immense leaves and deep, orange-coloured flowers, is as striking in moist positions of the herbaceous border as it is in the bog 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 EDITORS, 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.

Local News.—Correspondents will greatly oblige by sending to the Editors 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 October.

- SATURDAY, OCTOBER 2—
 Soc. Franç. d'Hort. de Londres meet.
 WEDNESDAY, OCTOBER 6—
 Nat. Chrys. Soc. Conference at Essex Hall, Strand.
 MONDAY, OCTOBER 11—
 United Hort. Ben. & Prov. Soc. Com. meet.
 TUESDAY, OCTOBER 12—
 Roy. Hort. Soc. Coms. meet. Affiliated Societies Fruit Competition. Conference of Horticultural Mutual Improvement Societies at 4 p.m. (Lecture at 3 p.m. by Mr. Thomas H. Mawson, on "Some Gardens of the later Renaissance.") British Gard. Assoc. Ex. Council meet.
 THURSDAY, OCTOBER 21—
 Brighton and Sussex Hort. Soc. lecture.
 MONDAY, OCTOBER 25—
 Nat. Chrys. Soc. Executive & Floral Coms. meet at Essex Hall, Strand.
 TUESDAY, OCTOBER 26—
 Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by the Rev. Prof. G. Henslow, on "Remarkable Instances of Plant Dispersion.") Croydon Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—54.6°.

ACTUAL TEMPERATURES:—
 LONDON.—Wednesday, September 29 (6 p.m.): Max. 57°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 30 (10 a.m.): Bar. 29.9; Temp. 55°; Weather—Dull.

PROVINCES.—Wednesday, September 29: Max. 60° Cornwall; Min. 51° Yorkshire.

SALES FOR THE ENSUING WEEK.

- MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
 Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
 TUESDAY—
 Clearance sale of Greenhouse Plants and Greenhouses, at Oxford Nursery, Oxford Road, Gunnersbury, by Protheroe & Morris, at 12.
 Unreserved sale of 12,000 Established Orchids at the Nurseries, Plumpton, Sussex, by order of Mr. F. J. McBean, by Protheroe & Morris, at 12.30.
 WEDNESDAY AND THURSDAY—
 Clearance sale of Nursery Stock at Tunbridge Wells Nurseries, Tunbridge Wells, by Protheroe & Morris, at 11.30.
 FRIDAY—
 Unreserved sale of a portion of the Under Fell collection of Cyrtopodiaceae, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Sand-Binding Grasses.

The recent Report on afforestation and coast erosion, dealt with considerable fullness on the former subject, but reserved a detailed consideration of the latter.

If, however, the proposal to establish a development fund for the amelioration of the resources of this country is adopted—and all who care for the progress of our country hope that it will be—then among the more modest schemes which might be undertaken without delay is one to tie down the sand of the sea-shore by means of sand-binding Grasses. For it is well known that, in certain districts, the constant blowing inland of the sand is at once a source of danger to the permanence of the coast-line and a menace to agriculture. More than 70 years ago Sowerby, in his *Grasses of Great Britain*, drew attention to the havoc wrought in certain localities by the wind-borne sand and to the power, long recognised, of sea Grasses, and in particular of the Marram Grass (*Psamma arenaria*) to give stability to dunes and banks of sand. Speaking of Marram Grass, he observed: "Its economical

value is of no trifling amount, as thousands of acres of fertile land, adjoining the low, sandy parts of our coasts, must within a few years be reduced to almost hopeless sterility were it to be removed. To form an adequate idea of the distressing effects produced upon cultivation by the drifting of sea-sand, we must visit districts liable to its inroads and notice, during the prevalence of high winds, the manner in which it is borne by their resistless force inland."

In Elizabethan times the service rendered by Marram Grass in maintaining the coast-line on sandy shores was so fully recognised that an Act was passed prohibiting persons from destroying it. By reason of its fibrous texture and because also of the large amount of silica it contains Marram was in much demand for the making of mats and ropes. Hence the need for the Elizabethan Act, which was renewed in the reign of George II. That the damage done when once the shore-sand begins to shift is enormous we may learn from the old records. Thus, in the past century the sand-floor advanced into the interior, swallowing up a strip of fertile land five miles in width. In the course of a few years, a district of more than 10 square miles on the west coast of Scotland, called by reason of its fertility the granary of Forres, was completely inundated by blown sand. Manor house, orchards, all were buried. It is known that in this case the calamity was caused by some persons thoughtlessly pulling up the tract of Marram Grass which bound the surface of the sand-hills in the neighbourhood. Marram Grass owes its sand-fixing properties to its powers of living on poor, sandy soil, of resisting drought, and of refusing to be buried, no matter how deep the sand piles itself about the plant. Like so many Grasses—Couch, for instance—it roots readily at the nodes, and so, when cut to pieces, each lit forms a mature cutting, which strikes root at once. In use as a sand-binder it is planted generally in late autumn in rows from 1 to 3 feet apart at right-angles to the direction of the prevailing winds. Wherever it takes hold it offers resistance to the movements of the sand, and soon sand-hills are formed. Thus, in a leaflet for farmers, issued by the New Zealand Department of Agriculture on the subject of sand-binding Grasses, records are given of its speedy effect: "At New Brighton Marram Grass was planted on the shore in 1899. There are now large sand-hills, and the further drift of the sand, which previously, was very dangerous, has been completely checked."

In New Zealand other plants are also used for the same purpose; for example, Sea Lyme Grass (*Elymus arenarius*), which resembles a gigantic Wheat, and a native Grass (*Spinifex hirsutus*) and Sedge (*Scirpus frondosus*). But of all the plants that serve the purpose of forming sand-banks and thus at once preventing the drift of sand over fertile land and of resisting encroachments by the sea, Marram Grass is best, for the reason that, when it has bound the sand into a stable state, it gives place to other forms of vegetation. These serve, by their decay, to enrich the ground with humus and so help to gradually build up a fertile soil. A piece of work which might well be undertaken by the aid of the Development Grant would be a survey of sandy coast-lines and extensive Marram plant-

ing. Such reclaimed land might serve in turn for the planting of coniferous trees, as it serves in France and Germany.

OUR SUPPLEMENTARY ILLUSTRATION represents a flowering branch of *Lycium pallidum*, a hardy, ornamental shrub. The genus *Lycium* contains upwards of 70 species, but few are of horticultural value. They are natives of dry, sub-tropical parts, including the Mediterranean region, South Africa, Southern China, Western South America, and the Southern United States. *Lycium pallidum* is the most ornamental of the cultivated species. It has been known to botanists since 1844, in which year it was discovered by FREMONT on one of the tributaries of the Colorado River in New Mexico. Its habitat extends into Utah and Arizona. The plant was introduced into this country through the agency of the Arnold Arboretum in 1888. It has proved a very attractive shrub, and is especially useful for planting on a dry, sunny bank, bed, or border, being perfectly hardy. Cultivated specimens at Kew form spreading bushes from 3 feet to 4 feet high, with numerous short, thorny branches. The flowers are produced in clusters, in the month of June they are an inch long and of a pale greyish-green colour. The glaucous-green leaves are 1 inch to 2 inches long, elliptic, or elliptic-spathulate in shape. The bright red berries set freely in this country.

ROYAL APPOINTMENT.—Messrs. CLIBRANS, Nurserymen, Altrincham, Cheshire, have recently been granted a Royal Warrant appointing the firm Nurserymen to his Majesty the King.

THE LATE PETER BARR.—At the meeting, on Tuesday last, of the Floral Committee of the Royal Horticultural Society, the chairman, Mr. W. MARSHALL, proposed a vote of condolence with the family of the late Mr. BARR, who was formerly a regular attendant at the meetings of this Committee. The resolution was adopted. In another column of this issue, Mr. JNO. WRIGHT makes a suggestion for raising a memorial to Mr. BARR, which will also have the effect of strengthening the Orphan Fund. The proposal deserves general acceptance.

"THE BOTANICAL MAGAZINE."—The issue of this journal for October contains figures and descriptions of the following plants:—

CEREUS AMECAMENSIS, tab. 8277.—Mr. N. E. BROWN describes this Mexican species as being closely allied to the brilliantly coloured *Cereus speciosissimus*. The stems of the two plants are similar in appearance, but those of *C. speciosissimus* are mostly 3-4-angled, whereas in *C. amecamensis*, whilst the more erect stems are 3-4-angled, those which grow more or less horizontally are often, at least in part, 5-angled, and the growing shoots do not show the dull purplish tinge at the tips which characterise those of *C. speciosissimus*. Another great difference is in the flowers, these being pure white; they are produced in May or June. The cultivation recommended for this species is similar to that generally afforded *Phyllocacti*, namely, an abundance of heat and moisture, with ample sunshine in summer, and dryness near the root in winter. The figure printed in the *Botanical Magazine* has been made from a plant presented to Kew in 1900 by Mr. H. J. ELWES.

CISSUS ADENOPODUS, tab. 8278.—This species was introduced to Kew by Mr. M. T. DAWE, who sent it from the Mufukamata Forest, Uganda, in 1905. Mr. SPRAGUE describes it as being nearest to *Cissus Buchananii*, which differs in having five leaflets in place of three, and a very glandular inflorescence. The average length of the petioles is $1\frac{1}{4}$ to $2\frac{1}{2}$ inches, and the leaflets, which are deciduous, 2 to 4 inches long, and $1\frac{1}{4}$ to

2½ inches wide. The upper surface is green and the under side a brilliant red, with prominent nerves. The flowers are produced in autumn, and the fruits ripen in the following spring. Attention is drawn to what are described as "pearl-glands" on the inflorescence, young leaves, and stipules. They are supposed in certain cases to serve as "food bodies" for ants. Like *Cissus discolor*, *C. adenopodus* is an ornamental plant in the tropical house, its long trailing stems clothed with red leaves, being very attractive in summer.

LAURELIA SERRATA, tab. 8279.—This delightful and fragrant evergreen was the subject of a detailed illustration in the *Gardeners' Chronicle*, December 10, 1904, p. 401, under the name of *L. aromatica*.

RHODODENDRON COOMBENSE, tab. 8280.—The figure has been prepared from specimens sent to Kew in 1907 by Messrs. J. VEITCH & SONS, who have raised a large number of forms from seed collected by Mr. E. H. WILSON, in China. Mr. BOTTING HEMSLEY explains that in proposing a distinctive name for this plant, he does so with the object of avoiding possible confusion, rather than for the purpose of expressing a conviction that *R. coombense* deserves to rank as a species. The group of *Rhododendrons* to which *R. concinnum* and *R. coombense* belong, includes a considerable number of very closely allied plants. A comprehensive study of the whole material, including the introductions by WILSON and the seedling forms raised at Coombe Wood, is necessary in order to lead to a better knowledge of the extent to which seminal variation occurs. *R. coombense* is a dwarf and densely branching shrub, with sparsely set leaves 1¼ to 1½ inch long. The flowers are borne in trusses of three to five blooms at the tips of the branches and are 1¼ to 1½ inch long, being coloured rosy-pink with a tinting of yellow on the outside of the petals.

BULBOPHYLLUM (CIRRHOPELALUM) CAMPANULATUM, tab. 8281.—Mr. R. A. ROLFE has referred this plant and the whole of the section *Cirrhopetalum* to which it belongs, to the genus *Bulbophyllum*. At the same time it is suggested that the recognition of the section *Cirrhopetalum* as a floristic group apart from *Bulbophyllum* has certain practical advantages that appeal to cultivators. Therefore it is likely that this plant will generally be known as *Cirrhopetalum*. The species is a native of Sumatra, and was introduced to the Brussels Botanic Gardens. A plant was presented to Kew in 1908 and flowered in October of the same year. The specific name has reference to the shape assumed by the inflorescence in consequence of the strong decurvature of the lateral sepals of the individual flowers. The flowers are a very light purple colour.

CHRYSANTHEMUM CONFERENCE.—We are furnished with further particulars of the programme to be observed at the National Chrysanthemum Society's Conference, at the Essex Hall, Strand, on October 6. The conference will be divided into two sessions, afternoon and evening. The president, Sir ALBERT ROLLIT, LL.D., D.C.L., will preside at the afternoon meeting, when the following papers will be given: "Chrysanthemums as Annuals" and "Early Single Chrysanthemums," by Mr. W. WELLS. From 5 p.m. to 6 p.m. there will be an interval for tea, after which the evening meeting will commence under the chairmanship of Mr. THOMAS BEVAN (chairman of the Executive Committee). A paper on "Late Market Chrysanthemums," and two short papers will be read on "The Best Chrysanthemums for Cut Flowers"—(a) from a commercial point of view, by Mr. P. A. CRAGG, (b) from an aesthetic point of view, by Mr. D. B. CRANE. The proceedings of the conference

will be concluded about 8 p.m., so that there will be an opportunity for members who may arrive late to inspect the exhibits until 9 p.m. Prizes are offered by Messrs. W. WELLS & Co. for six vases of early single *Chrysanthemums* staged at the meeting.

FRENCH HONOUR FOR A BRITISH AGRICULTURIST.—Sir THOMAS ELLIOTT, Secretary to the Board of Agriculture and Fisheries, has been nominated by the French Government to be a Commander of the Order "du Mérite Agricole."

ANGLO-JAPANESE EXHIBITION, 1910.—At the Anglo-Japanese Exhibition, to be held at the White City next year, the Japanese gardens will be laid out by skilled gardeners from Japan. These gardens will be good object-lessons to those who contemplate the formation of Japanese gardens in this country.

*** UTILISATION OF VEGETABLES BY MAN.**—A general survey of the history of the utilisation of vegetables by man and the part that plants in general play in human life has been issued under the joint authorship of M. D. BORS and M. G. GADECEAU. The chapters are written from a historical as well as a scientific point of view, and are most comprehensive in their scope. The work contains 370 pages divided into 10 chapters. Starting with the origin of life on the globe and the relations of the several kingdoms, the authors proceed to discuss such subjects as the first utilisation of plants by primitive man, the influence of man on vegetation, plants for food, economic plants, forage plants, industrial plants, medical and poisonous plants, and, finally, ornamental plants. In each of these divisions the authors have sub-headings, in which the various questions are exhaustively treated, and following each chapter are explanatory notes or references to authors quoted. The historical matter recorded helps us to follow the gradual progress made by the various races of mankind in cultivating and using vegetables.

AGRICULTURAL EDUCATION.

A PARLIAMENTARY paper (Cd. 4896) has just been issued jointly by the Board of Agriculture and Fisheries and the Board of Education concerning agricultural education. The paper is signed by Lord Carrington and Mr. Runciman.

We extract the following clauses which specially relate to the distribution of grants by either and both departments:—

"2. In order to avoid overlapping or duplication of work in the sphere of Agricultural Education between the Board of Agriculture and the Board of Education, and at the same time to secure that every portion of the field is as largely aided and developed as possible, by the combined and separate efforts of the two Boards, it has been arranged that in future all Parliamentary grants in respect of Agricultural Education shall be distributed, in the case of institutions giving instruction to students taking advanced courses in Agriculture or in some special branch thereof as further defined below, by the Board of Agriculture, and as regards other forms of Agricultural Education by the Board of Education. But this distribution will be carried out by both Boards under conditions which will secure that the various sections of work thus aided are in due relation to one another. And, in order to facilitate this, an Inter-Departmental Committee consisting of responsible Officers of the two Boards will be constituted, to consider and report to the Boards on all questions which may arise either as to the correlation of the duties of the two Boards or as to the grants to be made in cases in which they are mutually interested. This Committee will meet from time to time as may be required. Officers of either Board, other than those appointed as members of the Committee, may assist the Committee from time to

time as the Committee or either Board may think desirable.

"3. The sphere of work thus falling to the Board of Agriculture and Fisheries will comprise institutions of two types:—

"(a) Those whose predominant purpose and work it is to provide comprehensive courses of Agricultural Instruction of an advanced nature, of which the proper benefits can only be received by students who, on admission, have received a satisfactory general education, whole-time, up to the age of 17 (or thereabouts), or later, or who have otherwise obtained a preliminary education of a similar standard. Each such institution should serve more, usually considerably more, than one Local Education Authority's area.

"(b) Institutions restricted to one special section of Agricultural Instruction (e.g., Forestry, Dairying, Cider-making), the main purpose of which is to provide a course of specialised teaching in that subject on such a plane as will equip those who pass satisfactorily through it to be competent Instructors in that section of Agricultural work in Agricultural Institutions or as local Instructors in all parts of the country.

GRANTS TO EXISTING INSTITUTIONS.

"Government Grants will thus be paid by the Board of Agriculture and Fisheries in respect of their agricultural work to the following institutions, and to such others as may in future be found to be of a similar character or on the same educational plane:—

University College of North Wales, Bangor; University of Leeds; Armstrong College, Newcastle-on-Tyne; University College of Wales, Aberystwyth; University of Cambridge; University College, Reading; Royal Agricultural College, Cirencester; South-Eastern Agricultural College, Wye; Midland Agricultural and Dairy College; Harper Adams Agricultural College; College of Agriculture and Horticulture, Holmes Chapel; Harris Institute, Preston; Royal Veterinary College; British Dairy Institute, Reading; Royal Horticultural Society's Garden School, Wisley; Horticultural College, Swanley; National Fruit and Cider Institute.

"4. While the special functions of the Board of Agriculture will, as above shown, be to deal with and to influence the Agricultural Colleges and other independent institutions named in the foregoing list, the relations of the Board of Education will, in the main, be with the County and other Local Authorities and such other Bodies as are supplying part of the local system of provision of Public, including Agricultural, Instruction. And it will be the business of the Inspectors of the Board of Education to represent to the County and other Local Authorities the need for continuous development of special provision for Agricultural Education, and to draw attention to the various types and grades of work thus required, particularly as regards the need for a largely increased provision of Farm Schools. The Inter-Departmental Committee with the views of the Rural Education Conference before them will give to the Board of Education all the advice and information they can as to types of School, methods of instruction, and lines of organisation of instructional staff, most needing to be encouraged in particular parts of the country.

"5. There is, at the same time, an important matter in connection with some of the cases comprised in the foregoing paragraph for which some special arrangement seems desirable, viz., the provision and efficient maintenance of Farms and Experimental Stations in connection with Farm Schools and such other similar places of Agricultural Instruction as fall within Section 4 above. These Farms and Stations are greatly needed if the educational work of institutions of this type is to be carried on with full efficiency; and, as it is in the highest degree desirable that such forms of practical work should be kept in close touch with the latest and best developments in practical agriculture, it is believed that such Government supervision and aid as is made to them should be from the Board of Agriculture. It has, therefore, been arranged that such Parliamentary Grants as may be, or become, available for the establishment and maintenance of the Farms and Stations, and of any experiments

* *Les Végétaux, leur rôle dans la Vie quotidienne*, by D. Bois and G. Gadeceau. (Pierre Roger & Co., 54, Rue Jacob, Paris.)

or investigations carried on in connection therewith, shall be distributed by the Board of Agriculture; the Grant in respect of the Educational work of the Farm Schools being made by the Board of Education, and all necessary arrangements for maintaining due relation between the two functions of the Schools and Stations, and for making the corresponding grants, being determined by the two Boards on the report of the Inter-Departmental Committee above described."

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE FOUNDER OF THE ROYAL BOTANIC SOCIETY.—The affairs of the Royal Botanic Society being prominently before the public at the present time, the following remarks may be of interest to some of your readers. While recently walking in the churchyard of Hazlemere, near High Wycombe, Bucks, I came across a gravestone with the following inscription: "In memory of Philip Barnes, F.L.S., formerly of Norwich; Founder of the Royal Botanic Society of London. Died Feb. 24, 1874; aged 82 years." Inside is a small stained-glass window, "In memory of Philip Barnes, Founder of the Royal Botanic Society, 1839," also the words "Consider the Lilies." Making enquiries, I found the stone does not mark the actual grave, that being under a large Beech tree, beneath which it was his wish to be buried. A small stone slab, level with the turf, with the letters "P. B.," marks the actual spot; the larger stone was moved from under the tree because the vicar thought the continual drip would spoil it. C. E. L.

THE LATE MR. PETER BARR.—Having known the late Mr. Barr intimately for 40 years, may I suggest that his memory should be fittingly perpetuated? If this could be done in a way that would secure permanent good, without calling for appreciable sacrifice on the part of those contributing towards it, surely it would be worth the doing! I am led to make a definite proposition all the more worthy of consideration remembering Mr. Barr's own efforts on behalf of an object which we all know to be a good one. Mr. Barr's name stands first on the list of the first committee of the "Royal Gardeners' Orphan Fund," which he assisted in establishing, and only those who acted with him, including the present writer (in 1887), can know how zealously our deceased friend worked for the accomplishment of that object. Would it not, therefore, be especially appropriate if, by a large number of small gifts, an adequate sum were secured to endow a memorial in perpetuity in connection with that beneficent charity, and thus commemorate—in a way we know he would rejoice in—the honoured name of "Peter Barr"? J. Wright, V.M.H.

WOOLLY APHIS.—I think probably most fruit-growers and nurserymen will agree that this is one of the most troublesome pests which they have to contend against, and a good number of gardeners and amateurs will be interested in anything relating to it. Something has been done in the way of combating the plague in the Antipodes and also in America, by working Apples upon stocks such as Northern Spy and Winter Majetin, which, it is said, are proof against the American blight, and I thought years ago of trying the effect of these stocks in this country; but when I saw at Chiswick the old tree of Northern Spy covered with woolly aphis, I concluded that it would be waste of time and money to import stocks of this variety. Of course, we know that this aphis prefers certain varieties of Apples to others; whilst Cox's Orange Pippin, Blenheim Pippin, and others may be completely covered, one rarely, if ever, finds a trace of the pest on Duchess of Oldenburgh, although growing alongside. Still, I think this is only a question of preference, and I do not believe we should be free from the pest if we grew no other variety than Duchess of Oldenburgh, that is, upon land previously infested by the blight. I have occasionally seen it upon trees of this variety, and if there were no other hosts, I think it would increase upon this. It would be vain to tell of all the remedies which

have been tried in order to get rid of *Schizoneura lanigera*. I have tested most of them. Paraffin is useful, but very dangerous, and, I believe, it always injures the trees to a greater or less extent. Methylated spirit, in the hands of a persevering amateur, is a certain cure; but if his neighbour re-stocks his trees, it is a heart-breaking job to recommence the cleansing process, and, of course, it is out of the question to treat large standards with a camel's hair brush and a drop of spirit. Whale oil is useful, but, alas! it is neither pleasant to use nor agreeable to look upon; and so we go on through the list. I would not have written thus far if I had only failures to chronicle; but I think I may say that at last I have met with success. I tried some nicotine for Apple sucker (*Psylla mali*), and noticed that some patches of American blight on the stems of some standard Apple trees turned a yellowish colour, lost all their fluffy appearance, and decayed away. So I bought a lot more nicotine, and sprayed some bush trees, but failed to see the least result, although used in exactly the same way. A second spraying did a little good, but was by no means satisfactory, so we tried the mixture stronger, with the most happy result, for now it kills every bit of American blight. The remedy is prepared by Messrs. Walter Voss & Co., Millwall, London, E., and is called "Woburn Tobacco Extract." I use a pint of this to 12 gallons of water, and I dissolve 3 lb. of best soft soap, and mix it in a paraffin cask full of water. The cask holds about 36 gallons, and thus 3 lb. of soap and 3 pints of nicotine are required; I find the soap helps to keep the nicotine on the trees. I suppose it is a confession of weakness to admit that I could find American blight in our nursery to experiment upon; but I feel sure that such will not be the case next season. When I wrote in these columns some five years ago (see *Gardeners' Chronicle*, May 21, 1904, p. 298), telling how Black Currant mite could be destroyed, most people thought the remedy was too cheap and simple, and others gave us credit for having a stock of mite on hand, and so would not buy trees; but things come round in time, and, although one still sees and hears that no remedy is known for the Currant mite, many growers have thanked me for clearing their plantations. The present remedy may take on better, for it certainly does not err on the side of cheapness. As we all know, American blight hibernates on the roots of the trees, so it must not be neglected during the winter. One of the winter washes will be useful to cleanse the branches and stems of the trees. I have used Cooper's V.I. Fluid with good effect. February is the best time to apply this, and a good dressing of soot upon the surface of the soil is most beneficial. A dusting of sulphate of ammonia will also destroy the underground aphis, and if gas water can be got, such as the gas men pump out of the mains, it is fatal to American blight when watered into the soil. I have no interest in any of the things named in this paper, but simply speak of them as I have found them for the common good of all interested in fruit or fruit-tree culture. A. H. Pearson, *Lowdham*.

COSMOS.—The annual *Cosmos* has hitherto been looked upon as purely an autumn flower in this country, but recently a new race of early-flowering varieties has appeared. It has been sold under several names, such as *Cosmos prae-cox*, *Cosmea Express*, *Cosmea New Early-flowering*, and in America as *Cosmos Julia E. Lee*. No matter under what name, if one gets the new early-flowering strain, one obtains something very different from the old one. This new strain can be relied on to begin blooming in July (it did so even in this late season), and if no severe frost occurs, it will continue in bloom until October or even November. To obtain early flowers the seed must be sown as other half-hardy annuals: that is, it ought to be sown in February in gentle heat. The seedlings should be transplanted into boxes, or potted up singly when large enough, or they may be planted out under glass towards the end of May or early in June. This *Cosmos* can be planted 2 feet to 3 feet apart, as it makes great growth and forms fine bushy plants 3 or more feet high and 2 feet to 3 feet in diameter. The flowers vary from 2 inches to 4 inches in diameter, and they are gracefully and beautifully formed. The colours are white, rose and crimson, and they come re-

markably true. The foliage is similar to the old *bipinnatus*, reminding one at a little distance of *Asparagus Sprengeri*. Both foliage and flowers last remarkably well when cut. I have had them for several days on my table, and they make a welcome change from the usual summer flowers. C.

BUPHTHALMUM SALICIFOLIUM.—One of the most useful of the summer-flowering perennial herbaceous plants is *Buphtalmum salicifolium*. Not at all fastidious as to soil or situation, it makes a brave show all through the summer months when covered with its bright yellow, daisy-like flowers. If planted in bold masses, it produces a striking effect. The plants grow about 2 feet high, and produce their flowers on stems 9 inches long. The flowers last well in a cut state in water. The plant is readily increased by division in early spring. W. H. Yates.

SCYPHANTHUS ELEGANS.—This pretty, yellow-flowered trailer is known in its native country (which I believe is Mexico) as the golden cup flower, as implied in the first portion of its name, which is the Greek for a cup. It is figured on plate 238 of volume iii. of *Sweet's British Flower Garden*, and on plate 5028 of the 84th volume of the *Botanical Magazine* under its synonym of *Grammatocarpus volubilis*. I received seeds of it this spring from California, and having some two dozen plants more than I require for my own use I shall be glad to send them to readers of the *Gardeners' Chronicle* who have a greenhouse and would like to have one specimen. Each correspondent will kindly send me a strong, small cardboard box and three or four stamps to pay its postage by parcel post. W. E. Gumbleton, *Belgrove, Queenstown, Ireland*.

HYDRANGEAS IN TUBS (see p. 220).—We have six plants growing in tubs, which measure 3 feet in width and 20 inches in depth. The average height of the plants is 8 feet and the width 10 feet. They are carrying about 350 well-developed trusses of bloom. During the summer months they are used on the terraces here, and placed in a cool greenhouse during the winter. *Matthew Nicholls, St. Clare Gardens, Kemsing, Sevenoaks*.

OSMANTHUS (OLEA) FRAGRANS.—I received recently from a friend in England a flowering specimen of a charming shrub under the name of *Olea fragrans*. He had received it from the nursery of Messrs. Rovelli, at Pallanza, on the Lago Maggiore. It had small bright orange-coloured flowers, extending for about an inch down the stem under the bunch of leaves which terminated the shoot. On looking up *Olea fragrans*, now referred to *Osmanthus*, in the *Botanical Magazine*, I found it figured on plate 1552 of the 38th volume, but it did not quite agree with the specimen sent me. I shall be glad if any reader of the *Gardeners' Chronicle* can tell me whether the orange-flowered plant is correctly named or not. W. E. Gumbleton, *Belgrove, Queenstown, Ireland*. [We have received specimens of the same plant from Mr. Bennett-Poe, who also obtained it from Messrs. Rovelli Brothers. It is undoubtedly *Osmanthus fragrans*, which is very variable, especially in leaf characters. Dr. Henry collected yellow, as well as white-flowered forms of it in China, where it is cultivated for its highly fragrant flowers used for scenting tea. The figure in the *Botanical Magazine* gives a poor idea of the plant. *Osmanthus* is closely related to *Ligustrum*, *Syringa*, and *Jasminum*, and the odour of the flowers is rather Jasmine-like. *O. aquifolium*, also a native of China and Japan, is almost as variable in foliage as the Holly.—Eds.]

ROMNEYA COULTERI.—A plant of *Romneya Coulteri* in the gardens of E. Byron, Esq., Culver, near Exeter, has spread beneath an asphalt path, and the shoots have forced up the surface. The path was made with 3 inches of concrete and superficially with 4 inches of asphalt. The offset growing through the path has formed a strong bush and bore many flower-buds. The parent plant, which was planted by the gardener, Mr. G. Camp, about five years ago, is now 8 feet high and 12 feet through. A. H.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 28.—The usual fortnightly meeting was held on this date in the Society's Hall, Westminster. There was a remarkably fine display of flowers, fruits and vegetables, the annexes as well as the large hall being filled with exhibits. Although the weather was very unfavourable—rain fell unceasingly during the day—the attendance was good. Dahlias, Michaelmas Daisies, Border Chrysanthemums, Gladioli, and Roses were very numerous. A representative collection of ornamental vines, including many new species, shown by Messrs. JAS. VEITCH & SONS, LTD., was awarded a Gold Medal.

Exhibits of vegetables and fruits were as numerous as at the last meeting, there being two important groups of fruit trees in pots in addition to large exhibits of gathered fruits, and several collections of finely-grown vegetables. Exhibits of Orchids were not so numerous as on some occasions, although there was plenty of interest in this section, including several novelties. The FLORAL COMMITTEE granted eight Awards of Merit, four being given to new Dahlias. The ORCHID COMMITTEE conferred one First-class Certificate, three Awards of Merit, and one Botanical Certificate.

The FRUIT AND VEGETABLE COMMITTEE recommended a First-class Certificate to an Apple and Awards of Merit to a perpetual-fruiting Strawberry and a variety of climbing Bean.

At the 3 o'clock meeting in the lecture room, the second of the Masters's Memorial Lectures was delivered by Prof. Hugo de Vries before a large audience. A report of the lecture is given on p. 238.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. W. Bain, W. J. James, W. P. Thomson, J. T. Bennett-Poë, Chas. E. Pearson, H. B. May, Chas. T. Druery, Jas. Walker, John Green, Wm. Cuthbertson, G. Reuthe, J. F. McLeod, R. Hooper Pearson, F. Page Roberts, R. C. Reginald Nevill, W. A. Binney, E. A. Bowles, Jas. Hudson, A. Kingsmill, J. W. Barr, Geo. Paul, Chas. Dixon, H. J. Jones, W. T. Ware, W. J. Bean, W. Howe, E. H. Jenkins, E. T. Cook, C. Blick, Arthur Turner, and R. W. Wallace.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, showed more than 50 varieties and species of *Vitis*, which now includes those plants more commonly known in gardens as *Ampelopsis*. The specimens were shown as pot plants trained to tall poles, several being 14 feet in height. Many were new introductions from China. The autumn tinting of the leaves was very beautiful in such species as *Vitis Cignetæ*, *V. armata*, *V. Thomsonii*, *V. Thunbergii* and *V. Henryana*. Some had leaves of very large size, others much smaller foliage. In some, such as *V. armata* and *V. repens*, the leaves were simple, almost cordate, whilst others bore compound leaves, which were sometimes, as in *V. orientalis*, bipinnate. Especially interesting were *V. aconitifolia*, *V. odoratissima*, *V. heterophylla* and *V. lecoidei*. In addition to the vines, Messrs. VEITCH showed sprays of brightly-berried trees and shrubs, including *Viburnum rhytidophyllum*, with red and black fruits in corymbs; *Cratægus Crus-galli*, *Hippophaë rhamnoides*, *Rosa Mayesii*, with red, urceolate hips, and *Cotoneaster rugosa Henryii*, with bright green, lanceolate leaves and clusters of scarlet berries. The same firm staged a large-flowered *Tritonia* labelled Lord Roberts. (Gold Medal.)

Mr. L. R. RUSSELL, Richmond, Surrey, showed, as a corner exhibit, a group of large-flowered Clematis, set off by coloured *Vitis* and Bamboos at the back, with a front row of the variegated *Veronica Andersonii*. Amongst the more noticeable of the Clematis were *Mme. Ed. André* (claret-coloured), *Nelly Moser* (having a broad pink line on a pale blue ground), *Beauty of Worcester* (light blue), *Ville de Lyon*, and *Clematis integrifolia Durandii* (a very free-blooming variety with flowers a metallic blue shade). As a separate exhibit, Mr. RUSSELL showed 16 varieties of hardy Heaths, including *Erica vagans rubra*, *E. vulgaris Searlei*, *E. v. alba pumila*, *E. vagans carnea alba*, *Menziesia noli-folia atro-purpurea*, and *M. p. alba*. (Silver Banksian Medal.)

Messrs. PAUL & SON, Cheshunt, showed, as at the last meeting, a large collection of ornamental

trees and shrubs as sprays, with several in flower and fruit. *Rubus laciniatus* had large bunches of Blackberries, the fruits being very fine for tarts, and much superior to ordinary bramble berries. The fruits of *Berberis Thunbergii* are coral-red berries that at once attract the eye with their pretty colouring. (Silver-gilt Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed *Veronicas* of the *Andersonii* section, in batches of various coloured varieties. Two of the best were *Eveline*, with salmony-pink flowers, and *Valiere*, a large-flowered blue variety. Adjoining the *Veronicas* were plants of *Bouvardia grandiflora* and *Salvia splendens*, the white and scarlet flowers intermixed forming a charming combination. Messrs. MAY also exhibited a collection of *Polypodiums*, all varieties of *P. vulgare*. There were two dozen distinct kinds, and it was hard to believe they had all originated from one species. A selection of the more handsome includes *P. v. trichomanoides*, with finely-cut leaves; *P. v. cambricum Prestonii*, *P. v. grandiceps Foxe*, *P. v. cambricum*

Messrs. GARAWAY & Co., Bristol, showed a new Tea Rose labelled *Teresa Bevan*. The shade is a coppery-rose.

Other exhibitors of Roses were Mr. W. LEGGETT, Colchester; Messrs. MCGREDDY & SON, Portadown, Ireland, who had seedling and new varieties (*Silver Flora Medal*), and Rev. W. CHALMERS-HUNT, William Rectory, Hitchin.

Messrs. DOBBIE & Co., Rothesay and Marks Tey, showed Sweet Peas and early-blooming Chrysanthemums. These latter were very fine, and included *Caledonia* (white), *Carrie* (yellow), *Ethel* (lemon-yellow), *White Massee* (really a lemon shade), *Holme's White*, *Mrs. J. R. Pitcher* (blush), *Harrie* (bronze), and *Agnes* (bronze), all excellent varieties. (*Silver Flora Medal*.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed early-flowering Chrysanthemums, of which we noticed *Leslie* (yellow), *Roi des Blanc* (white), *Perle Chatillonnaise* (buff with palest rose), *Tapis de Nieve* (white), and *J. Bannister* (a bronze sport from *Perle Chatillonnaise*). The same firm showed border Phloxes and Pentstemons. *Iris* is a fine bluish-mauve-coloured



[Photograph by Elliott & Fry.]

PROFESSOR HUGO DE VRIES, OF AMSTERDAM, WHO DELIVERED THE SECOND "MASTERS" LECTURE ON TUESDAY LAST.

Barrowii, with large fronds, each beautifully lacinated, and *P. v. elegantissimum*. (*Silver Flora Medal*.)

A charming exhibit of Roses was shown by Messrs. WM. PAUL & SONS, Waltham Cross, Herts. There were boxes, baskets, and epergnes filled with bright blooms, small Palms, Ferns, and other foliage being intermingled amongst them. The Roses were in great variety, prominent kinds being *Pharisæer*, *Liberty*, *Betty* (yellow, with a suffusion of palest rose), *Mme. Jules Grolez* (rose), *Joseph Hill*, *Warrior*, *Ecarlate* (red blooms, in sprays), *La France*, and *Mme. Abel Chatenay*. (*Silver-gilt Flora Medal*.)

Messrs. FRANK CANT & Co., Colchester, exhibited Roses in great assortment. In the centre of the display was a bank of *Fran Karl Druschki*, and a red variety intermingled. There were also fine vases of *Mme. A. Chatenay*, *Lady Buttersea*, *Papa Gontier*, *Lyon Rose*, *Duke of Teck* (red), *La Tosca* (blush pink), and other well-known kinds. (*Silver-gilt Flora Medal*.)

Messrs. B. R. CANT & SONS, Colchester, showed Roses, amongst which the new variety, *Claudius*, was prominent; also *Lady Reay* (a new H.T. variety, with pink flowers, recommended as a bedder), *Killarney* and *White Killarney* were both well shown. (*Silver Banksian Medal*.)

Phlox. *Sheriff Ivory* and *G. A. Strohlein* (red) are also fine varieties of the perennial *Phlox*. (*Silver Banksian Medal*.)

Messrs. J. BURRELL & Co., Cambridge, showed a large number of seedling Gladioli, Cactus Dahlias and Roses. The Dahlias were all seedlings. *Rosalind* (pale pink with a white centre), *Rival* (yellow), *Leda* (pink), *Janet* (bronze), and *Oswald* (scarlet) are all worthy of notice. The Roses included pretty bunches of garden varieties. (*Silver-gilt Banksian Medal*.)

Mr. W. TRESSEDER, Cardiff, also showed Roses and Dahlias. Two bouquets of Dahlias showed the suitability of the flower for this method of floral decoration. There were many fine show Dahlias, *W. Powell* (yellow) being exceptionally good. The Cactus and Pompon varieties included the leading kinds. (*Silver-gilt Banksian Medal*.)

Mr. JAS. STREDWICK & SON, St. Leonards, exhibited a stand of Dahlias of Cactus varieties of their raising, most of which have been described in these columns. (*Bronze Flora Medal*.)

Mr. CHAS. TURNER, Slough, showed Dahlias in variety, including many of the show and Peony-flowered types. *Eccentric* is of this large-flowered kind, being red with white tips. Mr. TURNER also exhibited the varieties of Pompon

Dahlias selected after trial by the National Dahlia Society as being best for garden purposes (see p. 240). (Silver Flora Medal.)

Messrs. J. CHEAL & SONS, Crawley, Sussex, exhibited Dahlias, including single, Pompon, and Cactus varieties. The single kinds were very pretty, especially Columbine, Serita (crimson), Formosa (red), Peggy (rosy-mauve), Flora, and Miss Roberts. The best of the Pompon varieties were Cyril, Elsa, Tommy Keith, and Nerissa (a shade of silvery-rose). (Silver Banksian Medal.)

Mr. M. V. SEALE, Sevenoaks, had a large exhibit of Dahlias intermingled with coloured foliage, the display being made very decorative. It contained good blooms of the most popular kinds. (Silver Flora Medal.)

Messrs. CARTER PAGE & Co., London Wall, London, again made a fine display with Dahlias of all varieties as at the last two meetings. (Silver Flora Medal.)

Exhibits of Dahlias were also shown by Mr. S. MORTIMER, Rowledge, Farnham, Surrey; Mr. J. T. WEST, Brentwood (Silver Banksian Medal), and Messrs. T. S. WARE, LTD., Feltham, who also showed perennial Asters. (Bronze Flora Medal.)

Mr. H. J. JONES, Hither Green, Lewisham, showed 50 bunches of perennial Asters in 44 varieties. The group was arranged very attractively, each variety being shown in a glass vase. Mrs. F. Brazier (pale blue), Decima (white), Mrs. Twinam (pink), Finchley White (the largest of the white varieties), Hilda Morris (slatey-blue), and Mrs. S. T. Wright (rosy-purple) are a selection. (Silver Flora Medal.)

Messrs. W. CUTBUSH & SON, Highgate, showed miscellaneous hardy flowers. Helianthus rigidus Miss Willmott is a fine variety of this showy sunflower; Potentilla Gibson's Scarlet is an improved variety of *P. atrosanguinea*. There were also Pentstemons, Michaelmas Daisies, Delphiniums, of which Dwarf King is a fine deep-blue variety, Pernettya mucronata in fruit, Phloxes, Liliums, Ranunculias, Polygonum Bistortii, and other seasonable subjects. The same firm exhibited a fine group of Carnations, principally of the perpetual-flowering type. Lady Millar, of the Souvenir de la Malmaison type, produces its pretty blush pink blooms at all seasons of the year. (Silver Flora Medal.)

Messrs. R. WALLACE & Co., Colchester, showed hardy flowers in variety. Pentstemon Myddleton Gem has rose-pink and white flowers. Amongst varieties of Asters, we noticed *A. Bessarabicus*, *A. B. major*, *A. Amellus Riverslea*, and other attractive varieties, including that known as Favourite. There was also a large number of Kniphofias and many varieties of Montbretias. Kniphofia Wilson Ker is a large red-flowered variety. At one end of the group were strong clumps of Colchicum Bornmuller and *C. giganteum*.

Mr. FRANK BRAZIER, Caterham, showed decorative or border Chrysanthemums. Ethel Blades, Nina Blick, and Leslie were prominent. The group also contained perennial Asters. Mrs. F. Brazier (with big blue flowers), Cottage Maid (paler blue), Hilda Morris, and Mrs. S. T. Wright were noticed. Mr. BRAZIER also showed Pentstemons and Phloxes in variety.

Messrs. BACKHOUSE & SON, York, showed strong spikes of Colchicum speciosum, *L. s. album*, and a dark variety labelled atro-rubens. In the group was Cheiranthus Allionii, also Monkshoods, Miss Mellish Sunflower, and Michaelmas Daisies in variety.

Messrs. GUNN & SONS, Olton, Birmingham, exhibited large pans of *Viola cornuta*. The flowers, some white as well as blue, were exceedingly numerous. (Silver Banksian Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, showed seasonable hardy flowers, also *Vallota purpurea*, Nerines and Colchicums as pot plants.

The SIX MILLS NURSERY, Stevenage, exhibited Heleniums, Asters, Gypsophila paniculata fl. pl. and other border flowers.

Mr. G. REUTHE, Keston, Kent, set up a group of hardy flowers in which we noticed a carmine-flowered variety of *Lobelia cardinalis*.

Messrs. J. & A. CLARK, LTD., Dover, staged seasonable border flowers, amongst which were some excellent spikes of *Cimicifuga simplex*. (Bronze Flora Medal.)

A fine plant of *Platycodon alcinorne* was shown by Miss S. G. ABETALL, Muswell Hill (gr. Mr. E. P. Cooper). (Cultural Commenda-

AWARDS OF MERIT.

Carnation O. P. Bassett.—A tree or perpetual variety, with very fragrant, scarlet flowers, in which the petals were much fringed. Shown by Mr. A. F. DUTTON.

Pentstemon Myddleton Gem.—This variety has pretty, clear rose-coloured flowers with white throat, rather smaller than those of the best florists' strain. The point in this one is its extreme hardiness in the severest frosts common in this country. It forms large bushlike plants in Mr. Bowles's garden at Waltham Cross, and flowers abundantly. Shown by Messrs. WALLACE & Co.

Rose Flower of Fairfield.—This is stated to be a perpetual-flowering variety of Turner's Crimson Rambler. In other respects the novelty does not exhibit any marked difference. Shown by Messrs. STUART LOW & Co.

Dahlia Quimbo (Cactus).—A maroon-coloured variety with exceptionally incurved florets and of very regular formation.

Dahlia Gold Crest (Cactus).—A very pretty variety, having a bright yellow base and glowing scarlet-tipped florets. Both these varieties were shown by Messrs. H. STREDWICK & SON.

Vitis Wilsonæ (see fig. 101).—A new species from China, of the armata type. The leaf is

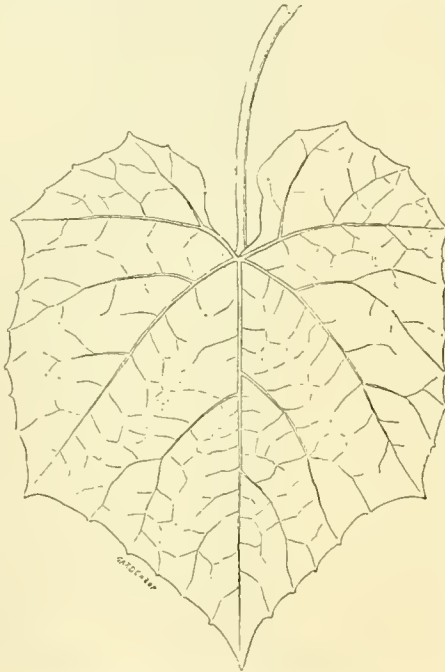


FIG. 101.—LEAF OF VITIS WILSONÆ: HALF NATURAL SIZE.

(Obtained an Award of Merit on Tuesday last.)

almost regularly five-sided, with a circular depression at the stalk end. The margins are almost entire, but the principal veins terminate in small points. The foliage assumes a deep red colour in autumn, which was well shown in many of the basal leaves on the specimen exhibited. Shown by Messrs. JAS. VEITCH & SONS, LTD.

Dahlia Little Donald (Pompon).—A finely-formed flower of this miniature type, the flower being of a shade of maroon. Shown by Mr. S. MORTIMER.

Dahlia The Lancer (Cactus).—A dark red variety of free-blooming habit. Some of the stems carried three good flowers on long stalks. It is recommended as a garden variety. Exhibited by Mr. H. SHOESMITH.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, F. J. Hanbury, R. Brooman-White, J. Forster Alcock, A. A. McBean, H. G. Alexander, Walter Cobb, J. Charlesworth, H. A. Tracy, W. H. Hatcher, H. Ballantine, Gurney Wilson, W. Boxall, W. Bolton, C. J. Lucas, C. H. Curtis, and Sir Jeremiah Colman, Bart.

Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed a splendid plant of the chasteily-beautiful *Cypripedium Actæns Bianca* (Leeanum Prospero × insigne Sandere) (see *Gardeners' Chronicle*, fig. 114, October 10, 1908, p. 261), which was given a First-class Certificate, September 29, 1908. It is a very large flower, of perfect form, and fine substance, the large snow-white dorsal sepal having a pale emerald-green base, the rest of the flower being yellow. Lieut.-Col. HOLFORD also showed *Lælio-Cattleya Golden Fleece* (Golden Gem × *Dowiana aurea*), with a spike of seven Buttercup-yellow flowers, having some Indian-red markings on the lip; and the fine *Lælio-Cattleya Pizarro* Holford's variety (see Awards).

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. Collier), staged an effective little group, principally of *Dendrobiums*, and which included a good example of the rare *D. taurinum*, with a strong spike of pretty white and rose-coloured flowers; several of the true *D. Phalaenopsis* Fitz., with many sprays of claret-rose flowers; and of the lighter-coloured *D. P. Schröderianum*, including a specimen of *D. P.* Gatton Park variety, with large white flowers having violet markings on the lip; *D. bicaudatum*, a Java species much resembling some of the Australian kinds; *Cirrhopetalum appendiculatum*; and the yellow and rose-coloured *Lælio-Cattleya Ophir rosea*.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford, staged a small group of finely-grown, rare *Cypripediums*, including the handsome *C. Thalia* Mrs. Francis Wellesley; *C. Tbalia* New-Hall-Hey variety; *C. Milo*, and the dark-coloured *C. Milo Cobb's* variety; a very dark form of *C. Baron Schröder*, *C. Ballantini Westfield* variety, and a splendid plant of *C. Fairfieldianum*.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver-gilt Flora Medal for a group rich in good things. In the centre was a varied selection of their handsome hybrids of *Sophranitis grandiflora* varying in tint from light scarlet and red to rose and purple. Behind them were two good plants of the rare *Angræcum Buyssonii* and some good specimens of *Vanda cœrulea*. The group contained many hybrid *Cattleyas* and *Lælio-Cattleyas*, including a selection of the variable and pretty *Cattleya Iris* and *C. Rhoda*. With them were fine specimens of *Odontoglossum grande*, *O. crispum*, the *O. crispum xanthotes Charlesworthii* being a chasteily-beautiful form; a batch of the rose-coloured *Phalaenopsis Esmeralda*, a very rich scarlet *Odontioda*, near to *Vuyylsteekæ* in form; *Dendrobium Cœlogyne* and other *Dendrobiums*; a superb, dark-coloured *Odontoglossum Harryanum*, the singular *Chondrorhyncha Chestertonii*, *Oncidium incurvum album* and two new *Cattleyas* (see Awards).

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a good group of hybrid *Cattleyas*, *Lælio-Cattleyas*, *Odontoglossams*, &c., among which were noted the new *L.-C. nitens* (*Heiena* × *Dowiana aurea*), a bright flower of medium size and having yellow sepals and petals tinged with red and crimped rose-coloured lip with ruby-red centre having golden lines running from the base; and *L.-C. Walter Gott* (*C. bicolor* × *L.-C. Blethleyensis*), the petals being yellow deeply tinged with bronzy-red, the lip rose-purple with a white base. In the centre of the group were several plants of the new white *Dendrobium Sandere*, and others noted were *Lycaste macrophylla*, *Cirrhopetalum refractum*, the graceful *Ylia densiflora*, some curious *Cycnoches*, with both male and female flowers; the yellow *Dendrobium velutinum*, and other rare species.

Messrs. MANSELL & HATCHER, LTD., Rawdon, Yorkshire, secured a Silver Flora Medal for an attractive and interesting group of showy hybrids, and rare and curious species. The centre was composed of 20 well-flowered plants of *Cattleya Iris* with varying tints of bronzy-yellow, rose and purple in the flowers of the different specimens. With them were *Cattleya Folia*, *C. Armstrongia*, *Brasso-Cattleya Thorntonii*, some pretty hybrid *Odontoglossams*; *Cypripedium Wiertzianum* J. Wilson Potter's variety; *C. Maudie*, *C. Flambeau*, and other *Cypripediums*; the interesting species being represented by a fine *Mormodes pardinum unicolor*, with two strong spikes; the elegant little *Seraphyta*

multiflora, Bulbophyllum Godseffianum, Brassavola nodosa grandiflora, Cirrhopetalum maculosum, the elegant Angraecum pellucidum, with fringed-lipped and semi-transparent flowers, &c.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, secured a Silver Flora Medal for an excellent group of well-grown and finely-flowered Orchids, which included several good novelties and rare species. The finest in the group was Cattleya Rhoda conspicua (see Awards). The centre of the group was of hybrids, which included a fine specimen of Cattleya Minucia, with a spike of seven flowers, good C. Iris, the pretty C. Harold, and others. At the back were graceful spikes of the yellow Oncidium oblongatum, and on either side a selection of finely-flowered Dendrobium formosum giganteum and Cattleya Gaskelliana, one charming light form of which bore nine flowers. Among the species were several plants of Cynoches chlorochilon, Cœlogyne Veitchii with two long drooping spikes of pure white flowers, several Cirrhopetalums, Pleurothallis, Oncidium unicolor, &c.

Messrs. STANLEY & Co., Southgate, showed several plants of their Cattleya iridescens (biolor × Eldorado) varying in colour. Also C. St. Gilles, C. Minucia, and C. Gaskelliana alba.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent Odontoglossum Macnabianum Rosefieldense, a very finely-blotched flower with a large white labellum with purple markings in front of the crest.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed a very fine specimen of Cypripedium Chapmanii superbum.

E. ROGERSON, Esq., Oakdene, West Didsbury, Manchester, sent the handsomely-blotched Odontoglossum crispum Ethel, a very fine and richly-coloured flower, which had to be passed by the Committee, as the spike had been restricted.

H. T. PITR, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Odontoglossum Stamfordianum (bictoniense album × Uro-Skinneri), with greenish sepals and petals and silver-white lip; and the pale yellow and white O. grande Pittianum.

AWARDS.

FIRST-CLASS CERTIFICATE.

Lalio-Cattleya Pizarro Holford's var. (L. Jongheana × C. Dowiana aurea), from Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A notable flower in every respect and in which the influence of *L. Jongheana* in narrowing the lip is quite eliminated, the flower being uniformly broad in all its parts. The sepals and petals are bright purplish-rose, with a small white base. The broad crimped lip is deep copper-red, changing to rose in front, the disc being ruby-red of a velvety or dusky tint, and obscurely veined with gold.

AWARDS OF MERIT.

Cattleya Rhoda conspicua (Iris × Hardyana), from Messrs. STUART LOW & Co., Bush Hill Park.—This is the most remarkable and beautiful of this very variable cross, some plants of which closely resemble *C. Iris*, while others are distinctly of *C. aurea* type, the present plant being in effect a white-petalled *C. Hardyana*, except that the lip is more openly displayed and there is more of a violet tint in the colouring of the lip. The sepals and petals are cream-white, the front of the lip violet-crimson, and the discs yellow, with golden-yellow veins from the base.

Cattleya Basil (Enid × Mantinii), from Messrs. CHARLESWORTH & Co.—In this the colour and fine substance of *C. Mantinii* is transferred to the large-flowered *C. Enid (Mossiae × Warszewiczii)*. The flowers are large; the sepals and petals are rose-purple and the lip is finely expanded, ruby-crimson, with yellow disc.

Cattleya Mrs. Pitt superba (Harrisoniana × Dowiana aurea), from Messrs. CHARLESWORTH & Co.—A pretty light-rose-coloured flower, with a distinct prismatic arrangement of purple lines in the tube of the lip.

BOTANICAL CERTIFICATE.

Disa polygoneoides, from Messrs. JAS VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea.—A very singular species from S.E. Cape Colony, with tall, erect spikes, densely set on the upper part with small yellow flowers. The plant was finely cultivated and bore four spikes.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. J. Cheal, E. Beckett, W. Bates, H. Parr, A. R. Allan, J. Vert, H. Markham, J. Davis, G. Reynolds, J. Jaques, F. Perkins, A. Dean, J. McIndoe, O. Thomas, H. S. Rivers, J. Lyne, Fred. Treseder, G. Wythes, and C. Foster.

Sir MARK COLLETT, Bart., Sevenoaks (gr. Mr. Nicholl), exhibited some fine Pears named Calabasse Oberdieck, grown under glass. It was thought to be identical with Vicar of Winkfield variety, and it was decided to ask the exhibitor to send fruits from out-of-door trees to the next meeting for comparison.

Mr. W. BATES, Twickenham, sent several heavily-fruited branches of Langley Bullace to show its cropping qualities. Numerous Apples and several Plums were submitted for award, but none was granted this distinction.

Messrs. STORRIE & STORRIE, Dundee, sent a seedling Apple, which the Committee wished to be grown at Wisley to test its merits in the south.

Mr. G. W. MILLER again showed the deep-red-coloured Apple Red Victoria.

Messrs. H. CANNELL & SONS, Swanley, showed two heavily-cropped roots of a new late Potato named South Pole. They were asked to send tubers to Wisley for trial, the variety being one of promise.

A group of fine fruit trees in pots some 50 feet in length was staged by Messrs. T. RIVERS & SONS, Sawbridgeworth. In the front were baskets of choice, gathered fruits. Apple trees included finely-fruited specimens of Gascoyne's Scarlet Seedling, King of Tompkins County, Melon, Washington, Emperor Alexander, and others. Of Pears there were excellent trees of Conference, Louise Bonne of Jersey, Fondante d'Automne, and Doyenné Boussoch. These, with Plum President, Cherry Guigne de Winkler, and various Figs, Oranges, and Peaches, constituted the principal features of the group. The gathered fruits included superb Peasgood's Nonesuch, Ribston Pippin, Cox's Orange Pippin, and Gascoyne's Scarlet Seedling Apples, and President, Coe's Golden Drop, Admiral, Transparent Gage, Monarch, and Late Orange Plums. There were also many bunches of Grapes in nine varieties, and some capital Pears. (Gold Medal.)

The entire upper end of the Hall was occupied by a wonderful collection of bush, pyramid, and flat-trained trees, all lifted the previous day from the open ground at Messrs. JAS. VEITCH & SONS' fruit nursery, Langley. There were 100 trees in all. Of Apples the new variety Rev. W. Wilks was shown as maiden trees superbly fruited. This is a grand early Apple, judging by the excellent specimens shown. Very fine also were Tyler's Kernel, Grantonian, Lane's Prince Albert, Mrs. Barron, Bramley's Seedling, Cellini Pippin, Lord Derby, King of Tompkins County, Bismarck, and Cox's Pomona. Pears included Benrre Clairgean, Louise Bonne of Jersey, President Hardy, Durondeau, Princess, Conference, and St. Luke. There were also Brown Turkey, White Ischia, and Bourjassotte Noire Figs. A tree of Langley Bullace carried an enormous number of fruits. (Gold Medal.)

Messrs. JAS. VEITCH & SONS also set up a large collection of some 50 dishes of vegetables, having fine Onions, Leeks, Beets, Carrots, Parsnips, Potatos, Red and White and Savoy Cabbages, Tomatos, and other kinds. (Silver Knightian Medal.)

J. A. NIX, Esq., Tilgate, Crawley, staged a fine collection of fruits, including Grapes Black Alicante, Black Hamburg, Lady Downe's Seedling, Gros Maroc, Mrs. Pinee, Appley Towers, Madresfield Court and Muscat of Alexandria; also of Peaches good fruits of Walburton Admirable, Prince of Wales, and the Nectarine. In addition were Nectarines Victoria and Pineapple, good Apples and Pears and other fruits, the whole constituting a remarkably good collection. (Silver-gilt Knightian Medal.)

Messrs. H. CANNELL & SONS, Swanley, showed a large collection of hardy fruits grown on orchard trees. The fruits were not over large, but very clean, and otherwise in excellent condition. Of kitchen Apples, Potts' Seedling, Grenadier, Edward VII., New Hawthornden, Lord Derby, Peasgood's Nonesuch, Stirling Castle, Warner's King, and Bramley's Seedling were all excellent.

Of dessert Apples we noticed good samples of Allington Pippin, Lady Sudeley, Baumann's Red, Wealthy, Worcester Pearmain, Gravenstein, Col. Vaughan, and Ben's Red. Pears were represented by Pitmaston Duchess, Durondeau, Benrre Hardy, Triomphe de Vienne, Vicar of Winkfield, and others, and Plums by Prince Engleheart, Pond's Seedling, Grand Duke, Kirke's Blue, Wyedale, and Goliath. Besides these there were numerous other fruits. (Silver-gilt Knightian Medal.)

Messrs. S. LOW & Co., Bush Hill Park, Enfield, displayed a few Apple trees in pots and several dishes of fruit, including some of Red Victoria Apples.

Messrs. SPOONER & SONS, Hounslow, set up a table of fine market samples, including Apples Hollandbury, Hambling's Seedling, Emperor Alexander, Peasgood's Nonesuch, Gloria Mundi, Baumann's Red, Red Quarrenden, The Queen, Flower of Kent, Bowhill Pippin, Stirling Castle, Warner's King, and Wealthy. Also Plums Grand Duke, Monarch, Magnum Bonum, and Emperor. (Silver Knightian Medal.)

Mr. G. HODDAY, Romford, staged a representative collection of vegetables, having a table some 20 feet in length fully furnished. Generally, the vegetables were rather under than over the usual exhibition size, as Mr. HODDAY holds what is best suited for cooking should be the exhibition standard. (Silver-gilt Knightian Medal.)

Mrs. BANKS, Grosvenor Square, London, W., set up a large group of bottled fruits, all bottles having the screw capsules. Almost every kind of fruit, and even Rhubarb stems was represented. (Silver-gilt Banksian Medal.)

AWARDS.

FIRST-CLASS CERTIFICATE.

Apple St. Everard.—A seedling from Cox's Orange Pippin crossed with Margil. The fruits are of medium size, roundish like Cox's Orange Pippin, but they have the stripe of Margil. The flesh is very richly flavoured and juicy, the variety being a first-class dessert Apple. From Messrs. JAS. VEITCH & SONS.

AWARDS OF MERIT.

Strawberry Atkins' Continuity.—The fruits are roundish, deep red in colour, very crisp and of good size. The plant is evidently a free cropper. Shown by Mr. J. ATKINS, Beckenham.

Runner Bean White Emperor.—The pods are a great length and of the rough runner type. Grown under trial at Wisley, it proved to be the heaviest cropper. The flowers and seeds are both white. Shown by Mr. E. BECKETT, Aldenham House Gardens.

COMPETITIVE CLASSES.

In the class for three dishes of Peas, the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), won the 1st prize, having specially fine pods of Gladstone, Late Queen and Duke of Albany; Lady COWPER, Panshanger, Herts. (gr. Mr. Staward), was placed 2nd. For one dish of Peas, C. WATNEY, Esq., Watford (gr. Mr. C. Dyke), was awarded the 1st prize for capital pods of Autocrat; 2nd, the Rev. CHALMERS HUNT, Hitchin. The class for nine kinds of vegetables saw Mr. BECKETT again to the fore, he having superb samples of Leeks, Cauliflowers, Pink Celery, very fine Onions, good Windsor Castle Potatos, Perfection Tomatos, Intermediate Carrots, Perseverance Runner Beans and Brussels Sprouts; H. L. TATHAM, Esq., Elstree (gr. Mr. W. Gaiger), was awarded the 2nd prize for excellent products. In the class for six kinds only, Mr. A. BASILE, Woburn Park Gardens, Addlestone, was 1st with capital Cauliflowers, Celery, Leeks, large, flattish Onions, Best of All Tomatos, and supremely fine Factor Potatos; 2nd, Mr. C. HODDAY, Romford. There were three other exhibits in this class, but in all cases the prizes are restricted to two, no matter how good the competition.

There was no entry for the readers' class for 12 kinds of vegetables. In that for a collection of salads, Mr. BECKETT again won the 1st prize easily, his group including Celery, Beets, Tomatos, Cos and Cabbage Lettuces, Broad-leaved and Curled Endives, Chicory, Cucumbers, Radishes, and Mustard and Cress; 2nd, Lady COWPER (gr. Mr. Staward). There was no entry in the class for a collection of autumn Strawberries.

SECOND "MASTERS" LECTURE.

THE PRODUCTION OF HORTICULTURAL VARIETIES.

ON Tuesday last, Prof. Hugo de Vries delivered the second "Masters" Memorial Lecture before a large audience at the Royal Horticultural Society's Hall, Vincent Square.

Mr. A. D. Hall, F.R.S., who occupied the chair, in briefly introducing the lecturer, referred to the purpose of these lectures, which are intended to keep alive the memory of the late Dr. Masters, and to bring before the horticultural world the researches of science as its discoveries bear upon the practice of horticulture, and thus to continue the work—the application of science to horticultural practice—which Dr. Masters never lost an opportunity of furthering.

Prof. de Vries, in his first lecture (see *Gardeners' Chronicle*, June 26, 1909, p. 419) dealt with Dr. Masters's own researches in vegetable teratology; in this one his subject was mainly his own researches into the origin of horticultural varieties. He pointed out that Darwin's work on the "Variations of Plants and Animals under Domestication" had lead the way for prolonged

of doubling of flowers or variegation of foliage. Only after careful selection and constant care do such variations become so marked as to ensure a sufficient contrast with the species from which they were derived to make them worth cultivation as novelties.

There are thus two types of varieties with which the horticulturist has to deal—the "constant" variety and the "ever-sporting" variety. The former type, Prof. de Vries calls "mutants," and in reply to a question, pointed out that "mutants" differ from other variations, fluctuating variations as they may be called, in that the former arise suddenly and not by small degrees, and when they have once appeared they "breed true" to their new characters provided they are self-pollinated, while varieties formed after the tedious, oft-repeated selection of small differences, differences depending very often upon methods of cultivation, belong to the "ever-sporting" type.

Good examples of "mutants" are furnished by white "sports" of many flowers and by dwarf varieties. With these the florist's work in fixing lies in securing isolation, and if isolation be complete, the fixing is accomplished in a single year.

The extent and even the occurrence of variegation in certain plants, as in the variegated Horse Radish, depends largely upon the method of cultivation, and, the extent of doubling seen in other plants may vary enormously even on a single plant at different seasons of the year. These afford examples of the "ever-sporting" varieties. Such varieties may arise fully developed or may appear only by steps. Small indications of possibilities appear first, and the florist has to isolate them and "work them up" by constant selection of the most marked variations in the desired direction.

The lecturer then went on to show how varieties had been produced under his own observation in plants whose histories had been known for many generations.

His first example was the peloric form of the common Toad Flax. This form has, in all its flowers five spurs, instead of only one spur as seen in the common type. It has been found in a considerable number of widely-separated places under circumstances that leave no reasonable doubt that it has been produced from seed of the common type. It rarely produces seed, but, being perennial, is able to hold its own for a considerable number of years, though it may finally disappear. Prof. de Vries sowed seed of the common type in his garden and watched the progeny through eight generations, always excluding the chance of cross-fertilisation, without observing any change whatever. In the ninth generation, however, a plant bearing peloric flowers suddenly

appeared. Thus a sudden variation had occurred under his own observation without any previous indication of deviation from the type. The seed he was able to save from this abnormal specimen reproduced the variation, and similar variations had arisen from succeeding generations at intervals.

In like manner he had seen sudden variations arise in *Oenothera biennis*, where a form with very narrow petals, which he had called "cruciata," had appeared, and in the Dahlia, where the tubular corollas were darkly coloured inside instead of outside, as is usual.

As an example of an "ever-sporting" variety, the lecturer gave an account of the experimental development of the Double Corn Marigold (*Chrysanthemum segetum*), since double flowers of Compositæ form an excellent example of "ever-sporting" variations.

The seed in this case was derived from the large-flowered garden variety, in which there are on an average 21 rays, though the range of variation in number is up to 24 and down to nine. In the fourth year, by selecting flowers showing the largest number of rays each year, the average was raised to about one hundred.

It might have been expected, said the lecturer, that the average number of ray florets might be increased by this process of selection, but there was also the chance that a double variety might be secured, and this was actually the case, for in the fifth year one was secured in which about 200 rays were present in the head. Thus, by selecting what was at first a slight variation from the normal, and breeding from those of its



FIG. 102.—*OENOTHERA LAMARCKIANA* AND TWO OF ITS MUTANTS WHICH IT PRODUCES ANNUALLY AT AMSTERDAM.

investigation in showing how great a significance attached to these variations in supporting the theory of evolution. Varieties may be regarded as "small species," i.e., groups of plants differing from one another in only one or at most a few characters, but differing so that if their origin were not known, some botanists would regard them as distinct species.

If, as will be generally admitted, the facts of variation strongly support the argument for evolution, the lecturer pointed out that the process by which variations arose in all its details became a most interesting and important subject of enquiry. While the actual manner in which species are produced in Nature may differ, and it probably does differ in details, from that in which varieties are produced in horticulture, yet the laws governing the process will be the same in both cases. In "fixing" the varieties which arise in the garden, there is generally the difficulty of guarding against cross-pollination, since numerous closely-allied forms are usually cultivated in close proximity to the new form, and there is the fact that many of the variations which it is desired to reproduce and develop are only faintly indicated at first, as in the cases



FIG. 103.—"POLLINATION CAGE," FORMED OF METAL GAUZE, IN PROF. DE VRIES' EXPERIMENTAL GARDEN AT AMSTERDAM.

progeny which showed the greatest development of that variation, a fixed double form was at length reached.

Another instance of an interesting "ever-sporting" variety was afforded by the race of five-leaved Clovers which the Professor had succeeded in establishing.

The case of "mutants" in *Oenothera Lamarckiana*, to which the lecturer next referred, afforded an instance of not one, but several new forms, arising suddenly in one generation, from seed of one plant. About a dozen of these "mutants" could be relied upon to appear each season; the number of different "mutants" is, of course, not unlimited, but the same novelties spring from it almost every year, and in cases where they can be got to produce seed by self-pollination, they breed true.

One of the most interesting of these "mutants" is the dwarf form known as *nanella* (see fig. 102), which, though much shorter in the stem than the type, bears flowers quite as large and is, therefore, very showy. This form appears in the proportion of about 2 per cent. of the seedlings from *Lamarckiana* every year.

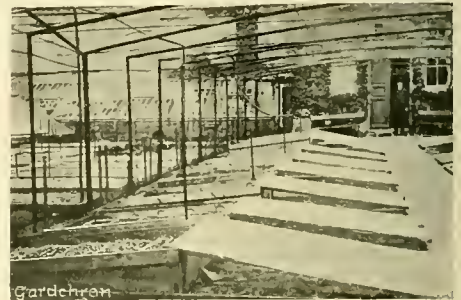


FIG. 104.—VIEW IN PROF. DE VRIES' EXPERIMENTAL GARDEN, SHOWING THE COVERING OF WIRE NETTING.

Another "mutant" named *lata* (see fig. 102) has weak stems, and much broader leaves of a paler green colour than the type, and with rounded tips, while a form known as *albida* is also fairly common, and, like the others, may be distinguished from the type even in the seedling stages; it has narrow, whitish leaves (see fig. 105). Many other mutants have occurred and usually reoccur among the seedlings of *Lamarckiana* every year.

An illustration of the field in which the original plants of *G. Lamarckiana* from which the seed was obtained was shown, as well as figures of the "mutants" themselves.

Professor de Vries then showed slides of his experimental garden at Amsterdam (see fig. 104) to illustrate the methods of cultivating the plants and ensuring the exclusion of insects likely to carry pollen by enclosing the flowers in paper bags or growing the plants in metal gauze houses (see fig. 103). The whole garden is protected from birds, mice, etc., by being caged with wire netting (see fig. 104).

THE DISCUSSION.

Professor Percival raised the question as to whether there was any periodicity in the occurrence of the periods during which mutations occur, suggesting that perhaps every ninth, tenth, or twentieth generation or so might see their recurrence in certain species. Mr. Drury also referred to this question, basing his remarks upon his experience among the many "mutants" which occur naturally among British Ferns. Prof. de Vries thought that perhaps fifty generations might be nearer the period at which mutations might occur, but pointed out that the question must be pursued for a long period, in order that it might be answered. So far no answer could be given.

Mr. C. C. Hurst expressed his obligations to the lecturer for his lucid lecture and emphasised

mens of polished sections of various timber trees, and cases of sand-dried specimens illustrative of inflorescences, the classification of fruits, the dispersal of seeds, &c.

On two large cards were mounted specimens of pressed Alpine plants, showing in a very practical manner certain lime-loving plants and their corresponding allies, found chiefly on the older siliceous and granite rocks, as follows:—

Plantes calcicoles.—*Anemone alpina*, *Rhododendron hirsutum*, *Primula auricula*, *Gentiana acalis*, *Erica carnea*, *Doronicum scorpioides*.

Plantes siliceoiles.—*Anemone sulphurea*, *Rhododendron ferrugineum*, *Primula viscosa*, *Gentiana Kochiana*, *Calluna vulgaris*, *Arnica montana*.

The most important exhibit was a magnificent collection of Conifers by Monsieur LACHENAL, of Neydens (Haute Savoie). It comprised 137 species and varieties, of which the following were described as "novelties," viz., *Retinospora obtusa crispata* (a golden form from Japan), *R. obtusa nana*, *R. tetragona*, *Taxus appressa variegata*, *T. cuspidata*, *Wellingtonia compacta nana*, *Pinus glauca*, *P. g. pendula*, *Pinus Fremontiana*, *Abies alcockiana glauca*, and *A. nobilis glauca argentea*.

This large collection of trees and shrubs, in beautiful condition, won a Grand Prix d'Honneur, with the special congratulations of the judges.

Messrs. GEORGES BOCCARD FILS, of Petit Saconnex, had another collection of Conifers, in-

arranged in perfect symmetry, a fashion which we hoped was dying out in both France and Switzerland.

Most of the exhibits of fruit and vegetables were extremely fine, the best fruit being shown by Messrs. MOREL ET CHASSET, of Lyons, and the ECOLE CANTONALE D'HORTICULTURE.

It was amusing to see exhibited specimens of *Erica tetralix* labelled var. *rosea*, for it was the ordinary pale pink form most common in the British Isles. But *Erica tetralix* is not found in Switzerland.

A storm of wind and rain has greatly injured some of the flowers since the opening of the exhibition. *H. S. Thompson.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 9.—*Committee present:* Messrs. E. Ashworth, R. Ashworth, Arthur Ashton, Bail, Cowan, Holmes, Holden, Keeling, Leemann, Parker, Smith, Sander, Ward, Warburton, and P. Weathers (hon. sec.)

J. T. CLIFTON, Esq., Lytham Hall, Lytham (gr. Mr. Float), staged a group of plants in great variety. It contained a well-grown specimen of a fine variety of *Vanda cœrulea*, also a grand plant of *Peristeria elata* bearing half-a-dozen flower-spikes. Awards of Merit were voted to *Cattleya* × *Lytham Hall* (a hybrid between *C. × Grossii* × *C. Gaskelliana*), *Miltonia Schröderiana*, *Phalenopsis Sanderiana* Coundon Court variety, *Houlletia odoratissima*, *Angræcum Eichlerianum*, *Cattleya* × *Armstrongæ*, *Lælio-Cattleya* × *Nysa Lytham Hall* variety, and *Cattleya* × *Maronii Clifton's* variety. Botanical Certificates were awarded to *Phalenopsis Regnierii*, *Sigmatostalix radicans*, *Stenoglottis longifolia*, *Dendrobium canaliculatum*, *Pleurothallis platyrachis*, and *Angræcum Scottianum*. First-class Certificates were awarded to *Vanda cœrulea* Clifton's var., *Dendrobium acuminatum*; and a Cultural Certificate for *Peristeria elata*. (Silver-gilt Medal.)

Z. A. WARD, Esq., Cringlewood, Northenden (gr. Mr. Weatherby), staged a charming group of *Cattleyas*, *Lælio-Cattleyas*, and choice hybrids, including several beautiful forms of *Cattleya* × *Iris*. (Silver-gilt Medal.)

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), showed a small exhibit of *Cypripediums*. Most of the plants shown had been previously certificated. (Bronze Medal.)

Mr. C. PARKER, Fern Bank, Preston, was awarded a Bronze Medal for a small group of well-grown *Cypripediums*, including *C. × A. de Lairese*, *C. × Bartonii* var. *superbum*, *C. × Massaianum* var. *superbum*, and *C. × Helvetia*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, exhibited *Cypripedium* × *Fletcherianum*, a hybrid between *C. × Lord Derby* × *C. Godefroyæ* var. *leucochilum*. It was awarded a First-class Certificate. *Cattleya* × *Iris* Vale Bridge variety received an Award of Merit.

A. WARBURTON, Esq., Vine House, Haslingden (gr. Mr. Dalgleish), exhibited *Cypripedium Godefroyæ* var. *The President*, to which an Award of Merit was voted.

J. RUTHERFORD, Esq., M.P., Beardwood, Blackburn (gr. Mr. Lupton), exhibited *Brasso-Cattleya* × *Madame Chas. Maron*.

N. GALLOWAY, Esq., Great Horton, Bradford, was awarded a Silver Medal for a group of Orchids, of which *Cypripediums* were the principal subjects.

E. ROGERSON, Esq., West Didsbury, exhibited *Cypripedium* × *Rosettii*, *C. × Stanley Rogerson*, *C. × Olga Bagshaw* var. *The Gem*, and *C. × Martha E. Rogerson*, the latter being a hybrid between *C. Godefroyæ* var. *leucochilum* and *C. niveum*.

The Rev. J. CROMBLEHOLME, Clayton-le-Moors (gr. Mr. Marshall), gained an Award of Merit for *Cypripedium* × *argenteum*, a hybrid between *C. Stoneii* × *C. Chamberlainianum*.

J. MCCARTNEY, Esq., Hey House, Bolton (gr. Mr. Holmes), showed a group of *Cattleyas*, *Lælias*, and hybrids. *Lælio-Cattleya* × *Bayardo*, *L.C. × Henrietta*, and *Cattleya* × *Iris* Hey House variety, were given Awards of Merit. (Silver Medal.)

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), received First-class Certificates for *Cypripedium* × *Holdenii*, a beautiful albino hybrid of *C. × Maudie* × *C. calcesum* var. *Sanderae*, and an exquisite form of *Cattleya* × *Iris*, labelled *Auburn House* var.



FIG. 105.—MUTANTS OF *GENOTHERA LAMARCKIANA*, SHOWING HOW EASILY THEY MAY BE DISTINGUISHED EVEN AT THE SEEDLING EARLY STAGE.

the importance of the facts Prof. de Vries had stated, namely, first that "mutants" were germinal variations which breed true so long as they are isolated and, secondly, they were of sudden occurrence completely developed.

The chairman, in conclusion, thanked Prof. de Vries for the lecture, and expressed the hope that all who are in any way employed in raising new varieties of plants will keep careful records of their work for, in order that greater knowledge of the laws that underlie the causes of variation may be obtained, there was abundant need for experimenters to "watch, wait, and record."

GENEVA INTERNATIONAL EXHIBITION.

THIS exhibition attracted large numbers of visitors during the second week of September, and it was the most important show of the kind yet held in Geneva. On the Scientific Committee figured the names of such well-known and distinguished botanists as de Candolle, Chodat and Briquet, and indeed the scientific exhibits on the balcony of the hall were an interesting and somewhat novel feature of the exhibition. They comprised a most instructive exhibit from the ECOLE CANTONALE D'HORTICULTURE, with good speci-

cluding very fine plants of *Abies excelsa pyramidalis* and *Cedrus atlantica glauca*.

The floral exhibits, as a whole, were disappointing, but the recent bad weather may partly account for it. The finest collections were sent by Mons. GEORG, Petit Saconnex (gr. Mons. A. Prodalliet). They included fine masses of *Geraniums*, *Primulas*, *Cyclamen*, *Solanum Wendlandii*, and *Ferns*. There were two splendid collections of *Begonias*, one by Messrs. VACHOUX-DUVAL ET FILS, of Carouge; and another by Mons. CHAS. MARTIN, a private gardener at Petit Saconnex; several blooms were 8 inches across.

Mons. CORREYON, of Chêne Bourg, and Mons. L. VORAZ-MOLIN, of Lyons, showed herbaceous plants, which included *Physostegia virginica*, *Leucophytus Brownii*, *Morina persica*, *Sylphium albidiflorum*, *Romneya Coulteri*, &c., but many of the plants were not in good condition. The *Gladioli* of Herr WILHELM PRITZER, of Stuttgart, were very fine and showy; and from Florence, the ECOLE ROYALE D'HORTICULTURE sent a collection of varieties of *Anthurium hybridum* obtained from seed. The ECOLE CANTONALE D'HORTICULTURE had a fine show of *Nepenthes* and foliage plants, and there were two other good lots of handsome foliage plants. The table decorations were very poor and ill-arranged, and the few water plants, which occupied the centre of the hall, were spoilt by being

Mrs. S. WOOD, Moorfield, Glossop, showed a group consisting of well-grown Cattleyas and hybrids. Cattleya \times Miss Barney, and C. bicolor \times C. Eldorado each received an Award of Merit.

Messrs. KEELING & SONS, Bradford, showed a number of choice Cypripediums. C. \times Lily Measures, C. Dourdanense, and the rare *Odontoglossum bictonense* var. album received Awards of Merit. (Bronze Medal.)

SHEFFIELD CHRYSANTHEMUM.

SEPTEMBER 17, 18.—This Society holds two exhibitions annually. The early show took place on these dates in the Corn Exchange. The schedule included only 19 classes, of which two were open to any exhibitor, the others being restricted to members of the Society. The display of flowers, fruits and vegetables was an exceptionally good one. Nearly 100 exhibits were staged, including many handsome non-competitive groups displayed by nurserymen. Gold Medals were awarded to Messrs. W. ARTINDALE & SONS, Sheffield, who exhibited a very large collection of flowering plants, including Gladioli, Dahlias, early-flowering Chrysanthemums, &c.; Messrs. SEAGRAVE & Co., who displayed early-flowering Chrysanthemums, Dahlias, and ornamental plants; Messrs. SUTTON & SONS, Reading, for an attractive stand of flowers, fruits and vegetables; Messrs. DOBBIE & Co., Rothesay, who exhibited Dahlias and Potatos; and Messrs. R. PROCTOR & SON, Chesterfield, for a display of Roses in more than 100 varieties. A Bronze Medal was awarded to Messrs. PENNELL & SON, Lincoln, for an exhibit of Dahlias, Gladioli and other flowers.

In the competitive classes the best collection of cut flowers arranged for effect, occupying a table space of 30 feet by 3 feet, was shown by Messrs. SEAGRAVE & Co., the 2nd prize being awarded to J. J. WHEAT, Esq. This last-named exhibitor secured the 1st prizes for a collection of vegetables, a collection of fruit, and a collection of cut flowers respectively.

The class for a collection of vegetables was open to all, and in this Mr. WHEAT, who won the 1st prize, was followed by Mr. W. BARKER.

Early-flowering Chrysanthemums were best shown by Mr. J. HARRISON, Mr. WHEAT gaining the 2nd prize in this class.

Mr. W. GREEN showed the best six vases of early-flowering Chrysanthemums in not fewer than four varieties, and in this class Mr. W. CARNALE was placed 2nd.

Mr. CARNALE, however, excelled in all the classes for Dahlias, having the best 12 Show or Fancy Dahlias, the best 12 blooms of Cactus Dahlias in not fewer than six varieties, and the best six bunches of Pompon varieties.

The Brincliffe Challenge Bowl, presented to the Society by H. Atkin, Esq., and offered for the best-kept cottage or allotment garden, was won by Mr. SHAW.

There was also a prize for the best-kept flower garden. In this case the prize was won by Mr. J. BINGLEY.

NATIONAL DAHLIA. TRIAL OF POMPON DAHLIAS.

SEPTEMBER 22.—Thirteen members of the Committee visited Mr. Charles Turner's nursery at Slough, on the above date, to inspect the trial of Pompon Dahlias. The number of varieties inspected was 75. The Committee considered their value from a garden as well as from an exhibition point of view. The maximum number of marks obtainable in each case was three, so that a variety could gain six marks if it had the best qualities of a garden, as well as a show, flower. Eighteen varieties obtained three marks for garden decoration, and 14 for exhibition value. Only six of this number obtained six marks. The following obtained three marks for garden decoration: Daisy, amber, shaded orange; Darkest of All, maroon; Falcon, orange-yellow, tipped with scarlet; Iris, amber and fawn; Isabel, orange-scarlet; Mars, bright scarlet; Montague Wootton, white, heavily edged with crimson lake; Nerissa, soft rose; Portia, deep mauve; Ideal, yellow; Romulus, crimson-lake; Silvia, edged with rose; Tommy Keith, crimson, tipped with white; Vara, yellow; Virginalis, pure white; Whisper, clear yellow, edged with red; White Aster, pure white; and Gerlina, crimson-maroon. Of these, Tommy Keith, Nerissa, Montague Wootton,

Falcon, Daisy and Ideal also obtained three marks as exhibition varieties. Others that were awarded three marks for the same quality were Adela, Nellie Bromhead, Hecla, Cyril, Clarence, Douglas, Adelaide, and Edith Bryant. The wet season caused the growth of the plants to be unusually robust. Each variety was represented by six or more plants.

SOCIÉTÉ POMOLOGIQUE DE FRANCE AT NANCY.

SEPTEMBER 28.—The Pomological Society of France, whose yearly meetings are held in various parts of that country, this year chose Nancy as their venue, and the show was made in the grounds of the exhibition now being held there. Though Nancy is not among the great fruit districts of France, except in respect of the Vine, the show was not what might be expected from this Society or from French cultivators; indeed, the locality was but poorly represented. The finest collection of fruit was that sent by Messrs. NOMBLOT-BRUNEAU, of Chatenay. There were Pears shown as we expect to see them in France, and Apples, too, were good, the new variety Jean Hardy being especially well shown. This is an Apple which should do well in England and make a valuable addition to our exhibition fruits. The show included many collections of Dahlias, but not of the quality we are accustomed to see in England. Perhaps the only exhibit which would have arrested attention at the Horticultural Hall at Westminster were the superb Gladioli shown by Messrs. LEMOINE ET FILS. A noticeable feature of this show, as of so many French exhibitions, was the lack of amateur support, which is much to be regretted.

ANSWERS TO CORRESPONDENTS.

APPLE: *Belvedere*. You should have sent the fruit without cutting it. We do not, however, think there is any disease present. The superficial mould developed after the fruit had become split.

BANANAS: *F. S.* The Banana is cultivated in only a very few gardens in this country. The plant requires a warm, lofty house and plenty

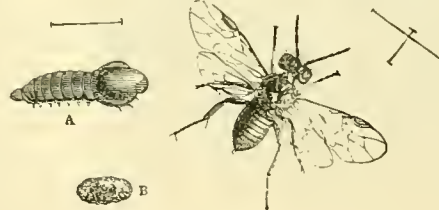


FIG. 106.—PEAR SLUG-WORM AND CHERRY SAWFLY.

A, maggot; B, chrysalis. (The lines indicate nat. size.)

of room for the development of its large leaves. It fruits in two or three years from the sucker. We think the story you mention is very unlikely to be true.

CELERY DISEASED: *W. H. S.* The plants are affected with root-rot, caused by *Sclerotinia sclerotiorum*. The fungus is present in the soil, which should be treated with lime. No disease is present in the *Pelargonium*.

CYCLAMEN UNHEALTHY: *Mayo*. The damage has been caused by thrips. Dip the plants in, or syringe them with, tobacco water.

DAFFODIL BULBS UNHEALTHY: *A. J. B.* The injury is caused by the bulb-mite. Apply lime to the infected soil.

FAIRY-RINGS IN GRASS: *T. M. V.* See reply to *F. G.* in the issue for September 11, p. 192.

FILBERT: *J. W. P.* The holes appear too large for the nut-weevil; one of the cavities is large enough to suggest mice as the cause. The nut-weevil is *Balaninus nucum*. In autumn the maggots leave the nuts and bury themselves in the ground, to appear as perfect insects about May or June. If you shake the trees on quiet evenings in May or June many of the weevils will fall to the ground and can be caught on paper coated with tar or some other sticky substance. Scrape the top layer of soil from beneath the trees and burn it.

LOBELIA DISEASED: *J. M.* A fungus—*Theilavia basicola*—has attacked the roots. Treat the soil with lime.

NAMES OF FRUITS: *F. C. P.* The Pear was rotten when it reached us.—*Bristol*. Colonel Vaughan.—*H. M.* Pear Souvenir du Congrès, Apple Norfolk Dumpling.—*O. M. 1*, Your fruit much resembles Lord Grosvenor; 2, Northern Greening.—*W. P. H.* Peasgood's Nonesuch.—*S. J. H.* Plum Decaisne.

NAMES OF PLANTS: *S. McG. & Sons*. *Acer rubrum*.—*T. K.* *Polygala myrtifolia grandiflora* (syn. *Dalmaiana*).—*W. B.* *Helxine Soleirolii*.—*J. F. M.* *Sedum maximum*; *Solanum jasminoides*.—*F. C. E. 1*, *Gentiana asclepiadea*; 2, *Euphrasia officinalis*; 3, *Sanicula europea*.—*F. E. 1*, *Fagus sylvatica incisa*, cut-leaved Beech; 2, *Lycocateria formosa*; 3, *Olearia Haastii*; 4, *Ptelea trifoliata*, illustrated in the *Gardeners' Chronicle*, September 29, 1894, p. 375; 5, *Crataegus Pyracantha*; 6, *Choisya ternata*.—*O. R. 1*, *Oncidium flexuosum*; 2, *Cattleya Harrisoniana*; 3, *Masdevallia simula*; 4, *Liparis longipes*; 5, *Otomeria diaphana*; 6, *Selaginella umbrosa*.—*Surridge. 1*, send when in flower; 2, *Sempervivum tortuosum variegatum*; 3, *Ruellia Portellae*; 4, *Gesneria elongata*; 5, *Maranta Massangana*; 6, *Chlorophytum elatum variegatum*; 7, probably a drawn-up specimen of *Poa trivialis variegata*; 8, probably *Cosmos bipinnatus*, no flowers.

PEAR SLUG: *A. B.*, *Epping*. The sawfly (see fig. 106) lays its eggs just under the upper surface of the leaves of the Cherry and Pear, in June or perhaps earlier. The slug-worms, which are covered with a greenish secretion, when about six weeks old cast their green or blackish-looking coats and appear as buff caterpillars free from slime, being smooth and transversely wrinkled. These caterpillars go down into the ground, spin a cocoon, and from these the sawflies emerge in the following summer. The larvae feed on the upper surface of the leaves, which, in some instances, they remove entirely, leaving the Pear or Cherry leaves as skeletons. Dust the slug-worms over with quicklime or gas-lime. The first application they will throw off by exuding a coating of slime, but they cannot continue doing this, and if a second application is made soon after the first it will kill them. The trees may be syringed with strong soap-suds or tobacco water, or with water containing 2 lbs. of soft soap and a peck of lime to each 30 gallons of water. Following a severe attack, the surface soil should be removed during winter to the depth of 3 or 4 inches. This will contain a very large number of cocoons, and should be burned or buried deeply with some quicklime or gas-lime. Vaporite might be inserted in the soil in autumn, if the soil cannot be removed. Many of the sawflies may be caught by shaking the trees in the evening over a freshly tarred board or cloth.

ROSE LEAVES DISEASED: *S. M'G. & Sons*. The fungus causing the injury is the second stage of the Rose rust—*Phragmidium subcorticatum*. The first stage appears as yellow, powdery spots on the stem and leaves, and should be sprayed with potassium sulphide solution—1 ounce in 3 gallons of water. Collect and burn all diseased sprays.

TO DESTROY WORMS IN A LAWN: *W. W.* Dissolve ½ ounce of corrosive sublimate (poison) in 15 gallons of water, and apply it over the lawn. Take care that poultry does not eat the dead worms. Another plan is to mix a peck of freshly-made quicklime in 40 gallons of water, allowing it to stand until clear, and then apply the liquid from a rose watering-pot.

TOMATOS: *Broughton*. The discoloration of the fruits is due to an absence of potash in the rooting medium. No disease is present. Dress the soil with sulphate of potash.—*B. T. A.* The plants are affected with Tomato-canker, caused by a fungus—*Mycosphaerella citrullina*. An account of this disease is given in the issue for September 11, p. 186. It is recommended to spray the plants with the Bordeaux mixture.

Communications Received.—Lord A.—O. F. M. W.—C. F. A. E. S.—E. A. B.—E. Rodrigues, Brussels.—M. S.—J. Comber—Tunncliffe—G. B.—G. F.—A. O.—A. L.—Manilla—A. D.—W. W.—G. Woodward (telegram)—R. Farrer—D. A. C.—U.S.A.—Mrs. R.—W. B. H.—A. C. B.—S. A.—W. H. W.—S. W. F.—T. H.—A. H. P.—D. Bois.—F. B.—A. D. W.—W. H. W.—Confiders, St. Mary Church—A. R., Potter's Bar.—J. P.—M. S.



LYCIUM PALLIDUM. A HARDY SHRUB.
FLOWERS GREENISH, SOMETIMES TINGED WITH PURPLE.

Photograph by C. P. Raffil.

THE

Gardeners' Chronicle

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HARDY HEATHS.

IN their excessive appreciation of exotic plants horticulturists are apt to overlook many beautiful species in our own British flora. Amongst these are the Heath and Ling, which adorn hill and moor with their conspicuous masses of colour. In districts where these plants abound in a wild state, the cultivation of the native species is unnecessary. Even in such places, however, the many beautiful varieties and several hybrids should receive attention, together with other hardy species not found wild in the British Isles, for they exhibit great variation in form in the colour of the flowers; rivalling indeed the Heaths of the Cape of Good Hope.

In a wild state Heaths are confined to peaty soil; but, provided the ground is fairly free from lime, it is not difficult to establish them in the wild garden, pleasure grounds, or in open spaces in the woodland, planting bold masses which, when in bloom, last for a long time and form an imposing display. A Heath garden, or one devoted mainly to these plants, can be made a very interesting and singularly beautiful spot, for though, as may be readily seen from the appended notes descriptive of the various species, the chief displays are in spring and autumn, one or two of them may flower even in mid-winter.

The soil need not be deeply dug when preparing it for Heaths: the principal point is to bury any grass that may be present sufficiently deep to prevent it growing the following year. The "Creeping Couch" or "Cooch Grass" (*Triticum repens*) is the worst enemy in this respect, and as far as possible it should

be picked out and burnt. Leaf-mould or peat, if available, may be dug in with advantage when preparing the ground. Subsequent top-dressings of leaf-mould for two or three years after planting will also be beneficial.

In gardens where lime is present in the soil, beds of Heath may be made by digging out a good depth of the soil, say, about 18 inches to 2 feet, and replacing it by peat and leaf-mould. The plants, however, must not be artificially watered unless with water taken from a rain-water tank, because there may be much lime in the ordinary water of the district.

Heaths are readily propagated by means of seeds, cuttings, and layers. Preference is usually given to cuttings, which, as a rule, make the best plants. August and September are the most suitable months to insert them. They may be rooted in pots in a close propagating frame with a little bottom heat, or under hand-lights outside. Convenient pots to use are 5-inch (48 size). Fill these at least half full of drainage, cover the drainage with a layer of rough peat, making it up with finely-sifted sandy peat, pressed very firm, and over this place a layer of sand. The most suitable cuttings are the points of the semi-mature, small side-shoots clothing the stems. These may be about an inch in length, and should be inserted fairly close together and firmly in the pots. When rooted, which should be in from six weeks to two months, the pots may be placed on a light shelf in a cool greenhouse, and transferred later to a cold frame. April is a good month for planting the rooted cuttings in a prepared nursery bed, set out 3 inches between the plants and 6 inches between the rows. The young plants should be shaded from sun till established in the new soil. To induce the formation of dwarf, bushy specimens, the points of the shoots should be removed several times during the growing season. The following spring the plants should be again moved, either transferring them to their permanent quarters or, preferably to the nursery for another year, giving them more room to grow. Each plant should be lifted with a good ball of soil adhering to the roots, it being useless trying to establish Heaths with little or no soil attached to the fibrous roots. But when once established, they require very little attention. In beds and conspicuous positions the plants look more shapely and tidy if the old flower-heads are cut off when the blooms fade.

E. ARBOREA (the Tree Heath).—The species is a native of the Mediterranean region and the Caucasus, and was introduced in 1658. In favourable localities specimens sometimes grow 15 feet or more in height. In the London district it is slightly tender: thus, the points of the taller growths were cut back by frost last winter. At Kew, *E. arborea* forms a bush some 4 feet to 6 feet in height. The flowers appear during March, April, and May, and are of a delightful fragrance, suggesting Vanilla or Hawthorn. The variety *alpina* is a native of the mountains of Cuenca, Spain, and grows at an altitude of 4,000 to 5,000 feet. It is a very distinct plant from the type and quite hardy, flowering a little later than the type. Very upright and stately in habit, it gives promise of making a useful lawn specimen. The foliage is a rich green, and the flowers white.

E. AUSTRALIS.—Although introduced into this country in 1769, this is by no means a common plant in gardens. Last winter the young shoots were badly cut in some districts, but the tall, woody growths were not harmed, and by June the plants were beautiful and green. In habit they are inclined to be straggling, hence the young plants should be pinched frequently. The leaves are dark green, the flowers red, produced during March and April. The species grows 4-6 feet high, and it is a native of Portugal.

E. CARNEA is a common plant on the mountain ranges of Europe. It is said to have been first introduced to this country from Germany in 1763. The plants are dwarf in habit, 6 inches being about the average height. The leaves are disposed in whorls, the flowers pale red and pendulous, appearing from January to May. This is one of the first plants figured in the *Botanical Magazine*, tab. 11 being devoted to it. A common nursery name for this plant is *E. herbacea*. A white-flowered form is named *alba*.

E. CILIARIS.—This is a common species in South-western Europe, and it is also plentiful on several of the Cornish Heath-lands and in Dorsetshire. The stems are thin and straggly, the plant about a foot high, and the ciliated leaves rich green. The red flowers are terminal and produced from June to October, being especially beautiful in July. *E. Mawiana*, of nurseries, and a native of Portugal, is considered by botanists to be a variety of *E. ciliaris*. Flowering from July to October, this is undoubtedly one of our best Heaths. Compact in growth, the rich purplish-crimson flowers are larger than those of the type.

E. CINEREA.—In company with the Ling (*Calluna vulgaris*) this is the Heath so commonly met with on the moors of the British Isles and in Central and Western Europe. The flowering season is August and September. The height varies from 6 inches to a foot. The drooping reddish-purple blossoms are borne in whorled, leafy clusters. There are numerous varieties, differing chiefly in the colour of the flowers. *Alba* is sometimes found growing wild; in the garden, when planted in masses, it forms a perfect sheet of white in August and September. *Alba minor* is a small-growing form, with a lesser number of flowers in each raceme and brighter green leaves. *Atrosanguinea*, deep red, and *coccinea*, bright red, are beautiful varieties, but unfortunately not over-robust in growth. *Purpurea* and *rosea* are similar in habit to the species, *rosea* being the brighter in colour.

E. LUSITANICA.—The common name of this species in gardens is *E. codonodes*, Lindl., under which name it is figured in the *Gardeners' Chronicle*, 1877, vii., 463, fig. 70. *E. polytrichifolia*, Salisb., is a second synonym. In severe winters the taller shoots are usually cut by frost, but the plants soon recover. This is a spring-flowering species, with white blossoms, which in the bud state are tinted with pink. In habit it is upright, forming a very handsome and striking specimen not unlike *E. arborea*. It is a native of Spain and Portugal, and with us it grows from 4 feet to 5 feet in height. Under more favourable conditions it would no doubt grow much taller. *A. O.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

BULBOPHYLLUM SAUROCEPHALUM.

OUR illustration, which was taken from a specimen that flowered in Sir Frank Crisp's collection at Friar Park, Henley-on-Thames, represents this curious Philippine Bulbophyllum, which was described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1886, vol. ii., p. 262, and has frequently appeared in gardens since it was shown by Mr. James O'Brien at a meeting of the Royal Horticultural

swollen rachis, along which the flowers are arranged, closely pressing against it. In the species illustrated, the rachis is of a reddish-claret colour, the flowers being whitish, marked with rose-purple. It is a very free-growing plant if placed in an intermediate house, and it is highly probable that all the specimens in cultivation have been derived from the plant originally imported. The genus *Bulbophyllum*, including *Cirrhopetalum*, is one of the most varied and singular in the whole of the vegetable kingdom. Several leading Orchidists pride themselves on their collections of these plants, and only those

that the inflorescence is decurved and not erect, as shown in the drawing. Sir Frank Crisp informs us that his plant bore four inflorescences.

Other and showier sections of *Bulbophyllum* include the large hooded *B. grandiflorum*, and a number of large and pretty Malayan species, which have from time to time been illustrated in the *Gardeners' Chronicle*.

The *Cirrhopetalum* section is the most elegant, the flowers being arranged in parasol-like umbels, with some of the segments fringed.

MILTONIA VEXILLARIA RUBELLA.

THIS pretty variety has smaller flowers than the type. They are a bright rose tint and are produced later than those of the large-flowered kind. Several specimens, each with five or six flower-spikes, are in bloom in the gardens of Mrs. T. F. Blackwell, The Cedars, Harrow Weald (gr. Mr. J. Dinsmore). They are effectively arranged with other Orchids, including the deep mauve-tinted *Cochlioda vulcanica*, the orange-coloured *Epidendrum vitellinum*, specimens of *Cattleya Gaskelliana* and a tall plant of the showy *Dendrobium calceolaria* with five spikes of its large creamy-buff flowers, the slipper-shaped, pale-yellow lip having deep claret-purple blotches on each side.

NEW OR NOTEWORTHY PLANTS.

DECUMARIA BARBARA.

(See Supplementary Illustration.)

DECUMARIA is related to *Hydrangea*. Only two species are known, namely, *D. barbara*, a native of the Southern United States, and *D. sinensis*, which Dr. Henry discovered in Ichang, China, as a "creeper, hanging down from the wall of a cliff in the Ichang gorge, with beautiful clusters of fragrant, white flowers." Both species have opposite, entire leaves and stems which cling and climb by means of rootlets exactly like Ivy and *Hydrangea scandens*. *D. barbara* often ascends trees to a considerable height. Although introduced into British gardens more than a century ago the North American species is scarcely known in cultivation, and this may be due to its tenderness, for it does not thrive out-of-doors in the neighbourhood of London without some protection. At Kew it is happy in the temperate house, and it is also grown in Messrs. Veitch's Coombe Wood nursery. The specimen figured in the Supplementary Illustration is from the garden of Mr. Gumbleton, where it flowered for the first time on an open wall in July of this year. The flowers are white and fragrant. The fruit is a turbinate, ribbed capsule containing numerous small seeds and an abundance of very minute acicular raphides lying loose among the seeds. The purpose of these raphides is not evident. The close relationship between *Schizophragma* and *Decumaria* was pointed out by Asa Gray, the main difference between them being in the flowers, which are all uniform and fertile in *Decumaria*. Mr. W. G. Smith has shown the flowers in section, and also the rootlets with their viscid sucker-like tips. The Chinese species does not appear to be in cultivation. W. W.

LILIUM YOSHIDAI.

ABOUT four years ago Herr Max Leichtlin flowered a Lily which he had raised from seeds obtained from the Philippines, and which he thought sufficiently distinct to rank as a new species. He therefore named it in compliment to Mr. S. Yoshida, Secretary of the Horticultural Society of Tokio, who procured the seeds for him. The seedlings made rapid growth, and in their second year one plant had three stems



FIG. 107.—BULBOPHYLLUM SAUROCEPHALUM, FROM SPECIMENS SUPPLIED BY SIR FRANK CRISP: FLOWERS WHITISH, MARKED WITH ROSE-PURPLE.

Society on April 24, 1894, when it was accorded a Botanical Certificate.

Bulbophyllum saurocephalum belongs to the *clavatum* group, based on *B. clavatum* (Thouars), originally found in the Mascarene Isles, but more recently in the West Indies, from which specimens it was renamed by Griesbach *B. pachyrhachis*. Several other species of the group are known, there being a very strong resemblance between them in general appearance. The characteristics of the group are the curiously

who have actually given way to the hobby can appreciate the great amount of interest and pleasure to be derived from the pursuit.

B. saurocephalum is one of the least showy species, yet the examination of the arrangement of its curious flowers, somewhat resembling an alligator's head, repays the trouble, and after the flowers have passed, the appearance of globular seed-capsules, occasionally introduces another phase, the dark-coloured flower-stem remaining fresh for a considerable time. It should be said

bearing 15 flowers. The following year it had 22 flowers. It was grown in a frame, from which frost was excluded, and appeared to be bulbous and evergreen. Several plants of this Lily have recently flowered at Kew, and I see no material difference between them and *L. philippinense*, of which a figure and description by Mr. Baker were published in the *Gardeners' Chronicle*, 1873, p. 114. There is also a figure of it in the *Botanical Magazine*, t. 6250 (1876). This plant was introduced from the Philippines by Messrs. Wallace, of Colchester, and first flowered by Messrs. Jas. Veitch & Sons, in 1873. Although it is said to grow at a considerable elevation, under cultivation here it has proved too tender to live out-of-doors. Probably, now that the Philippines are better known, this fine Lily will be found widely distributed and exhibiting some amount of variation. The type comes near *L. longiflorum*, but it has smaller bulbs, thinner stems and narrower leaves than any form of that species. The flower also is longer and narrower in the tube, and it is more elegant. The plants which have recently flowered differ from that figured in the *Botanical Magazine* in their flowers being tinged with red on the ribs of the tube, but they are produced singly on the stems, although the plants flowered at Baden Baden had several flowers on a stem. It would be worth the while of some enterprising collector to send home a big consignment of the bulbs of this Lily from the Philippines. It ought to be hardy in the warm parts of the British Islands. W. W.

NEW GARDEN WORMS.

In the *Gardeners' Chronicle*, March 12, 1904, p. 161, I gave an account of certain annelids which I had received from the Botanical Gardens at Oxford. Among them was a new variety of *Allolobophora veneta* which I named *tepidaria*. Having recently had occasion to examine the earthworms found in other gardens in different parts of the country, I am able now, not only to extend my remarks respecting the various forms which this very polymorphic annelid assumes, but also to report on the discovery of certain other species and varieties.

I purpose, in the present contribution, limiting myself to one species with its various sub-species or varieties. In the year 1866 Dr. D. Rosa published an account of the earthworms of Venice, and among them he described a new species under the title *Allolobophora veneta*. About the same time I found a similar worm in Ireland, and named it *A. hibernica*. The two differed in certain details, and as Dr. Rosa was before me in point of time, the Irish worm was regarded as a variety of the Venetian one. In 1904 a second variety was discovered at Oxford, and more recently a second variety in Ireland. But up till the present year no trace of the typical form had been found in England. Now, however, I am able to record that not only does the type occur in our gardens, but two other very strongly marked varieties or sub-species which are new to Britain, if not to science.

I had occasion during the past summer to visit Kew Gardens, and was able to secure from the Director and some of the staff ready promises of help in my pursuit. As a result, a fine collection of annelids from the Frame House reached me on September 3, and among the different species represented was the type of Rosa's Venetian worm. As Rosa's account is in Italian, and is not accessible in England, I give a summary of his diagnosis, in order that we may the better understand the character of the variations which we find in the other English forms. *Allo. veneta*, Rosa, as found in the Campo di Marte, is from 50 to 70 mm. (or 2 to 3 inches) long when preserved in alcohol, and numbers from 120 to 150 segments. It is 5 mm. broad, and almost exactly resembles the well-known *Brandling* (*Allo. foetida*) in colour, shape and size. The male pores on segment 15 are visible on small papillæ, the girdle normally extends from

the 27th to the 33rd segment, and there are special organs (*tubercula pubertatis*) on segments 30 and 31. The worm is exceedingly agile, and emits a yellow fluid from the dorsal pores.

The other details, relating to the disposition of the setæ and the internal organs, are of interest only for systematic purposes, and need not be translated. It will, however, be seen that in certain points there seems to be a close affinity between the Venetian worm and the *Brandling*. On the other hand, it bears a close resemblance to another species known as the *Alpine worm* (*Allo. alpina*, Rosa); but the English forms have never hitherto recalled the *Brandling* until I received the type from Kew. It must be admitted that a well-developed specimen is an exceedingly graceful worm, but the colour bands are not so distinctly marked in the English form of *A. veneta* from Kew as in the *Brandling* and in the Continental type.

Among the specimens from Kew there was a good deal of variation, and one of the number almost exactly corresponds with a sub-species, which I shall now proceed to describe. I obtained, a few days ago, a good collection of worms from St. James's Gardens, West Malvern, and among them were about a dozen specimens of a worm which was new to me. For some time I found it difficult to determine whether or not it was one of the forms of *Dendrobæna*; but repeated examination has led me to the conclusion that it is a new and very strongly marked form of *Allo. veneta*. On account of its striking resemblance to a worm which has been known as *Dendrobæna arborea*, I have named it *Dendroidea*, as being the best term to express the fact that it resembles *Dendrobæna* or the tree worm.

This new variety is about 35 mm. (or 1½ inch) long in alcohol, and 3 mm. at its widest part. When alive and fully extended it may reach as



FIG. 108.—A NEW EARTHWORM.

Allolobophora (*Eisenia*) *veneta*, Rosa: new sub-species *robusta*, from specimen preserved in alcohol. Should be ½ less in diameter.

much as 3 inches. It has the warm brown colour of the *Dendrobænas*, with a light girdle and a somewhat octohedral tail. The girdle usually extends over seven segments, and the *tubercula pubertatis*, which are normally on segments 30 and 31, sometimes cover a part of the adjacent segments, and so make the resemblance to other worms all the more striking.

Along with these worms I found a large number of another which must also be referred to the same species, but are so unlike any of the other forms I have ever seen that I have named it *robusta*. In alcohol it is about the same length as the last, but is nearly twice as stout, being 5 mm. in width. When alive, it is a far more delicate-looking worm than the other forms, has a flesh-coloured head, and a body which is wanting in the brown colour of the *Dendrobænas*. In alcohol it resembles *Allo. rosea*, but it differs from that worm in having the girdle segments well compacted on the dorsal surface. In *Allo. rosea* they are distinct, and the dorsal pores are very conspicuous. The worm has an under surface similar to that of the *Brandling*, and when two specimens are engaged in impregnating each other's ova, they form a knot which is so complete that the bodies are lost in each other's embrace, and cannot be distinguished the one from the other.

I cannot here discuss the problems which are raised by such facts as I have just adduced. They will be considered elsewhere, but it will help to present the matter in a clearer light if I close with a brief summary, setting forth the main points of difference.

The English forms of *Allo. veneta* now known are four in number, in addition to the two found in Ireland.

1. *Allolobophora* (*Eisenia*) *veneta*, Rosa.—The type found at Kew in the Frame Houses, September 2, 1909. Colour like the *Brandling*, 50 to 70 mm. long and 5 mm. in diameter in alcohol. Widely distributed in Europe, but subject beyond most annelids to great variation.

2. *Allo.* (*Eisenia*) *tepidaria*, Friend.—Found at Oxford in January, 1904, and described in this journal. Girdle limited to four segments, 29 to 32, length in alcohol 40 mm., with a diameter of 2 to 3 mm.

3. *Allo.* (*Eisenia*) *dendroidea*, new sub-species, closely resembling *Dendrobæna arborea*.—Shorter than the last, as that is shorter than the type, but similar in diameter. Colour in alcohol brown on the dorsal surface, lighter underneath. Found at Kew and at West Malvern.

4. *Allo.* (*Eisenia*) *robusta*, new sub-species (see fig. 108).—Quite distinct in appearance, both when alive and in alcohol, from the others. Length in alcohol 35 to 40 mm., with a diameter of 5 mm. A very robust appearance in spirits, though the worm is more delicate-looking when alive, and much less active than the last. Plentiful at St. James's Gardens, West Malvern.

Should readers of this article be interested in the subject they are invited to send collections of annelids to the writer in tin boxes with damp moss, and any particulars respecting locality, soil, distribution, frequency or the like, which might prove of value for purposes of identification. *Hilderic Friend, St. Asaph, Malvern.*

THE ROSARY.

NEW POLYANTHA ROSES.

APPLE BLOSSOM (Schmidt).—This variety is a profuse bloomer, exceptionally well suited for forcing, ordinary pot culture, and as a bedder. The flowers are double, and of the pretty shade indicated by the name; they are freely produced in clusters. In form and size they somewhat resemble those of the well-known *Crimson Rambler*, the petals being rather short and rigid. The plants may be induced to yield several crops of flower throughout spring and summer by removing the withered flowers and inducing fresh growths. Every shoot produces blooms, as is also the case with many others of its class, such as *Baby Rambler* (Mme. N. Levavasseur), *Baby Dorothy Perkins* (Maman Levavasseur), of which *Apple Blossom* is said to be a sport, and Mrs. W. J. Cutbush.

PRINCESS ENA.—This variety is stated to be a sport from the *Baby Crimson Rambler*. Its single flowers, about 1 to 1½ inch in diameter, are produced in clusters. They are of a deep rose colour on first opening, but quickly pass to a dull, pink shade, and showing to a marked degree the plum colour so noticeable in the flowers of its parent when in an advanced stage. The flowers of this new variety are of short duration.

BIRDIE BLYE (Conrad Jones & Co.).—A variety of the *Rambler* type, with large, pale green foliage, and producing sparingly, on long, slender stems, rather large, double, rosy-carmine flowers, that possess the scent so marked in the old-fashioned *Roses*. The clusters of blooms are usually composed of three, four and sometimes five individual flowers, each about 2½ inches in diameter. The texture of the petals is slightly flimsy, and likely to suffer from scorching.

VEILCHENBLAU.—This variety has been described as a blue *Rose*, but the colour is a shade of rich, reddish purple. It is an exceedingly vigorous-growing *Rose* of the *Rambler* type. The flowers are semi-double, about 1½ inch in diameter, and they are borne in loosely-arranged sprays of 8 to 10. In the bud state the colour is crimson, and it is only when the flowers are fully expanded that the presence of the purplish-blue tint is detected. The habit of the plant is strong;

the shoots being inclined to be rigid and perhaps a trifle coarse. Its distinct colour should place it in demand amongst lovers of Pillar Roses. It is of German origin, and the raiser fails to give any clue as to its parentage.

BUTTERCUP (W. Paul & Sons).—A free-growing climber, with large, glossy, green, leather-like foliage. Its single flowers are of a rich yellow colour when forced, but they are said to be almost orange coloured in the early stages, gradually passing to cream when grown under cool treatment. The sprays are somewhat long and thinly studded. The individual flowers measure about $1\frac{1}{2}$ inch across. *W. M.*

THE PATRINIAS.

The Patriniæ are erect, glabrous or hairy perennials, belonging to the Valerian family. Their chief habitat is Central and Eastern Asia, although some are found in Japan. There are about 10 species known to science; but the majority are not of great interest as garden plants, and only five or six are in cultivation. Like the Valerians, they all grow in damp or shady situations, and prefer a light, rich soil. The oldest species in cultivation is the yellow-flowered *P. sibirica*, which was grown in gardens about 150 years ago; the latest introduction is *P. palmata*, a Japanese species (see fig. 109). All the Patriniæ may be cultivated with ease and will grow well in any shady border. Propagation may be effected by means of seeds and division of the roots.

P. INTERMEDIA (SYN. *P. RUPESTRIS*).—This is one of the prettiest flowered species, a native of Siberia and Eastern Asia. It is figured in the *Botanical Magazine*, t. 714, as *Valeriana sibirica*, and has been in cultivation since the beginning of the last century. The plant attains to a height of about 1 foot to $1\frac{1}{2}$ foot, and has pinnatifid leaves with lanceolate segments and a large terminal lobe. The corymbs of fragrant, yellow flowers are produced in May and June.

P. PALMATA (see fig. 109).—This is a low-growing, spreading plant, 6 inches to 1 foot high. It is found in the central mountains of Japan at an elevation of 2,000 feet to 7,000 feet, mostly in shady, moist places. As the specific name implies, the leaves are palmate; they are nearly all radical. The flower-stems bear corymbs of numerous, fragrant, golden-yellow flowers. These appear in July and August. The plant illustrated is growing on the edge of a bog garden. Seeds of the species were received at Kew Gardens from the Tokio Botanic Garden, in 1906, and plants flowered for the first time in this country in July of last year. *Patrinia palmata* is quite hardy in sheltered places.

P. SCABIOSÆFOLIA.—In general habit and form of leaves this plant greatly resembles our native *Scabiosa arvensis*. Both *P. intermedia* and *P. palmata* are glabrous, but *P. scabiosæfolia* has a pilose stem, the pinnatifid leaves being also hairy. The plant is strong-growing, reaching a height of 2 feet. The loose corymbs of white flowers are developed in May. The species has a wide distribution, being found in Northern Asia, China, and Japan.

P. SIBIRICA.—Although this species was the first of the genus introduced into this country (it is figured in the *Botanical Magazine*, t. 2325, as *Valeriana ruthenica*), it appears to have gone out of cultivation. It comes from the Altai mountains in Siberia. The stems are glabrous and grow about 1 foot high; the radical leaves are spatulate and almost entire; the canline foliage is partly pinnatifid. The small, golden-yellow flowers are borne in close corymbs and possess a Jessamine-like fragrance.

P. VILLOSA.—This is the coarsest-growing member of the genus, reaching a height of between 2 feet and 3 feet. The stem and lobed leaves are thickly covered with stiff hairs. The plant is a native of China and bears loose corymbs of whitish flowers in summer. *W. I.*

TREES AND SHRUBS.

SHRUBBY HYPERICUMS.

The Hypericums flower during late summer and early autumn. They are easy to grow, provided that they are not disturbed frequently. It is, however, a good plan to renew the plants as soon as they show signs of exhaustion, rather than try to coax worn-out plants back to health, for most of the species are easily increased by means of cuttings in summer, whilst others may be propagated from seeds which usually set freely. An annual cutting back in spring is necessary with most species, care being taken at the same time to remove any old wood that can be spared. Hypericums rejoice in good loamy soil and like a position shaded from the midday sun, whilst a few species may be used advantageously in positions where the shade is moderately dense.

The numerous species are widely distributed in Europe, Asia, and North America, whilst some are also found in North Africa. Considerable difference is noticeable in habit.

inch across and noticeable by reason of their pale yellow petals and golden-coloured stamens. The leaves are distinct, being oblong and about $2\frac{1}{2}$ inches long by half an inch in width.

H. BUCKLEYI is a charming little plant for the rockery. Growing 6 to 9 inches high, it forms a pretty little clump with tiny leaves and golden-coloured flowers of moderate size. It inhabits the mountainous regions of North and South Carolina and Georgia.

H. CALYCIUM is well known as an excellent carpeting plant for shady places, whilst it also thrives in moderately open situations. A native of Europe, it is sometimes found wild in Britain, and, like *H. Androsæmum*, is known by the common name of "Tutsan," whilst it is also sometimes referred to as the "Rose of Sharon." It grows but 9 to 12 inches high, suckers freely, and rapidly forms a large mass. The flowers are golden in colour, with reddish anthers, and are about 3 inches across.

H. DENSIFLORUM.—This North American species is a neat-growing plant of rather com-



FIG. 109.—PATRINIA PALMATA: FLOWERS YELLOW.

for, whilst some grow into large, dense masses 3 or 4 feet high, others form dainty little plants suitable for special places in the rock-garden. In the following notes those species only are mentioned which are of garden value.

H. ANDROSÆMUM.—A strong-growing species of good habit, growing $1\frac{1}{2}$ to $2\frac{1}{2}$ feet high and suitable for the shrubbery or wild garden. It may be distinguished by its oval leaves, which are about $2\frac{1}{2}$ inches long and $1\frac{3}{4}$ inches wide, large heads of yellow flowers, each flower being about 1 inch across, and black fruits, which ripen during September and October. The fruits are distinguished from those of other Hypericums by being fleshy. During the process of ripening they turn from green to red before assuming the black colour of the ripe fruit. This European shrub is known under the common name of Tutsan.

H. AUREUM is a native of the southern United States. It is of moderately-strong growth and attains a height of 3 feet. The blossoms appear in August and September. They are from 1 to $1\frac{1}{2}$

feet high, 1½ foot or so high. The leaves are small and linear; the flowers rich yellow, less than 1 inch across and borne in great profusion. This plant requires less pruning than the strong-growing kinds; in fact, little more than the removal of the dead flower-heads.

H. ELATUM.—As is the case with a great many of the species, this has been known under a variety of names, and nine synonyms are recorded. It is one of the showiest of the large-growing set and forms a bush 3 to 4 feet high. The flowers are 1 to $1\frac{1}{2}$ inch across and borne in good-sized inflorescences during July and August. It is a native of the Canary Islands.

H. GALIODES is found in the south-eastern United States, and is somewhat similar to *H. densiflorum* in habit. It grows $1\frac{1}{2}$ to 2 feet high and bears small, yellow flowers.

H. HIRCINUM.—This is easily distinguished from other species by its strong smell, which resembles that given off by goats. It attains a height of 3 or $3\frac{1}{2}$ feet. The leaves are nearly 2 inches long and $\frac{3}{4}$ to 1 inch wide, sometimes

mottled with grey. The flowers are about 2 inches across, the petals being small and the stamens long and so numerous as to almost hide the petals. It is a southern European species. A dwarf variety, in cultivation under the name of minus, rarely exceeds 6 inches in height.

H. HOOKERIANUM.—A Himalayan species which attains a height of $3\frac{1}{2}$ or 4 feet. The young branches are glaucous, the leaves oval and the flowers yellow, somewhat cup-shaped and 2 inches across. It is of decorative appearance and one of the best of the larger-growing varieties.

H. KALMIANUM.—This North American species grows about 2 feet high and bears small yellow flowers in terminal heads. The leaves are short and narrow, and are retained until well on into the winter.

H. MOSERIANUM is a hybrid between *H. patulum* and *H. calycinum*, and is intermediate in habit between these two species. The flowers are almost as large as those of *H. calycinum*, but more shapely. It is a very free-flowering plant, and an excellent subject for a bed on a lawn in a prominent position. It commences to blossom early in July, and continues to flower until frost occurs in autumn.

H. PATULUM.—This species is found both in India and China, and is of elegant habit with rather small, light foliage and shapely, golden-yellow flowers $1\frac{1}{2}$ to $1\frac{1}{2}$ inch across. It is not so hardy as most of the species, and should not be planted in cold situations. The var. *Henrii* is a strong-growing plant, somewhat like *H. Hookerianum*. The growth is sturdy and both leaves and flowers are considerably larger than those of the type. It is also hardier than the type.

H. URALUM is a sub-evergreen shrub from the Himalaya. It grows 3 to 4 feet high under favourable conditions, but is often seen about $2\frac{1}{2}$ feet in height. It is of more account by reason of its light and elegant habit than of its flowers, which are rather small and borne somewhat sparsely. *W. D.*

PELARGONIUM ECHINATUM.

This pretty species, native of the Cape and of Australia, is seldom seen except in botanic gardens, although it has been in cultivation since 1795. Hence it must be supposed that it has never been well known, or that it has been crowded out by the more showy varieties.

It is, however, a plant which appeals to the taste of those who appreciate graceful habit and dainty markings.

The stems are green and somewhat glossy, clothed with spines which turn downwards; they appear to have developed from stipules which have become fleshy and rigid, and no doubt serve as protection against browsing animals during the resting season. The lobed leaves are clothed with soft hairs, especially on the under surface, which give to the plant a greyish appearance.

The flower-stems appear in May and June, and measure a foot or more in length, with four or five branches, each of which is terminated by an umbel of seven or eight flowers (see fig. 110).

The three lower petals are white, the two upper possess a purple spot, and some stripes of the same colour at their bases. The plant was first flowered by Mr. Colville, a nurseryman in the King's Road, Chelsea, in 1795.

Pelargonium echinatum is not a difficult plant to cultivate, but requires a definite period of rest by being dried off at the root gradually after it has finished flowering, when it will lose all its leaves. Repotting should be done in the autumn, and the plants will then start slowly into growth. To form a graceful plant, the shoots should not be cut back, but tied into the desired shape either for baskets or pots. *E. J. Allard, Cambridge Botanic Garden.*

FOTA, CO. CORK.

FOTA, the residence of Lord Barrymore, is renowned for its fine Conifers and other trees, many of which are exceptionally splendid specimens. The lake, in which the best of the Water Lilies are grown, contains a somewhat extensive island, and is one of the many beautiful spots in the grounds. It was formerly planted with *Arundinaria Falconeri*, but in 1904 the plants flowered and died. However, since then a fresh planting of Bamboos has been made, and these are now about 10 feet high. Around the island are enormous Gunneras. Water Lilies and the Canadian Rice, *Zizania aquatica*, grow well in the water. Another charming spot is the retreat in which the tree Ferns are grown. It is entirely surrounded and overshadowed by trees, where no sun can penetrate and no gales intrude. There are about 20 huge Ferns, with stems some 10 feet in height and a frond-spread of over 12 feet rising from an undergrowth of *Woodwardia*

Liquidambar styraciflua, 50 feet; *Fitzroya patagonica*, 30 feet; *Ilex latifolia*, fruiting freely, 30 feet; and *Prumnopitys elegans*, also bearing fruit, 30 feet. The specimen of *Cornus capitata*, better known as *Benthamia fragifera*, is probably the finest in the United Kingdom, though there are taller examples at Heligan, in Cornwall, where it was first introduced into this country. The Fota tree is 40 feet in height, and has a branch-spread of 63 feet, and when in full flower is a glorious sight. *Embothrium coccineum* is represented by a very healthy tree about 30 feet in height, which has sent up numerous suckers, some of them many feet distant from the parent trunk, an occurrence which rarely happens in Cornwall. If these suckers are given room it appears as if they would in time form a large group which would be an exceedingly handsome object when they are in flower. The specimen of *Parrotia persica* is of somewhat prostrate growth, not being higher than 12 feet at its tallest point, but it has a spread of 33 feet and must be a marvellous sight when in its autumnal glory. A fine



FIG 110.—PELARGONIUM ECHINATUM: FLOWERS WHITE WITH PURPLE SPOTS AND STRIPES.

radicans and *Lomaria procera*. One of the finest trees on the estate is a perfect specimen of *Pinus Montezumae*, about 40 feet in height and of like diameter. There are also good examples of this rare Pine at Tregothnan and Menabilly, in Cornwall. Other good Pines are *P. Ayacahuite*, 70 feet; *P. insignis*, 65 feet, with a branch-spread of 80 feet; *P. patula*, 65 feet; *P. religiosa*, 60 feet; *P. parviflora*, and *P. coriensis*, a very rare tree, of which this specimen is supposed to be the finest known. *Abies grandis* is 70 feet in height and *A. religiosa* 65 feet, while others of this family are *A. firma*, covered with cones, 30 feet; *A. brunoniana*, *A. sachalinensis*, *A. brachyphylla*, *A. bracteata*, *A. Albertiana*, *A. Sieboldii*, *A. Veitchii* and *A. Webbiana*. *Cupressus Knightiana* is a very distinct tree, and there is a good specimen of *C. Macnabiana*. Other good trees are *Cryptomeria japonica*, 70 feet in height, with a clear stem of 20 feet; an Oriental Plane, with delicately cut foliage, 70 feet in height, with a spread of 50 feet; a fine Tulip tree (*Liriodendron tulipifera*), with an enormous bole, 60 feet; a specimen of

tree of the Caucasian Walnut, *Pterocarya fraxinifolia*, bore in July long, pendulous, white flower-spikes. *Acacia melanoxylon* is 30 feet in height; *Eucalyptus coccifera* is a healthy tree, and there are good examples of *Torreya myristica*, *Sciadopitys verticillata*, and *Juglans boliviana*. The rare *Fagus Cunninghamii* is 40 feet in height. *Magnolia Campbellii* is 30 feet high, and there is a good example of *M. Thompsonii*. Of shrubs, there are three large bushes of *Edwardsia (Sophora) grandiflora*, standing in the open with no wall in proximity. The tallest is 15 feet in height, and was, in July, covered with seed-pods. The female form of *Garrya elliptica*, which is an uncommon plant in gardens, was in fruit. A curious sight was a common Laurel, some of the foliage of which was pure white. *Osmanthus (Olea) ilicifolius* flowered this year. *Pittosporum Mayi* was nearly 40 feet in height, and there was an enormous bush of *Escallonia Phillipiana*, 25 feet through. A good specimen of *Davidia involucreta* was 10 feet in height; *Drimys aromatica* was of the same stature, as was *Drimys Winteri*, and the rare *Rhaphithamnus cyanocarpus* was

16 feet high. *Desfontainea spinosa* was exceptionally fine and smothered in scarlet and yellow flowers, being fully 9 feet in height with the same spread. Other shrubs were *Aralia trifoliata*, *Clerodendron trichotomum*, *Feijoa Selowiana*, *Eucryphia cordifolia*, *Hakea pugioniformis*, 15 feet; *Escallonia organensis*, *Pittosporum crassifolium*, *Xanthoceras sorbifolia*, *Descainea Fargesii*, *Coprosma lucida*, *Olea lucida*, *Podocarpus chinensis*, *Eucomia ulmoides*, and *Lomatia ferruginea*. There was a fine group of Dogwoods, including *Cornus brachypoda*, fruiting; *C. Kousa*, *C. florida*, *C. latifolia*, in profuse bud; *C. Spathii*, with golden foliage, very handsome; and *C. Mas*, 15 feet in height and 18 feet through. *Lavatera maritima bicolor*, grown against a wall, was 12 feet in height. This plant has for some time been grown in the south-west under the name of *Lavatera assurgentiflora*, which is a very scarce plant, but it was growing by the other *Lavatera* at Fota and bearing pink flowers. Against the same wall was an enormous plant of *Asparagus deflexus*, overtopping the coping and spreading many feet. *Semele androgyna*, perhaps better known as *Ruscus androgynus*, was bearing fruit, which it occasionally does in Cornwall. A pretty unknown climber from Tasmania was bearing large, purple berries. This I met with in two other Irish gardens, but in all without a name. Other wall plants were *Fremontia californica*, 14 feet; *Brachysema lanceolata*, *Hermannia candelans*, *Manettia bicolor*, *Cesalpinia Gilliesii*, and *Indigofera Gerardiana*. In a bed a large group of *Lilium longiflorum* from the Azores was blooming finely, and there were large numbers of Bamboo seedlings ready for planting out in their permanent quarters. There were some exceedingly fine examples of *Olearia macrodonta* in the grounds, the largest being about 15 feet in height and 18 feet in diameter. In an open spot were two splendid specimens of *Phoenix senegalensis*, with a height of about 12 feet and a leaf-spread of 15 feet. In a damp position *Bupththalmum cordifolium*, 50 feet in diameter, was in full flower. *Leptospermum scoparium* was 20 feet in height and 18 feet through, *Carpenteria californica*, against a wall, 9 feet; and *Grevillea sulphurea*, over 6 feet. In a piece of ground in a walled garden were small specimens of *Pinus canariensis*, *P. ceubroides*, *P. leucodermis*, *Quercus macedonica*, *Cercidiphyllum japonicum*, *Schinus Molle*, *Acacia podalirifolia*, *Coprosma repens*, *Aralia papyrifera*, *Corynocarpus laevigatus*, *Calodendron capensis*, *Astelia Cunninghamii*, *Gaya Lyallii*, *Aristolelia racemosa*, *Gordonia anomala*, *Kennedy rubicunda*, *Olearia purpuracea*, *Myrtus bullata*, *Buddleia auriculata*, *Myrsine Urvillei*, *Plagianthus divaricatus*, *Metrosideros florida*, *M. lucida*, *Rhamnus purshianus*, and *Andrela serrata*. *Wyndham Fitzherbert*.

THE ALPINE GARDEN.

SUN AND LIME-LOVING ALPINES.

SOME Alpine flowers need full exposure to sunshine and also thrive best when lime is present in the soil. On rockeries or sunny banks where such conditions exist, the following plants will be found suitable:—

The *Acantholimon*s, or Prickly Thrifts, the best being *A. acerorum* and *A. venustum*; *Achillea rupestris*, *A. umbellata*, *A. argentea*, and *A. tomentosa*; the *Æthionemas*, with their pretty Candytuft-like flowers; *Lyall's Bayonet* plant, *Aciphylla Lyallii*, of quaint and unusually effective appearance; the *Alyssums*, including *A. saxatile compactum*, *A. alpestre*, *A. argenteum*, and *A. serpyllifolium*; some of the species of *Anthemis* or Chamomiles, *A. Biebersteiniana* being one of the finest for the purpose; *Anthyllis montana*; *Astragalus tragacantha*; all the species of *Aubrietia*; the curious little *Centaurea stricta*, which should be given a place by itself so that it may not crowd other occupants of the rockery; the *Cerastiums*; the pretty, yellow-flowered *Coronilla iberica*; hardy *Cyclamens*; almost all the *Dianthus*es, or *Pinks*, especially those with white, grey or whitish leaves.

Erodiums, of which *E. guttatum*, *E. sibthorpi-anum*, and *E. chrysanthum* are especially good; some of the best of the hardy *Geraniums*, such as *lancastrisense*, *argenteum*, and *cinerum*; *Helianthemum*s, or Sun Roses; *Lithospermum* pro-

tratum and *L. purpureo-cœruleum*; *Micromeria Piperella* and *M. rupestris*, two tiny, shrubby plants of fragrant odour and very pleasing for the purpose; and *Phloxes* of the *subulata* or *setacea* section.

Amongst the *Saxifrages*, *Aizoon*, *crustata*, *lantoscana*, and others of this section may be included; also *Sedums* and *Sempervivum*s; and lastly, although far from exhausting the list, *Veronica saxatilis* and its variety *alba*.

It is not, however, everyone who has a rockery composed of limestone, therefore, some may require to make other arrangements to cultivate these lime-loving plants. Such may find a way out of their difficulties very simply. Some limestone chippings and small bits of the same material may be mixed with the soil, but a much easier plan for most people is to use some old mortar rubbish, such as may be secured during the demolition of old buildings. This material, broken small, is much better than fresh lime, which should be avoided, but I have found some of the ground lime now being sold for agricultural purposes useful when old mortar was not obtainable. Even a little bonemeal will be helpful in the absence of the other materials recommended. *S. Arnott*.

The Week's Work.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODGE, Bart., Leonardlee, Sussex.

Sweet Peas.—Any seeds to be sown during autumn should be put into the ground as soon as possible. Autumn sowing has always succeeded well in my experience, the plants flowering earlier than those from spring-sown seed. This year we commenced cutting Sweet Peas in the last week in May, and they grew 9 feet high and flowered very abundantly until August. The soil should be well trenched and heavily manured. After this has been done, some broad drills should be made, placing in these drills some fine, rich soil. The seeds should be sown fairly thickly, in order to allow for some failures. Sweet Peas should be sown in separate colours. After the seeds have been covered, make an application of soot over each row, and directly the plants are seen above the surface soil, let another dusting of soot be given. At the same time, some cotton should be placed along each row, and drawn tightly, in order to preserve the plants from sparrows. A sharp look-out for mice must be kept during winter, and if severe weather occurs, it will be well to place some coal-ashes close to the rows on either side to protect the roots. Some of the very best Sweet Peas for garden purposes are:—Dorothy Eckford (white), Helen Lewis, John Ingman (scarlet), King Edward VII., Evelyn Hemus, Evelyn Byatt, Frank Dolby, and Countess Spencer.

Border Carnations.—The time has arrived when the layers may be severed from the parent plants, and planted in their permanent quarters. If the soil has been prepared by deep trenching and heavy manuring, as was recommended in a former Calendar, all that will need to be done now is to lightly tread the soil and rake the surface ready for planting. In taking up the layers sever the stem with a sharp knife, if this was not done 10 days previously. Secure each layer with a good ball of earth about the roots, and do not plant too deeply. After the planting is done, dust the ground about with soot, and place a label to each variety. The best position for Carnations is one exposed to the sunshine. If they are planted in mixed borders, they should be placed in groups of 6, 12, or 18, according to the size of the border. Those plants intended for supplying flowers merely for cutting should be put in an exposed garden border in the reserve garden or kitchen garden. In some localities it is difficult to keep border Carnations in good condition out-of-doors during winter, and in such cases the layers should be potted up into 3-inch pots, placing them in such a position that glass lights may be placed over them during severe weather. It is not frost that injures Carnations so much as excessive damp. Therefore, a good porous soil should be used, and measures adopted to have the pots thoroughly well drained, taking care to avoid over-watering. The plants may be stood thickly together

in cool frames, or on a sheltered border. Sparrows are frequently troublesome to Carnations, eating the young leaves; therefore, some rows of black cotton should be placed about the plants, just an inch or two above them.

General work.—The present is a good time for trenching the ground and preparing it for planting. Any portions intended for trees or shrubs should be dug deeply, or trenched, and any old tree roots or large stones should be removed. When trenching is being done, the soil should be thrown high enough to allow for sinking. The inexperienced frequently make a mistake in this matter, the consequence being that the ground afterwards falls below the desired level. As frosts may now occur at any time, care should be taken to see that herbaceous plants, tuberous and bulbous plants, whose growth will be cut down by the first severe frosts, are properly labelled before this happens. *Lobelia cardinalis* var. *Queen Victoria* should be taken up and put into pots, unless the district is so favourable that this plant will suffer no harm out-of-doors. Those which are put into pots must merely be placed in a cool structure, where no heat is employed. *Plumbagos*, *Abutilons*, *Grevilleas*, *Streptosolens* and *Fuchsias* should be treated in a similar manner. The lawns may now be mown for the last time this season, but the work should be carried out on dry days as far as possible.

THE ORCHID HOUSES.

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

Cattleyas.—Any plants of *Cattleya Trianae*, *C. Mendelii*, *C. Mossiae* and others which have completed their new pseudo-bulbs, and require more root-room, may be safely repotted. Now that growth is completed, the principal pseudo-bulbs will make many new roots, therefore the plants will quickly become re-established. It being advisable to disturb the roots as little as possible, the old receptacle should be carefully broken, and the corks taken away piece by piece without disturbing the drainage or roots. After this has been done, the whole may be placed into a pot of suitable size, filling in with corks up to the top of the old drainage and surfacing firmly with the new Orchid compost described in last week's Calendar. Such plants as *C. gigas* and *C. Warneri* that have completed their growths may also be repotted. Following this operation water must be afforded very sparingly, merely keeping the compost moist around the edge until each plant has made plenty of roots in the new soil. *C. Dowiana* and its variety *aurea* are the most handsome *Cattleyas*, and are always highly appreciated for hybridising purposes. Plants of this species, as they pass out of flower, should be kept for a few weeks on the dry side, and more light and air should be afforded them; this treatment will assist in the maturing of the new pseudo-bulbs. If kept too moist after the flowering period, the plants, as a rule, do not send out a sufficient number of roots to enable the plants to recover from the strain of flowering. Plants of *C. labiata*, whose flower-buds can be seen pushing up through the sheaths, should be afforded the lightest position in the house. Moderately water each plant whenever the compost is dry, but avoid over-watering. Although the plants may not show the effects of too much watering directly afterwards, they are likely to do so soon after the flowers have faded. Owing to the rain and bad weather, the present season is a critical time with many *Cattleyas*, *Lælias*, and their hybrids now completing their new growths. In some plants the grower will notice that, from lack of sunshine and air, the thin papery sheath which encircles the new pseudo-bulbs has become soft and of a dark colour. The moisture, either from the sheath or the new pseudo-bulb, appears to get between the two, and this is often the cause of the bulbs rotting. Keep the plants rather drier at the roots for a few days, and let the atmospheric moisture in the houses be less than usual. Allow the plants plenty of sunshine and fresh air, and leave the ventilators open a little at night. Let the plants be closely examined every day, and if these signs of injury are noticed in the outer sheaths of the new growths, the sheaths should be slit open from top to bottom and the excess of moisture thus allowed to escape.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Gathering and storing Apples.—These operations should be supervised by an experienced man, as any carelessness either in selecting the fruit or in handling it will have unsatisfactory results. In a large number of instances late-keeping varieties of Apples and Pears are gathered before they are in a fit condition. The later these varieties are left to hang upon the trees, the better will they keep afterwards. Much of the shrivelling noticed in late Apples and Pears in the spring is the result of the fruits having been gathered too early, or of their being stored in too dry an atmosphere. A few degrees of frost will do them no harm, as is proved by the fact that any fruits overlooked at gathering time frequently keep in a good condition on the trees until well into the winter. The latest keeping Apples, therefore, being allowed to remain upon the trees until the last moment, should be given extra care in storing. This applies to such culinary varieties, for instance, as Newton Wonder, Bramley's Seedling, Lane's Prince Albert, Northern Greening, Sandringham and Dumelow's Seedling (Wellington); and such dessert varieties as Ashmead's Colonel, Sturmer Pippin, King of Tompkins County, Lord Hindlip, Reinette du Canada, and Court pendu-plat. The greatest care should be taken in the handling of the fruits in order that they may not be bruised, and every fruit that is not perfect, in this and other respects, should be put aside for present consumption. Assuming that the operations are carried out in the manner I have described, the fruits of the latest varieties may be stored in fairly thick layers. In fact, they are the better for this, and space will thereby be economised. When the earlier varieties have been used, the later fruits may be set out more thinly. In cases where the fruit room is insufficient, there need not be any hesitation in storing late Apples in a cool outhouse or shed until a space can be found for them in the proper room. Where there is room enough in the fruit room, a few of the best fruits of each variety should be set out on a bench or table, labelling them and stating the date of gathering. These will be of interest to visitors, and the fruits may be readily examined from time to time so as to determine when each variety comes to its best condition. Any straw or other material used in the fruit room must be perfectly sweet. I prefer to use kitchen paper, this being clean and capable of being renewed easily. Hay or straw is apt to become musty, and taint the fruit. Regarding the atmosphere of the fruit room, it may be pointed out that excessive dryness is more harmful than damp conditions. A cool, dark room, with atmospheric conditions similar to those generally found in a good cellar is an ideal place for preserving fruits. Indeed, there are few fruit rooms that are better than a good cellar for the purpose.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Pineapples.—Plants of the Queen variety intended for supplying fruits next season will require very careful treatment until they are placed in their fruiting quarters. Gradually reduce the atmospheric temperature and induce the plants to rest until the end of the year. Each plant should be carefully examined before applying moisture, as there will be no need for anything like the former quantity of water at the roots, but on no account allow the soil to become too dry. Keep the atmosphere in the house drier, and discontinue syringing except on fine mornings. The night temperature may fall to 65°, and even lower on very cold nights. During the day it may be allowed to rise to 75° or 80° by the action of the sun, but air must be freely admitted whenever weather conditions will permit. Where the bottom heat can be regulated by hot-water pipes, it should be kept at about 70° but this must not be allowed to fluctuate, otherwise some of the plants may produce their fruits prematurely. Suckers must now be more carefully watered. During the autumn and winter months it will be better to keep the roots on the dry side, taking care, of course, not to carry this to extremes. The plants must not be crowded together in plunging them, as they require to be exposed to all the light

possible. For the same reason the glass in the roof of the house must be washed as often as necessary to keep it perfectly clean. Plants now ripening fruits will be better if placed in a house by themselves, where the atmosphere can be kept warm and dry. The later plants in a moister atmosphere may then be encouraged to swell their fruits. The atmospheric temperature at night in this house must not fall below 70°. During the day, and in sunny weather, it may rise to 80° or 85° if a little air is admitted at the top of the house on such occasions.

Peach and Nectarine trees.—If the young shoots on the trees in the earliest house are sufficiently matured, they will be now shedding their leaves. In such circumstances a few Birch twigs may be drawn lightly over the trees to dislodge the leaves. On no account must these be drawn in the reverse way to that in which the buds are growing, neither must they be used until it has been determined that the leaves are ready to fall. If there is the least evidence of immature shoots, no effort must be spared to get them thoroughly ripened before starting the trees into growth, and it may be necessary to have a little heat in the water pipes. Directly the leaves have all fallen from the trees the operations of pruning, cleaning, and training can be commenced. Assuming that the surplus shoots were removed from the trees directly the crop was gathered, all the pruning that will be needed now will consist in the removal of a few of the older, barer branches, in cases where these can be spared. The trees must be loosened from the trellis, the house and trellis thoroughly cleansed with soapy water, and the trees carefully washed with a mixture of soft soap and sulphur in water. For cleansing the young shoots, only a soft brush must be employed, one that will not damage the buds. When all this has been done, and the trees are again trained, the operator should resist the temptation to overcrowd the shoots, and he should endeavour to train most of the fruiting shoots on the upper side of the main branches. Following the completion of the training, remove 2 or 3 inches of the surface soil from the border by means of a fork, and in place of this apply a top-dressing consisting of fresh loam, with liberal quantities of lime rubble and wood-ashes mixed with it.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

The stove.—Now that the growing season of such plants as Allamanda, Bougainvillea, Codium, Clerodendron, &c., is nearly over, the structure containing them should be thoroughly cleansed and the plants rearranged so that each plant will be well exposed to the light. As the aim of the gardener should be to get the growth already made well ripened, manure will no longer be required, and the amount of water given should be reduced gradually. By the time winter sets in the deciduous subjects should be left dry at the root, but care must be taken not to allow the evergreen plants to suffer from want of water. The growths of perennial climbers should be thinned, and, if not already done, seeds of the annual kinds should be saved. Very little shading will now be required, and unless the blinds are used to conserve the heat of the houses during cold winter nights, they may be taken down any dry day and stored for the winter.

Roses.—All the pot plants should now be turned out of their pots to see that the drainage is in good order, and at the same time any plants which require repotting should receive this attention. Roses thrive in a tenacious loam, with some bonemeal and sifted horse-droppings added. The plants to be repotted should have the balls of soil slightly reduced. The potting must be firmly done, and the plants placed on a bed of cinders, plunging the late kinds to the rims of the pots so that they may not be broken by frosts. Those plants which do not require repotting should have their surface soil removed and be lightly top-dressed.

Cinerarias.—The most forward plants should now be placed into 6 inch pots, in which they will flower. A suitable compost is one consisting of two-thirds loam and one-third leaf-soil and dried cow manure in equal quantities, with the addition of a little bonemeal and sand. The plants should be grown in as cool conditions as possible, syringing the foliage on fine days. A

look-out must be kept for the disfiguring leaf-miner; as a precautionary measure syringe the foliage with a solution of soft soap or quassia chips, which will render the foliage distasteful to the fly.

Calceolarias.—There must be no delay in pricking off the seedlings; the larger plants may be potted direct into thumbs, treating them similarly to the Cinerarias, but using a less rich soil.

Pelargoniums.—The "Zonals" for winter flowering should now be placed in a heated brick pit or a carefully ventilated greenhouse. The plants should be kept as near to the glass as possible, and grown in a fairly dry atmosphere.

Caladiums.—These plants should be grouped in the coolest part of the stove to mature their tubers. Gradually reduce the amount of water given, and throughout the winter keep them on the dry side, but at no time allow the soil to become dust dry, or many tubers will be lost through dry-rot. A temperature of from 55° to 60° Fahr. is as low as Caladiums can be safely subjected to during the winter.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Preparing against frost.—Up to the time of writing, the weather has kept wonderfully open, but owing to want of sunshine vegetation is in a very gross and unripened state. Frosts may now occur any night or morning, and therefore every preparation should be made to guard against preventable injury therefrom. French and Runner Beans have yielded splendid returns, and the plants in many cases are still in full bearing. The Dwarf or French Beans which were sown in the open for fruiting late should be protected by placing a temporary framework over a part of this crop, and any spare lights may be placed thereon. These should be further covered with mats at night when severe frosts are likely to occur. The warmth obtained by the use of the glass will do much to improve the quality of the produce, and good crops may be expected until the end of the present month. The pods of runners should be kept closely picked, and if the ends are placed in a little water and kept in a cool place these will continue good for at least a fortnight provided the water is changed occasionally. Marrows should be treated in the same way, and very late plantings will produce fruits for some time yet, if lights can be placed over them. Continue to remove to specially prepared frames Endive, Lettuce, autumn-sown Cauliflowers, and Parsley. Parsley is such an important crop that every care should be taken to make provision for a continuous supply throughout the winter. Late sowings pricked into cold frames near to the glass, at a distance of 3 inches from plant to plant, and 6 inches between the rows, will give the best results. Plant them very firmly, apply a good dressing of soot, and then a thorough watering. A double row also may be planted at the foot of a south or west wall or building, where some slight protection can be afforded in the event of severe weather. Early plants which have made much growth should have all the old foliage removed. Give a good dressing of soot; stir the surface soil with the Dutch hoe.

Mushrooms.—Continue to prepare fresh beds in the Mushroom shed as the old ones become exhausted. The new beds will do much to stimulate those that are in bearing. Endeavour to maintain a moist, even temperature of about 55°, but in no case should it exceed 60°. Fire-heat should not be employed under any circumstances at this season, or the quality of the produce will be poor and the beds will quickly become exhausted.

Turnip.—These have done exceedingly well throughout the summer, the season having been an ideal one for this crop. Attend to the thinning of late sowings and keep the hoe constantly at work between the rows and plants. Soot is one of the finest stimulants to this crop, and an application once in every ten days is not too frequent; on very poor ground a frequent slight application of vegetable manure will be very beneficial. Lift the roots as soon as they become of sufficient size and store them in ashes or sand, but avoid placing them together in too great a bulk.

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 EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 11—
United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, OCTOBER 12—
Roy. Hort. Soc. Coms. meet. Affiliated Societies Fruit Competition. Conference of Horticultural Mutual Improvement Societies at 4 p.m. Lecture at 3 p.m. by Mr. Thomas H. Mawson, on "Some Gardens of the later Renaissance." British Gard. Assoc. Ex. Council meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—50.6°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 6 (6 P.M.): Max. 60°; Min. 44°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 7 (10 A.M.): Bar. 30.0; Temp. 60°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 6: Max. 56° Bury St. Edmunds; Min. 48° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Climbing Plants, Ornamental Shrubs, Trees, &c., at the Royal Gardens, Hampton Court, by order of Mr. J. Naylor, by Protheroe & Morris, at 12.

TUESDAY AND WEDNESDAY—
Annual Sale of well-grown Nursery Stock, at the Sunningdale Nurseries, Windlesham, Surrey, by Protheroe & Morris, at 12.30.

WEDNESDAY—
Azaleas and Bays, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

WEDNESDAY, THURSDAY, AND FRIDAY—
Sale of well-grown Nursery Stock, at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

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

Thanks to Aiton's *Hortus Sir Joseph Banks*, a record, though but an imperfect one, exists

of Banks's services to horticulture by way of the importation of seeds and living plants from various parts of the world. Unfortunately, no distinction is made in Aiton's work between the plants introduced by Banks personally and those sent home by his collectors and friends. In yet other respects, the results of his activity are not as widely known as they deserve to be; for he was something more than a patron of botany and horticulture, and an almost perpetual President of the Royal Society.

Many individual pioneers in discovery and invention have been forgotten, or neglected, by posterity, partly through their deeds having been overshadowed by those of numerous immediate followers, or even contemporaries, and partly from a want of appreciation by the public of the value and importance of first steps in regions previously unexplored. This was for many years the fate of Banks, as far as the generality of men is concerned. It is true that among horticulturists Banks is remembered as one of the first members of the Royal Horticultural Society, and his name is commemorated by the Banksian Medal, instituted after his death in 1820, and awarded from time to time by the Floral, Orchid, and Narcissus Committees.

Recently, however, the publication of his *Journal of the Voyage of the "Endeavour,"* edited by Sir Joseph Hooker, and of the *Illustrations of Australian Plants*, edited by Mr. James Britten, have done much to rehabilitate his fame as a great pioneer of science and colonisation. Now, a highly appreciative volume on *The Father of Australia**—fittingly enough from the pen of a member of the Commonwealth, Mr. J. H. Maiden—provides a final vindication of Banks's title to a place in imperial history. The careless hand of chance casts the shroud of oblivion at hazard. Forms of animal and vegetable life may undergo extinction,

Commonwealth, but it is now enshrined in the history which Mr. Maiden has written and will be perpetuated in the memorial which he hopes to establish. These, indeed, are the explicit objects for which Mr. Maiden has written the life of Sir Joseph Banks—to disseminate information concerning his services to mankind and to obtain funds for the purpose of erecting a memorial. The volume has been printed at the public expense, and it is hoped that the proceeds of the sale will considerably augment the Memorial Fund, which has been already started. The book consists of a chronological series of extracts from published and un-



[By courtesy of the Royal Horticultural Society.]

SIR JOSEPH BANKS, BART. 1743—1820.

memories of the world's great men may fade. It is among the finest acts of mankind to intervene effectively, relieving the organisms which Nature has doomed and rescuing from oblivion the names of the world's benefactors. Like the Australian tree, *Eucalyptus macrocarpa*, which survives in one locality only and which, thanks to the efforts of men like Mr. Maiden, is to be preserved, so the grateful memory of Banks, "Australia's greatest early friend," survives in the minds of the more thoughtful members of the

* *Sir Joseph Banks, The Father of Australia*. By J. H. Maiden, Director of the Botanic Gardens, Sydney, N.S.W., pp. xxvi. + 244, with 64 illustrations. Sydney: W. A. Gullick, Government Printer. London: Kegan, Paul & Co. 1909.

published documents, suitably illustrated from authentic sources, and connected by notes and explanations which make it into a continuous narrative. Mr. Maiden, who is no stranger in this country, has spared no pains in his task, and has, in leaving Banks, as it were, to tell his own story, edited a romance so attractive that the reader is loth to lay down the volume till the end of the adventurous story is reached. Prominence is given to Banks's great and persistent efforts in introducing useful plants into the colony, and in securing for cultivation at Kew seeds and living plants of the highly characteristic flora of the new country. In this connection it is interesting to read

Sutton's report to Sir Joseph Banks, dated December 28, 1800, on the results of his attempts to introduce certain useful plants into the colony. It runs: "I do myself the honour of writing to you an account of what plants I have been able to take alive to New South Wales:—One Olive; six Black Mulberries; six White ditto; four Willows; 18 Chily Strawberries; two Walnuts; two Spanish Chestnuts; two Oakes; four Pomgranites; two Plantains; Mint, and the following sorts of vines—Tokay, White Fontiniac, White Muscadine, Black Fontiniac, Constantia, and Muscat of Alexandria. It is with painful concern I inform you, sir, that I have not been able to bring the Hops and many other valuable plants that I had on board": no mean achievement when it is remembered that, owing to a variety of causes, the plants were about a twelvemonth aboard ship, and that these were the days before Wardian cases were invented.

Mr. Maiden's account of events in the early days of Australian settlement and exploration is not limited to the part taken by Banks. It embraces particulars of many other prominent personalities, including Robert Brown, who was naturalist to Flinders's expedition, 1801-1805.

We hope that Mr. Maiden's admirable efforts on behalf of the memorial to Banks will meet with the most ample success.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on Tuesday, the 12th inst. At the 3 o'clock meeting of Fellows, a lecture on "Some Gardens of the Later Renaissance," will be delivered by Mr. THOMAS H. MAWSON.

—In regard to the Spring Bulb Show, 1910, the Council inform us that (subject to their general rules) the following prizes presented to them by Messrs. ROBT. P. KER & SONS have been accepted:—Class 12 (amateurs): Twelve pots of *Amaryllis* (*Hippeastrums*); each pot must contain one bulb only, and not more than one pot of any one variety can be included; size of pots optional; prizes, £3, £2, £1.

COMPETITION FOR NEW APPLES AND PEARS.—At the fortnightly meeting of the Royal Horticultural Society, to be held on Tuesday, the 26th inst., special prizes are offered for varieties of Apples and Pears introduced to commerce since 1892. Nine of these classes are for Apples and four for Pears. They are divided between amateur and trade exhibitors, five of the Apple and two of the Pear classes being for nurserymen. Amateur competitors will be given money prizes, but trade exhibitors will receive medals, the most important being the Society's Silver-gilt Knightian Medal offered for 12 dishes of Apples of distinct varieties. As a guide to intending exhibitors, we give the following list of the more important varieties of Apples and Pears put into commerce since 1892, with the names of the distributors, raisers, or the exhibitor who secured an award for the variety. We do not suppose the list is complete, and, therefore, shall welcome any additions our readers may send for publication in the next issue. Further, in the case of *Gabalva Pippin*, the variety was grown locally by the late Mr. Andrew Pettigrew, at Cardiff Castle, for a number of years before it was brought before the notice of fruit-growers. Whether or not such varieties may be included in the competition is not perfectly clear, but we may suppose they may, if it cannot be proved they were in general commerce:—**APPLES:** Norfolk Beauty (W. Allan); Allington Pippin,

Christmas Pearmain, Hambling's Apple (Geo. Bunyard & Co.); Atalanta, Armorer (J. Cheal & Sons); Rival (Clibran's); William Crump (W. Crump); Star of Devon (J. Garland); Ballenora Pippin, Ard Cairn Russet (Baylor Hartland); Charles Ross, The Houblon (W. Horne & Sons); Goodwood Pippin (Parker); Stanway Seedling (T. H. Kettle); King's Acre Bountiful, King's Acre Pippin (King's Acre Nurseries); Royal Late Cooking (Owen Thomas); Coronation (Pyne); Hector MacDonal, Winter Quarrenden (J. R. Pearson & Sons); Early Rivers, Rivers' Early Peach, Thomas Rivers, St. Martin's, Prince Edward (Thomas Rivers & Son); King Edward VII. (W. B. Rowe & Sons); Encore, Mrs. Phillimore (Charles Ross); Fenn's Wonder (T. Simpson); Diamond Jubilee (A. J. Thomas); Feltham Beauty, H. Ballantine, Langley Pippin, Middle Green, Marshall Oyama, Mr. L. de Rothschild, Mr. John Seden, Rev. W. Wilks, The Langley, Veitch's Scarlet (James Veitch & Sons, Ltd.); Lord Hindlip (J. Watkins). **PEARS:** Blicling, Santa Claus (Geo. Bunyard & Co.); Beurre Naghan (J. Cheal & Sons); Conference, Marquis, Red October, St. Edmund, St. Luke, Parrot (Thomas Rivers & Sons); General Wauchope (Chas. Ross); Charles Ernest (Jas. Veitch & Sons, Ltd.).

HORTICULTURAL CLUB.—The house dinners of the club will be resumed on Tuesday, the 12th inst., at 6 p.m., at the Hotel Windsor. Mr. H. INIGO TRIGGS, A.R.I.B.A., will give a lecture on "Italian Gardens," illustrated with lantern slides and plans.

ROYAL GARDENERS' ORPHAN FUND.—The treasurer of the Royal Gardeners' Orphan Fund acknowledges the receipt of £5 left from her small estate by the late Mrs. ANNE CLAYTON, wife of Mr. H. J. CLAYTON, Wharfè Bank, Ulleskelf, and formerly of Grimston Park Gardens, Tadcaster, "in remembrance of her husband's early connection with the fund."

WINTER SPRAYING.—The Rev. W. WILKS, M.A., Secretary of the Royal Horticultural Society, writes as follows:—"Now that the time for winter spraying of fruit trees is drawing upon us again, may I call the attention of fruit-growers and amateurs to the report of the conference on Spraying Fruit Trees held in the hall of this Society on October 16, 1908, and which may now be obtained in book form? The work deals with the methods of spraying for both entomological and fungal pests, and gives information respecting washes, spraying machinery, &c. It forms the latest collated information on the subject, and may be had at the offices of the Royal Horticultural Society, Vincent Square, Westminster, price 1s."

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The 23rd annual dinner of the above society will be held at the Waldorf Hotel, Aldwych, W.C., on Thursday, October 28, at 6.30 p.m. J. B. SLADE, Esq. (of Messrs. Protheroe & Morris), will occupy the chair.

PHARMACY'S DEBT TO BOTANY.—The following extract is taken from an inaugural address delivered by Prof. ALEXANDER TSCHIRCH at a recent meeting of the Pharmaceutical Society and published in the Society's *Journal*:—"So far I have spoken chiefly of the problems of pharmacology and of the closely connected pharmacology-physiology. But are we standing on safe ground if the botanical origin of the drug is not known? To pharmacology-pharmacology will always owe an indelible debt for providing it with a sure basis for work. It is especially here in London that attempts have been made to determine the botanical origin of all those drugs, the derivation of which was not definitely

known; where HANBURY often devoted himself to such problems and where HOLMES has worthily maintained the tradition; London, which, botanically speaking, is a suburb of Kew, in whose herbaria, gardens, and museums immense botanical treasures are piled; London, which possesses in the Museum of the Pharmaceutical Society a wonderful collection of drugs; London, with its wharves at which the ships of every nation discharge their cargoes, and with its immense warehouses which permit of a deep insight into the commerce in drugs, to feel the pulse of which is important to every pharmacognosist. Many pharmacology-botanical problems also slumber in the lap of pharmacology. Although lately progress, especially in pharmacology-anatomy, has been made chiefly on theoretical and purely scientific lines, as, for instance, the study of the anatomical and morphological development of medicinal plants to which for the last twenty years, in conjunction with numerous pupils, I have devoted much attention, nevertheless comparative pharmacology-anatomy has brought to light many facts directly available for practice. I will allude only to the microscopical analysis of powdered drugs. This branch, which has been fostered here in London by GREENISH, enables the pharmacist to protect himself from fraud, and has become a worthy companion of that most important branch of pharmacology, the chemical assay of drugs. Another question of eminently practical importance is that of the injurious pests of cultivated medicinal plants and of drugs. I have termed this branch of pharmacology pharmacology-pathology. Very little work has as yet been accomplished in this field. Botanists have given us some information with regard to the pests that attack living medicinal plants, but up to the present no one has systematically devoted himself to the subject, with the exception of the practical men in the great cultivating districts of South California, where there are plantations of Citrus several square kilometres in extent and a Peach garden of 19 square kilometres. There great attention is paid to these pests, and means of combating them (as, for instance, the scale insects of the Citrus) are extensively practised. The cultivators know that attention in this respect brings its abundant reward, and that neglect is followed by severe damage. Of no less importance is a knowledge of the pests that attack drugs. To be able to combat one pest alone its conditions of life must be known. How many drugs are not destroyed in the warehouses, drug houses, and pharmacies by the attacks of insects? How often does not vanilla become mouldy and unsaleable? A systematic study of these pests, whether of animal or vegetable nature, and of the means of resisting them, is one of the problems of the pharmacology of the future, and one which must result in great gain for the practical pharmacist."

A NEW ENEMY TO THE STRAWBERRY.—In some parts of Germany the Strawberry plants have been attacked for the first time by a beetle, *Anthonomus rubi*, which is not unknown to cultivators of Raspberries and Brambles as the Raspberry flower piercer. The eggs of the beetle are to be found in the flowers, and it is an easy matter to find evidences of the injury done by the beetles. The pierced flowers wither and fall to the ground. From the eggs arise caterpillars which feed on the tissues of the flowers. At a later date, the caterpillars become chrysalids, which remain in the earth till the following spring, when they develop as beetles, and at once begin their destructive work. The best means at present known for destroying them consist in searching the plants before and during the flowering season, and stripping off the creatures into a sack. The removal of the blooms that have been pierced helps to lessen the number of the insects.

DISTRIBUTION OF PLANTS.—It is announced that the Commissioners of His Majesty's Works and Public Buildings intend to distribute this autumn, among the working classes and the poor inhabitants of London, the surplus bedding-out plants in Hyde and Regent's Parks, and in the Pleasure Gardens, Hampton Court. If those interested will make application to the superintendent of the park nearest to their respective parishes or to the superintendent of Hampton Court Gardens, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution. Any costs of carriage must be borne by the recipients.

LÆLIO-CATTLEYA × JASON (CATTLEYA HARDYANA × LÆLIA LATONA).—MR. WILKINSON, gr. to G. W. JESSOP, Esq., Cliffe Cottage, Rawdon, Leeds, calls our attention to the fact that the name was recorded from material supplied by him before the recording of the L.-C. Jason (L.-C. Massangeana × C. Dowiana aurea), reported in the *Gardeners' Chronicle*, August 21, 1909, p. 136, in reference to a plant shown by Lt.-Col. HOLFORD. Therefore, by right of priority, Mr. JESSOP's name must be retained. Lt.-Col. HOLFORD has changed the name of his plant to L.-C. pactolus.

FLOWERS FROM JOHANNESBURG.—MR. JAS. HALL sends from his garden in Johannesburg pressed fresh-gathered flowers of Violets and Bunch Primroses of very fine quality, the Violets especially being very large and still fragrant. Mr. HALL says: "Such flowers are obtainable for several months, and Roses are even more prolific and lasting here than in Great Britain. Our spring is in August. Frost has not been so severe this winter as it has been sometimes, yet some mornings during the past fortnight ice half-an-inch thick has been on the still water in the tanks in exposed situations. I may say that all the leaves have fallen from the deciduous trees, Roses, &c. I have all my Roses pruned. Vines, and other plants requiring pruning, if pruned after the end of July, bleed seriously and suffer in consequence. Those who do not understand how to manage our red, gritty soil complain that it is 'very poor.' But one only needs to know how to work it—such is my experience, but the secret of working it has only been gained after thirty years of constant application. In the natural red ground I grow all my best produce, whether in pots, tins, or the open ground. Even Ferns thrive in it, especially our native representatives of *Adiantum Capillus-Veneris*, which may be grown as large as *A. Farleyense* occasionally, under favourable conditions. By the way, what a remarkable plant *Adiantum Capillus-Veneris* is! The species in some form is found almost all over the world. I do not know what you call the South African form, but it is so much larger and better than the European type, that I believe it has a different specific name in gardens. Our form is much nearer to the Japanese type, which, I think, is called 'Mariesii,' than it is to the British wild plant. These speculations call lots of things to the mind of an old rambler, and the mention of the Japanese affinity reminds me of an old friend submitting to me specimens of *Cyrtomium* collected on the Boschberg, and which seems to still further connect the flora of these widely separated countries. But to return to floral flowering plants, I think gardeners in the Old Country would be much surprised to see that for flowers we depend largely on the garden plants grown in Great Britain, and to see the perfection attained here with Carnations, Stocks, Violets, Primroses, Dahlias, Chrysanthemums, and all the popular flowers of British gardens.

We get British seeds. I would like to say a word to intending colonists, no matter where they may be intending to pitch. Do not turn up your nose at 'hungry' or supposed unproductive soils. I have had much to do with such, where high-class, unthoughtful gardeners have failed, and my experience has been that 'hungry' soil, properly manured, both by substantial manure and liquid during the season of growth, is the best you can have. For example, take that sandy stretch from Ostend to Brussels. What region is more productive? But the produce depends on the man and his methods more than on the soil, which is anything but fertile." It may be added that on Tuesday, August 17, after the above letter was written, there occurred a heavy snowstorm at Johannesburg. Much damage was done to ornamental trees, many of them being broken down under the weight of snow.

THE HASTENING OF GERMINATION.—The germination of seeds may be hastened by various means. Soaking in hot water has been employed for this purpose often and successfully. According to the *Agricultural News of the West Indies*, vii., 1908, dilute chlorine water is efficacious. Seeds of various kinds treated with dilute chlorine water and placed in sunshine germinate in six hours; but the seeds must be washed in ordinary water immediately the radicles appear, otherwise the seedlings are injured. Other agents mentioned in the article are very dilute alkaline solutions and formic acid (1 part in 5,000 of water). A contribution on the allied subject of the stimulation of refractory seeds to germinate is made by M. J. AYMARD, *Fils*, and published in the *Annales de la Société d'Horticulture de l'Hérault*. M. AYMARD finds that old seeds may be caused to germinate by steeping them for 10 hours in water at about 68°, to which calcium chloride has been added at the rate of 30 to 40 grains per pint of water. The most marked results were obtained with old seed of *Viola cornuta*; treated seed giving a germination of 60 per cent., while untreated seed failed to germinate.

NYMPHÆAS AT DARMSTADT.—Mons. H. HENKEL informs us that amongst the many new Nymphaeas now flowering in his nurseries at Darmstadt is a white, night-flowering, new species of the Lotus type from Australia. It resembles *N. Zenkeri* from West Africa. There is also flowering a new, blue species from Uganda. Amongst hybrids a dark red hybrid of *N. purpurea*, a dark blue hybrid of a new form of *N. Heltzei*, and a soft blue hybrid of *ampla* var. *speciosa*, are flowering. A blue Nymphaea, hardy at least in Northern Italy, is also in flower, together with many others.

PUBLICATIONS RECEIVED.—*Fruit Ranching in British Columbia*. By J. T. Bealby. (London: Adam and Charles Black.)—*The Book of Nature Study*. Edited by Bretland Farmer, D.Sc., F.R.S. (Vol. V.) (London: The Caxton Publishing Co., Strey Street, W.C.)—*The Journal of the British Gardeners' Association*. (October.)—*Trees and Shrubs of the British Isles*. By C. S. Cooper and W. Percival Westell, F.L.S. (Part 12.) (London: J. M. Dent & Co., 29 & 30, Bedford Street, W.C.) Price 1s.—*The British Year-Book of Agriculture and Agricultural Who's Who, 1909-10*. Published by Messrs. Vinton & Co., Ltd., 8, Breams Buildings, Chancery Lane, E.C. Price 5s. net.—*Pruning* (Illustrated). A compendium of outdoor work, written by a practical fruit grower for fruit growers, with special supplement for small holders. Published by The Lockwood Press, 1, Mitre Court, Fleet Street, E.C. Price 1s. net.

FLORISTS' FLOWERS.

GLADIOLUS.

THE results of hybridising are very marked in *Gladiolus*, especially in the section which flowers in late summer and autumn. Three distinct races were originally raised, and for a time the varieties were sold as one or other of these, namely, *gandavensis*, *Lemoinei*, and *Nancyanus*. During recent years, however, the three sections have been intercrossed so freely that any attempt to classify them is almost hopeless. The *gandavensis* section was the first raised. Louis Van Houtte gives the parentage as *G. psittacinus* and *G. cardinalis*, while Dean Herbert, who also raised some of the early hybrids, names *G. oppositiflorus* as the second parent. The name of Kelway, of Langport, looms large in the history of this section, the firm having made a speciality of *Gladioli* for at least 50 years.

The *Lemoinei* section is the result of crossing *G. purpureo-auratus* with the best of the *gandavensis* varieties. This race is named in compliment to M. Lemoine, of Nancy, who raised the first of them in 1875. A few years later he introduced the third section *Nancyanus*, the result of crossing *G. Saundersii* with his *Lemoinei* race. Under the name of *Childsii*, varieties similar to *Nancyanus* were distributed in America. These are said to have been raised by Max Leichtlin and sold by him to an American firm. The parentage is given as *G. Saundersii* and varieties of *gandavensis*.

At the present time Mr. H. H. Groff, of Simcoe, Ontario, Canada, is distributing a strain popularly known as Groff's hybrids. In the breeding of this race Mr. Groff claims to have used the best varieties he could obtain of all three sections, *gandavensis*, *Lemoinei*, and *Nancyanus*, including *Childsii*. This strain is not remarkable so much for the size of the individual flowers as for their great diversity of colours, which include yellow and blue, and for the height of the spikes, which are 5 feet to 6 feet, with 30 or more flowers. Another remarkable point about this strain is the exceedingly low price of the bulbs. This, no doubt, is the result of growing tens of thousands of bulbs from seeds in a soil and climate exactly suited to their requirements.

A commendable method adopted by some English nurserymen is to offer the bulbs according to colour of flowers, instead of making a catalogue of several hundred named varieties. In his autumn and spring catalogue, 1908-9, Mr. Groff lists only five named varieties amongst the thousands of bulbs offered. The colours are divided into five groups, as follow:—

Dark hybrids, including cerise, crimson, purple, red, scarlet, and violet.

Light hybrids, including white, cream, pink, flesh, light rose, and pale yellow, with more or less darker markings in the throat.

New yellow hybrids.—These undoubtedly are Mr. Groff's greatest success with *Gladioli*. For the past six weeks a bed of *Kniphofias*, amongst which a hundred of these bulbs were planted, has been an object of great admiration in the Royal Gardens, Kew. These will supply a long-telt want, for in the past good yellows in quantity have been unknown. The colour is a yellow, not a rich golden-yellow but a much more decided yellow than the so-called yellow Sweet Pea. In some of the flowers there are only faint coloured lines, while in others the blotches are very distinct. The majority of the spikes at Kew were between 5 feet and 6 feet in height, many of them producing one or two side spikes. In some spikes the flowers had the hooded characteristics of the *Lemoinei* section, while others resembled *gandavensis*.

Blue and purple shades.—These also are a great advance on those previously offered in any quantity. A companion bed to the one

containing the yellow varieties at Kew contains 100 bulbs of these shades. The tints include lilac, heliotrope, clematis-blue, and purples with the usual varied markings in the throat. Many of the spikes are a great advance on the variety Baron Jules Hulot, one of the best-known purples. Some of the spikes have the hooded Lemoinei flowers. Mr. Groff claims to have used the species *G. papilio* to obtain these shades of colour.

Four of the five named varieties offered in Mr. Groff's catalogue flowered at Kew: Blue Jay, a

NOTES FROM A "FRENCH" GARDEN.

OUR first batch of Lettuce Little Black Gott is now coming through the ground. We are still sowing batches of different varieties, it being important that the plants shall become fit for transplanting at various dates. We have now prepared the ground and set the cloches in position for pricking-off the plants, and shall start this operation as soon as the cotyledons (seed leaves) are developed. The plants will be lifted carefully and the tips of the roots pinched

may be picked out in the frames if no cloche is available, putting 280 or 300 under each light.

We are now picking out in frames the Cauliflowers raised in September. Two barrow loads of well-decayed manure were put under each light. We plant 240 to 250 Cauliflowers to each light. The last row of plants is set 6 inches from the bottom board to prevent the Cauliflowers in it from getting drawn. We keep the lights closed for two or three days until the plants become established in their new quarters. After this period ventilation is given day and night except in case of frost.

The Ox-heart Cabbages have been pricked out and the ground for their final quarters is being prepared by manuring it heavily and digging it.

Now that the crops have been cleared from the old manure beds, we break them up as fine as possible and set the decayed manure in ridges 15 feet apart (measurement taken from each ridge). This manure, which will be used as soil in the ensuing year, will be broken up again within two or three weeks.

In gardens where the soil is of a heavy nature, as in our case, it is advantageous to drain thoroughly the space allotted to the hot-beds. The beds have to be heavily watered, which is apt to make the soil sour and soppy and prevent the manure from decaying; moreover they are only exposed to the air for a short period, and this in the rainiest season of the year.

In places near to a town where clinkers can be procured conveniently, a good layer of these would drain the ground sufficiently. In other places the space must be thoroughly drained with pipes. *P. Aquatias.*

TRADE NOTES.

DISSOLUTION OF PARTNERSHIP.

THE partnership between Alfred Watkins and Chas. David McKay, carrying on business as Watkins & Simpson, at 12, Tavistock Street, Covent Garden; 13, Exeter Street; Mercer Avenue, Long Acre, London; and at Evesham, in the county of Worcester, was dissolved on May 10, 1909. Mr. Alfred Watkins will continue the business alone as Watkins & Simpson in the same manner as heretofore.

Mr. C. D. McKay has entered the service of Messrs. Cooper, Taber & Co., Ltd., seed merchants, 90 and 92, Southwark Street, London, S.E., in which firm he has obtained shares.

Mr. H. SCHUSTER.

We are informed that Mr. H. Schuster, for many years traveller for Messrs. Linden et Cie., Brussels, has been appointed to represent the "Etablissement Charles Madoux-Brassine," Avenue de la Chasse Royale, Anderghem, Bruxelles, Orchid growers and importers.

APPLE REV. W. WILKS.

In the collection of fruit trees in pots shown by Messrs. Jas. Veitch & Sons, Ltd., at the last meeting of the Royal Horticultural Society (see p. 237), an outstanding feature was a number of maiden trees of this fine culinary Apple. The tiny trees each bore several large fruits, two of which are shown in fig. 112. The variety was granted an Award of Merit at the meeting held on September 20, 1904, and was first figured in *Gardeners' Chronicle*, October 8, 1904. It was raised from Peasgood's Nonesuch crossed with Ribston Pippin. The tree is a strong grower and a free cropper. The flesh is white, juicy and pleasantly flavoured. The skin is yellowish-green spotted with brown and scarlet.



[Photograph by John Gregory.]

FIG. 112.—FRUITS OF APPLE REV. W. WILKS ON A MAIDEN TREE, AS EXHIBITED BY MESSRS. JAS. VEITCH AND SONS, LTD., ON THE 28TH ULT.

great advance in the blue shades and a strong grower; Afterglow, salmon, shaded fawn, with violet-blue markings in the throat; Dawn, pinkish-salmon, shaded white, claret markings on the petals, sturdy habit; La Luna, creamy-white, changing to white with age, brown markings in the throat; and Peace, a white variety, pale lilac markings inside the flower, which with age also appear on the edges of the petals. [See *Gardeners' Chronicle* Supplementary Illustration, March 30, 1907.] A.

off with the fingers to cause the development of laterals. Where there are plenty of cloches, not more than 24 plants need be put into each cloche, but if the quantity is limited we put as many as 30 in each cloche. The Lettuces are always set at the least 1 inch within the edge of the bell-glass to prevent the leaves, later in the season, from touching the glass in frosty weather. The beds must be inspected early in the morning to catch any slugs found inside the cloches. The Passion or Palatino Lettuces

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PROPOSED MEMORIAL TO PETER BARR (see pp. 232 and 234).—Mr. John Wright's suggestion of a form of memorial of the late Mr. Barr for the benefit of the Royal Gardeners' Orphan Fund should appeal strongly to a wide circle of readers. It does seem, however, having regard to Mr. Barr's special association with the Daffodil, that it is a movement which should be promoted by the Narcissus Committee of the Royal Horticultural Society. Could not the chairman, Mr. H. B. May, convene a special meeting of that Committee? Mr. Wright suggests the creation of a memorial in perpetuity. That, presumably, means the raising of a sum sufficiently large to enable the interests accruing from Three Per Cent. Consols to provide an orphan pension of £13 per year. To do that and allow a small margin to meet office expenses, a sum of some £450 would be needed. If so much can be raised, well and good. If not, then some previous examples might be followed, and the memorial made terminable when the sum raised is exhausted. In addition, the Narcissus Committee could easily have an excellent memorial of their old "King" by having his photograph enlarged to full size, and, with an inscription, hung in the room in which that body hold their meetings. *V. M. H.*

—There surely can be no better way of instituting a permanent memorial of Peter Barr than the one Mr. Wright suggests, namely, through the Royal Gardeners' Orphan Fund. The writer well remembers Mr. Barr as one of those who laid the foundation stone of the fund in 1837. I am aware that these are times when money is not easy to get for such objects, but I think a good sum could be raised for the object in question, and shall be glad to give my own mite. *H. J. C.*

A FINE SPECIMEN OF CUPRESSUS MACROCARPA.—The following particulars relate to a tree of *Cupressus macrocarpa* growing in the Marquis of Lansdowne's garden at Derrew, Kenmare, Ireland:—The tree was planted 46 years ago, and is 59 feet in height. The extreme spread of branches measures 66 feet, while the trunk is 12 feet 9 inches in circumference at a distance of 3 feet above the ground level. It would be interesting to know whether any larger trees of this species exist in the British Isles. *William Holbrow.*

GLADSTONE PEA.—With so many varieties of Peas in cultivation, it is difficult to appraise the merit of one over another, but Gladstone is certainly a most reliable, late cropping variety. The pods are well filled and they are generally produced in pairs. The flavour is excellent. My late sowing was made on June 21, and now, at Michaelmas, the plants are giving us many gatherings, the cold, showery weather evidently suiting the plants, as no trace of mildew can be seen. This variety and Autocrat are the two best late Peas here. *J. Mayne, Bickton, October 1.* [A dish of Peas received from Mr. Mayne perfectly bears out his description of this variety.—Eds.]

THE FIRST NATIONAL DAHLIA EXHIBITION.—On a recent occasion, when certain members of the National Dahlia Society met at Mr. Arthur Turner's nursery at Slough, Mr. Turner handed to each of his guests a document of exceeding interest in the form of a copy of the schedule of classes and prizes offered at the first National Dahlia Show held in this country. This was in 1858, and by a coincidence the days of the show were September 23 and 24, Thursday and Friday, just as these days and dates fell this year. The place of the show was the old St. James' Hall, a building which also served for the first National Rose Show. It is interesting to note as showing how custom varies to-day as compared with that in 1858, that the classes were then limited almost exclusively to the large Show and Fancy flowers, no other section being in that day required. Next to these large flowers the oldest section is doubtless the Pompon or Bouquet, but no provision having been made for them in 1858 leads one to the conclusion that then they had not fully emerged from the transition stage into

that of a recognised section. There is at the end of the schedule one class for Bedding Dahlias, evidently the dwarf, compact habited section having large flowers, such as were those once known as Crystal Palace bedders. There is such a section to-day, and Mr. Turner has in his catalogue about 12 varieties, but it is doubtful whether one of these can equal for garden value the best of the Pompons. Cactus and single Dahlias were not popular in 1858. So far have Dahlias developed. Even the shows and fancies have much improved in habit since then, being now much dwarfier. A comparison of this schedule which was compiled 51 years ago with that of the present National Dahlia Society is indeed interesting. *A. D.*

BORDERS FOR VINES (see pp. 193, 220).—I know there is much difference of opinion among cultivators as to the value of a combination of inside and outside borders as against having the roots entirely within theinery. I have had good results from such a combination of rooting space, but am forced to the conclusion that if the roots are confined within theinery they are much better under control. Therefore, better results are obtained with such varieties as Mrs. Pince, Muscat Hamburg and Duke of Buccleuch, for examples, not forgetting that highly-flavoured Grape Lady Hastings. The opponent to the wholly inside border argues that it is all very well if you have careful assistants who supply moisture to the roots when they require it, but if there is a chance that they may suffer from want of attention, an out-of-door rooting medium is a distinct gain, because the roots obtain under more natural conditions that moisture denied them in an entirely artificial border indoors. I am confident that early Grapes, say those ripened in May, are more easily managed in an inside border than in one where the roots are exposed to rains in the early spring, when the roots require warm conditions. Again, during heavy August rains, so common in recent years, an entirely inside border does much to prevent the splitting of the berries of Madresfeld Court, an evil which this Grape is addicted to in some localities and under some conditions. Mr. Shingler, who has probably staged the finest specimens, from a colour point of view, of Mrs. Pince during the last ten years, is a firm adherent of inside border culture for this Grape, and the late Mr. Meredith, at Garston, near Liverpool, as far back as 1875, produced the first perfect examples of this Grape from an inside border. Many poorly-coloured examples are the result of a cold rooting medium, which is detrimental to the production of rich bloom. In a like manner also does a too deep border act against the welfare of the vines. From 2 feet to 3 feet in depth, with sufficient drainage to maintain porosity of the soil, is all that is necessary. Liberal supplies of moisture are absolutely necessary at certain stages of growth, but water stagnation about the roots is an evil, and one most common in excessively deep borders. *E. Molyneux.*

ENDURANCE OF POTATO VARIETIES.—The exact date is not given, yet presumably nearly 100 years have elapsed since Mr. John Sheriff prepared his paper on the "Curl Disorder in Potatoes" for the Royal Caledonian Horticultural Society, and from which Mr. D. W. Thomson gives a quotation (see p. 202). The varieties of Potatoes then in commerce were few, and all were great seed producers. It did not apparently occur to growers at that time to gather the flowers, as the exhausting effects of seed production were then imperfectly understood. Much later, such varieties as Shadstock Beauty, American Purple, and even Reading Russet, still widely grown, were great seed bearers, simply because the flowers produced pollen in abundance. Mr. Fenn's other seedling, Woodstocke Kidney, was also a free pollen producer, but International Kidney, raised from the same seed capsule, did not produce any pollen. Woodstocke Kidney in time went out of cultivation, not for lack of quality but simply because it was not a sufficiently heavy cropper. International Kidney produced tubers in abundance, and to-day it is one of the heaviest croppers of early market Potatoes, being known by the name of Jersey Fluke, a distinct variety that was raised 40 years ago. Magnum Bonum, a heavy cropping Potato, has been in existence 40 years;

this variety seldom or never produced seeds naturally. Magnum Bonum is still a fine cropping Potato. All the famous varieties of the Up-To-Date type, and indeed all great cropping varieties, produce few or no seed apples. Potatoes are now much longer lived because of this. How long have Early Rose and Beauty of Hebron been with us, and how good they still are? Neither produces fruits. The old Ashleaf Kidney, probably the most ancient and well-preserved of all our varieties, is still in cultivation, and as I have seen it in Surrey, as good as ever, but it is a non-fruiter. Mr. Sheriff seems to have attributed "curl" to the prevalence of seed apple production in Potatoes. But we have seen the curl very badly on varieties that never produce fruit. The remedy, as Scotchmen found, is change of seed, and now in the south because it is so much the rule to obtain seed tubers from distant districts, curl is rarely seen. I do not think that what Mr. Sheriff wrote was prophetic, but rather that it indicated less knowledge than we have to-day. *A. D.*

MONTBRETIA.—I herewith send flowers of 19 varieties of Montbretia. America has dark orange-yellow coloured flowers, with red centre; it is very free-flowering and quite distinct. Prometheus (see fig. in *Gardeners' Chronicle*, September 29, 1906, p. 223) is an extra large flower of a rich orange colour, with petals of great substance. Ameau d'Or is a perfectly formed flower, measuring often over 3 inches across; it is orange-coloured, with a large maroon ring round a yellow centre. Brilliant is well named, being scarlet with maroon blotches; the flowers are of good form. Le Factole produces large spikes and flowers of a bright golden-yellow colour. Messidor is a light yellow or straw colour, has large branching spikes, and is perhaps the nearest approach to white yet seen in Montbretias. Among the 60 varieties that have flowered with me this season Vesuvius is the richest coloured; it is a beautiful reddish-scarlet, with golden-yellow centre. This new variety, when better known, is sure to become a great favourite. Martagon is a charming variety, a shade of dark orange, with brown-red centre. M. Jacquau has large red and yellow flowers. Perhaps the most remarkable of all is Tragedy; it produces large flowers of a deep orange colour, with a velvety ring of rich blood-red shade, quite distinct from any other variety. Amongst the others, Hereward is a grand yellow variety, and is probably already well known to many readers as one of the best of those raised by Mr. Davison. I plant my Montbretia bulbs in late autumn on well-manured soil. For two months past the flowers have made a brilliant display. *Michael Cuthbertson, Rothesay.*

SOCIETIES.

ROYAL HORTICULTURAL
Scientific Committee.

SEPTEMBER 28.—*Present:* Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair); Messrs. A. W. Hill, W. Cuthbertson, J. Fraser, J. T. Bennett-Poë, W. Hales, E. M. Holmes, R. Hooper Pearson, and F. J. Chittenden (hon. sec.).

Prunus sp.—Mr. A. W. Hill, F.L.S., stated that the plant shown at the last meeting under the name of *Prunus Chaponii* proved to be a form of *P. cerasifera*.

Giant Puffball.—From C. C. PAINE, Esq., of Haverstock Hill, N.W., came a specimen of the giant Puffball (*Lycoperdon bovista*), having a circumference of 38½ inches.

Museum preparations.—Dr. VOELCKER showed a human heart set up as a museum preparation, which without dissection showed the whole of its structure. The liquid in which it was preserved was a mixture of various ethers, &c., and portions were rendered transparent owing to the refractive index of the liquid being the same as that of the material preserved. The discovery of this preservative was due to Dr. SPATTER-HOLZ, and it promises to be of great use in preparing museum specimens.

Forms of Impatiens Roylei.—Mr. E. A. BOWLES showed a white-flowered form of *Impatiens Roylei*, which has been called var. *pallida*. It is rather smaller than the type, and has paler, narrower leaves. He also showed a

variegated form which had appeared in his garden. The seedling had shown the variegation, and it had been maintained throughout the life of the plant.

Linaria maroccana sport.—Mr. BOWLES also showed a sport of *Linaria maroccana* with the corolla split to the base and without spurs, which had occurred in his garden. The flowers failed to produce seed, the ovary being absent.

Narcissus Tagetta var.—He also showed leaves of a form of *Narcissus Tagetta*, which persisted until the present time. They were quite green and healthy-looking, and about 18 inches in length.

Furcate inflorescence in Typha (see fig. 113).—Mr. R. HOOPER PEARSON exhibited a specimen of *Typha angustifolia*, received from Lord AVEBURY, in whose garden at High Elms, in Kent, the plant was growing. The stem showed a slight fasciation, and it bore at the top four inflorescences as shown in the figure. Fasciation appears to be very uncommon in the genus.

Solanine in Solanum nigrum.—*Solanum nigrum* is included amongst poisonous plants in works of toxicology, but cases of poisoning by it are rare, and relate chiefly to children; but its active principle, solanine, undoubtedly possesses poisonous properties in large doses. Solanine was originally discovered by DESFOSES, of Besançon in 1821, in the berries of *Solanum nigrum*; and to it and to atropine possessing mydriatic properties its physiological effects are believed to be due. Solanine also occurs in young sprouts of the Potato, in Tomatos, and other species of *Solanum*. *S. nigrum* contains about 0.3 per cent. of solanine. Mature healthy Potatos are said to contain none, but KASSNER separated 30 to 50 milligrammes from 150 grammes of diseased Potatos. ORFILA found that the extract of *Solanum nigrum* had a very feeble effect as a poison, but rabbits are killed by doses of 0.1 grain of solanine per kilogramme of weight of the animal. The symptoms commence in 10 minutes, with apathy, low temperature, and slow breathing; convulsions set in before death, and the pupils become dilated. Dogs are not easily affected by it, as it is usually rejected by vomiting. BLYTH, in *Poisons: Their Effects and Detection*, p. 398, remarks: "Poisoning in all recorded cases (i.e., in cases of accidental poisoning of human beings) has not been by the pure alkaloid solanine, but by the berries of different species of *Solanum*. The symptoms, in about 20 cases, have varied so greatly, that the most opposite phenomena have been described as the effects of poisoning." The recorded cases of poisoning by the berries of *S. nigrum* are not numerous, and have usually occurred in children. The death of three children is recorded by HIRTZ, *Gaz. Med. de Strasbourg*, in 1842, and other cases by MAURAY, *Gaz. des Hôp.*, 1869, J. B. MONTAINE, *Chim. Méd.*, 1862, and by MANNERS, *Ed. Med. Jour.*, 1867. The facts concerning cases of poisoning by the berries of *S. nigrum* require confirmation. Even the statement concerning the poisonous action of solanine and its dose need careful revision, for it is highly probable that much of the solanine used by investigators has been impure, and may have contained decomposition products, since solanine is easily split up by various reagents. Doses of more than quarter-grain, to commence with, would be considered unsafe for medicinal purposes. An excellent summary of what is known of its physiological action will be found in DUPUY, *Des Alcaloides*, pp. 503-521, and in the *United States Dispensatory*, 1907 (19th ed.), pp. 1,654-5. Reference may also be made to *Kobert Lehrbuch der Intoxikationen*, pp. 759 and 1,057, regarding the recorded cases of presumed poisoning by solanine in Potatos. With reference to the use of the berries of *Solanum nigrum* as food: first, it is quite possible that in a luxuriant, cultivated form of the plant the amount of solanine might be reduced considerably, and the fruit prove edible. Secondly, the fruit, when boiled, especially in the presence of vegetable acids, might be less likely to produce unpleasant symptoms than the raw fruit, since the decomposition of solanine might take place, and solandine, which is usually set free, is reported to be non-irritant. Thirdly, the berries have no doubt been largely eaten in the United States, and, so far as I am aware, no dangerous results have followed. Fourthly, some persons are unusually sensitive to the alkaloids of belladonna, and it is quite possible that

cases of idiosyncrasy may occur with regard to solanine. That solanine itself can produce distinct physiological action there can be no doubt, but how far the symptoms attributed to it are due to pure solanine has not yet been proved. Fifthly, it is also possible that, as in the Potato, the percentage of solanine present in *Solanum nigrum* may vary according to the age and condition of the fruit, whether ripe or unripe, and to other circumstances of difference in season as regards light and heat. But there is no need apparently to add a fruit of such doubtful utility, and so lacking in good qualities to the list of more palatable fruits already in the market.



FIG. 113.—FASCIATION IN *TYPHA ANGUSTIFOLIA*, FROM SPECIMENS SUPPLIED BY LORD AVEBURY.

Hybrid Willows.—Mr. J. FRASER, F.L.S., showed six hybrid forms of Willow, recorded in British floras and other botanical works as *Salix ambigua*. Most authorities are agreed that *S. ambigua* is a hybrid between *Salix aurita* and *S. repens*. No two of the forms are exactly alike, but four of them approach *S. aurita* more closely than the other parent. He explained this by the fact that the parents in the wild state are extremely variable, and consequently one might expect the hybrids to be equally variable. Two of the forms approached more nearly to *S. repens* in shape, variation, and character of the hairs. While the leaves of the six forms showed affinity with one or other parent, the catkins were most

nearly like those of *S. repens* in size and other particulars. All of the above he preferred to name by using the names of the parents, namely, *Salix aurita* × *repens*. He also showed another hybrid named *Salix cinerea* × *repens*, with forms of the supposed parents most nearly like them.

NATIONAL CHRYSANTHEMUM.

OCTOBER 6.—Instead of the usual early exhibition of this Society a conference was arranged this season to take place on the above date at the Essex Hall, Strand. Concurrently with the conference there was a small exhibition from some of the trade growers, who exhibited groups of Chrysanthemums with Perennial Asters, Dahlias and other seasonable flowers. Prizes were offered by Messrs. W. Wells & Co. for six vases of early single Chrysanthemums. The Floral Committee granted Certificates of Merit to three novelties, all large-flowered Japanese varieties.

THE CONFERENCE.

At the afternoon session the chair was occupied by Mr. Thomas Bevan (Chairman of Executive Committee). The proceedings were opened by Mr. C. H. Curtis with a discourse on the treatment of the Chrysanthemum as an annual plant. Following this, a paper was read by Mr. W. Wells on the "History of the Early Flowering Single Chrysanthemum." Mr. Wells stated that the advent of the early-flowering single Chrysanthemum may be said to have commenced with the variety Mabel Goacher. This variety was sent out in the spring of 1902; it had pure white florets with a blush on the reverse side. It flowered profusely during August and September, being, each season, the first single white variety to flower out-of-doors. Mabel Goacher was originally catalogued with the early double varieties; in 1904 the essayist crossed the variety with Miss Rose and Bertha Jinks, but none of the progeny gave promise of any improvement on Mabel Goacher. Later, another batch of seedlings was raised, and many of these were selected for distribution. Several of the best varieties have three or four rows of florets, and many would regard these as semi-double, but they have a greater value than those with merely one row, because, when packed for a journey, they do not show injury so readily as the others. In 1907 Mr. Wells raised large quantities of seedling plants, and, as early-flowering Chrysanthemums can be satisfactorily treated as annuals, as many as 15,000 plants were planted for this purpose. The following autumn (1908), being favourable for seed saving, he obtained six gallons of seeds. Referring to their treatment as annuals, Mr. Wells said that, if seeds were sown in spring, the plants will all flower the same year, but their period of flowering varies greatly and extends from August to November or until there is severe frost. Cuttings of single Chrysanthemums should not be taken until March, when they will root quickly and soon develop into good plants. They should be planted 15 inches apart either way. The plants commence flowering in July, but the early flower-buds should be removed, as the hot sun of August destroys the colours and they are not so bright as later blooms on the same plants.

LATE MARKET CHRYSANTHEMUMS.

The subject of "Late Market Chrysanthemums" formed the title of a paper by Mr. J. B. Riding.

The essayist stated that an ideal market variety is one that produces flowers of a clear decided colour on stiff, erect stems. The blooms must possess lasting qualities, and the plant should have a good constitution. In order to secure late Chrysanthemums, a long season of growth is essential, therefore, the cuttings should be rooted early in the season, as late-rooted plants make soft, sappy growth in most years, and produce weakly, thin-stemmed flowers that are of little use. If the plants are pinched when about 6 inches high, or even less, this will lay the foundation of a plant large enough for all purposes, but this pinching should be done when the shoot is quite soft, so that it will break into growth freely. Before the young plants become stunted or starved, they can be placed in their flowering pots, and, assuming the pots employed are 16's, then three plants in each will produce a splendid bush in the following autumn. Light and air are

essential, therefore the plants should be allowed ample room throughout the summer months, and not only during the summer, but right up to their flowering period. When it is remembered that these Chrysanthemums are at least 10 or 12 weeks under glass before they bloom, it will be obvious how important it is that they should not be crowded.

The following late varieties were recommended by Mr. Riding for market purposes:—(White): Cannell's Late Prolific, Mrs. Thompson, Queen of the Exe, Princess Victoria, Heston White, Madame R. Obertbur, Snowdriit, and Mdle. T. Panckoucke. (Yellow): Golden Mrs. Thompson, Market Gold, Allman's Yellow, Mrs. G. Beech, True Gold, and Negoya. (Crimson): Violet Lady Beaumont, W. A. Crossley, and Matthew Hodgson. (Bronze): Taxedo and Lord Brook. (Pink): A. J. Balfour, Mdle. L. Charvet, Winter Cheer, and Framfield Pink.

CHRYSANTHEMUMS FOR CUT FLOWERS.

The next paper was on "The Best Chrysanthemums for Cut Flowers," by Mr. Percy A. Cragg. The following varieties were said to furnish good sprays of flowers on long stems:—Pink Marie Masse, with its sports; Horace Martin or Elstob Yellow (the latter a slight improvement), Crimson Masse, Red Masse, Mrs. Bailey (white), Holme's White, and Ralph Curtis (creamy-white). Nina Blick, a lovely red-bronze flowered variety, should be kept well watered, for if allowed to become dry at the roots the flowers go a dingy brown. Carrie, a good yellow Chrysanthemum, is not such a favourite as Horace Martin. Goacher's Crimson should be cut back the last week in July. Roi des Blancs is the best of all white Chrysanthemums for decorative purposes, although it does not grow so freely as some others. Polly is quite the best of all the early varieties; it is a lovely bronze shade. Charles Jolly is a pink variety that does well if rooted in the first week of April; if rooted before then it flowers too late. All these are September bloomers, continuing into October.

Among October-flowering varieties, the following were recommended:—Touchwood Bronze, a very good spray flower; Mrs. Cragg (old gold), Etoile d'Or (yellow), Le Pactole (bronze), Bouquet Rose (rose), Source d'Or and its sports, and Mrs. Scott (white). It is better not to propagate any of these before the end of March or even the beginning of April, and the plants should not be stopped or they will flower too late.

For disbudded blooms cut from out-of-doors the following give good results:—All the Masse varieties mentioned, if cut back the last week in July, and the shoots that come up from the bottom disbudded, furnish blooms 5 inches across, with stems 2 feet long. White and Yellow Mme. Desgrange, if cuttings can be obtained of good stock; in hot, dry seasons it may be found that the stems become too hard, and that the flowers wilt when cut; but if the ends are scraped and split up a little way, and put at once into water, no further trouble will be experienced. Nina Blick is specially good in wet seasons. Nelly Blake, a bronze seedling from Mme. Desgrange, is also good if grown well. Members of the Source d'Or family are admirable on some soils, but not on heavy land.

Some varieties need protection from damp, and then they give good returns. These include Mrs. Scott, Le Pactole, Mrs. Cragg, Old Gold, and Etoile d'Or.

Amongst Japanese and Incurved varieties the following were recommended:—La Triumphant, which, although rather subject to mildew, and to damping in wet weather, crops well, the blooms lasting fresh for a long time when cut; Miss Olive Dunsday. Mr. F. McNiece, Gracieuse, a lovely Incurved Japanese which, if kept cold and grown well, is the best pink of all; and Poit Revine a December variety, which is in flower about the same time as Mme. Louise Charvet. The pink sport from Princess Victoria is of fair colour and sells readily. Framfield Pink, and its sport Winter Cheer, are in season at Christmas, and will last until February.

Of bronze-flowered varieties *Hortus Tolosanus*, Lady Lennard, Mikado and Bronze Princess Victoria may be enumerated.

Red varieties are not numerous. Market Red and T. Humphreys are excellent for flowering the end of October and the beginning of November; Exmouth Crimson continues the succession until Matthew Hodgson is ready in December.

Of White kinds, Money-maker, Mrs. Roots,

Miss A. Byron, Mrs. J. Thompson, Mrs. Judson, Mdle. T. Panckoucke, and Princess Victoria are all good varieties. Then, last of all, for districts free from fog, there are Heston White and White Framfield, which is more vigorous than its parent.

Of yellow varieties, starting with the October bloomers, Yellow La Triumphant is very good. The next reliable variety, at the end of October, is Embleme Poitevine, which can be had in flower till mid-December. Le Peyron, Nagoya, Golden Mrs. Thompson and Golden Victoria are also to be recommended.

The first single-flowered variety to bloom is Mary Richardson. Following closely are Reine des Roses and Rosie Bell. The Pagram family, white, pink and bronze, blooming in early November, are exceedingly good, whether disbudded or grown naturally in sprays. Gaiety is a very fine bronze, and Kitty Bourne is the best yellow. The following are also good: Sylvia (bronze), Mrs. Roberts (pink), Irene Cragg (white), Sir George Bullough (yellow), Delicatissima (pinkish-fawn), and Elizabeth, Phillis and Evelyn, all pink kinds.

The concluding paper was on "The Best Chrysanthemum from an Æsthetic Point of View," by Mr. D. B. Crane. He advocated the claims of the Single, Pompon, Anemone-flowered, thread petalled and other small-flowered types.

THE EXHIBITION.

FIRST-CLASS CERTIFICATES

were awarded to the following varieties:—

White Queen (Japanese).—A rather large bloom, with drooping creamy-white flowers. The centre is composed of rather thin florets, which is a fault. Shown by Mr. MARTIN SILSBURY, Shanklin, Isle of Wight.

Empress (Japanese).—A promising exhibition variety of lemon-yellow or canary colour. It is a deep bloom with plenty of substance, and will probably be seen at the November shows this year.

Tom Edwards (Japanese).—A rich, yellow variety of the incurved Japanese section, a promising variety for early decorative purposes.

NON-COMPETITIVE EXHIBITS.

Mr. NORMAN DAVIS, Framfield, Surrey, staged a group of large exhibition varieties, interspersed with vases of Michaelmas Daisies. In the exhibit were several good blooms of the two novelties which received the Society's Certificate of Merit. (Silver-gilt Medal.) Mr. W. J. GODFREY, Exmouth, showed blooms of exhibition varieties. (Silver Medal.) Messrs. W. WELLS & Co., Merstham, Surrey, exhibited a collection of single Chrysanthemums; also about 5½ gallons of seed of these varieties. (Silver Medal.) Mr. J. B. RIDING, The Nurseries, Chingford, exhibited border Chrysanthemums, Perennial Asters, and Dahlias. (Silver Medal.) Mr. J. H. WITTY, Rose Nursery, Swains Lane, Highgate, showed vases of early-flowering border Chrysanthemums. (Bronze Medal.) Mr. FRANK BRAZIER, nurseryman, Caterham, Surrey, showed a group of decorative Chrysanthemums intermingled with Michaelmas Daisies and other seasonable garden flowers. (Silver Medal.)

COMPETITIVE CLASS.

Messrs. Wells's prizes were won by Mr. C. PAYNE, Sandhills Gardens, Betchworth, Surrey; Mr. E. F. HAWES, Royal Botanic Gardens, and Mr. W. NEWTON, Little Heathwood, Potters Bar, in this order.

BRITISH GARDENERS' ASSOCIATION.

A PUBLIC meeting of gardeners will be held on Wednesday, October 15, at 7.30 p.m., at Pitt's Restaurant, Kew Green, Surrey, when the aims and objects of the British Gardeners' Association will be explained by Mr. John Weathers, general secretary, and other members of the Association. Mr. D. Campbell, head gardener at The Priory, Roehampton, will preside. Discussion is invited.

The next meeting of the London branch will be held at Carr's Restaurant, 264, Strand, W.C. (near the Law Courts), on Thursday, the 14th inst., at 8 p.m., when a paper will be read by Mr. C. Hill on "Roses for Town Gardens." The chair will be taken by Mr. E. F. Hawes. All professional gardeners are invited to attend, whether members of the B.G.A. or not.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending October 6.

The first warm week since the middle of August.—After the first day the temperature continued high during the daytime, and with the exception of the last night the nights were also more or less warm for the time of year. On the five warmest days the highest reading in the thermometer screen ranged between 64° and 66°, and on the warmest night the exposed thermometer did not fall below 53°—a very high reading for October. In fact, in the previous two months on only one night was such a high temperature registered by the same thermometer. The ground has now become quite warm, being 4° warmer than is seasonable, both at 1 foot and 2 feet deep. Rain fell on all but one day, and to the total depth of three-quarters of an inch. During the week 3½ gallons of rain-water have come through both the percolation gauges. The sun shone on an average for only 1½ hour a day, which is less than half the average duration for the beginning of October. The first few days of the week were calm, but since then the wind has been at times rather high. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 9 per cent.

SEPTEMBER.

Exceptionally cold, sultry, and humid, with an unusually frequent rainfall.—In only two Septembers in the last 23 years has the mean temperature been as low. The days also have only in the same two Septembers been as cold. The night temperatures were below the average, but in no way exceptionally low for the month. The highest temperature in the thermometer screen was 70°—the lowest maximum reading in September for 13 years. The lowest temperature registered by the exposed thermometer was 29°, which is only about the average extreme minimum for the month. Rain fell on as many as 18 days, but to the total depth of only 2 inches—½ an inch below the September mean. The sun shone on an average for 3½ hours a day, which is 1½ hour a day short of the usual duration for the month—making this the most sunless September for 13 years. The winds were as a rule light, and in the windiest hour the mean velocity only amounted to 15 miles—direction west. Only once before in the last 23 years, and that was in 1896, was the amount of moisture in the air at 3 p.m. as great.

THE SUMMER RAINFALL.

During the summer half of the present drainage year ending October, 16½ inches of rain fell, which is 2½ inches in excess of the average rainfall for the same six months in the last 63 years. April, June, July and August were all more or less wet. September, on the other hand, proved rather dry, while there was an average fall of rain in May. The only wetter summer-half of the year in recent years was that of 1903. E. M., Berkhamsted, October 6, 1909.

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. A. C. PARSONS, for nearly 4 years Gardener to G. ARNOLO, Esq., Sandlea, Datchet, as Gardener to Mrs. HOLT, Waratah, Chislehurst.
- Mr. W. GUNSTON, for the past 18 months in the nursery of MESSRS. B. LAOHAMS, LTD., Southampton, and previously Gardener to Mrs. TAYLOR, Chichease Castle, Wark-on-Tyne, Northumberland, as Gardener to VIOLET, Lady BEAUMONT, Slindon House, Arundel, Sussex.
- Mr. W. GARWOOD, for the past 2 years and 5 months Gardener to W. P. THOMPSON, Esq., Rock Edge, Birkenhead Park, as Gardener to ALFRED W. N. BURDER, Esq., Belconie Court, Bradford-on-Avon.
- Mr. J. BAINES, for 6 years Gardener to Mrs. WRAY HUNT, West Manor, Ruddington, Notts., as Gardener to the Hon. EVANS-FREKE, of Bisbrook Hall, Uppingham.
- Mr. E. GAFFIN, for the past 8½ years in the gardens at Heythorpe Park, Chipping Norton, as Gardener to Colonel MALCOLM LITTLE, Dunsmore, near Rugby, Warwickshire. (Thanks for 2s. received for R.G.O.F. box.)
- Mr. J. STEVENS, for the past 9 years and 10 months Gardener to the late Sir H. M. HAWLEY, Bart., Tumbly Lawn, Boston, as Gardener to Dr. J. NEWSEAD, West Ashby Manor, Horncastle. (Thanks for contribution to R.G.O.F. box.)
- Mr. E. FERGUSON, for the past 5 years Foreman at Bella-drum Gardens, Beaulieu, as Gardener to W. MACGURE, Esq., Springfield House, Inverness.
- Mr. W. ANSELL, for 6 years Second Gardener at Titsey Place Gardens, Limplfield, Surrey, as Gardener to J. W. FIELD, Esq., Southsea House, Dorking, Surrey.
- Mr. J. H. FOCKERING, as Gardener to R. WOODWARD, Esq., Arley Castle, Bewdley, Worcestershire.
- Mr. LEWIS CHILVERS, for nearly 3 years Gardener to Princess ALEXIS DOLGOROUK, Nashdom, Hitcham Vale, and previously nearly 4 years Foreman at Dropmore, as Gardener to Miss NEVE, Osborne Lodge, Cranbrook, Kent.
- Mr. E. R. BEAMIS, for the past 20 months at Shiplake Court Gardens, Henley-on-Thames, as Gardener to Lord BRAYE, Stanford Hall, Swinsford, near Rugby.
- Mr. R. PEERLESS, for some years Foreman at Brookwood Asylum, as Gardener at the Surrey County Asylum, Netherne, Merstham.
- Mr. H. GAZELL, for the past 3 years in the Pleasure Grounds, Boston House, Brentford, as Gardener to Capt. MIDDLETON, Frogs Hall, near Dunmow, Essex.
- Mr. J. W. SLEIGHTHOLM, late Gardener at Cliff Ridge, Gt. Ayton, R.S.O., as Gardener to THOS. PRIESTLEY, Esq., Bank Top House, Bradford, Yorks.
- Mr. T. WHITING, for 3 years Foreman at Shotover, Wheatley, Oxford, as Gardener to Mrs. MILLER, at the same address, in succession to Mr. J. BROADFOOT, who has retired. (Thanks for contribution to R.G.O.F. box.)

MARKETS.

COVENT GARDEN, October 6.

[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.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing cut flowers and their prices, including Asters, Carnations, Coreopsis, Dahlias, Enchiridiums, Gaillardias, Gardenias, Gladioli, Heather, Lilies, and others.

Table listing plants in pots and their prices, including Marguerites, Pelargoniums, Oenotheras, Pansies, and others.

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

Table listing plants in pots and their prices, including Marguerites, Pelargoniums, and Selaginella.

Table listing plants in pots and their prices, including Solanums, Spiraea japonica, and Veronicas.

Fruit: Average Wholesale Prices.

Table listing fruits and their prices, including Apples, Bananas, Damsons, Figs, and Grapes.

Table listing fruits and their prices, including Lyches, Melons, Nuts, and Oranges.

COVENT GARDEN FLOWER MARKET.

There has been a revival of trade during the past week, owing chiefly to the demand for flowers and plants for Harvest Festivals. Lilliums have made considerably advanced prices; Callas also have sold well. Plants of Solanum capsicastrum are seen, and, though the plants are not large, they are well berried. Cyclamen and Cinerarias also may be purchased, but these plants are not so well flowered as we may expect them later. Chrysanthemums form the leading feature amongst flowering plants. Plants of the variety Mme. Desgrange with about eight to ten blooms are worth 30s. per dozen. Le Pactole with fewer flowers make the same price, but there are many of the Mme. Marie Masse varieties from the open ground which are sold at from 4s. to 6s. per dozen. If the nurserymen would grow fewer plants and cultivate them so as to obtain the highest quality specimens, they would find them more profitable than larger quantities of inferior ones. There is always a demand for cheap plants, but those of the best quality are sold first. Ericas are not selling very readily. E. gracilis is well flowered, the blooms being of a good colour. E. gracilis nivalis remains true to character, in fact I think the blooms are whiter than when the plant was introduced. The stock plants have to be carefully selected, for some revert to the type: I have recently seen specimens with one or more shoots which have reverted to the normal colour. I have not yet this season seen well-flowered E. hymenalis in the market, but at a nursery a fortnight ago I noted plants with flowers just opening. Asters are still good, but it would be difficult to quote uniform prices; their value varies considerably. Some market growers cultivate Michaelmas Daisies well in pots. Wallflowers and other hardy subjects are already seen. Conifers, climbers and other hardy trees and shrubs may also be purchased in the market.

CUT FLOWERS.

The supplies are uncertain and the advance in prices of most things last week may be sustained. Much depends on the weather. Even Chrysanthemums are scarcer, but a little more sunshine will soon make a difference in the supply. Carnations are adversely affected by the dull weather; it not only makes a great difference to immediate supplies, but the buds for later flowering do not develop. Roses are fairly plentiful except blooms of extra good quality. Most hardy flowers are damaged by the wet weather. Autumnal foliage is a feature, but with many plants the colours are not so good as in a dry autumn. The increasing use of hardy foliage by the florists has materially reduced the value of that grown under glass. A. H., Covent Garden, October 6, 1909.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing cut foliage and their prices, including Adiantum, Agrostis, Asparagus, Berberis, Croton, Cycas, Ferns, Grasses, and others.

Table listing cut foliage and their prices, including Hardy foliage, Ivy, Moss, Myrtle, Physalis, Smilax, and others.

Vegetables: Average Wholesale Prices.

Table listing vegetables and their prices, including Artichokes, Beans, Beetroot, Cabbages, Cardoons, Carrots, Cauliflowers, Celeriac, Chicory, Cucumbers, Endive, Horseradish, Lettuce, Marrows, Mint, Mushrooms, and others.

Table listing vegetables and their prices, including Mushrooms, Mustard and Cress, Onions, Potatoes, Radishes, Salsify, Spinach, Stachys, Tomatoes, and others.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS.—The first meeting of the winter season was held on Wednesday, September 22, when the hon. secretary, Mr. H. Coleby, lectured on "Plants and their Means of Defence." He showed that plants have their enemies, and to be able to survive they must defend themselves against attack. Certain methods employed by different plants, both native and exotic, to protect themselves were referred to. Diagrams were used to illustrate the lecturer's remarks.

BRISTOL AND DISTRICT GARDENERS.—A successful meeting was held on September 30. Dr. Shingleton Smith presided over a large attendance of the members. Mr. J. C. House, Westbury-on-Trym, gave a lecture upon "The Hardy Flower Garden all the Year Round." The lecturer explained the meaning of the words "perennial" and "herbaceous." Mr. House recommended the early autumn months as the most suitable time for making a new flower garden, and the early winter months for renovating old ones. The lecturer gave an outline of a colour scheme, naming scarlet for the centre, other shades, such as purple, followed with cream and white, and then orange, gradually leading up to scarlet. Delphiniums and Pyrethrums were named as being unsafe to plant between September and February, but most other subjects, including Moon Daisies, Asters, Helianthus, Eryngiums, Poppies and Aconitums, may be planted in the winter months. Mr. House staged a bank of hardy flowers, for which he was awarded a special certificate. H. W.

READING GARDENERS' ASSOCIATION.—The meetings of this flourishing association were resumed on Monday, September 27. The president (Mr. Alderman Parfitt) occupied the chair. In celebration of the "coming-of-age" of the association it was decided to hold a non-competitive exhibition of fruit, flowers and vegetables in the small Town Hall, Reading, on Wednesday, November 17. Mr. Wilson read a paper on "Experiences and Observations on Fruit Growing during 1909." Seven new members were elected.

LOUGHBOROUGH GARDENERS.—The annual meeting and dinner of the Loughborough and District Gardeners' Mutual Improvement Association was held recently. Mr. J. T. Smith presided. The balance-sheet showed that the total receipts for the year were £23 2s. The expenditure was £19 10s. The thirteenth annual report showed that the County Council had granted the society a series of three lectures, Mr. J. Smith, of the Midland College, Kingston, again being the lecturer. The president had again offered prizes for essays, and the report of the judges of these essays was very favourable. The exhibition of Sweet Peas took place in July. The annual outing was an unqualified success, the Duke's being visited. The committee was re-elected, with the substitution of Mr. J. Watkins for Mr. Pawlett. Mr. J. T. Smith was re-elected chairman, and Mr. H. Roberts vice-chairman. Mr. McVinish was again elected hon. treasurer, and Mr. F. Reynolds hon. secretary.

REMARKS.—Home-grown Peaches and Nectarines are almost over for the season. They are realising good prices. Madresfield Court Grapes are a good market, but scarce; Muscat of Alexandria Grapes are selling freely. Peas are a poor trade, with the exception of a few selected varieties. Claret-coloured Bananas from the West Indies arrived in splendid condition and sold readily. Prices for Tomatoes are inclined to be firmer, although no increase yet has taken place. Trade generally is quiet. E. H. R., Covent Garden, Wednesday, October 6, 1909.

Potatoes.

Table listing potato varieties and their prices, including Bedfords, British Queen, Epicure, and others.

Table listing potato varieties and their prices, including Lincolns, Up-to-Date, and others.

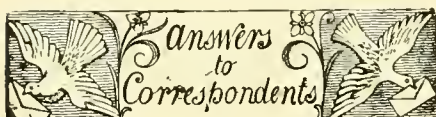
REMARKS.—Trade is slightly better and prices have a tendency to rise. Consignments have been heavier, but this increase is not expected to continue, as the growers will commence clamping next week. Edward J. Newbourn, Covent Garden and St. Pancras, October 6, 1909.

CATALOGUES RECEIVED.

GEORGE BUNYARD & Co., LTD., The Royal Nurseries, Maidstone, Kent—Fruit Trees and Roses.
 D. PRIOR & SON, Colchester—Roses.
 THE LIVERPOOL ORCHID & NURSERY CO. (COWAN'S), LTD., Gateacre Nurseries, Gateacre, near Liverpool—Ornamental Shrubs and Trees, Roses, Fruit Trees, &c.
 W. KNIGHT & SONS, Park Nurseries, Heathfield, Sussex—Nursery Stock.
 CHARLES TURNER, Royal Nurseries, Slough—Auriculas, Carnations, Picotees, Pinks, &c.; Roses.
 R. WALLACE & Co., Colchester—Lilies, Hardy Plants, Bulbs, DICKSON & ROBINSON, Manchester—Bulbs.
 JAMES VEITCH & SONS, LTD., Royal Exotic Nursery, King's Road, Chelsea—Roses.
 JOHN PEEO & SON, Roupell Park Nurseries, West Norwood—Chrysanthemums; Trees, Shrubs, Hardy Climbers, &c.
 JOHN MCKERCHAR, 35, Giesbach Road, Upper Holloway, London—Liliums and other Bulbous Plants; Garden Sundries.
 ELISHA HICKS, Twyford, Berks.—Roses.

FOREIGN.

M. LEENHORS & Co., Steil-Tegelen, Holland—Roses.
 TRANSON BROTHERS & D. DAUVESSE (Barbier & Co., Successors), 16, Route d'Olivet, Orleans, France—Nursery List.
 HAAGE & SCHMIDT, Erfurt, Germany—Novelties in Flowers (Seeds).
 L. SPATH, Baumschulenweg, b. Berlin, Germany—Fruit Trees, Roses, Trees, Shrubs, &c.



Editors 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 *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BEECH TREES WITH WHITE SPOTS: *A. E. S.* The white patches which you take to be a fungus are insects allied to the common mealy bug. The pest generally confines itself to the stem and main branches. If, therefore, you scrub these with some strong insecticide such as caustic alkali wash you will rid the trees of them. If you defer the work of applying the caustic wash until a little later the trees will be bare of foliage and you will then be able to see better what you are doing. Caustic alkali wash is a corrosive substance, therefore gloves should be worn by the operator to protect the hands. The wash should be made as follows:—Caustic soda (10 per cent.), 1 lb.; potassium carbonate (60 per cent.), 1 lb.; soft soap (10 ounces); water, 10 gallons. The soda and potash should be dissolved in water, and the soap, having been previously dissolved in hot water, added to the solution, afterwards making up the quantity to 10 gallons.

CELERY DISEASED: *W. W.* The foliage is destroyed by a fungus—*Septoria Petroselinii*. The infected parts should be gathered and burned or buried deeply. It would be advisable not to grow Celery or Parsley on the land bearing an infected crop for a year or two.

CLUBBING IN CABBAGES: *W. E. W.* This trouble results from a fungus—*Plasmiodiophora brassicae*. This pest infests all kinds of plants of the Brassica or Cabbage family, therefore such weeds as *Shepherds' Purse*, *Charlock*, and *Hedge Mustard* should be rigorously exterminated. The young plants are most liable to infection, and it is a good plan to dip the roots of the seedlings in a puddle formed of thick mud, soot, and a little sulphur, before planting them out in the beds. It has been found that quicklime is a good cure for clubbing, if applied at the rate of 35 bushels of lime per acre.

EARLY VINERY: *J. W. G.* We have seen Muscat of Alexandria and Black Hamburg Grapes do well in the same vinery, but it is not advisable to plant them together unless it is specially desired. The Muscat of Alexandria requires a very warm, moist atmosphere, whereas the Black Hamburgs succeed fairly well under cooler conditions. But Black Hamburg is largely employed as a variety for early forcing, indeed it is one of the best Grapes for the purpose. Other varieties recommended for

early forcing are *Madresfield Court*, *Duke of Buccleuch*, *Royal Muscadine*, and *Foster's Seedling*. You will find full particulars as to the making of vine borders in an article by Mr. Ward in the issue for September 18, p. 193.

EUCOMIS PUNCTATA: *C. Pattison.* We suspect that after potting your bulbs you started them too quickly into growth. *Eucomis* is not a delicate subject, but may often be found growing quite freely in sheltered spots out-of-doors. After the plants have been potted water should be afforded very sparingly. The rotting was probably caused by excess of moisture. If you will read the remarks to *Kensington* on the culture of *Vallotas* and *Nerines* in the issue for September 25, p. 224, you will find much information that will help you if applied to the *Eucomis*.

FRUIT TREES INFESTED WITH MOSS AND LICHENS: *F. De V. W.* The best plan to rid your trees of these growths is to apply a caustic alkali wash, such as is recommended above to *A. E. S.* for Beech trees. The best time to carry out this work is in February or March, or even later, if it can be deferred without risk of injuring the expanding buds. If two sprayings are necessary, November is a suitable time for the first one and the end of March for the second.

GARDENERS' NOTICE: *G. B.* The usual practice is for a head gardener to receive or to give a month's notice to terminate an engagement.

GLADIOLUS: *Amateur.* The corms you mention were purchased in the ordinary way. For further information see p. 250. You should have no difficulty in flowering the corms the first year if purchased from a reliable firm; while if planted in good loamy soil, they should increase in vigour instead of deteriorating the second year.

GRAPES: *L. & L. W.* We cannot advise you as to the reason of your Grapes cracking and decaying unless you send specimens for examination. We do not think the bluebottle flies have caused the mischief, but they would be quite ready to attack the berries directly the skin was broken.

GRAPES WITH BROWN MARKINGS: *J. P.* There is no disease present on your Grapes; the trouble is caused by some external injury. You will find the principal reasons why Grapes become thus disfigured, described in the issue for September 11, p. 192, in reply to *A. H. H.*

"HA-HA" OR SUNKEN FENCE: *W. H. B.* In an ordinary way a wall about 4 feet in height is ample for excluding sheep and cows from the garden, but in the case of horses much will depend upon the character of the animals themselves. It is quite possible, however, to so arrange the base of the trench that horses would not attempt to mount the wall or fence. The trench may be anything between 10 feet and 15 feet in width, and the bank being made from the field level at an easy gradient, should afterwards be formed at an angle of about 40° or 45°. The bank or slope, rounded at the summit, should first resemble a section of an arc and not be allowed to take on an acute or straight line angle, so arranging matters that the lower portion for a space of 3 feet from the wall approaches the level. In this way the barrier becomes more effective. The stability of the wall is a matter of importance, and its strength must be gauged by the character of the soil. In the case of wet or badly-drained soils, drain pipes should be inserted at the base and again at 1 foot high.

Kew: *Tunnicliffe.*—Write to the Curator, Royal Botanic Gardens, Kew. He will send you an application form.

NAMES OF FRUITS: *J. C. R.* Plum Pond's Seedling.—*G. Bottram.* 1, Williams's Bon Chrétien; 3, Chaumontelle; 4, Brockworth Park; 5, Emile d'Heyst; 6, Marie Benoist; 7, Marie Louise.—*S. R. H.* 1 and 3, Dutch Codlin; 2 and 4, Catshead; 5, Norfolk Beaufin; Pears: 1, Williams's Bon Chrétien; 2, Marie Louise; 3, Louise Bonne de Jersey; 4, Gansel's Bergamot.—*A. Butler.* 1, Lord Suffield; 2, Kerry Pippin; 3, Doynné de Merode; 4, Potts's Seedling; 5, not recognised; 6, Passe Colmar.

NAMES OF PLANTS: *A. C. H.* *Aerides suavisimum* and *Cypripedium oenanthum* (*Harrisianum* × *insigne*).—*St. Mary Church* (no letter

received). 1, *Pinus Laricio*; 2, *Picea excelsa* var.; 3, *Pinus sylvestris*; 4, *Pseudotsuga Douglasii*; 5, *Cedrus atlantica*; 6, *Cedrus Libani*.—*H. D. McC.* 1, *Laburnum alpinum*; 2, perhaps *Broussonetia* sp. (send larger specimen); 3, *Pyrus lobata*; 4, *Populus balsamifera*; 5, not found; 6, *Ligustrum lucidum*.—*W. Curtis.* *Alonsoa Warscewiczii*.—*J. C. R.* 1, *Cestrum elegans*; 2, *Coronilla varia*; 3, *Monarda didyma*; 4, *Helium autumnale* var. *cupreum*.—*F. Fay.* *Chrysanthemum Parthenum* var. *flore pleno*.—*Veronica.* 1, *Acalypha Mosaica*; 2, *Dracæna Guilfoylei*; 3, *D. ornata*; 4 and 9, *D. ferrea variegata*; 5, *D. metallica*; 6, *D. albo-rosea*; 7, *D. amabilis*; 8, *D. excelsa*; 10, *D. fragrans*. These *Dracænas* are now known as *Cordylines*. 12, *Datura Stramonium*.—*J. E. T.* 1, *Muehlenbeckia complexa*; 2, *Salvia coccinea*; 3, *Linaria purpurea*.—*T. C. C.* 1, *Cyrtomium falcatum*; 2, *Polystichum angulare*; 3, *Selaginella Wildenovii*; *Chlorophytum elatum variegatum*; 5, *Strobilanthes Dyeriana*; 6, *Begonia Evansiana* (*discolor*).—*R. O.* 1, *Odontoglossum blandum*; 2, *Maxillaria tenuifolia*; 3, *Oncidium pubes*; 4, *Pleurothallis Grobyi*; 5, *Bulbophyllum Careyanum*; 6, *Cochlioda sanguinea*.—*A. D. R.* 1, *Begonia Evansiana* (*discolor*); 2, *B. nitida*; 3, *B. fuchsoides*; 4, *B. argyrostigma*; 5, *B. Mme. Anna Low*; 6, *Dracæna fragrans*; 7, *D. marginata*; 8, *D. intermedia*.—*W. T. G. L.* 1, *Weigela hortensis*; 2, *Forsythia viridissima*; 3, *Cotoneaster frigida*; 4, *Spiræa arifolia*; 5, *Spiræa Lindleyana*; 6, *Agapanthus umbellatus* var. *minor variegatus*.—*J. L. Lastrea rigida* (a British species).

OAK LEAVES MILDEWED: *L.* Mildew has been common on Oak leaves this season. The pest is *Erysiphe guttata*. Powdered sulphur is a good remedy, but in the case of large trees you can do nothing to combat the disease.

PEARS CRACKING: *G. E. F.* The Pears are badly attacked by a fungus—*Fusicladium pirinum*; a similar fungus also attacks the Apple. Spray the diseased trees with dilute Bordeaux mixture in the spring, when the buds are commencing to expand, again when the blossoms are falling, and a third time when the fruits have set. It will also be advisable to spray the trees during the winter with a solution of sulphate of iron.

PRIZE FOR A TABLE DECORATION: *Disqualified.* In a class for a table decoration the prizes are not only awarded for the quality of the flowers but also for the skill shown in arranging them. This last consideration is usually the more important one. If, therefore, the arrangement is left to a third person, we think the committee is justified in disqualifying the exhibit.

VINE ROOTS UNHEALTHY: *W. M. M.* The roots are free from fungus disease, but are injured by the sourness of the soil. Slaked lime is the best corrective for sourness. Keep the surface soil open so that air can enter, and with a little mulching a new growth of surface rootlets will be secured.

VIOLETS: *C. F. B.* You do not say whether you prefer single or double varieties, therefore, as the treatment for the two types is similar, we will give the names of two varieties of each. The best single kinds are *La France* and *Princess of Wales*, and the best double varieties *Marie Louise* and *Mrs. J. J. Astor*. They can be grown successfully in pots in a cool house, and this method would be the best for your purpose. The present is a suitable time for potting them up for flowering in winter and spring. Procure plants that have been specially grown and prepared for winter blooming and they will commence to flower almost at once. It is important, for the successful cultivation of Violets under glass, to remember that they require a free circulation of air at all times. The plants should be placed on shelves or stages, as near to the glass as possible, and they must never be allowed to suffer from dryness at the root.

Communications Received.—*J. C.*—*W. W.*—*W. B. H.*—*H. Güssow*—*A. P.*—*S. M. W.*—*E. B.*, Brussels—*D. N.*—*Rev. H. F.*—*T. F.*—*W. H. D.*—*A. S.*—*Bonn*—*E. B.*—*P. L. W.*, Illinois—*O. S. M.*, Alfred, N.Y.—*H. W. W.*—*C. Forrest*—*C. F. B.*—*F. J. C.*—*H. S.*—*T. G.*—*T. W. G.*, Kew—*A. A.*—*T. M.*—*W. C. P.*—*J. S. D.*—*A. Y.*—*H. A.*—*R.*—*Dutfield*—*A. W. R.*—*W. G. D.*—*A. G. J.*—*W. W. P.*—*J. B.*—*J. P.*—*H. W.*—*W. M.*—*E. M.*—*B. C.*—*C. S.*—*A. R.*—*O. S.*—*R. B.*—*J. S.*—*Bellgroves, Ltd.*—*A. R.*



DECUMARIA BARBARA. A HARDY DECIDUOUS CLIMBER.

FLOWERS WHITE, SWEETLY SCENTED.

A. RAPHAIDES ; B. POLLEN GRAINS ; C. AERIAL ROOT (MAGN.).



THE
Gardeners' Chronicle

No. 1,190.—SATURDAY, October 16, 1909.

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JOHN MORTIMER AND THE ART OF HUSBANDRY.

DURING a considerable part of the eighteenth century the name of John Mortimer and his book on the art of husbandry* bulked large in horticulture. Philip Miller's *Gardeners' and Florists' Dictionary* of 1724 provides evidence of the extent to which that gardener was indebted to Mortimer in the compilation of this, his first book; and all through Dr. Johnson's dictionary Mortimer is quoted for words connected with husbandry, gardening, brewing, and kindred matters. In Johnson's *History of English Gardening* it is recorded that Mortimer was a retired London merchant who, in 1693, having purchased the estate of Filhols, in Essex, put into practice there his theories relating to agriculture and other rural pursuits. Later, the name of the estate was changed to Toppingo Hall, and Mr. Johnson relates how, in 1829, Cedars of Lebanon of large size, which Mortimer had raised from seeds derived from cones imported from Syria, were still thriving. From other sources we learn that he was a native of Somersetshire, and that his paternal estate had been destroyed by inundations. Mortimer

* Title of 1st Edition. *The Whole Art of Husbandry, or the Way of Managing and Improving of Land.* Being a complete collection of what has been written on the subject, either by ancient or modern authors, with many additions of new experiments and improvements not treated of by others, to which is added The Countryman's Kalender. London: Printed by I. H. for H. Mortlock, at the Phoenix, and L. Robinson, at the Golden Lion, in St. Paul's Churchyard, MDCCVII.

was thrice married, and it is supposed that his first wife, Dorothy Cromwell, was a daughter of Richard and a grand-daughter of Oliver Cromwell, the Protector.

As appears from the many editions which were published, Mortimer's book had a great success. It first appeared in 1707, again in 1708, 1709, 1712, 1714, 1716, in Dublin in 1721, and the latest edition, by his grandson, in 1761. In 1727 a translation was published in Sweden.

The first portion is entirely devoted to agriculture, and part of the second to brewing and other matters unconnected with horticulture. Such interesting subjects as current prices, wages, &c., enhance the value of the book to the general reader. The several parts are cleverly arranged, and the matter condensed in a manner uncommon for the period. Accuracy is most painfully lacking in the part devoted to the garden, many plants being described more than once under different names, and in some instances under different sections. It is, in a word, a plain, undemonstrative treatise, and present-day readers will search its pages in vain for fine writing like that of Lawson, for the quips and loving remarks of Parkinson, the classical allusions of Evelyn, or the unique comparisons of Ralph Austen.

The purely horticultural part of the book runs to about 240 pages and embraces in separate sections vegetables, shrubs, the greenhouse, flowers and fruit. Taking them seriatim and the more interesting points in each, we may note that the author strongly recommended that all ground should be trenched, the top spit to be turned into the bottom and the under spit transferred to the surface, objectors to the practice being reminded that ground trenched in autumn became so mellowed by exposure during winter and enriched by manure applied in spring that it was quite fertile at that season. Another point he argued was the need of rotation in cropping, and among other remarks of a general nature mention may be made of that advising the reductions of buds and shoots, and the lifting of bulbs immediately subsequent to withering of foliage. In the article on Artichokes, of which three kinds were cultivated, the desirability of leaving only two or three "slips" to each plant is recorded. Broad Beans were to be sown in rows 3 feet apart and the pods when ready "cut off with a knife." Late Cauliflowers were to be lifted and "set" in a greenhouse to yield a supply during winter, and Hotspur Peas were said to be ready to use in May from sowings in early autumn, while the Sugar Pea, which is being largely cultivated at the present time, was strongly recommended. The seeds of Peas were by some cultivators dibbled single in rows. From all this it is apparent that there were gardeners 200 years ago who knew their business.

Besides crops usual in kitchen gardens at the present day a large number of others long ago suppressed are also mentioned, and it is curious in this connection to find double Violets among them, these and Lavender having been requisitioned as edging plants. Roses also appear in this section, and such fruits as Currants, Gooseberries, Strawberries, and Raspberries. The close clipping of Gooseberries is condemned, and the utility of what appears to have been the common practice of bundling together strong and weak canes is pointed out. The chapter descriptive of shrubs calls for no comment, but that portion in which greenhouse subjects are treated must briefly be referred to, because it proves that greenhouses which at that time were structures for the preservation of greens (Evergreens) during winter were not at all uncommon. Mortimer passes in rapid review several

kinds of greenhouse more or less adapted to the purpose: the sunk pit protected with wooden shutters, and others, including the most expensive, the walls of which were lined with Dutch tiles and lighted by means of glass casements. Heating was effected in all sorts of ways:—by charcoal in pans, by fires lit in holes in the floor, by "fire hung up," by "trils made under the floor to convey warmth from the stoves made on the backside of the house." Those conversant with the essayists of that period will remember the description of a greenhouse, which reads rather like that of a winter garden, and which appeared in the *Tattler* of June 1, 1710, fully confirming Mortimer's statements. Both are alike also in the list of tender exotics, inasmuch as each is ludicrously brief. Mortimer's comprises *Solanum Capsicastrum*, Citrons, *Phoenix dactylifera*, Lemons, Oranges, Capsicums, Pomegranates, the Pine Apple and the Tulip tree! But in other sections mention is made of plants, e.g., Cannas, Cyclamens, *Ranondia pyreniaca*, *Opuntias*, tender *Jasmines* and *Passifloras* which were to be preserved over winter in the greenhouse.

Concerning the flower garden the author chronicles no advance on previous writers. He seems to have been ignorant of the magnificent gardens which had been, and at that time were being, laid out on the great estates. His idea for a flower garden was a "long square" lying close to the house with a principal walk in the middle leading from the most frequented room in the house. It was to be fenced with a brick wall in preference to any other, but if a "quick" fence were adopted, then Holly was the best. The "inward" quarters were to be divided by clipped hedges of Codlins, Cherries, Plums, Quinces, *Cratægus pyracantha*, &c., no doubt on account of their blossoms, but partly also for their fruit. "Greens" cut in "chequer-work" are also noted. The best walks for winter were "reckoned those paved with broad stones," of which at present we are seeing so much. "Walks of grass are much to be preferred in summer," of which also there are many modern examples, but in addition to these several other kinds of walks are described. Incidentally we learn that the flowers were arranged in beds bordered with wooden rails. Anemones, Auriculas, of which "the double sort is the most rare and the Windsor Auricula the most splendid," Gillyflowers, which were carefully disbudded to one or two blooms, Pinks, in which the China Pink is included, and which have always been regarded as first cultivated by Fairchild about the year 1713, the "double Pheasant-eye" named here also for the first time, *Ranunculus*, Stocks and Tulips were the chief plants cultivated; and of other plants mentioned none were novelties at that period. *Bacchus-bole* and *Dorothea* are two which Miller quotes in 1724, but they were strange to him. Not improbably they are merely names of some florists' flowers, the latter almost certainly a Carnation, and perhaps also the first-named.

There yet remains to examine the section devoted to fruits, the culture of which would appear to have given the author the greatest pleasure. In certain matters, as in dwarfing trees, he is less advanced than some of his predecessors, but many remarks point him out as a careful experimentalist. For example, he trained some of his orchard trees "fan-fashion," or, as we now term it, as open bushes. One of the causes of sterility in Apples he considered to be dryness at the root at the time of blossoming, and as one means of inducing a condition of fruitfulness, summer pruning is recommended. An interesting descriptive catalogue of fruits is given. Of Apples quite 120 sorts are noted. It is amazing to read that the Golden Pippin was "the best of Apples for cyder, eating, and baking." Of very old varieties

note may be made of the Golden Rennet, the Leather Coat, which is here said to be "an extraordinary good bearer," which I do not find to be the case. There is also the Bartlet, the John Apple, indissolubly associated with Sir John Falstaff; Queenings, and Pomewater, this latter constantly cropping up in old literature. It is here "indifferent and long lasting"; earlier, it was soon past; the Margaret, the Jennetin, the Codling, the Cat's Head, Fillets (Violets), and the Short Start (Court Pendu). The Devonshire Quar- rington was then new, and the King Apple of that period was early and so cannot be identical with Warner's King, as has been supposed. Several have synonyms. Of Pears about 140 names are noted. Mortimer introduced several French varieties, but his nomenclature is almost beyond recognition. "Bœvre" does duty for beurré, and for Virgoulee we have "Virgo, lair." The "Early Susan," "little bigger than a Cherry," was the first to ripen, and he mentions several Katherines, of which the red was the best, and this was the commonest, too—"as red as is a Katherine Pear." Some 50 Peaches are named, of which "the Ricket Peach hath lately gained the reputation of being the best"—this probably a seedling of Ricket's, a nurseryman of Hogsdon. "Malacotounes," we are told, are "Apples with cotton on them!" At this period they were not much valued. Salway, it may be mentioned, is a modern Malacoton. A short Husbandman's Kalender of 40 pages completes the book. This Kalender is arranged in the manner usual during a very long period, and contains nothing out of the common, though in the list of fruits in use and of plants in flower are some not mentioned in the body of the book. R. P. Brotherston.

ORCHID NOTES AND GLEANINGS.

CATTLEYA IRIS KING EDWARD VII.

CATTLEYA Iris, a beautiful hybrid between *C. bicolor* and *C. Dowiana aurea*, raised by Messrs. Charlesworth & Co. some years ago, has proved to be one of the most varying of hybrid Cattleyas. All the forms are handsome, but some few exceed the rest in size and colour. One of the best varieties is that known as King Edward VII., illustrated in fig. 114. The photograph was taken from a flower in the collection of H. S. Goodson, Esq., Fairlawn, West Hill, Putney. The petals are very broad and indicate strongly the influence of *C. Dowiana*. Both sepals and petals are of the colour of old gold, with a slight rose shade. The side lobes of the lip, much shorter than the fleshy, white column, are cream-white, tinged and veined with pale rose, the broad front lobe being magenta-rose, with red veining from the base to the centre.

CATTLEYA GASKELLIANA "DELIGHT."

This charming white Cattleya was a special favourite with the late Marquis de Wavrin, who was a keen collector of distinct forms of large-flowered Cattleyas, and one of the best authorities on their respective merits. The flowers are about 7 inches across, and of a clear, silvery-white colour, the base of the lip having white lines on a chrome-yellow ground, and, in front, a marbled blotch of Parma Violet colour—a very uncommon tint for Cattleya Gaskelliana. A three-flowered inflorescence, taken from a plant acquired when the Wavrin collection was distributed, is sent by Francis Wellesley, Esq., Westfield Common, Woking.

LÆLIO-CATTLEYA WALTER GOTT.

A PRETTY new hybrid, between Cattleya bicolor and Lælio-Cattleya Bletchleyensis (*C. Warszewiczii* × *L. tenebrosa*), has flowered with Messrs. Sander & Sons, St. Albans, and has been named after Mr. Gott, who has charge of their Orchid-raising department. As with all the hybrids of *C. bicolor*, the influence of that parent is clearly shown, but the introduction of *L. C. Bletchleyensis* has resulted in a very pretty

flower. The sepals and petals are bronzy-yellow, the lip deep magenta in front, with a cream-white base. Being of hybrid parentage on one side, the batch raised will no doubt give many distinct varieties.

NOTICES OF BOOKS.

THE BOOK OF NATURE STUDY.

THIS volume maintains the high standard set in those already published. In the earlier chap-

Sprengel, the pioneer of investigations into the relations between flowers and insects.

A chapter is devoted to the Scotch Fir, special attention being paid to features of biological interest, and this section of the book concludes with a few general notes on pollination and the dispersal of seeds, with a brief scheme of classification, indicating the systematic position of the types described. Good Scots will rejoice to find the Ling (*Calluna vulgaris*) described as Heather, while the two common species of *Erica* are referred to as Heaths.



FIG. 114.—CATTLEYA × IRIS "KING EDWARD VII."

ters, Dr. Lang continues to deal in an interesting way with the life histories of various common flowering plants, many of which are illustrated by excellent coloured plates. Parasites, such as the Dodder, and insectivorous plants, like the Sundew and Butterworts, come in for a share of attention, as does also the Willow Herb, with its curious pollination mechanism, first described by

• Edited by Bretland Farmer, D.Sc., F.R.S. Vol. iv. (The Caxton Press.)

Ferns, mosses, fungi, and lichens have been treated in a special section, illustrated by a number of good photographs. Those of the lichens are particularly clear, and show structural details clearly enough for purposes of identification.

The concluding chapter constitutes an introduction to the study of Ecology—a novel feature in a work of this kind. The author deals with woodland vegetation, referring more especially

to the common plant-associations characteristic of commons, heaths, and moors. A useful feature is the bibliography at the end of each section.

TROPICAL CULTURES.

THE Belgian Ministère des Colonies has issued recently two handbooks on the cultivation of economic plants in the Belgian Congo, which may prove of service to British cultivators in adjoining territories.* The first, on rubber-yielding plants, treats of *Landolphia*, *Funtumia* and other genera belonging to the Apocynaceæ; of *Hevea brasiliensis*; of *Ficus elastica* and other species of *Ficus*; of *Castilloa elastica* and *C. Tunu*; and of *Manihot Glaziovii*. Full particulars are given of each operation, from propagation, by seed or otherwise, to the collecting, preparing and packing of the rubber. Much of the contents consists of the results of experiments in relation to growth, yield, and quality of latex, as determined by soil, climate and other factors. There are a good many illustrations of individual trees and of plantations, with particulars of size and age. The experiments have been carried on in various distant places, but chiefly in the Botanic Garden at Eala, on the river Congo, at the Equator.

The second work is on the cultivation of the Coffee and Cocoa, from which we learn that, owing to over-production of the former, prices are not remunerative. Africa is the home of the genus *Coffea*, of which about a score of species are known, and, apart from the familiar *C. arabica* and *C. liberica*, which furnish practically all the Coffee of commerce, experiments have been made with *C. Arnoldiana*, *C. aruwimiensis*, *C. Dewevrei*, *C. Royauxii*, *C. canephora* var. *sankuruensis* and var. *kouliuensis*, and *C. congensis* var. *Chalotii*. For the results we refer to the original source.

HARDY HEATHS.

(Continued from page 241.)

E. MACKAYI.—A profuse autumn-flowering species found in Spain and in Galway, Ireland. Intermediate between *E. ciliaris* and *E. Tetralix*, it is considered to be a natural hybrid of these two species. Synonyms used in some nurseries and gardens are *E. Mackaiana* and *E. Tetralix* var. *Mackayana*. The small leaves are dark green above, nearly white beneath. The flower-heads are somewhat umbellate, purplish-pink, deeper in colour than *E. Tetralix*, which the flowers most resemble.

E. MEDITERRANEA.—This Heath is a native of South-west France, Spain, and Ireland, in Galway and Mayo. It is without doubt the best of our taller-growing, spring-flowering Heaths. Here and there a few tips were damaged by the severe weather last winter, but it is a hardier species than *E. arborea*, *E. australis*, and *E. lusitanica*. This is a grand plant for naturalising in the more open places in the woodland. The colour of the flowers—reddish-pink, with prominent black anthers—makes it one of the best species to plant for effect in a setting of the varied shades of green of trees. From March to May the bushes, 4 feet to 5 feet in height, are covered with blossoms. Wild specimens of this height have been found on mountain bogs in Ireland, while under very favourable conditions specimens sometimes attain a height of 12 or more feet. In cultivation there are two forms, one having much richer coloured blossoms than the other. The white variety *alba* differs chiefly in the colour of the flowers, being similar to the type in stature. Var. *glauca* is a low-growing plant, with glaucous-green foliage; var. *hibernica* is found in Ireland; var. *nana* is a dwarf, compact

plant, and var. *hybrida* a natural hybrid between *E. carnea* and *E. mediterranea*. This is truly a very valuable plant, for at the present time (September) it is covered with buds almost on the point of opening, while in winter, and especially in February and March, the reddish flowers are delightful, even though they may have been covered with snow for several weeks or have been subjected to as much as 20° of frost.

E. MULTIFLORA.—A native of South-west Europe, and, according to Nicholson's *Dic-*



FIG. 115.—FASCIATION IN LILIUM DALMATICUM.
(From a photograph supplied by Mr. Elwes.)

tionary of Gardening, introduced into this country from France in 1731. The name multiflora, is particularly appropriate for this plant, as both mature specimens, 2 feet in height, and young plants, 4 inches high, are covered with blossoms. These are white, disposed in racemose corymbs, the brown anthers being prominent. It is an autumn and

early-winter flowering species. A synonym is *E. peduncularis*, J. and C. Presl.

E. SCOPARIA.—This species is found in the Western Mediterranean region. It is a tall, slender-growing species, but of little value in gardens, the flowers, which are produced in late summer, being greenish in colour. Synonyms are *E. arborea*, Hort., and *E. virgulata*, Wendl.

E. STRICTA.—Synonyms for *E. stricta* are:—*E. Corsica*, D.C., *E. multicaulis*, Salisb., *E. pendula*, Wendl., *E. ramulosa*, Viv., and *E. terminalis*, in the *Botanical Magazine*. The plant forms a pretty bush, 6 feet in height, covered in July and August with purplish-red flowers, nearly every growth terminating with an umbel of a dozen or more blossoms. It is a native of South-western Europe, and was introduced into this country in 1756.

E. TETRALIX.—This is known as the "Cross-leaved Heath," the leaves being arranged on the stems in whorls of fours in the form of a cross. The greyish-green hue of the foliage and the drooping pink, wax-like flowers give the plants a choice-looking appearance. It flowers during July and August, averaging a foot in height. *E. Tetralix* is abundant on moors and bogs in Britain and North and Western Europe to Russia. A number of forms have been given varietal names. *Alba*, as the name denotes, has white flowers; var. *Lawsoniana* is similar in colour to the type, but more compact and smaller growing; there is also less of the greyish tint on the foliage. Var. *mollis* has white flowers and distinct greyish leaves. Var. *Stuartii* is smaller-growing than the type, while the ground-colour of the corolla near the base is white. Var. *rubra* is richer in colour.

E. VAGANS.—This Heath is popularly known as the "Cornish Heath," being a common wild plant in that county; it is also a native of South-western Europe. It flowers from July to September, attaining a height of 12 inches to 2 feet, and has light purple blossoms. There are three distinct forms or varieties in addition to the type—var. *alba*, white; var. *grandiflora*, an improved *E. vagans*; and var. *rubra*, rose-coloured. The stamens in this species and the varieties are prominent, extending outside the corolla, not with the anthers pressed against the style, a characteristic of most of the species, the other notable exceptions being *E. mediterranea* and *E. multiflora*. A. O.

(To be continued.)

FASCIATION IN LILIUM DALMATICUM.

THE specimen of a fasciated stem of *Lilium dalmaticum* (see Fig. 115) has been reproduced from a photograph sent by Mr. H. J. Elwes. Fasciation is one of the commonest abnormalities in plants, but it is peculiarly prevalent in *Lilium* when grown under high culture. Specimens of *L. auratum*, for instance, are sent to us every season in plenty, some examples bearing an extraordinary number of flowers. We do not remember, however, a similar instance in *L. dalmaticum*, although, in Masters' *Teratology*, *L. Martagon* is included in the list of species in which fasciation had occurred in some degree. Mr. Elwes' specimen bore as many as 366 flowers and buds, of which about one-half did not open. With respect to *L. dalmaticum*, Mr. Elwes now states that he thinks this Lily should be considered as a distinct species, notwithstanding that in his own Monograph of the genus, and by other writers, it has been treated as a variety of *L. Martagon*. *L. dalmaticum* is much more robust in growth. Some of the batch of seedlings from which the fasciated stem was cut were more than 6 feet in height. The dense, woolly pubescence of the buds, though, like the flowers, variable in colour, distinguishes the plant from any form of *L. Martagon* known to Mr. Elwes.

*1. *Manuel Pratique de la culture et de l'Exploitation des Essences Caoutchoutifères indigènes et introduites au Congo Belge.*

2. *Manuel Pratique de la culture du Caféier et du Cacaoyer au Congo Belge.*

A STRAWBERRY CENSUS.

THE Strawberry crop is not less important in private gardens than in commercial establishments. It is such a generally popular dessert fruit that we suppose there are few gardens of any pretension in this country where anxious consideration is not given to the culture of the plant. In the greater number, provision is made not only for the cultivation of Strawberries out-of-doors but also for forcing them in glasshouses for the prolongation of the season of ripe fruits. Such is the importance of the crop that it becomes necessary for those engaged in cultivation to take every means in their power to ascertain which varieties are best suited for their particular requirements. It may be admitted at once that the qualities desired in a Strawberry grown solely for domestic purposes are not identical with those required in the fruit raised for the supply of the general public. If a variety has the quality of good flavour in a marked degree, but lacks vigour of habit and free-cropping qualities, or, if it has fruits which have not the necessary texture and solidity of flesh to enable them to remain good after being carried long distances, it is scarcely one that will commend itself to commercial gardeners. At the same time, if these latter characteristics can be obtained in a variety which also possesses the most estimable quality, namely, that of flavour, there is every reason why it should be as popular in the commercial gardens and markets as in private establishments.

From time to time letters are addressed to us on this question of variety. In some cases the writers relate their experience in the case of a particular kind; in others, they ask for advice in the important matter of selection. For these reasons it appeared to us that a census of Strawberries would be interesting and instructive, and, therefore, occasion was taken during the past season, when writing to a number of correspondents in relation to the hardy fruit crops, to address to these same correspondents certain questions respecting Strawberries. Nearly 200 cultivators were good enough to send us the information required. The correspondents were, for the greater part, head gardeners in private establishments, but the list also included many market-gardeners, nurserymen and amateur fruit-growers. The compilers of the returns were asked to name the best early, the best mid-season, and the best late fruiting varieties; also, the best varieties for forcing, the best varieties from the point of view of flavour and the best varieties introduced since 1900. In each case it was the best three that were asked for. The results clearly show the extraordinary popularity of Royal Sovereign, which is cultivated in many gardens to the exclusion of all other varieties, it being used alike for cultivation out-of-doors and for forcing in the houses. Whether this is a wise policy is doubtful. Not only is there greater interest when more variety is cultivated, but, owing to the idiosyncracies of varieties, to their late or early-blooming characters, and to their general habit, some are likely to succeed in particular seasons when certain others fail. In the task of maintaining a supply as long as possible it is equally important that at least a selection of the known varieties should be cultivated. Nevertheless, in many cases correspondents named that variety alone instead of enumerating three, therefore, in order to give the variety the place it should occupy in the census, in such cases the one return was counted three times, this method, of course, being extended to all varieties returned in a similar manner. We know that in a census of this kind the results merely indicate what varieties are grown and appreciated most commonly rather than an exact determination as to which are really the better sorts. Some of the newer varieties would probably have figured more prominently in the lists if they were more widely distributed. However, it is satisfactory that in several cases they are mentioned. The Laxton, for instance, which has been in cultivation only

BEST EARLY STRAWBERRIES.

	Scotland N.	Scotland E.	Scotland W.	England N.E.	England E.	Midland Counties.	Southern Counties.	England N.W.	England S.W.	Wales.	Ireland.	Total Number of Votes.
Royal Sovereign	4	13	15	6	20	51	60	15	11	12	13	210
Vicomtesse Hericart de Thury (sya Garibaldi)	4	8	7	2	9	22	16	10	5	5	3	91
The Laxton	1	1	1	2	1	6	3	6	1	3	—	24
Leader	—	—	—	—	1	4	5	2	2	2	—	17
Black Prince	—	—	—	1	1	7	1	2	1	1	—	16
Keen's Seedling	3	1	1	1	1	3	1	1	1	1	—	14
La Grosse Sucrée	—	—	—	1	2	6	1	2	1	1	—	14
Noble	—	—	1	1	1	2	2	3	—	3	—	12
Sir Joseph Paxton	—	—	—	—	1	6	2	—	—	1	—	10
Bedford Champion	—	—	—	—	—	4	—	1	1	2	—	8
Kentish Favourite	—	—	—	1	2	1	4	—	—	—	—	8
John Ruskin	—	2	1	—	—	1	—	2	—	1	—	7
King of the Earlies	—	4	—	—	—	1	—	—	—	2	—	7
Scarlet Queen	—	2	—	—	2	2	—	1	—	—	—	7
Myatt's Eliza	—	4	—	—	—	—	—	—	—	—	—	4
Laxton's No. 1	—	—	—	—	2	2	—	—	—	1	—	3
President	—	—	—	—	2	1	—	1	—	—	1	3
Gunton Park	—	—	—	—	1	—	—	—	—	—	—	2
Mentmore	—	—	—	—	1	—	—	—	—	—	—	2
Edouard Lefort	—	—	—	—	—	—	1	—	—	1	—	2
Monarch	—	—	—	—	1	1	—	—	—	—	—	2

MID-SEASON STRAWBERRIES.

	Scotland N.	Scotland E.	Scotland W.	England N.E.	England E.	Midland Counties.	Southern Counties.	England N.W.	England S.W.	Wales.	Ireland.	Total Number of Votes.
Sir Joseph Paxton	1	4	9	3	6	15	16	6	4	5	3	71
President	—	5	6	5	8	16	4	8	5	5	2	67
Fillbasket	—	6	1	1	3	8	8	7	3	1	2	40
Royal Sovereign	4	—	—	—	6	11	5	5	5	8	—	89
Reward	—	1	—	—	1	12	7	2	—	7	1	31
Bedford Champion	—	—	—	1	5	8	5	3	3	4	1	30
Leader	—	4	—	—	5	5	5	1	1	1	3	25
British Queen	—	—	2	—	4	4	2	2	2	1	—	16
The Bedford	—	—	3	1	2	2	3	2	2	1	—	14
Monarch	—	—	—	—	3	4	3	1	—	—	1	12
The Laxton	1	—	1	—	—	4	1	2	1	2	—	12
Countess	—	1	—	—	1	5	1	2	—	—	—	10
Dr. Hogg	—	—	3	—	1	1	2	1	—	1	—	9
Gunton Park	—	—	1	—	—	3	4	—	—	—	1	9
Mentmore	—	—	—	—	—	3	3	1	—	—	—	7
Louis Gauthier	—	—	—	—	2	4	—	1	—	—	—	7
Vicomtesse Hericart de Thury	—	1	2	1	—	1	2	—	—	—	—	7
Dumbarton Castle	—	2	3	—	—	—	—	—	—	—	1	6
James Veitch	1	—	—	1	1	1	—	1	—	—	1	6
Trafalgar	—	—	—	—	1	1	2	—	1	—	1	5
Profit	—	—	—	—	—	—	—	—	—	1	3	4
Sir Harry	1	—	—	—	—	1	—	1	—	—	—	3
Kentish Favourite	—	—	—	—	—	1	2	—	—	—	—	3
Perfection	—	—	—	—	—	1	—	—	—	—	—	2
Bountiful	1	—	—	—	—	—	—	—	—	—	—	2
Aberdeen Favourite	—	2	—	—	—	—	—	—	—	1	—	2
Kitley's Goliath	—	—	—	—	—	1	1	—	—	—	—	2
Scarlet Queen	—	2	—	—	—	—	—	—	—	—	—	2
Duke of Edinburgh	—	1	—	—	—	—	—	—	—	—	1	2
Cropper	—	—	—	—	1	—	—	—	—	1	—	2
Progress	—	—	—	—	—	1	—	1	—	—	—	2
Lord Overton	—	—	2	—	—	—	—	—	—	—	—	2
Givon's Late Prolific	—	—	—	—	—	1	1	—	—	—	—	2
Sir Charles Napier	—	—	—	—	—	—	1	1	—	—	—	2

LATE STRAWBERRIES.

	Scotland N.	Scotland E.	Scotland W.	England N.E.	England E.	Midland Counties.	Southern Counties.	England N.W.	England S.W.	Wales.	Ireland.	Total Number of Votes.
Givon's Late Prolific	—	13	6	7	13	29	31	15	5	9	3	181
Waterloo	—	2	3	1	12	19	16	2	2	10	3	76
Laxton's Latest	1	4	1	2	4	17	12	2	2	7	3	64
Latest of All	—	1	1	1	11	16	7	4	4	4	5	63
Elton Pine	4	12	4	2	2	11	—	—	—	—	1	34
Trafalgar	—	3	1	1	2	5	1	1	—	—	1	13
Eleanor	—	—	—	1	1	4	1	2	1	2	—	12
British Queen	—	—	—	—	1	5	2	—	—	—	—	8
President Loubert	—	—	—	1	—	3	1	1	—	—	—	6
Dr. Hogg	—	—	—	—	1	1	—	2	1	1	—	6
Oxonian	—	—	—	—	—	1	1	1	2	—	—	4
Fillbasket	—	—	—	—	—	1	3	—	—	—	—	4
Frogmore Late Pine	—	—	—	—	1	1	—	1	—	1	—	3
Vicomtesse Hericart de Thury	3	—	—	—	—	—	—	—	—	—	—	3
St. Joseph	—	—	—	—	—	—	—	—	—	—	—	2
Myatt's Seedling	1	1	—	—	—	—	—	—	—	—	—	2
Louis Gauthier	—	—	1	1	—	—	—	—	—	—	—	2
Loxford Hall Seedling	—	—	—	1	—	—	—	—	—	—	1	2
Newton Seedling	—	—	—	2	—	—	—	—	—	—	—	2
Reward	—	—	—	—	—	1	—	—	—	1	—	2
Sir Antoine de Padoue	—	—	—	—	—	1	1	—	—	—	—	2

a few years, occupies the third position in the voting for early-fruiting varieties. A large number of varieties were mentioned, over and above those shown in the tables, it having been deemed expedient to omit all those which gained but one vote. There were 15 of such varieties in the first table, namely, that for the best early Strawberries.

There have been occasional complaints during the past few years that the habit of certain varieties, such, for instance, as Royal Sovereign, has shown deterioration, and, in our own columns the writer of an article three years ago maintained that it had become necessary to find a substitute for this variety in commercial gardens. Without entering, at the moment, into the general question of deterioration of varieties, it may be said without hesitation that Strawberries, like most other plants, may be kept in the greatest vigour for the longest period by obtaining fresh stock occasionally from a distance, just as it has been found necessary to get fresh seed tubers in the case of Potatoes.

It will be generally conceded that modern Strawberries excel the older sorts in many im-

The Week's Work.

THE ORCHID HOUSES.

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

Oncidium Kramerianum and *O. Papilio*.—A light position in the Cattleya house is suitable for plants of the butterfly Orchids, *Oncidium Kramerianum* and *O. Papilio*. They may be grown in shallow pans or baskets, with just a thin layer of compost to root in. The flower-stems of these plants will continue to send out flowers for a long period, for each flower as it fades is succeeded by another. But those who wish to have strong plants and good flowers, should remove the flower-spikes after they have produced three or four blooms. Afford the plants plenty of water at all times.

Oncidium.—In the cool house the Brazilian *Oncidiums*, such as *O. Forbesii*, *O. crispum*, and *O. varicosum* are now developing their flower-spikes, and strong, well-rooted plants may be allowed to bloom, but in the case of small and weakly plants the spikes should be removed as soon as they appear. These plants produce strong, many-branched flower-spikes within a few

which includes *D. thyrsoiflorum*, *D. densiflorum*, *D. Griffithianum*, *D. Bronckartianum*, and *D. Farmeri*, that have finished their growth, may also be removed from their growing quarters to a cooler and better ventilated atmosphere, but they should not be kept quite so dry at the root as those of the *D. nobile* section. *D. suavissimum* and *D. chrysotoxum* thrive and bloom very well if kept in the growing house; they merely require sufficient water to keep the pseudo-bulbs and the leaves fresh and plump. The deciduous *D. aureum* (*heterocarpum*) will soon be pushing out flower-buds from the pseudo-bulbs formed last year, but the plants should be allowed to remain in the resting house till the buds have about half developed, at which time they will need more warmth to assist their expansion.

Deciduous Calanthes.—Plants of the *C. Veitchii* and *C. vestita* section are now showing their flower-spikes from the base of the new bulbs, and it is important that each plant be given additional space. To meet this requirement we fill up the space recently occupied by the deciduous *Dendrobiums* with the largest and most forward of the plants, elevating them well up to the roof glass, and so arranged that every plant obtains its full share of sunlight, shading after this date being unnecessary. The extra light will invigorate and solidify the bulbs and counteract spot in the leaves. The smaller plants that remain in their growing quarters are rearranged and treated likewise. The bulbs, though considerably advanced, still require plenty of water at the root, and at each alternate watering weak liquid cow manure may be applied, but it should be discontinued when the leaves begin to change colour. After that stage a moderate amount of clear rain-water should be afforded until all the flowers are expanded, when water should be gradually withheld. *Calanthes* of the *C. Regneri* section that are now in full growth will also require extra sunlight, which will cause the soil to dry up quickly and necessitate the application of more water to the roots. If treated in the same manner as the others were when in full growth, these plants should make large, plump, pseudo-bulbs and commence to open their flowers soon after those of the *C. Veitchii* section are over.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Late Grapes.—The latest varieties should now be perfectly ripened, and the chief object is to keep them in good condition for as long a period as possible. The atmospheric temperature at night should not be less than 50°. During bright, genial weather it may rise during the day to 70°, or even 75°, provided the ventilators are open at the top and bottom of the house on such occasions. Whenever there is evidence of moisture in the outdoor atmosphere the front ventilators must be kept closed. Unless water is absolutely necessary to the roots it should be withheld, and even when moisture is called for it should not be applied in excessive quantities, nor should it be used at a temperature much less than 60°. Such water may only be given on fine mornings when air can be admitted to prevent moisture condensing on the fruits; after the watering has been done a layer of clean straw should be placed over the borders. Remove all lateral growths in order that air may circulate freely about the leaves, as this will also prevent moisture condensing on the fruits. The common practice of placing flowering plants in vineries where ripe fruit is still hanging is injurious to the Grapes and vines, and, although the crowding inevitable at this particular season of the year is a matter not easily dealt with, plants should only be put in late fruiting vineries as a very last resource. In cases where such houses have to be brought into requisition for the purpose, some discrimination should be made as to the kind of plant which is selected and the situation given them in the vinery. For instance, plants requiring much water are to be rejected, and such plants as are placed in the house should be arranged on shelves as far away from the Grapes as possible. Carelessness in these matters is the frequent cause of deterioration in fruit-tree borders, the results of which are to be seen in mildew, shanking, and imperfectly finished fruit.

Planting Peach trees.—This operation may be done during autumn or winter, but if it can be

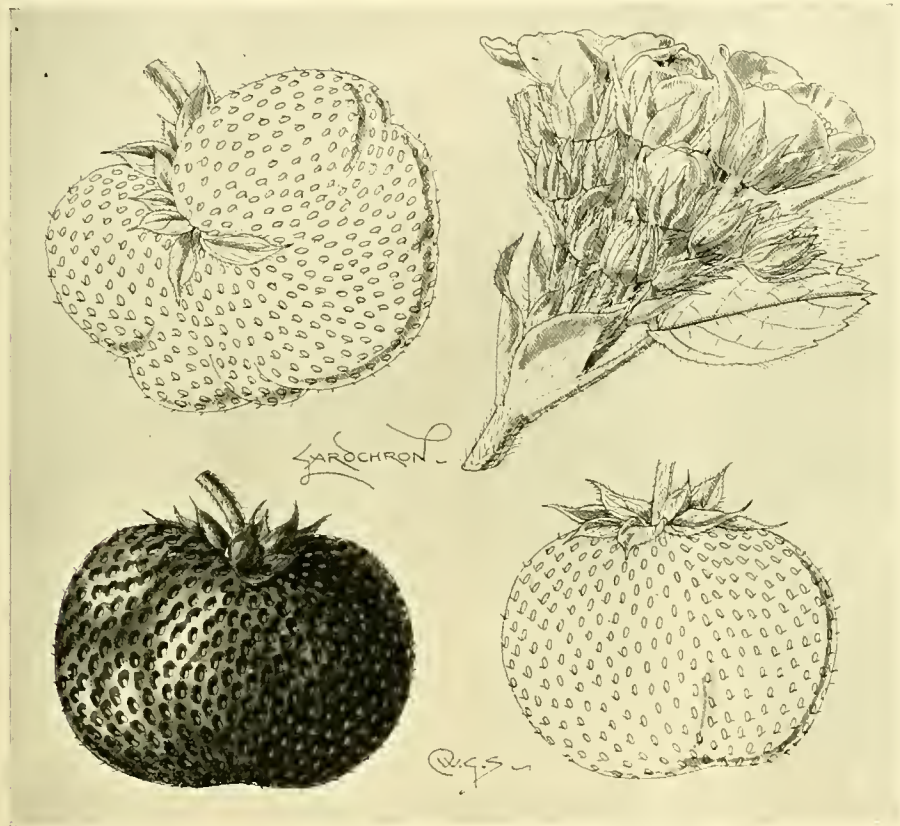


FIG. 116.—NEW PERPETUAL-FRUITING STRAWBERRY ATKIN'S CONTINUITY. (See also p. 237.)
(Received an Award of Merit at R.H.S. meeting on September 28.)

portant characteristics, but particularly in size of fruit and heavy cropping. We have no hesitation in saying that whilst these qualities in themselves have given general satisfaction, it is nevertheless desirable that even greater efforts should be made to develop good flavour, such, for instance, as is found in British Queen.

In the perpetual-fruiting varieties there appears to be the promise of considerable improvement. Two varieties of this section, recently distinguished by the Royal Horticultural Society's Award of Merit, have shown marked superiority, both in size and flavour, and these may be expected to still further prolong the season of first-class Strawberries, which, at the best, is very short. We give illustrations, from drawings by Mr. Worthington Smith, of these varieties, Atkins' Continuity and Laxton's Perpetual. Further tables will be published in the next issue.

months after being imported, and the plants quickly exhaust themselves if allowed to retain these spikes for too long a time. Plants that are only semi-established or badly rooted, if allowed to develop such spikes, gradually but surely dwindle away, notwithstanding that everything is done for them as regards care and cultivation. Therefore, cut the spikes immediately the flowers are fully expanded and place them in water, where they will remain fresh for a considerable period. While these plants are developing their flower-spikes, they should not be allowed to get very dry, or the flower-buds may drop off and the spikes will be useless. Plants of *O. concolor* that have made up their new pseudo-bulbs will not require anything like so much water as they needed during the growing period, but they must not be kept so dry as to cause them to shrivel.

Dendrobium.—The *Dendrobiums* must now be often examined, and any plants that have made up their growths should be removed to the resting house. Plants of the evergreen section,

done during the present month or early in November the trees may be expected to make fresh roots before they break into growth in spring. Do not make such borders too large for their purpose. A border 4 feet wide and 2 or 2½ feet deep will provide sufficient rooting space for several years. Prepare a sloping base of concrete, and on this place a 1 foot layer of brickbats; this will provide ample drainage. The soil should not be of too rich a character. Very rich loam would be all the better for having some common garden soil and plenty of old mortar rubble mixed with it. A richer compost may be added in later years when the trees are carrying crops of fruit. Make the border in layers and ram each layer of soil firmly as the work proceeds. Do not keep the trees out of the ground for a longer time than is necessary, and

nails and shreds, and the walls so battered by frequent nailing that it is scarcely possible to find a square inch free from holes. A tree may be trained to wires in less than one-third the time than would be required to fix it by nailing; moreover, the holes in the wall caused by nailing afford breeding places for insects, and the shreds that are used also shield these pests. Therefore not only from the time-saving point of view, but also that of cleanliness, wiring is to be preferred. When once the wall has been wired it will last in a perfect condition for some years. The trees can be cut each year from the wires, pruned, cleaned, and restrained with greater ease than in the case of nailing. I have heard of damage resulting to the shoots of trees from the use of galvanised wire, but have never seen an instance,

on shelves or in drawers in the fruit-room, where they will keep in good condition for another week or two, thus prolonging the season of these choice dessert fruits. The fruits should be picked whilst quite dry, and any that are bruised or damaged should be rejected, as their presence would soon cause decay in the store.

General work.—If fruit-tree planting is contemplated on a considerable scale, it will be advisable to visit some of the best fruit-tree nurseries in order that the trees may be seen and a selection made of those best suited to meet the requirements. If it is impossible to make such a visit and the gardener has any doubt upon the best varieties obtainable for any particular purpose it will be well for him to leave the selection in the hands of the nurseryman, who can usually be relied upon in such matters. In any case there should be no delay in placing the order for the trees, it being desirable that planting should be done while there is still time for the trees to make some root growth before winter.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LOOER, Bart., Leonardslee, Sussex.

Begonia.—It is quite time to lift Begonias from the flower-beds. For the present and until the foliage dies down the tubers may be stored in boxes; later the soil should be shaken from the tubers and the latter stored in a cool place which is secure from frost.

Canna.—Examine the Cannas before the flowers are passed and see that the colours and varieties are properly labelled. Any that have appeared inferior had best be thrown away. When the Cannas have been taken up they should be treated much in the same way as Begonias, but it is not good practice to store them under a greenhouse stage where there is drip or much moisture of any kind.

Planting.—As these and other beds become cleared of their summer occupants, they should be deeply dug and manured, as was recommended in last week's issue. At the time of writing, the weather is very favourable for planting of any kind, therefore the opportunity should be taken to get out the Wallflowers, Forget-Me-Nots, Thrift, Pansies, Arabis, and other spring-flowering species. Be careful to plant them firmly so that they will not be loosened by the wind. It may be desirable to plant some of the beds with dwarf evergreen shrubs, for when a good selection of these is made and the plants are well arranged they have a very good effect. Such plants include Cupressus, Aucuba, Skimmia, Ligustrum, Veronica, Buxus, Taxus, Juniperus, and Viburnum. These small shrubs require to be planted rather close together and, if put in sufficiently early, they make a few roots, which suffice to keep them in good condition for several years. Any kind of tree and shrub can be planted at this season in beds, borders, shrubberies, or other positions in the pleasure grounds.

Camellia.—The Camellia may be planted in partially exposed conditions or against south and west walls. The best varieties for out-of-door culture are those which start into growth late in the season, and consequently flower late. *C. japonica anemoneflora* is one of the most useful varieties. *C. Donkelaaris* is a first-rate grower; it flowers profusely and is one of the most beautiful Camellias. Camellias do not require a soil composed exclusively of peat, but on the contrary they do best in a mixture of peat, leaf-mould and loam. Until the plants get established they require a little shelter, and the roots being susceptible to injury from frost, some light material should be placed over them during the spring.

Rhododendron.—Rhododendrons may be planted or replanted at any time of the year when the plants are not in actual growth, but probably October is the best of all times for this work. Rhododendrons should be planted rather more closely together than is the usual practice, in order that they may shade each other's roots from the sun. Plant them shallowly, but firmly. They require a mulching for the first year after planting to protect them from frost during winter and heat during summer. A thin mulch frequently renewed is better than a permanent, thicker covering. It is desirable to plant a few less formal habited shrubs with Rhododendrons, as by doing this a



FIG. 117.—NEW PERPETUAL-FRUITING STRAWBERRY LAXTON'S PERPETUAL.

(Received an Award of Merit at R.H.S. meeting on September 14.)

in planting them keep the roots near the surface of the border. Apply a good watering immediately after the planting is done, and syringe the trees twice each day for a week or so until they have recovered from the check.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Wired walls for fruit trees.—It behoves every gardener to take advantage of all labour-saving devices, wherefore I strongly recommend that all walls used for fruit-tree training should be wired. In many gardens there may be seen walls on which every tree has to be secured by means of

and am inclined to think that they are uncommonly rare. But anyone who fears this can prevent it by giving to the wires a coat of paint. Indeed, this practice is to be recommended, for it preserves the wire against the weather. Raidineurs, holdfasts and eyes are procurable at very moderate prices from ironmongers and sundriesmen, and the actual wiring can be done by any intelligent workman. The distance which should be allowed between the wires depends upon the tree that is cultivated, but as a general rule 6 inches is a convenient width, this being suitable for Peaches, Cherries and Plums.

Late Plums.—Dessert Plums, like Coe's Golden Drop, should be gathered and laid thinly

longer season of flowers is enjoyed, and the Rhododendrons themselves certainly succeed better. Considerable care should be exercised in planting Rhododendrons, for the plants should not be of all one size, neither should the beds be planted in the same style. In the grouping of colours, too, there is much room for the exercise of care and taste. Among some of the most interesting plants that will grow well and appear to good effect amongst Rhododendrons are Erica, Andromeda, Kalmia, Magnolia, Ledum, Bambusa, Arundinaria, and the section of Rhododendrons generally known in gardens as Azaleas. Many of the taller-growing species of Liliun succeed admirably in Rhododendron beds and serve to make them bright in late summer when the Rhododendrons have passed out of flower.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Seakale.—The weather during the past season has been favourable to this crop, although in many localities the crowns will be later than usual in ripening. To assist this process as much as possible all decayed foliage and any that is commencing to lose colour should be removed by cutting to within an inch of the base. In early districts the plants will be sufficiently advanced for some of the crowns to be lifted for forcing. The roots should be cut away from the main stem and reserved for planting again, putting them for the present in sand. Later, when there is bad weather, they may be tied into bunches of suitable lengths. Seakale will start to grow much more freely when forced if the crowns can be rested for a week or two after lifting and before they are placed in forcing conditions. If Seakale is required exceptionally early in the season it is better to use retarded grounds for the earliest crop. Seakale usually requires from three to four weeks after it is placed in a dark corner of the Mushroom house or cellar.

Rhubarb.—Suitable varieties, which have been specially grown for forcing in a warm position in the open, should, after all the foliage is removed from them, be lifted, leaving the roots intact as far as possible and allowing them to rest for a period on the surface of the ground under a north wall, covering them with a little long litter. The warmer end of the Mushroom house should be set apart for the Rhubarb. After removal to the Mushroom house the roots should be covered with ordinary soil and the crowns and surroundings damped twice daily with tepid water.

Globe Artichokes.—If these have been given proper attention they are probably still yielding good supplies of "chokes." In the event of frost, any which are not fully developed should be protected slightly, and others which are fit to cut should be taken off with about 8 inches of stem attached. They should be afterwards placed in a little water and stood in a cool place. By cutting off a small portion of the stem on every third day, the "chokes" may be kept in a good condition for a considerable period. The best varieties are more tender and more likely to be injured by severe weather than the ordinary kinds; therefore it is necessary to take some strong suckers at this season of the year and pot them up singly into 7 and 8-inch pots so that they may be given some protection, such as a cold frame, during the winter months.

Cucumbers.—It will be more difficult every day for many gardeners, who have not the best means at their disposal, to maintain a proper supply of Cucumbers. The glass of the Cucumber house must be kept scrupulously clean, so that every ray of sunshine may reach the plants. Maintain an atmospheric temperature of 65° to 70°, varying a little with the climatic conditions. Damp the interior walls and paths several times each day and again the last thing at night.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Cyclamen.—The earliest plants will now be showing their flower-buds, and may be given frequent doses of weak manure water. Place the plants in a good position in a light, well-ventilated house. Unless it is intended to save seed from them, the flowers should be removed as soon as they show signs of fading, to encourage the plants to produce a succession. Seedlings raised

during the present autumn are ready to be pricked off; the largest may be potted singly into thumb-pots, using a light, porous compost such as one composed of equal parts sifted loam and leaf-soil, with plenty of silver sand. Press the soil firmly, and place the young plants near to the light in an atmospheric temperature of 55°, shading them for the first few days from direct sunlight. Cyclamen should be lightly fumigated to check the spread of aphid and thrip. Should red spider appear, sponge the leaves with soft-soapy water.

Fuchsia.—Cuttings of soft, young growths should be inserted to furnish shapely young plants to bloom next summer. As soon as the cuttings are rooted, pot them singly into small pots and keep the plants steadily growing in an intermediate degree of heat. If the plants are well-grown, and allowed ample room for development, they will form pyramidal plants without stopping the leading shoot. Whilst not neglecting the newer varieties, we find that the old free-blooming Rose of Castile and the large-flowered Phenomenal are indispensable. Gradually reduce the amount of water afforded the large plants which have finished flowering, so as to encourage thorough ripening of the wood. For a time before storing them in their winter quarters these plants may be stood out-of-doors in a sunny position.

Ferns.—*Adiantum cuneatum* and other Ferns grown to provide fronds for cutting must now be exposed to more light and freer ventilation to harden them, or the fronds when cut will wither quickly. Throughout the winter the other Ferns should be kept slightly drier than has hitherto



FIG. 118.—STRAWBERRY GIVON'S LATE PROLIFIC.

This variety gained the highest number of votes in the census for late varieties. See p. 260.

been the case, both as regards atmospheric moisture and water at the root. The present will probably be found a convenient time to overhaul the Ferneries, cleansing the plants and their receptacles, removing faded fronds, and generally rearranging them.

Anthurium.—Now that these plants have completed their growth they may be moved to a slightly lower temperature, where they should have drier surroundings, and be given less water at the root, but they must at no time be allowed to become dry. The fine-foliated kinds must be kept quite free from draughts.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Private trading concerns in public parks.—In many of the larger public parks in this country it is no unusual thing to find private firms catering for the comfort or amusement of visitors. The provision of refreshments, musical entertainments, and numerous kinds of games; the hiring out of chairs and boats and the letting of fishing rights are oftentimes in the hands of contractors who, paying highly for the privilege, very naturally endeavour to make a considerable profit out of them. While it must be conceded that the practice of letting these rights for a given period to the highest bidder is one which saves the responsible officials much worry and anxiety, it

is after all a system which ought never to be tolerated in public parks. With the exception of the sale of refreshments, which it would be difficult—although not impossible—for a public authority to deal directly with, all the other matters previously alluded to could be managed in the interests of the general community much better by a parks department than by a private trading company. One of the tenets in every park official's management creed should be that on no account ought any private firm to be allowed to make a profit out of the amusements and recreation of the people when the facilities for doing so have been created and made possible by the previous expenditure of public money. Any profits from this source should be made—where possible—by the public authority, and spent again in the interests of the whole community. Whatever a contractor may pay for any park monopoly has to be paid again by the public, as well as the profit every contractor strives to make over and above, so that in the long run it is much better for the department to manage its own affairs and deal directly with the public. In addition to the financial advantages of this arrangement, there are others worthy of consideration. The presence of outside interests in a park not infrequently gives rise to much unpleasantness between visitors and the contractors and the latter and the governing body itself, and it is often found that the managing committee cannot deal with its own affairs in such a way as it feels most advantageous. A case illustrating this point was recently brought to my notice, which is worth noting. In one of the provincial towns, advantage was taken last winter of the services of the unemployed to make various improvements in, and around the edges of, a large lake. For this purpose it was necessary to lower the water, and it remained out for about three months. Although this happened in the depth of winter—at a period when few if any persons ever made use of pleasure boats—and notwithstanding that the alterations undertaken improved the boating facilities, the boating contractor applied to have a quarter's rent refunded to him on account of his being unable to make use of the lake for that period! Unless agreements are most carefully drawn up to cover all possible contingencies it is not at all difficult for a parks department to have considerable trouble and annoyance from those having what are practically vested interests in parks. Many municipal authorities are now doing away with these "outside interests" in their public grounds and are utilising all money-making concerns for the full benefit of the ratepayers.

THE APIARY.

The honey harvest in Aberdeenshire.—It has now become apparent that the honey harvest of 1909 in Aberdeenshire will be as disastrous as that experienced in 1907. Granted that a little honey may still be gathered from the Heather-clad hills, it cannot do more, in many cases, than help to pay the heavy expenses necessary for preparing the apiaries for the coming winter. The old-fashioned straw hives are still the great favourites with those who keep bees on a small scale, and a number of the stocks in these have died during the summer, while it is feared many more will be lost where heavy swarming prevailed, owing to want of stores and to queenlessness. Great care ought to be exercised by apiarists at this time to see that every stock goes into winter quarters with ample stores of food and a fertile queen. Many apiarists had a splendid and remunerative season last year, simply from the fact that they paid due attention to their stocks at the close of the disastrous season of 1907. One can easily understand the cause of the poor results this year. The season has been too cold and sunless except for a very brief period of warm weather during the early days of August. Very little honey was gathered from Clover this season. During the heat wave experienced in August, however, the bees obtained a considerable quantity from Charlock, which was then in full bloom. A good harvest was expected from the Heather this year, but the prolonged spell of cold, cheerless weather upset all calculations. Hopeless, however, as the outlook may seem at the end of an unproductive season, apiarists have the cheering reflection that two bad years seldom follow each other. It is rare for there to be two bad years in succession.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, OCTOBER 21—
Brighton and Sussex Hort. Soc. lecture.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—49°0'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 13 (6 P.M.): Max. 61°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, October 14 (10 A.M.): Bar. 30.0; Temp. 56°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 13: Max. 56° Bury St. Edmunds; Min. 46° Durham.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Fruit Trees, Roses, &c., at The Nurseries, Downham, Norfolk, by order of Messrs. Bird & Vallance, by Protheroe & Morris, at 12.

TUESDAY—
Sale of Nursery Stock at The Nurseries, Bellingham, near Catford, by order of Messrs. J. Laing & Sons, by Protheroe & Morris, at 12.30.

TUESDAY AND WEDNESDAY—
Sale of Nursery Stock at the Shortlands Nurseries, Ash, Surrey, by order of Mr. H. Sleet, by Protheroe & Morris, at 12.

WEDNESDAY—
1,448 cases Japanese Liliums, at 1; Azaleas and Bays, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY AND THURSDAY—
Sale of Fruit Trees, &c., at The Nurseries, Churchdown, near Gloucester, at 11.30.

FRIDAY—
Sale of Fruit Trees, &c., at Pitville Nursery, Cheltenham, by order of Messrs. Heath & Son, by Protheroe & Morris, at 11.30.

THURSDAY AND FRIDAY—
Sale of Nursery Stock, at Womersley Nurseries, Sharnley Green, near Guildford, by order of Mr. W. Virgo, by Protheroe & Morris, at 12.

FRIDAY—
Sale of a portion of the Chillingham Collection of Orchids, at Protheroe & Morris' rooms, at 1.

At the annual meeting of the **Systematic Botany** British Association, which has just taken place at Winnipeg,

the presidential chair of the botanical section was occupied by Lieut.-Colonel Prain, the distinguished Director of Kew. He selected for his address the subject of systematic botany, and adduced arguments to vindicate the importance of this branch of botanical science. The subject is one which will appeal with irresistible force to horticulturists, for they know that systematic botany plays a fundamental part in the science of horticulture. Without it no orderly grouping of plants would be possible. Unaided by the results of the systematist's patient labours, the difficulties of the gardener would be increased enormously. To remember the Latin names of his manifold plants may be laborious, but to re-

member the plants without these names would be impossible. The tacit recognition of this indebtedness has led to the establishment of close and sympathetic relations between horticulture and systematic botany. Unfortunately, whilst the systematist and horticulturist have pursued the paths of knowledge hand in hand, there has grown up of recent years a certain coldness in the relations between botanists labouring in other fields and those devoting themselves to the work of classification. Nor is this altogether a matter of surprise. A hundred years ago botany was, to all intents and purposes, merely systematic botany. The microscope was a rarity, the minute structure of plants was just beginning to be unravelled, and vegetable physiology, in spite of the epoch-making work of early pioneers, was not a subject of general study. Then came rapid developments. Quickened by the idea of evolution, morphology made enormous strides. With progress in chemistry, the experimental study of the modes of life and work of plants found itself established on secure foundations. Morphology and physiology, like the prond sisters, came to look askance on the drudgery of the systematist Cinderella.

Dazzled by the promise of brilliant discovery offered by the new branches of botany, the student of the science neglected too often to become acquainted with the plants themselves. The vice of the age, as far as education is concerned—precocious specialisation—intruded itself, and students became experts in a part of botany before becoming acquainted with the science as a whole. Were this vicious practice reformed, less would be heard about lack of harmony between physiologist and systematist, and less also about the disappointing results of education generally. Sir George Paget years ago summed up the subject of specialisation by the comment: "You may be deep without being narrow." No harm can come of specialisation if the general education on which it should be based has been sound. It is the rule in Nature and in society. By specialisation the higher plants are distinguished from the lower, and the more highly developed societies from the more primitive.

However, signs are not wanting that the unphilial attitude referred to above is giving place to a more natural and cordial affection, and Lieut.-Colonel Prain's dignified exposition of the methods and objects of the systematist should do much to encourage its development. How important it is that there should be a perfect understanding between all groups of botanists may be seen from an inspection of the state of affairs which obtains at the present time in zoology. A student may pass through an exacting university course in zoology without learning more than a smattering of animal physiology. That is, he learns much about the names of animals, their relations with one another, and their gross and minute structure, but little about their modes of life. The divorce between zoology and animal physiology is well-nigh complete and wholly disastrous.

Animal physiology has come to mean, in England, human physiology with an occasional appeal to the rabbit and the frog. The general physiology of animals is not a subject of study in this country, and the amount

of investigation into the subject is, therefore, inadequate. It would be equally disastrous to botany if a like permanent alienation of physiologist from systematist were to occur. Happily, the danger of such a misfortune is decreasing. The new branch of botany known as ecology, which deals with plants in relation with one another and with their environment, stretches out one hand to the systematist, the other to the physiologist, and, though at present its grip may not, by reason of its youth, be very powerful, there is no doubt that it is firm enough to serve to keep in close formation the ranks of all workers in every branch of the science. Not only have physiologists to remember that botanical science owes a deep debt of gratitude to the systematists, whose labours have given to this country a prominent position with respect to systematic botany, but also that the greatest British botanists have been, without exception, systematists.

The horticulturist is grateful to systematist and physiologist alike, but, whilst to the former it is for favours received, to the latter it is in no small measure due to a lively sense of favours to come. He recognises the intricacy of the problems with which the physiologist deals, and he understands that it is not till these problems have been thoroughly thrashed out and adequate solutions to them obtained in the laboratory that the contribution of the physiologist to horticulture is likely to be considerable. He foresees a danger in the habit of physiologists in generalising from the results of experiments confined to single kinds of plants, and is, therefore, disposed to join with the systematist in urging them to pay more heed to the diversity of material available for his investigations.

PRESENTATION.—Mr. C. A. Caw, late secretary of the Handsworth Horticultural Society, on the eve of his departure to Canada, was recently presented with a purse of gold and an illuminated address by the members of the society. The presentation was made by the president Mr. WALTER G. GRIFFITH, who referred to the valuable services Mr. CAW had rendered to the society.

ORCHID SALE.—On the 8th inst. a portion of the collection of Cyripediums formed by G. SHORLAND BALL, Esq., Burton, Westmoreland, and known as the "Under Fell" collection, was sold by Mr. HAROLD MORRIS at Messrs. PROTHEROE & MORRIS'S Rooms, Cheapside, London. The plants offered were good, healthy specimens, and reflected great credit on Mr. HERDMAN, the grower. Cyripedium Gaston Bulteel var. Edward VII., two lots, realised 32 guineas each; C. Germaine Opoix Westfield variety, 70 guineas, and C. Thalia Mrs. Francis Wellesley, 50 and 21 guineas each; C. insigne "Francis Wellesley" was bought by its original owner for 20 guineas; C. Aeson giganteum sold for 40 guineas; C. Earl of Tankerville for 15 and 20 guineas each; C. The King (helltatum x seligerum majus), 21 guineas; C. Empress Alexandra, 20 guineas; C. F. K. Sander var. King Haakon, 21 guineas; C. Hindeannum, 16 guineas; C. F. K. Sander, original variety, 21 guineas, and other kinds 15 to 20 guineas. Cyripediums of equal merit to these mentioned failed to realise as high prices because they are already in collections. On the whole, it was the best Orchid sale in the present autumn, and it proved that the best Cyripediums still possess great value. There were 250 lots, and the total sum realised at the sale was £1,000.

A MUNICIPAL FLOWER SHOW.—The Battersea Borough Council have, for the sixth year in succession, arranged competitions for the best-kept gardens, &c., on their tenement estates, with a view to encouraging the cultivation of flowers. The Latchmere and Town Hall estates include 351 houses and tenements. The Battersea and Wandsworth Amateur Chrysanthemum and Horticultural Society undertook to make the necessary arrangements, and the competitions were arranged for upstairs window-sill gardens, indoor window gardens, and (a) centre, (b) gardens nearest houses. The total number of entries was 45. The prizes and certificates were presented to the winners on Thursday last, the 13th inst.

LEEDS PAXTON SOCIETY.—The growers of Sweet Peas in various parts, who helped the committee of this society with contributions of flowers on the occasion of their first show, held at Headingley, Leeds, on August 7, will be pleased to learn that the exhibition resulted in a net profit of £7 in aid of the Royal Gardeners' Orphan Fund.

NEW APPLES AND PEARS.—Mr. CHARLES ROSS, who has raised so many of the best modern Apples, writes us from Henley-in-Arden as follows:—In addition to the list of Apples and Pears given in the last issue (see p. 249) and put into commerce since 1892 are the following Apples: Paroquet (R.H.S. Award of Merit), Opal (R.H.S. Award of Merit), Bella (R.H.S. Award of Merit), Ruddy and Redwing. Paroquet and Encore were sent out by Messrs. J. CHEAL & SONS. I may mention that I gave to the late Dr. MASTERS samples of Rival, The Houlbon, Paroquet and Charles Ross to test their flavour, and, in a letter received from him, he said, "We consider that Paroquet is the best of the four." We have also learned from other sources that Apples James Grieve and President Roosevelt, and Pears Marguerite Marillat and R. D. Blackmore should be added to the list of varieties distributed since 1892.

THE CONGO FLORA.—Under the title of *Sylloge Floræ Congolanae*, Professor DURAND, assisted by Miss HÉLÈNE DURAND, has compiled an enumeration, with full geographical particulars, of all the flowering plants known to occur in the Congo Free State up to the end of 1908, and comparisons with the numbers given in publications which appeared in 1896 and 1900 respectively. The enumeration, which is preceded by a short historical sketch and some tabulated statistics, is according to the classification of Bentham and Hooker's *Genera Plantarum*, with some slight modifications in the way of additional newly-constituted families, such as the Scytopetalaceæ and the Dichapetalaceæ, the latter a new name for the Chailletaceæ, and, as in some former publications, the terminations of the family names are uniform throughout. Thus we have Leguminosaceæ, Umbelliferaceæ, Compositaceæ, and Labiataceæ. This is simple and convenient, and leaves nothing to memory, and it is far preferable to the varying terminations employed by some botanists. Another simplification we should like to see is the use of lower-case initial letters for all specific names, whether personal or otherwise, as in most zoological works, in the *Botany of the "Challenger" Expedition*, and in the *Biologia Centrali-Americana*. But this is a digression. For geographical purposes the Congo is divided by DURAND into 16 districts, four of which are again divided into zones, which, however, are not defined in this work, and no map is given, and no particulars of area or altitudes. But, taking in the irregularities of the boundaries, the Congo State extends through about 20 degrees of

equatorial longitude, and 18 of latitude, and is, perhaps, about equal to $12^{\circ} \times 12^{\circ}$, or, roughly, 800,000 square miles in area. Within this area there are elevations up to at least 13,000 feet, so that there is a temperate zone of vegetation. The present census of plants for this area is 3,546 species of phanerogamia or flowering plants, belonging to 991 genera, and 131 families. As to species, this is probably less than half of the number actually existing. The temperate element is very small, but it includes such familiar genera as *Thalictrum*, *Ranunculus*, *Delphinium*, *Nasturtium*, *Viola*, *Cerastium*, *Hypericum*, *Geranium*, *Trifolium*, and *Rubus*. Among characteristic African genera especially numerous in species are *Cola*, 22 species; *Ochna*, 13; *Ouratea* (*Gomphia*), 21; *Crotalaria*, 34; *Indigofera*, 26; *Combretum*, 37; *Dissotis*, 25; *Vernonia*, 42; *Clerodendron*, 25; *Eulophia*, 16; *Lissochilus*, 15; *Polystachya*, 18; *Angracum*, 18; and *Listrostachys*, 19 species. The families most numerously represented are: Leguminosaceæ, 415 species; Rubiaceæ, 299; Compositaceæ, 148; Apocynaceæ, 122; Acanthaceæ, 119; Euphorbiaceæ, 144; Orchidaceæ, 152; Cyperaceæ, 139; and Gramineæ, 132 species. The Apocynaceæ are, perhaps, the most important economically, on account of the large number of rubber-yielding members. Thus *Landolphia* is represented by 14 species; *Clitandra* by 11; *Carpodinus* by 14; and *Funtumia* by three species. *Strophanthus* numbers 12 species. The entire absence of Lauraceæ is noteworthy, and the presence of only one member of the Gesneraceæ, a species of *Streptocarpus*, is a surprise. Palms number only 15 species, belonging to seven genera, namely, *Phoenix* *Calamus*, *Raphia* (including *R. vinifera*), *Oncocalamus*, *Eremospatha*, *Borassus* and *Elacis*. The Cocoa-nut Palm is cultivated, or naturalised, in various spots on the lower Congo. On the other hand, Professor DURAND states that he has no satisfactory evidence of the existence of the *Donm* Palm genus *Hyphæne* within the state. He says *H. guineensis* Sch. and Thonn., and *H. vintriosa*, Kirk, are recorded, the former from the Island of Mateba by Ed. DUPONT, and the latter from the "Congo" by H. JOHNSTON, but he considers that these localities require confirmation. From the general distribution of the genus *Hyphæne*, its absence from the Congo is almost inexplicable.

PELARGONIUM ECHINATUM.—Mr. E. J. ALLARD writes from the Cambridge Botanic Garden stating that he made a slip in the note on this species published last week. *P. echinatum* is a native of the Cape, but not of Australia.

KENSINGTON GARDENS.

(See Supplementary Illustration.)

KENSINGTON GARDENS, together with Hyde Park, originally constituted the Manor of Hyde. The manor was Church property, but during the reign of Henry VIII. the lands were appropriated by the Crown, and for several hundred years afterwards they formed a Royal hunting ground. During the reign of George II., the park was divided into two portions, the part now known as Kensington Gardens being separated for the purpose of forming suitable pleasure grounds and gardens to the Royal Palace at Kensington. Although both Hyde Park and Kensington Gardens are under the care of the same superintendent, who has also the management of the adjacent Green and St. James's Parks, as well as numerous squares and small gardens, the public regulations in force differ in the two places. For example, Kensington Gardens are closed soon after sunset, but in Hyde Park the public is admitted until midnight; also, in the latter place

order is maintained by the police, whereas in Kensington Gardens this duty is performed by park constables. Hyde Park is probably unique amongst public parks in containing a police-station, the members of which are wholly employed in maintaining order within the park. Within the last five or six years a new police-station has been erected, and its complement consists of 56 officials, of all ranks, from inspector to constable, five of whom are mounted men.

Until recent years most of the plants employed in furnishing the flower-beds of the public parks already mentioned were raised in Kensington Gardens, in what was known as the frame ground. At one time when the use of bedding plants in these parks was much smaller than it now is, this nursery was sufficient for the needs, but in recent years it has proved inadequate. Hundreds of thousands of plants were raised annually, but in a make-shift manner. It was not surprising that plants raised in this cramped area did well, for they could not be coddled, but, on the contrary, were exposed to hardening influences when protection could not be found for them. But now the old glasshouses and frames have been done away with, and on part of the site stands the charming sunken garden which forms the subject of our Supplementary Illustration. It was designed by Mr. J. A. Gardiner, the present superintendent, and embraces, roughly, a little less than one acre. Originally the ground sloped from the Bayswater to the Kensington side, and many thousand loads of soil were needed to level the ground. This part of the work, together with much of the necessary digging, was done by the unemployed. The scheme includes a central water-basin, which is planted with white and blue-flowered *Nymphæas*, and also clumps of the common yellow Water Iris. Down the middle of the pond are arranged three old leaden tanks, these being planted with *Aponogeton distachyon*, the Cape Pond Weed. By the margin of the water will be noticed stone vases, in which, in summer-time, specimens of *Agapanthus umbellatus* are planted. The broad paving of flagstones around the tank has *Sedums*, *Saxifragas*, *Arenaria*, and similar subjects between the crevices. Next are three broad terraces, each with a dwarf retaining wall. The terraces have a grass walk along the front, and at the back a broad border planted with a great variety of subjects. Although so recently formed, the garden has appeared very beautiful during the past season, especially during July and August. The beds contain *Pæonies*, *Roses*, *Montbretias*, *Gladioli*, *Kniphofias*, *Gazanias*, *Fuchsias*, *Vicaria oculata*, *Marguerites*, *Violas*, *Sedum spectabile*, *Antirrhinums*, *Agrostemmas*, *Nicotinas*, *Tagetes*, *Godetias*, and many other plants. The garden is entered by four gateways, and at the corners of the steps are vases with examples of topiary work, some being Box cut in the form of birds. Around the outskirts, where alone the public is admitted, is a pergola or archway formed of Limes. Our picture shows the framework on which the young trees are being trained. The building seen at the back of the garden is Kensington Palace. Although not shown in our picture, there is a magnificent Orangery facing the sunken garden, from which it is separated by a lawn, which was also a part of the frame ground. The Orangery was built in 1705, during Queen Anne's reign, from designs by Sir Christopher Wren. This building has been put in order, although at one time it was used as a place of storage for the thousand and one odd things that are found in a nursery ground.

On the broad stone terrace in front of the Orangery have been placed eight old leaden tanks similar to those in the pond. These are planted with *Agapanthus* and *Hydrangeas*. The tanks themselves are very handsome, and bear dates of the 18th century. The new frame ground has been formed in the centre of Hyde Park, and is up-to-date in every detail.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

COSMOS.—I can fully endorse the remarks of C. (p. 234) about the usefulness of the annual Cosmos as a "cut flower" plant. The long stem and finely cut, palmate foliage that springs from each pair of flowering branchlets renders the Cosmos a most suitable and effective cut flower subject for the embellishment of rooms. When inserted loosely in fair-sized vases and glasses, heliotrope, magenta, white, and carmine colours being mixed, they are very effective, and keep fresh for a long time in water. The foliage of the varieties bearing coloured flowers is more graceful and finely cut than the leaves of those bearing white flowers. The flowers are stated by your correspondent to be 2 to 4 inches in diameter; but the new variety, Lady Lennox, is said to produce Orchid-like flowers of great beauty, and 6 to 8 inches in diameter! The Cosmos is a very robust grower, and, in good ground, attains to large dimensions within eight to ten weeks from the time of planting out early in June. They are quite as strong-growing as the Dahlia in favourable soil and conditions, the individual plants attaining to a height and diameter of quite 3 feet. Our plants

has bloomed regularly during previous summers, but has never been more than an ordinary specimen, rather poor than otherwise. To the very rainy season may be attributed some of its luxuriance; but other Hollyhocks close by are not finer than usual. Here and there may be one reaching 9 feet, but that is all. An interesting feature in this tall one is that it is exceedingly straight and erect as a flagstaff. One would like to know if such tall ones are frequent, and what is considered the average height of Hollyhocks. *Catherine C. Hopley.*

STEPHANOTIS FLORIBUNDA.—In the gardens here there is at the present time a plant of this fragrant stove climber in full flower. This is the second time the plant has flowered this year. The first time of flowering was in June. Each time it has been one mass of flower. It also has three fruits now in course of development, the largest being about the size of a small Coconut, and still swelling. The plant is in a large square tub, and covers a roof space of 21 feet by 9 feet. It is fed liberally with farmyard liquid manure during the growing season. *J. S. Higgins, Rûg Gardens, Corwen, N. Wales.*

THOMAS ANDREW KNIGHT AND DETERIORATION OF APPLES.—Mr. T. A. Knight over a century ago promulgated the theory that varie-

recently and which exhibit none of the symptoms of decay apparent in their fellows. It would be interesting to learn if this is an isolated case and due to local climatic conditions, just as all our Codlins were simultaneously affected with red spider a few years ago! However it may be, the circumstance indicates that the position held by Mr. Knight is at least plausible. Of course there are other parallels in the vagaries of Apples, such, for instance, as trees of one variety being sterile for a series of years and simultaneously regaining fruitfulness without any apparent cause. I have noted this in Cox's Pomona, Claygate Pearmain, and Red Astrachan, and for several years Ecklinville Seedling here has remained in a nearly sterile condition, though otherwise perfectly healthy. *R. P. Brotherton.*

BORDERS FOR VINES.—I am of the same opinion as Mr. E. Molyneux (see page 252). It has often occurred to me, in respect to early vineries especially, the practice of having outside and inside borders must be wrong, inasmuch as the roots in the outside borders must be growing in a much colder temperature (early in the year, when the vines are being forced) than the roots inside enjoy. The effect on the plants cannot be good. In respect to depth, the borders should not be more than 2 feet deep. *Wilmot H. Yates, Rotherfield Park Gardens, Alton, Hants.*

—I believe that better results can be obtained from vines restricted to inside borders only than are generally got from borders which are partly inside and partly outside. Of course, in gardens where there are plenty of spare frame lights that could be utilised for the purpose of covering the borders to protect them from unseasonable weather in spring and autumn, the evil might, to a certain extent, be prevented. As to varieties, including those already mentioned by Mr. Molyneux, that are better for the purely inside treatment, the variety Madresfield Court shows it more than any, for, where its roots are allowed to extend to an outside border, the berries have a greater tendency to crack. Mrs. Pearson and Golden Queen are also varieties that succeed better entirely inside the house. The depth mentioned by Mr. Molyneux and Mr. H. W. Ward, in his excellent article on the making of fruit-tree borders, in the issue for September 18, is ample. *Wm. Turner, Fonthill House Gardens.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 12.—Another fine exhibition was seen at the meeting held in the Society's Hall, Westminster, on this date. The building was filled with exhibits, both the annexes being utilised, which necessitated all the Committees meeting in the upper rooms. Displays of fruits and vegetables were again a feature, and nothing finer has been seen at these shows than the collection of vegetables from Lord Aldenham's gardens, or the fruits shown by the affiliated societies and trade growers. No award was made to a variety by this Committee, but one Gold and several Silver-gilt Medals were awarded in this section.

Exhibits before the FLORAL COMMITTEE were also meritorious, especially the collection of Nephenthes shown by Messrs. JAS. VEITCH & SONS, and a group of Ivies shown by Mr. L. R. RUSSELL. Both these exhibits were awarded Gold Medals. This Committee granted five Awards of Merit to novelties.

As is usual at the autumn shows, Orchids were not so numerous, although there were several interesting collections and many novelties. The ORCHID COMMITTEE granted one First-class Certificate and four Awards of Merit.

At the 3 o'clock meeting in the lecture-room, a lecture on "Some Gardens of the Later Renaissance" was delivered by Mr. Thomas H. Mawson.

A conference of the Horticultural Mutual Improvement Societies affiliated with the Royal Horticultural Society took place at 4 o'clock.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Drury, H. B. May, E. H. Bowles, A. Kingsmill, Jno. Green, Jas. Walker, C. R. Fielder, G. Reuthe, W. J. Bean, R. C. Nottcutt, W. Howe, J. F. McLeod, J. Jennings, C. Dixon, Jas. Douglas, E. T. Cook, Arthur Turner, Herbert



FIG. 119.—STRAWBERRY "WATERLOO," SECOND IN THE CENSUS FOR LATE VARIETIES. (See p. 260.)

were raised from seed sown in heat early in February, the seedlings being pricked out 3 inches apart in shallow boxes filled with fairly rich soil that was passed through a $\frac{1}{4}$ -inch meshed sieve. In due time the plants were hardened off, and they were transplanted in June at about 3 feet apart in the row. When planted in a row, a string should be placed on either side at a distance of about 1 foot from the plants, and the string entwined round a few sticks inserted in the ground at intervals of 12 to 15 feet apart as a protection against winds. This should be done after the plants have become established, and as soon as they require support. *H. W. W. Essex.*

A TALL HOLLYHOCK.—In a small private garden at Kew there is a Hollyhock 12 feet 3 inches high at the time of writing (September 24). As there are still three or four buds at the extreme summit coming into bloom in the regular manner, the probability is that, weather permitting, it will gain another inch or two as these open. Nothing has been done to stimulate growth; the plant has been left to take its chance in a rather neglected border, among common Sunflowers and other hardy perennials. There is no adjacent tree to draw it upwards, but it is in an open space where it

ties of Apples become worn out after a prolonged period of fruitfulness, and that the trees propagated from these during their period of decadence partook of their frailty, becoming diseased and decrepit at the same time. But whilst we have such acknowledged old Apples as Catshead, Golden Reinette, Margaret, Jenning, and others in absolute vigour and fertility, it is obviously impossible to accept the deductions of that once well-known pomologist. At the same time Mr. Knight fought not without good grounds for his theories, and it may be interesting not only on account of the fact as a fact, but because it to some extent explains Mr. Knight's position, to record an example which is taking place under the eyes of the writer. A large proportion of the Apple trees here have been propagated by myself. There are many trees of Duchess of Oldenburgh, which along with the parent tree usually produced quantities of fine fruit. Of recent years the latter has become with each succeeding year more and more unhealthy, and, though it cropped abundantly, the fruit, like the growth, was, during the present year, imperfect and mostly worthless. This year more than ever nearly all the trees propagated by budding from the old one have approached with a startling nicety to the same condition, the only exceptions being a few which were cut over

J. Cutbush, H. J. Jones, Chas. E. Pearson, J. T. Bennett-Poë, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, W. J. James, and R. Hooper Pearson.

Mr. L. R. RUSSELL, Richmond, Surrey, showed a magnificent group of ornamental Ivies, including arborescent forms of golden and silver varieties. The plants were splendidly grown, and set forth in an attractive a manner as is possible with such subjects. The more notable varieties were *Hedera elegantissima*, with silver variegations; *H. Helix aurea*; *H. digitata*, the finger-leaved Ivy; *Gold Cloud*, a magnificent golden-leaved form; *H. himalaica*; *H. minima*; *H. rhomboidea obovata*, a compact-growing plant; *H. Russelliana*, with pale green leaves; *H. Glymii*; *H. conglomerata prostrata*; and *H. dentata*. Mr. RUSSELL also showed varieties of the elegant-leaved *Bertolonias* and *Sonerilas*. *Bertolonia Souvenir de Gand* has sage-green leaves and rosy-crese veining. (Gold Medal.)

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, showed varieties of *Nepenthes*, of which plants the firm possess a remarkable collection. They were examples of the highest culture, each plant being a perfect specimen. Among the more noticeable were *N. Amesiana*, with short, broad, brownish-coloured pitchers, having wide wings heavily margined with hairs. *N. Chelsonii excellens*, the very big pitchers being trained to stakes; *N. ampullaria vittata*, with clusters of tiny yellow pitchers at the base of the stem. The species is remarkable in that it bears leaves of two kinds, those borne above showing but slight indication of pitcher formation, whilst the basal leaves are completely modified to form pitchers. *N. picturata*, a very finely-coloured variety, especially on the rim, the pitchers are dark red, with green spots; *N. ventricosa*, curiously constricted in the centre of the pitcher, which is a dull yellow; *N. Dicksoniana*, one of the biggest shown, some of the pitchers being nearly 1 foot in length; *N. mixta*, an extra fine plant, with many pitchers; *N. Morganæ*, on which were counted nearly 50 pitchers; and the magnificent variety named after Sir W. T. Thistleton Dyer.

Messrs. VEITCH also showed a batch of hybrid Rhododendrons of the type known as javanic-jasminiflorum, the plants being small but well flowered, and in a variety of colours. The species *R. jasminiflorum* has small white long-tubed flowers in trusses, the other parent, *R. javanicum*, has big orange-coloured flowers. The first cross resulted in the variety *Princess Royal*, with delicate pink petals. This crossed again with the species *jasminiflorum*, gave the blush variety known as *Princess Alexandra*. In the same group were *Nerines*, *Carnations* and the winter-flowering *Begonias* *Mrs. Heal* and *Elatior*. As a third group, Messrs. VEITCH showed plants of hardy Fuchsias. There were several tall pyramidal plants of *F. macrostemma*, a free-flowering variety, and much smaller plants of *F. Riccartonii Elysee*, a very decorative variety and quite hardy. (Gold Medal.)

Messrs. T. S. WARE, LTD., made a brilliant show with blooms of tuberous-rooted *Begonias*, having them in batches of white, yellow, rose, red, crimson and other shades. Varieties of border Asters added greatly to the decorative effect of the group. (Silver-gilt Banksian Medal.)

A fine group of Ferns was staged by Lady TATE, Streatham Common (gr. Mr. W. Howe). The plants were mostly large specimens, with smaller plants—principally of the newer varieties of *Nephrolepis exaltata* between. Amongst the more notable were *Nephrolepis cordifolia*, *Adiantum Veitchii*, *Nephrolepis exaltata* (a fine specimen), *Adiantum cardiochlena*, *Lomaria platyptera*, *Davallia Mooreana*, *Platyterium Wilkinckii*, *Dicksonia antarctica* and *Polypodium glaucum Mavi*. (Silver-gilt Flora Medal.)

Messrs. DAVID RUSSELL & SONS, Essex Nurseries, Brentwood, showed coniferous plants as goodly-trained specimens suitable for lawn or border planting. We noticed *Retinospora squarrosa*, *Taxus baccata elegans aurea*, *Cupressus Lawsonianus* in its numerous forms, *Cephalotaxus japonicus*, *Retinospora pisifera aurea* and many handsome *Abies*, Pines, Cedars, &c. (Silver Banksian Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Upper Holloway, showed varieties of large-flowered *Veronicas*, also the variegated-leaved form of *V. Andersonii*, a bank of the Scarlet *Carnations* *Elizabeth* and *Britannia* of the perpetual-blooming section, and a collection of *Scolo-*

pendrums, chiefly varieties of *S. crispum*, a few only of *P. aculeatum* and *P. angulosum* being included. It is difficult to enumerate the more beautiful amongst such handsome forms as *S. c. Robinsonii*, *S. c. fimbriatum cristatum*, *S. c. grande* (a broad-leaved form with beautifully crested margins); *S. c. fimbriatum* (rather darker in tint than the last), *S. c. Bowdenii* and others of the crested-leaved type. (Silver Flora Medal.)

Messrs. FRANK CANT & CO., Colchester, exhibited garden Roses in bunches, having fresh and well-coloured blooms of Hugh Dickson, *Souvenir de Maria de Zayas* (deep pink), *Lyon Rose*, *La Tosca*, *Trier*, *Ecarlate*, *Corallina*, *Edu. Meyer*, *Perle von Godesberg*, *Lady Waterlow*, and other varieties. (Silver Flora Medal.)

Messrs. B. R. CANT & SONS, Colchester, showed bunches of Roses, including a seedling bedding variety named *Rose du Barri*. It is a large, single variety of a deep rose shade. Others including Hugh Dickson (the best of the red, autumn Roses), *Claudius* (new), *Warrior*, *Safrano* and *Zephyrine Drouhin*, were noticed in good condition.

Messrs. R. HARKNESS & CO., Hitchin, made a very pretty display with Roses, which were shown in vases and Bamboo epergues. The taller epergues were furnished with blooms of one variety only, such as *Lady Ashtown*, *Viscountess Folkestone*, *Hugh Dickson*, *Betty*, *Mme. Ravary*, *Frau Karl Druschki* and *Mrs. John Laing*, whilst shorter bunches in vases formed a groundwork. (Silver Banksian Medal.)

A small collection of Roses was shown by Mr. W. LEGGETT, West Bergholt, Colchester, the exhibit including several specimen blooms in boxes, some, such as *Ulrich Brunner*, *Frau Karl Druschki*, *Mildred Grant*, *Capt. Hayward*, and *Mrs. G. W. Kershaw*, being very good. In vases at the back were well-known garden varieties.

Messrs. STUART LOW & CO., Enfield, staged a few plants and blooms of perpetual-flowering *Carnations*, including *Rose Doré* and *Royal Purple* varieties.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, staged varieties of single and Cactus Dahlias, vases of hardy flowers separating the boxes and forming a row at the back. The single Dahlias were especially attractive, such beautiful kinds as *Formosa*, *Naomi*, *Tighe*, *Sunrise*, *Rosebank Scarlet*, *Leander*, *Cardinal*, *Victory*, *Elaine*, *Eric*, *Alma*, and *Columbine* being noticed. Messrs. CHEAL also showed varieties of the small Pompon-Cactus-flowered Dahlias. (Silver-gilt Banksian Medal.)

Mr. J. T. WEST, Brentwood, exhibited varieties of *Pæony*-flowered Dahlias.

Messrs. CARTER, PAGE & CO., London Wall, London, again contributed a large exhibit of Dahlias, having good blooms of *Pompon*, *Cactus*, *show*, and other types attractively presented. (Silver-gilt Banksian Medal.)

Messrs. W. WELLS & CO., Merstham, Surrey, showed varieties of early-blooming *Chrysanthemums* of border and single kinds. (Bronze Flora Medal.)

Mr. H. J. JONES again displayed an attractive exhibit of Michaelmas Daisies, having many beautiful varieties in the best condition. (Silver Flora Medal.)

Messrs. GEO. BUNYARD & CO., LTD., Maidstone, showed, as a corner group, a collection of hardy flowers, amongst which were many border Asters, shown in large sheaves. In the front were vases of the rose-coloured variety of *Anemone japonica*, also *Gaillardias*, *Scabiosa caucasica*, *Kniphofias* in variety, *Physalis* with its brilliant calyces, and *Cimicifuga simplex*. (Bronze Flora Medal.)

Mr. FRANK BRAZIER, nurseryman, Caterham, Surrey, showed a large exhibit of perennial Asters, Pentstemons, decorative *Chrysanthemums*, *Phloxes*, *Kniphofias*, and other garden flowers. Amongst the *Phloxes* we noticed a fine orange-red-flowered variety labelled *G. A. Strohllein*. (Bronze Flora Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, showed seasonable hardy flowers, including Pentstemons, Lilliums, Michaelmas Daisies, Sunflowers, the new *Potentilla Gibson's Scarlet*, *Delphinium Dwarf King*, *Anemone japonica*; also a batch of *Nerines* and several small plants of *Vallota purpurea*. Messrs. CUTBUSH also showed varieties of *Carnations*, tastefully arranged in tall and short vases, with small *Cocos Palms* inter-

spersed. Such sterling kinds as *Enchantress*, *Victory*, *White Perfection*, *Afterglow*, and *Lady Norah Brassey* (purple) were represented by excellent blooms in large bunches. (Silver Flora Medal.)

Messrs. G. & A. CLARK, LTD., Dover, put up a display of autumn flowers from the open, including *Gilia coronopifolia*, *Cimicifuga simplex*, *Pyrethrums*, of which the variety *John Malcolm* is rose-coloured, *Tricyrtis hirta niger*, *Lilium tigrinum*, *Asters* in variety, *Scabiosa*, *Phloxes*, and others. (Bronze Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, showed seasonable hardy flowers, including *Pentstemons*, border *Chrysanthemums*, *Helianthus argophyllus*, *Cimicifuga simplex*, *Colchicum autumnalis*, *C. speciosum*, and *Gladiolus primulinus*. The Asters were very bright and showy, especially the varieties of *A. Amellus*. (Bronze Banksian Medal.)

Mr. CLARENCE ELLIOTT, Six Hills Nursery, Stevenage, showed Michaelmas Daisies, having good bunches of most of the finer varieties. (Bronze Flora Medal.)

Mr. CHAS. TURNER, Slough, showed varieties of Michaelmas Daisies and flowering sprays of *Cimicifuga simplex*. (Bronze Flora Medal.)

Mr. R. C. NOTCUTT, The Nurseries, Woodbridge, exhibited Michaelmas Daisies, *Show Dahlias*, *Helianthus*, *Cimicifuga*, and other seasonal flowers. (Bronze Banksian Medal.)

Messrs. GUNN & SONS, Olton, near Birmingham, staged a pretty exhibit of *Viola cornuta* and bedding *Violas*. They were arranged in fancy baskets, *Viola cornuta* being exceptionally well shown. (Bronze Banksian Medal.)

A golden-leaved variety of *Smilax*—*Myrsiphyllum asparagoides*—was shown by Messrs. TOM ROCHFORD & CO., Nurserymen, Broxbourne and Covent Garden. It was as vigorous in growth as the green form which was exhibited at the same time.

The Misses HOPKINS, Mere Gardens, Shepperton-on-Thames, exhibited Michaelmas Daisies and other border perennials. (Bronze Banksian Medal.)

The Misses ALLEN BROWN, Violet Nurseries, Henfield, showed *Viols*, including the varieties *Marie Louise*, *Princess of Wales*, and *J. J. Aster*, the last-named being a shade of lilac.

AWARDS OF MERIT.

Aster Lustre.—This is a variety of *Michaelmas Daisy* raised by the Hon. VICARY GIBBS (gr. Mr. E. Beckett). The flowers are $1\frac{1}{4}$ inch across, semi-double, and a rich mauve in colour. The plant grows $3\frac{1}{2}$ to 4 feet high.

Chrysanthemum White Queen.—A first-rate, white, Japanese flower, with smooth, reflexed florets of moderate width. Shown by Mr. SILSBURY.

Chrysanthemum Mary Farnsworth.—This is a large Japanese variety, with broad, reflexed florets, which have spoon-shaped tips. The colour is buff, but there are sufficient indications in the flower that later buds will develop some red colour. Shown by Mr. H. STREDWICK.

Rose Claudius.—This is one of the most fragrant Roses. It was shown as a Hybrid Tea variety, but one could easily imagine it to be a Hybrid Perpetual. The colour is pinky-red. The variety was awarded the National Rose Society's Gold Medal this season (see p. 222). Shown by Messrs. B. R. CANT & SONS.

Streptocarpus.—A strain of large-flowered *Streptocarpus*, shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), was given an Award of Merit. The colours were very pleasing.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, W. Boxall, J. Forster Alcock, F. Sander, Stuart Low, F. J. Hanbury, A. A. McBean, C. Cookson, W. Waters Butler, Arthur Dye, R. G. Thwaites, W. P. Bound, J. Cypher, W. H. Hatcher, H. G. Alexander, C. H. Curtis, H. A. Tracy, H. Ballantine, W. Bolton, Gurney Wilson, G. F. Moore, and Sir Jeremiah Colman, Bart.

Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander), showed six specimens of very handsome hybrids, which included the beautiful *Cypridium Germaine Opoux* Westfield variety, the very large and finely-coloured

C. nitens Lecanum var. Hannibal, *C. nitens* Alportense, with a strong resemblance to *C. insigne* Harefield Hall, *C. Cynthia* (see Awards), *C. Gaston Bultel* King Edward VII., the handsome *Cattleya Heloisia* (Forbesii \times Mossiae Reineckiana), a pretty bluish-white flower marked with crimson on the lip; and *Cattleya Dirce* (Vulcan \times Warszewiczii) with deep rose flowers, the front of the lip veined with rose-purple and showing the influence of *C. Schilleriana*.

Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate (gr. Mr. Collier), staged a small group, which included *Spathoglottis Colmanii* aurea, with clear yellow flowers, and a *Dendrobium* and *Cirrhopetalum*, which secured awards.

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for a group, the principal plant in which was the handsome white *Cattleya Hardyana* "The Baron," which was unanimously voted a First-class Certificate. The group contained a fine lot of *Lælio-Cattleyas*, *Odontoglossums*, and *Cypripediums*. Among those noted were *Odontoglossum Neptune*, a yellow, blotched hybrid of the *O. Harvengtense* class; *Anguloa uniflora Tracyi* variety, a fine wax-like white flower of the type known in gardens as *A. eburnea*; the yellow *Odontoglossum grande Pittianum*; *Cypripedium Chapmanii* superbum, with three large flowers and three buds; *Miltonia Bleuana Our Queen*, a white variety with rose markings at the base of the lip; *Cypripedium Maudiae*, various *Masdevallias*, &c.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. H. Ballantine), again showed the remarkable *Cattleya Lamberhurst* hybrid (*citrina* \times *intermedia*), for which he received a First-class Certificate on October 23, 1833—a very creditable instance of cultural skill.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a group in which both species and hybrids were well represented. The hybrid *Odontoglossums*, *Lælio-Cattleyas*, and *Cattleyas* had with them some fine examples of the clear blue *Vanda cœrulea*, the rare, milk-white *Pescatorea Dayana*, the little scarlet *Lælia monophylla*, the white *Saccolabium violaceum Harrisonianum*, *Odontoglossum grande aureum* in two tints of yellow and with white lip, and the curious, fragrant *Angraecum imbricatum* with clusters of white flowers with fleshy, yellowish lip.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a group, in the centre of which was a strong specimen of *Arachnanthe* (*Vanda*) *Lowii superba*, with a long, drooping spike of 29 dark, claret-barred flowers, and three of the large yellow basal blooms. With it were various *Lælio-Cattleyas*, including L.-C. The Duchess, with coppery orange-coloured flowers, having a deep ruby lip with gold veins; *Cattleya Lord Rothschild*, and other *Cattleyas*; a noble specimen of their best type of *Vanda cœrulea*; a large and finely-flowered *Coclogyne ocellata*, *C. speciosa albens*, &c.

Messrs. STUART LOW & Co., Bush Hill Park, secured a Silver Flora Medal for a bright group, which included many rare *Orchids*. The back was composed of Brazilian *Oncidiums*, with which were varieties of *Cattleya Adula*, *C. Venus*, and *C. Vulcan*, in front being a good plant of the true *Oncidium hamatophilum*. We also noticed *Coclogyne speciosa*, with salmon-tinted labellum, without the blackish ridges of the type; the rare *Cirrhopetalum Mastersianum*, with an umbel of pretty copper-yellow flowers, &c.

Messrs. J. CYPHER & SONS, Cheltenham, were awarded a Silver Banksian Medal for a group, at one end of which were a selection of *Dendrobium Phalænopsis Schröderianum*, with varieties of *Masdevallia chimæra* and *Miltonia vexillaria Leopoldii*, at the other end being a number of hybrid *Cattleyas*, principally hybrids of *C. Bowringiana*, and including *C. Mantinii inversa*, *C. M. nobilior*, and other showy varieties, the centre being of hybrid *Cypripediums*, with some fine *C. Fairrieanum* and *C. Mandiae* at the back.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent *Sophro-Cattleya Doris Shrubbery* variety, a fine dark-scarlet flower, with yellow at the base of the lip.

ED. ROGERSON, Esq., Oakdene, West Didsbury, Manchester (gr. Mr. W. C. Price), sent the perfectly-formed *Cypripedium Priam* (insigne *Chantinii* \times *Niobe*), with a fine, circular, white, dorsal sepal with dotted purple lines, and which received a First-class Certificate when shown by

Messrs. Veitch, the raisers, on November 20, 1900.

H. T. PITT, Esq., Stamford Hill (gr. Mr. Thurgood), showed *Cattleya Newingtonensis* (Mrs. J. W. Whiteley \times Harrisoniana).

J. FORSTER ALCOCK, Esq., Exhams, Northchurch, sent *Cypripedium Baron Schröder* New Hall Hey variety, a good dark form.

W. THOMPSON, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed *Odontoglossum exultans* var. *Christopher* (crispum \times excellens), a good pale yellow flower blotched with brown; and *Cypripedium Daisy Barclay* var. *Dunhamense*, white, closely lined and tinged with dark purple.

Monsieur MERTEENS, Ghent, showed a selection of hybrid *Odontoglossums*.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, sent *Cattleya Lord Rothschild* *Orchidhurst* variety, with lavender-tinted sepals and petals, and rose-marbled lip with large orange disc; *Cattleya radiata* (*Dowiana aurea* \times *Pittiana*), with greenish, cream-white sepals and petals, the broad front of the lip rosy-mauve, the base orange; and L.-C. *Purple Empress* (L.-C. Berthe Fournier \times C. *Hardyana*).

Mr. CHAS. TURNER, Slough, sent two good specimens of *Lælia pumila*, one with rose-coloured, and the other with bluish-white, sepals and petals.

Mrs. NORMAN C. COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman), sent the pale yellow and white *Cypripedium Sanacderæ* and *C. Faire-Maude*. (See Awards).

R. BROOMAN-WHITE, Esq., Arddarroch, Garelochhead, N.B., sent a fine selection of grand flowers of *Odontoglossum crispum*, both the white and spotted forms, and which were taken from Mr. BROOMAN-WHITE's *Odontoglossum* house, containing about 400 fine spikes. The plants were placed outdoors throughout the summer, and are in fine condition. *Sphagnum*-moss and *Hymenophyllums* grow naturally around Mr. BROOMAN-WHITE's property, and the air suits the *Odontoglossums* well.

Mr. A. W. JENSEN, Lindfield, Haywards Heath, sent a magnificent, large-flowered *Odontoglossum Harryanum* and a fine *O. crispum*.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, sent a very fine dark *Lælio-Cattleya Gotoiana*.

Mr. E. V. LOW, Vale Bridge Nursery, Haywards Heath, showed the fine greenish-yellow and white *Cypripedium Rossettii*; *C. Germaine* *Poix*, and *Odontoglossum Grande Pittianum*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Hardyana The Baron (Dowiana aurea Warszewiczii Frau Malaine Beyrodt), from H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day).—A superb *Cattleya* in size and shape equal to the best *C. Warszewiczii*, but with pure white sepals and petals, and large, deep ruby-crimson lip, with a light, yellow blotch on each side of the tube, and golden lines from the base.

AWARD OF MERIT.

Dendrobium taurinum Calmanii, from Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier).—A very beautiful variety, with clear white reflexed sepals, and erect, twisted, rose-pink petals, the shovel-shaped white lip being margined with rose. It is a strong-growing Philippine species.

Cirrhopetalum Fascinator, from Sir JEREMIAH COLMAN, Bart.—A very attractive species of the one-flowered section, and allied to *C. appendiculatum*, but larger and darker in colour. The dorsal sepal is pale green spotted with purple, and, like the petals, have a purple fringe. The united lateral sepals are 6 inches long, broad at the base, and tapering to a fine point, greenish white, blotched with claret-purple in the middle.

Cypripedium Cynthia (Charlesianum \times *Charlesworthii)*, from Lt.-Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A very fine *Cypripedium*, the square arrangement of its pure white dorsal sepal delicately marked with rosy-lilac, calling to mind the same feature in the remarkable *C. Lecanum* J. Gurney Fowler. The ground colour of the petals and lip is greenish, tinged and spotted with light purple.

Cypripedium Faire-Maude (Fairrieanum \times *Maudiae)*, from Mrs. NORMAN C. COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman).—Resembling a large dark *C. Juno*, with a very fine dark rose-tinted and striped dorsal sepal.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. A. H. Pearson, J. Cheal, W. Bates, C. Foster, H. Somers Rivers, E. Beckett, W. Poupart, H. Parr, J. Lyne, J. Davis, O. Thomas, J. McIndoe, P. C. M. Veitch, A. R. Allan, J. Vert, W. H. Jeffries, W. Pope, G. Wythes, A. Dean, W. H. Divers, J. Harrison, G. Hobday, J. Gibson, T. D. Tuckett, G. Reynolds, W. Fyfe, and J. Jaques.

Apple Red Victoria was again placed before the Committee, and the members expressed a wish to see the cropping qualities tested at Wisley. A white Grape, said to be a sport from Black Hamburg, was found, on comparison with a bunch of Golden Queen from Wisley, to be that variety. A white perfumed Grape of no special merit was also shown.

Exhibits of fruit were unusually numerous and large. THE KING'S ACRE NURSERY Co., Hereford, again set up a very fine group of fruit trees in pots, and many dishes and baskets of picked fruit. Pear trees were very fine, including the varieties Charles Ernest, Josephine des Malines, Alexandre Lucas, and Beurré Bachelier. Of Apples there were superbly fruited specimens of King of Tompkins County, Gloria Mundi, Wealthy, Twenty Ounce, Jonathan, and Washington. Also superb gathered fruits of Royal Jubilee, Lord Grosvenor, Warner's King, Charles Ross, Cox's Pomona, Emperor Alexander, Norfolk Beauty, Peasgood's Nonesuch, and The Queen. Of Pears there were Pitmaston Duchess, Beurré Diel, Durondeau, Louise Bonne of Jersey, and Beurré Baltet. There were also Plums, Crabs, Peaches, Grapes, and Figs. (Silver-gilt Knightian Medal.)

Messrs. W. PAUL & SONS, Waltham Cross, sent a small collection of fruit trees in pots, including Grapes Appley Towers, Black Alicante, and Foster's Seedling. Also well-fruited Pear trees, including Beurré Clairgeau, Calebasse, Conference, Durondeau, Marguerite Marillat, and others, and several Apple and Fig trees. (Silver Banksian Medal.)

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury Park, Acton (gr. Mr. G. Reynolds), exhibited forced fruit, having five medium-sized Queen Pineapples, 13 capital Melons, including Benheim Orange, His Eminence, and Ganton Scarlet; and eight dishes of Peaches, the varieties being Golden Eagle, Sea Eagle, Lady Palmerston, Albatros, Nectarine Princess of Wales, Early Rivers, and Gladstone. (Silver Knightian Medal.)

Lady TATE, Streatham Common (gr. Mr. W. Howe), showed a dozen good bunches of Black Alicante Grape cut from a vine carrying 80 bunches. (Silver Banksian Medal.)

Messrs. G. BUNYARD & Co., LTD., Maidstone, showed about 100 varieties of hardy fruits, the general quality being superb. Specially good were Pears Durondeau, Beurré Clairgeau, St. Luke, Verulam, Doyenné du Comice, Le Lectier, Alexandre Lucas, Doyenné Bonsoch, and Marie Benoist. Of Apples, Belle Dubois, Lord Derby, Cox's Pomona, Emperor Alexander, Warner's King, Stirling Castle, Lane's Prince Albert, Bountiful, Grenadier, and Peasgood's Nonesuch, were prominent kitchen varieties; whilst of desert sorts, Ben's Red, Beauty of Stoke, Houlton, Hitchin Pippin, Col. Vaughan, Ribston Pippin, Cox's Orange Pippin, Lord Hindlip, Washington, Charles Ross, Gravenstein, Jas. Grieve, and Baumann's Red Reinette were noteworthy. There were also several dishes of Golden Eagle Peaches. (Silver-gilt Knightian Medal.)

Messrs. J. CHEAL & SONS, Crawley, filled a long table with a very representative collection, including of Apples Early Victoria, Duchess of Oldenberg, The Old Nanny, Jubilee, Encore (a fine new variety), Lane's Prince Albert, Grenadier, Hornead Pearmain, Newton Wonder, Potts's Seedling, and Golden Spire. Amongst Pears were good fruits of Van Mons, Leon Le Clerc, Glou Moreau, Doyenné du Comice, Pitmaston Duchess, Durondeau, Beurré de Nagan (very fine), and others. The exhibit also embraced Plums, Crabs, and other fruits. (Silver-gilt Knightian Medal.)

Messrs. J. FRED & SONS, Norwood, had a good table of Apples and Pears. Of the latter, Pitmaston Duchess, Duchesse de Nemours, Beurré Diel, Conference, and Beurré Baltet père were excellent; as also were Apples New Hawthornden, Tyler's Kernel, Golden Spire, Warner's King, Gloria Mundi, Peasgood's Nonesuch, and Gascogne's Scarlet. (Silver Banksian Medal.)

Mr. R. C. NOTCUTT, Woodbridge, Suffolk, had an excellent collection of some 80 dishes of hardy fruits, including fine samples of Potts's Seedling, Charles Ross, Bismarck, Warner's King, Peasgood's Nonesuch, Bramley's Seedling, Dr. Harvey, Lord Derby, Lane's Prince Albert, The Queen, Allington Pippin, Royal Jubilee, Ribston Pippin, and other Apples; also numerous Pears and Crabs, the Dartmouth Crab being very rich in colour. (Silver Knightian Medal.)

M. PRICE, Esq., The Node, Welwyn, Herts. (gr. Mr. T. Pateman), exhibited a collection of well-grown fruits, including Grapes, Melons, Peaches, Apples and Pears. (Silver-gilt Banksian Medal.)

MESSRS. STUART LOW & CO., Bush Hill Park, staged 40 dishes of excellent Apples and Pears. (Silver Banksian Medal.)

A Banksian Medal was awarded to a collection of preserved fruits and vegetables in bottles staged by Miss BRADLEY, Hollingbourne.

From the Society's gardens at Wisley were exhibited Grapes and Pears. The varieties of both were numerous, and proved very interesting from a comparative standpoint, the quality of the Grapes being very superior.

COMPETITIVE FRUIT CLASSES.

The largest competition was seen in the class for affiliated societies. It was for six cooking and six dessert Apples, and six Pears. The ROYAL JERSEY HORTICULTURAL SOCIETY had a fairly easy task in winning the 1st prize with fruits generally of large size and superbly finished. The Pears were Doyenné du Comice, Pitmaston Duchess, Glou Morecan, Beurré Superfin, Duchesse d'Angoulême, and Emile d'Heyst. The dessert Apples were Chas. Ross, Cox's Orange Pippin, Christmas Pearmain, Cornish Gilliflower, and Egremont Russet. The cooking Apples were very fine; the varieties were Peasgood's Nonesuch, Lane's Prince Albert, Bismarck, Bramley's Seedling, The Queen, and Gascoyne's Seedling. The EAST ANGLIAN HORTICULTURAL SOCIETY (represented by Mr. Wallis, of Norwich) was awarded the 2nd prize.

There were five classes for Grapes, the chief one being for three varieties, three bunches of each variety. There was good competition, and the 1st prize was awarded to W. G. RAPHAEL, Esq., Englefield Green (gr. Mr. H. H. Brown), who had superbly finished bunches of Lady Downe's, good Black Alicante, and Muscat of Alexandria. 2nd, J. MILLER, Esq., Radlett, Herts. (gr. Mr. J. Kidd), who showed Appley Towers, Mrs. Pince, and Black Alicante.

In the class for three bunches of one white Grape for flavour, Muscat of Alexandria was excluded. The apparent sole exhibitor was A. BENSON, Esq., Merstham, Surrey (gr. Mr. Cornish), who had well-finished bunches of Mrs. Pearson.

In the class for three bunches of any Black Grape, for flavour, the Dowager Lady HILLINGDON, Sevenoaks (gr. Mr. J. P'hitton), was placed 1st, the variety being Madresfield Court.

For three bunches of Muscat of Alexandria, Mr. CORNISH was 1st with capital samples, the berries being large and well finished. 2nd, the Earl of HARRINGTON, Elvaston Castle, with heavier bunches, rather under-thinned.

The trade growers' class for Grapes found no entry.

There were three classes for Plums. The first was for three dishes of dessert varieties. The varieties in the 1st prize collection were Coc's Golden Drop, Transparent Gage, and Guthrie's Late Gage, the exhibitor being J. T. CHARLESWORTH, Esq., Red Hill, Surrey (gr. Mr. J. W. Herbert). Mr. J. VERT, Audley End Gardens, Saffron Walden, was 2nd; but in the class for three dishes of cooking Plums, Mr. VERT won the premier place with very fine samples of Pond's Seedling, President, and Monarch. 2nd, Mr. HERBERT.

No exhibitor competed in the trade fruit classes, which is to be regretted.

VEGETABLES.

From Aldenham House Gardens, Elstree, the Hon. VICARY GIBBS (gr. Mr. E. Beckett), staged one of those superb collections of vegetables such as have so greatly helped to render these gardens famous. The collection furnished a table measuring 40 feet long, and included some 100 dishes. Many of the vegetables were staged on an erect background, especially fine being pyramids of Cauliflowers, also Celery, Leeks, Seakale, Beet,

Onions, Carrots, Lettuces, Turnips, Radishes, Brussels Sprouts, and on the table splendid Ailsa Craig and other Onions; King Edward, Purple Eye and other handsome Potatos; Autocrat and Gladstone Peas; Matchless and Favourite Carrots; Ham Green, The Hastings and Golden Queen Tomatos, with Marrows, Cucumbers, Chicory, Globe Artichokes, Mushrooms, and practically every other ordinary garden vegetable. (Gold Medal.)

Mr. R. W. GREEN, Wisbech, set up a collection of 50 dishes of Potatos, generally clean, medium-sized samples. Of white kinds were noticed Superlative, Factor, Gold Reef, General Roberts, Dalmeny Regent, Closeburn Castle, and Highlander; and of coloured varieties there were Edgcote Purple, Eightyfold, Lord Tennyson, and King Edward VII. (Bronze Knightian Medal.)

Messrs. G. MASSEY & SONS, Spalding, showed an interesting collection of round and long Beets, short and long Carrots, also Seakale Beets. All, whether diverse or not, had on them the names of the vendors of the seed stocks, so that the exhibit had a certain educational value. (Silver Banksian Medal.)

CONFERENCE OF MUTUAL IMPROVEMENT SOCIETIES.

THE societies affiliated and in union with the Royal Horticultural Society held their annual conference on Tuesday last, at the Royal Horticultural Hall, Westminster. The meeting was held at 4 o'clock in the lecture-room, about 50 persons being present. The chair was taken by H. B. May, Esq. The business was to discuss various suggestions put forward by one or other of the societies. The first one considered was a proposal that the affiliated societies should organise meetings at a convenient centre in their respective counties, prior to these annual conferences, to consider and formulate subjects for discussion. It was suggested that these county meetings should be arranged under the auspices of the parent society, perhaps in the largest town in the county. At the same time it might be possible to hold a big county show, the various societies contributing. One speaker suggested that this should be undertaken by the Royal Horticultural Society; the same speaker thought it necessary that the affiliated societies should have a representative on the Council of the R.H.S. Mr. Bound doubted if the scheme would work well, as only 50 members from the 230 affiliated societies, each of which was entitled to send three delegates, had attended the conference, notwithstanding there was a most interesting show in the large hall below. The Chairman, as representing the Council of the R.H.S., stated that the initiative must come from the societies themselves, and that when they had formulated a practicable scheme they might rely on the sympathy and help of the parent society.

The next subject for discussion related to the horticultural competitions. This subject was advanced at the last conference in a very lengthy paper, and the feeling of the meeting was that to restrict a grower to a piece of ground of stated area for growing, say, Turnips or Carrots for an exhibition, was impracticable. The proposition met with no support.

The Chairman answered the next question. It was: "Is it possible for the R.H.S. to obtain books for daughter societies at cheap rates?" Mr. May said the R.H.S. had no privilege itself in this matter, therefore it could not possibly extend such a concession to the affiliated societies.

An interesting debate took place on the question of how to make the local meetings more attractive and helpful to young men. The Croydon delegates stated that out of 150 members they had only 14 young gardeners. The Croydon society had offered inducements in the way of prizes for essays, but this policy failed, as only two young men had competed. Several members spoke as to the difficulty of inducing journeymen and improvers to attend the meetings, and football and cricket were blamed as the counter attractions. It was argued that much of the trouble resulted because the young men were not made sufficiently welcome and that the head gardeners associated together. Mr. Geo. Gordon suggested that they should make their meetings attractive by employing lantern slides at the lectures. They should endeavour to bring to the meeting men who were eminent in the gardening world, as good lecturers were almost

sure to draw good audiences. It was also desirable to impart scientific knowledge at these meetings. Mr. Gordon instanced a course of lectures at which only about eight attended, but when the lecturer changed his subject to one of a more scientific character the average was increased to 80. Another speaker said it was advisable to give the young men minor posts in the management of the society. In their particular branch they had done this, and one young man acted as reporter of the meetings, another as assistant to the librarian, and so on. The Chairman stated that he knew the difficulty of inducing young men to attend, but much good might be done if the head gardener gave the matter personal interest. Some remarkable results were quoted during a discussion on educating the older schoolboys and ex-schoolboys in horticulture. The Highgate delegates stated their society provided classes for juvenile exhibitors. They gave away to boys 700 plants, and of these 500 were staged at their show.

The produce exhibited by these boys compared favourably with that shown by allotment holders. Work in this direction was also instanced at Preston and at Egham. In the latter place, 4,000 pots of cuttings and 1,000 pots of seeds were distributed to juveniles, and of these 3,000 were returned at the annual show.

The work done by the County Councils and School Authorities in the matters of teaching gardening and school gardens was approved.

The final question of what constitutes a professional, amateur, and cottage gardener respectively, was the subject of much debate. It was generally recognised that a definition of these terms that would fit every district was impossible, therefore each society should be guided in the matter by the locality, and status of its members. In every case, however, the definition should be published in the schedule that all competitors may know the rules.

SCOTTISH HORTICULTURAL.

OCTOBER 5.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date. The president, Mr. Whytock, occupied the chair, and there was an attendance of more than 100 members. A paper, illustrated by lantern views, was read by Mr. W. Smith, of Holyrood Palace Gardens, Edinburgh, on "Ornamental Trees and Shrubs." Effective grouping was the chief point of Mr. Smith's paper, and it proved very instructive.

Mr. SMELLIE, Busby, staged a collection of early-flowering Chrysanthemums, including several new varieties. Three of these, Hecuba, Galatea and Andrew Hoggan, were each awarded the Society's First-class Certificate.

A fine collection of new single Chrysanthemums was staged by Mr. A. THOMSON, Dean Gardens, Edinburgh, and two of these, Lizzie Douglas and Fortune's Favourite, were each awarded a First-class Certificate.

Messrs. DOBBIE & Co., Rothesay, also exhibited early-flowering Chrysanthemums and Cactus, "Collette," and other Dahlias. A First-class Certificate was awarded to a single Dahlia named Nimrod.

Amongst other exhibits of interest were fruits of the Burbank and other Plums, including several varieties of Gages raised by the exhibitor's father, from Mr. CHARLES WEBSTER, Gordon Castle, Fochabers; the new Apple Red Victoria, shown by Messrs. JAMES GRIEVE & SONS, Redbraes, Edinburgh; double Primroses of the second generation, produced from a blue variety crossed with double-flowered varieties, giving in the first generation all singles which, when selfed, produced singles and doubles in the second generation, were shown by Mr. P. MURRAY THOMSON, Cockbridge, Malsgate, Cumberland.

It was announced that the paper for the meeting on November 2 would be by Miss Burton, New Saughton Hall Gardens, Polton, the subject being "Begonias."

Six new members were elected.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 11.—The quarterly meeting of this society was held at the Horticultural Hall, Vincent Square, Westminster, S.W., on this date. Mr. C. H. Curtis occupied the chair. The death certificate of Mr. James Swingler was produced,

and the amount standing to his credit, viz., £30 4s. 1d., was ordered to be paid to his widow. Mr. Swingler's membership had lapsed since 1892. The sick pay for the month amounted to £34 10s. The usual quarterly grants from the benevolent fund were passed for payment. The annual dinner, as already announced, will be held at the Waldorf Hotel on the 28th inst. at 6.30 p.m., when it is hoped that as many members and friends as possible will attend. J. B. Slade, Esq. (of Messrs. Protheroe & Morris), will preside.

NATIONAL SWEET PEA

The results of the deliberations of the Floral Committee of this Society during the past season have been prepared for publication in the Society's *Annual*. In the meantime, we are requested to print the following details:—

CLASSIFICATION OF SWEET PEAS FOR 1910.

The following is an up-to-date selection of varieties in commerce, drawn up by the Floral Committee:—

<p>WHITE.</p> <p>Etta Dyke Nora Unwin *Dorothy Eckford</p> <p>CRIMSON AND SCARLET.</p> <p>The King *King Edward *Queen Alexandra</p> <p>ROSE AND CARMINE</p> <p>John Ingman Marjorie Willis *Prince of Wales</p> <p>YELLOW AND BUFF.</p> <p>Clara Curtis *Janies Grieve</p> <p>BLUE.</p> <p>A. J. Cook *Lord Nelsoo</p> <p>BLUSH.</p> <p>Mrs. Hardeastle Sykes</p> <p>CERISE.</p> <p>Christie Unwin. *Coccinea</p> <p>MAUVE.</p> <p>The Marquis *Mrs. Walter Wright</p> <p>MAROON AND BRONZE.</p> <p>*Black Knight *Hannah Dale</p> <p>PICOTEE EGGED</p> <p>Elsie Herbert Mrs. C. W. Breamore</p> <p>STRIPED AND FLAKEY.</p> <p>(Red and Rose.) Aurora Spencer Yankee *Jessie Cuthbertson</p>	<p>PINK.</p> <p>Countess Spencer *Prima Donna</p> <p>CREAM PINK.</p> <p>Constance Oliver Mrs. H. Bell *Queen of Spain</p> <p>ORANGE SHADES.</p> <p>Helen Lewis St. George *Miss Willmott</p> <p>LAVENGER.</p> <p>Frank Dolby Mrs. C. Foster *Lady G. Hamilton</p> <p>VIOLET AND PURPLE.</p> <p>Rosie Adams *Duke of Westminster</p> <p>MAGENTA.</p> <p>Menie Christie</p> <p>STRIPED AND FLAKEY.</p> <p>(Purple and Blue.) *Prince Olaf</p> <p>FANCY.</p> <p>*Sybil Eckford</p> <p>BICOLOR.</p> <p>Mrs. Andrew Ireland *Jeannie Gordon</p> <p>MARBLED.</p> <p>*Helen Pierce</p>
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An asterisk denotes a variety that is NOT waved.

TOO-MUCH-ALIKE VARIETIES.

The following varieties have been bracketed as too-much-alike. "Not more than one of the bracketed varieties shall be shown on the same stand at any exhibition of the National Sweet Pea Society."

<p>WHITE.</p> <p>{ Etta Dyke Paradise White Purity Snowflake White Spencer White Waved</p> <p>CRIMSON AND SCARLET.</p> <p>{ Miss E. F. Drayson Queen Alexandra Scarlet (Baker's)</p> <p>{ Dodwell F. Browne King Alfonso King Edward Spencer Paradise Crimson Rosie Gilbert Sunproof Crimson Sunproof King Alfonso The King (Dobbi's)</p> <p>ROSE AND CARMINE.</p> <p>{ Albert Gilbert Lady Farren Marjorie Willis Rosaland Splendour Spencer</p>	<p>ROSE AND CARMINE.</p> <p>{ E. J. Castle George Herbert John Ingman Mrs. W. King Paradise Carmine Phyllis Unwin Rosie Sydenham Rosy Morn Spencer Carmine</p> <p>YELLOW AND BUFF.</p> <p>{ Harold James Grieve Mrs. Collier Mrs. A. Malcolm Yellow Hammer Clara Curtis Paradise Cream Primrose Paradise Primrose Spencer Primrose Waved Princess Juliana Waved Cream (Malcolm's)</p> <p>BLUE.</p> <p>{ Flora Norton Miss Philbrick</p>
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<p>BLUE.</p> <p>{ Anglian Blue Flora Norton Spencer Kathleen McGowan Zephyr Mid-Blue Zoe</p> <p>BLUSH.</p> <p>{ Beauty (Bolto's) Bobby K. Countess of Northbrook Florence Morse Spencer Lorna Doone Mrs. Hardcastle Sykes Princess Victoria</p> <p>{ Blush Spencer Lady Althorp Mrs. T. G. Baker Paradise Regained Sankey Spencer</p> <p>{ Constance Oliver Doris Usher Nell Gwynne</p> <p>PINK.</p> <p>{ Countess Spencer Enchantress Paradise Pink Pearl</p> <p>CREAM PINK</p> <p>{ A. B. Bantock Earl of Plymouth Holdfast Belle Kitty Lea Mrs. Hugh Dickson Mrs. Henry Bell Mrs. Reutzahn Spencer Queen (Sutton's) Romani Ronni</p> <p>ORANGE.</p> <p>{ Dazzler Edna Unwin Gordon Ankeotell Ruby St. George Earl Spencer Nancy Perkin</p>	<p>LAVENGER.</p> <p>{ Giant Lavender (Stark) Lady Grizel Hamilton Lavender George Herbert Masterpiece Mrs. Chas. Foster Mrs. Walter Carter Countess of Radnor Lady Grizel Spencer</p> <p>MAGENTA.</p> <p>{ Menie Christie Mrs. Charles Maoder</p> <p>MAUVE.</p> <p>{ Ida Townsend Tennant Spencer The Marquis</p> <p>MAROON AND BRONZE.</p> <p>{ Anna Lumley Black Knight Spencer Douglas Unwin Maroon Paradise May Gerhold Nubia Othello Spencer</p> <p>PICOTEE EGGED.</p> <p>{ Dainty Spencer Distinction Elsie Herbert E. J. Deal Lady Althorp Improved Winifred Deal Mrs. Townsend Phenomenal Evelyn Hemus Mabel Cole Mrs. C. W. Breamore</p> <p>STRIPED AND FLAKEY</p> <p>(Purple and Blue.)</p> <p>{ Hester Marbled Blue President Senator Spencer</p>
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VARIETIES TO BE EXCLUDED FROM FUTURE TRIALS.

<p>{ Her Majesty Splendour Duke of Sutherland Monarch Lottie Eckford Maid of Honour Ivy Miller Stanley Boreatton Lord Rosebery Cyril Breamore Mrs. Feltoo Dora Cowper Devonshire Cream Celes Yellow Dorothy Eckford Captain of the Blues Bolton's Blue</p>	<p>{ New Countess Princess May Modesty Duchess of Sutherland Sensation Countess of Aberdeen Miss Bostock Pride of St. Albans Olive Bolton Codsall Rose Gorgeous Miss B. V. Hiley Mildred Ward Countess of Lathom Coral Gem Pink Gem Vera Jeffrey</p>
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Obituary.

ROBERT GORDON RAE.—The death of Mr. Robert Gordon Rae, for more than 25 years superintendent of Dundee Western Cemetery, occurred on October 2. Mr. Rae was a member of a well-known Aberdeenshire family. In the early fifties he commenced his apprenticeship as a gardener at Haddo House, Aberdeenshire. Ultimately he became head gardener to the Earl of Eglinton, in Ayrshire. From thence, in 1872, he received the appointment of superintendent of Craigton Cemetery, near Glasgow, and laid out the grounds there. He remained at Craigton 11 years, and afterwards removed to Dundee to take up the position he held at the time of his death.

STEPHEN TRESSEDER.—We regret to record the death of Mr. Stephen Treseder at Cardiff, on the 9th inst., in his seventy-sixth year. Mr. Treseder was a Cornishman, and a native of Truro. At an early age he went to Australia and New Zealand. In these colonies he resided for 14 years, spending a part of the time at the gold diggings. In 1870 he returned home, settling at Cardiff, where he commenced the nursery business which has since developed into the firm of Messrs. S. Treseder & Son, Rose growers. Mr. Treseder was well known throughout the

counties of Glamorgan and Monmouthshire. Those who had the privilege of being intimately acquainted with him will long remember him for his geniality and kindheartedness, and his strict probity in all business dealings. He leaves a widow and two sons, the elder of whom, Mr. W. Arthur Treseder, has carried on the business since his father's retirement six years ago.

J. S. GRANT.—We regret to announce the death, on September 10, after a few days' illness, of Mr. James Sinclair Grant, gardener to Mr. H. M. Arderne, of The Hill, Claremont, Cape Colony. Mr. Grant was formerly gardener to the late Mr. Rhodes, at Groot Schuur. He was an expert grower of Orchids, being formerly in the employ of Messrs. Sander & Sons, St. Albans. From St. Albans he went to the Municipal Gardens, Cape Town, and thence to Groot Schuur. On the Saturday preceding his death he complained of feeling unwell from a cold, which rapidly developed into inflammation, succeeded by pneumonia. Mr. Grant was only 33 years of age, and his death is greatly regretted. He leaves a widow and two young children. The funeral took place at Maitland Cemetery. Mr. Grant was a native of Lismore, Co. Waterford.

HIPPOLYTE MILLET.—This well-known Belgian horticulturist died recently at Tirmont. In 1843 M. Millet took a prominent part in the organisation of the Agricultural Committee of Tirmont. At that early date, a knowledge of Belgian horticulture and arboriculture was the possession of only a privileged few. M. Millet organised and took part in horticultural lectures for 60 years, during which time he greatly encouraged the taste for arboriculture and a love of plants and fruits. From 1851 he presided at the lectures which, from the first, were provided free, owing to the support obtained locally, but eventually were taken over by the State. Only two months ago M. Millet celebrated his 60th year of teaching, and his pupils and old students took that opportunity to make him a presentation in testimony of their esteem and affection.

SCOTLAND.

THE PERSIAN PLUM.

PRUNUS Pissardi flowers freely and even luxuriantly in Scotland, but its fruiting is a rare achievement in our somewhat trying and capricious climate. In my own garden, where it has shelter from every wind, with the exception of the north-eastern blasts, it blossoms abundantly, and even makes an endeavour occasionally to set its fruit. Its efforts in this direction, however, have hitherto been in vain. I have therefore been much interested to learn from Mr. Brodie of Brodie that Prunus Pissardi has fruited for the first time this season in the gardens of Brodie Castle, near Forres, in Elginshire, where the Almond tree (whose flowering shoots were adequately ripened by the sunlight of last summer) is also bearing fruit this season to a considerable extent. I may remark, incidentally, that the Almond has developed some of its fruit to the full size here this season, for the first time for 12 years. Only once have I had the gratification of seeing the oval and dark shining fruit of Prunus Pissardi, and that was in a sheltered place behind the private flower garden at Lochinch Castle, the residence of the Earl of Stair. Some years ago, in this journal, Mr. S. Arnott, of Maxwelltown Road, Dumfries, stated that the Persian Plum had fruited to a considerable extent at St. Mary's Isle, in Kirkcudbrightshire. I have written this communication in the hope that Prunus Pissardi, which is one of the most ornamental of all flowering trees, producing a luxuriance of blossoms in early April, and scarlet-blushed chocolate shoots during the summer and autumn months, may be cultivated more extensively. David R. Williamson.

MARKETS.

COVENT GARDEN, October 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.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Asters, Carnations, Dahlias, and Gypsophila.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Agrostis, and Asparagus.

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

Table listing various plants in pots and their prices, including Marguerites, Pelargoniums, and Selaginella.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Bananas, Damsons, and Grapes.

COVENT GARDEN FLOWER MARKET.

In comparing the market trade in plants and flowers with what it was years ago, there are many alterations. Formerly only dwarf, compact plants were wanted; now the taller, looser growing specimens sell better. For example, Chrysanthemums from 2 1/2 to 3 feet high make much better prices than the dwarf ones, and this applies to most other subjects. By this I do not mean thin, drawn plants. There is, of course, some trade for those of smaller sizes, but the greatest demand is for large plants. Even for bedding-out purposes larger plants are wanted. Perhaps the greatest change is seen in the large plants of the Rambler Roses, but these have been rather too numerous during the past season. The largest plants fetch from £1 to £5 each, but these are exceptional figures; those worth from 6s. to 10s. each sell readily. Tall plants of Heliotropiums, Lantanas, &c., are likely to be in demand during the coming season. It is evident that good bedding plants are profitable, and if part of the stock is left over, it will pay to hold it in reserve for the following season; in the meantime the plants should not be crowded or given more warmth than is necessary to ward off frost. There is no much that is new to record. Several growers have started selling Solanums and Cyclamens. Plants of Erica gracilis and its white variety are both good. Begonia Gloire de Lorraine is well flowered. Bouvardias are seen, but they are not of the best quality. Foliage plants are more in demand. Aralia Moseri seems to be quite taking the place of A. Sieboldii. Cupressus Bermudiana is another plant which is appreciated by florists. Araucaria excelsa may be had in all sizes and at cheaper prices than formerly. Ficus elastica seems to have gone out of favour, but good plants are seen, also Cyperus alternifolius.

CUT FLOWERS.

A week ago last Saturday almost everything of value was cleared out early, but it was not so last week. Liliums have sustained advanced prices, also Lily of the Valley. Violets are very plentiful; they are selling more freely. Callas—Richardia africana—are more in demand. Both Asters and Dahlias are plentiful, but early Chrysanthemums have a preference over all other border flowers. Gardenias, Stephanotis, Tuberoses, and other short-stemmed flowers have not been selling readily. Roses and Carnations have been over-plentiful. On Tuesday many good Roses were offered in the streets. Mme. Chateauy, on long stems, sold for 1d. each, this being an indication of their value. A. H., Covent Garden, October 13, 1909.

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. Wm. Wiggins, Foreman at Bracket Hall, Hatfield, Herts., as Gardener to Major-General Baillie, Caldecott House, Abingdon, Berks. Mr. H. HOGGIN, for the past 15 months Gardener to the Hon. W. F. D. SMITH, M.P., Manor House, Moreton Hampstead, and previously Gardener to Viscount GALWAY, Serly Hall, Bawtry, as Gardener to Viscount FALMOUTH, Mereworth Castle, Maidstone. (Thanks for contribution to R.G.O.F. box.) Mr. F. OLVER, for 6 1/2 years Gardener to Baron Von SCHROEBER, The Rookery, Nantwich, Cheshire, as Gardener to Lord DIGBY, Minterne, Cerne Abbas, Dorsetshire. Mr. A. PORTER, for the past 5 years Foreman in the gardens at Colly Manor, Reigate, as Gardener to C. J. WILLS, Esq., Westcott House, near Dorking. Mr. DAVID THOMPSON, for the past 3 1/2 years Foreman at Nortley Bank Gardens, Frodsham, Cheshire, and previously at The Grove, Watford, as Gardener to A. SWINGLEE, Esq., Smalley Hall, near Derby. (Thanks for your contribution of 2s. to the Royal Gardener's Orphan Fund.) Mr. W. AMEY, for the past 6 years Foreman at Bourton House Gardens, Shrivvenham, Berks., as Gardener to Mrs. ANDREW WESTON, Holme Grange, Wokingham, Berks. Mr. W. WELCH, for the past 4 years at Chardward Gardeos, Bourton-on-the-Water, and previously Inside Foreman at Woodgreen Park, Cheshunt, Herts., as Gardener to Mrs. L. ARMITAGE, Waterside, Windermerer, Westmoreland. Mr. F. T. WOODFIELD, for the past 8 years Gardener at Glynpton Park, Woodstock, Oxon., as Gardener to ISAAC LEWIS, Esq., Bedbury Park, Goudhurst, Kent. Mr. JAMES KELLY, for the past 3 1/2 years Foreman at Hopetoun House Gardens, South Queensferry, N.B., as Gardener to H.R.H. the Duchess of ALBANY, Claremont, Esher, Surrey. Mr. G. S. HATCHER, for upwards of 5 years Foreman at Kedleston Hall Gardens, Derby, as Gardener to B. D. HILL, Esq., Holfield Grange, Coggeshall, Essex. Mr. F. DALE, for the past 2 1/2 years Gardener to Capt. DAWES, Greenford Place, Harrow, as Gardener to E. SAMUELSON, Esq., Bodicote Grange, Banbury, Oxon. Mr. W. BALCOMBE, for the past 2 1/2 years Gardener to HERBERT MUSKER, Esq., Charlwood Park, near Horley, Surrey, as Gardener to Mrs. GRAHAM-SMITH, at Easton Grey, Malmesbury, Wilts. Mr. CHARLES M. HALL, for the past 18 months Gardener to the late ARTHUR BAKER, Esq., Henbury Hill House, Bristol, and previously 3 years at Henbury Court, Bristol, as Gardener to Capt. HAMILTON GORDON, The Quorns, Cirencester.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Beetroot, and Carrots.

REMARKS.—Home-grown Peaches and Nectarines are finished for the season, but some very good samples of these fruits are arriving from France, and these are selling freely. Italian Figs are scarcer and a little firmer in prices. The English Grape trade is slow. Newtown Pippin Apples are arriving in good condition and selling well. English Tomatoes are dearer. Large English Walnuts meet with a fair demand. Trade in vegetables and fruits is, generally, quiet. E. H. R., Covent Garden, Wednesday, October 13, 1909.

Table listing various potatoes and their prices, including Bedfords, British Queen, and Lincoln.

DEBATING SOCIETY.

DUNDEE HORTICULTURAL.—The first meeting of the season was held in the Technical Institute on October 6, the proceedings being devoted to a conference on "Early flowering Chrysanthemums." Mr. J. A. Laird presided, and there was a full attendance of members. The conference was opened with a short address by Mr. William Grant, Fenhall, and various members subsequently took part in the discussion.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending October 9, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was very variable, with frequent rain, interspersed, however, with fairly long intervals of bright sunshine. A thunderstorm occurred at Oxford on Sunday night, and at Llangamarch Wells on the early morning of Friday. Thunder alone was also observed at Yarmouth on Friday.

The temperature was above the average in all districts, the excess varying from 2° in Scotland N. to 3·8° in England E. and 4° 2' in Ireland S. The highest of the maxima were generally recorded early in the week, and ranged from 70° in England N.E. to 61° in Scotland N. The lowest of the minima, which were mostly registered on the 6th or 9th, ranged from 30° in England S.W. and 33° in the Midland Counties and England S.E. to 41° in the English Channel. The lowest grass readings recorded were 25° at Cambridge, 26° at Hereford, Manchester, and Llangamarch Wells, 27° at Cirencester, and 29° at Greenwich and Kew.

The mean temperature of the sea.—The water was colder than during the corresponding period of last year on almost all parts of the coast. The actual means for the week ranged from about 59° on the east coast of England and at Newport, to 55·2° at Port Erin, and to less than 51° at Kirkwall and Lerwick.

The rainfall was in excess of the average of the United Kingdom generally, but below it in Scotland E. and England N.E. and E. The excess was rather larger in the extreme south-east. As much as 1·65 inch fell at Prestwick on Sunday, and 1·05 inch at Fort William on Wednesday.

The bright sunshine did not differ much from the average over the kingdom generally, the values, ranging from 29 per cent. of the possible duration in Ireland S., 37 per cent. in England E., and 36 per cent. in England S.E. to 21 per cent. in Scotland W. and Ireland N., and to 20 per cent. in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending October 13.

Another warm and wet week.—The days have been only moderately warm, but the nights were as a rule more unseasonably warm. On the warmest night the exposed thermometer did not fall lower than 52°, which is about 16° higher than the average minimum in October. On the other hand, on the coldest night the same thermometer registered 2° of frost. The ground is now 3° warmer at 2 feet deep, and 5° warmer at 1 foot deep, than is seasonable. Rain has fallen on all but three days since the beginning of the month, and to the total depth of nearly 1½ inch. The ground is now moist to some depth, as is shown by the fact that during the same period six gallons of rain water have come through the bare soil gauge, and five gallons through that on which short grass is growing. The sun shone on an average for nearly 4½ hours a day, which is about an hour a day longer than is usual at this period in October. The winds were as a rule rather high, but in no hour did the mean velocity exceed 15 miles—direction south. The average amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by five per cent. E. M., Berkhamsted, October 13, 1909.

SCHEDULES RECEIVED.

Highgate and District Chrysanthemum Society's 25th annual exhibition, to be held at the Alexandra Palace, Muswell Hill, N., on Wednesday and Thursday, October 27 and 28. Secretary, Mr. E. J. Fenwick, 31, Harborton Road, Archway Road, Highgate.

The 30th Chrysanthemum show of the Ancient Society of York Florists, to be held on November 17, 18, 19, at The Exhibition, York. Secretary, Mr. Geo. F. W. Oman, 38, Patergate, York.

Bournemouth Horticultural Society's spring show, to be held on April 5 and 6, 1910. Secretary, Mr. C. W. Barrett, Lucerne, Fenton Road, West Southbourne, Bournemouth.

Forest Gate and Stratford Amateur Chrysanthemum Society's 18th annual exhibition, to be held in the Town Hall, Stratford, on November 4, 5, and 6. Secretary, Mr. A. J. Palmer, 19, Thorngrove Road, Upton Park, E.

Huntingdonshire Daffodil and Spring Flower Society's show, to be held at the Corn Exchange, Huntingdon, on Wednesday, April 20, 1910. Hon. secretary, Miss L. L. Linton, Strioe House, Buckden, Hunts.

Sheffield Chrysanthemum Society's exhibitions, to be held in the Corn Exchange, Sheffield, on Friday and Saturday, November 12 and 13. Secretary, Mr. C. Cook, City Road, Sheffield.

Farnham and District Horticultural and Chrysanthemum show, to be held in the Corn Exchange, Farnham, on Tuesday and Wednesday, November 9 and 10. Hon. secretary, Mr. G. E. Aldridge, Mossdale, St. Cross, Farnham.

Doncaster and District Chrysanthemum Society's 17th annual exhibition, to be held in the Corn Exchange, on Wednesday and Thursday, November 3 and 4. Hon. secretary, Mr. J. C. Mitchell, 11, High Street, Doncaster.

Newport (Mon.) and District Chrysanthemum Society's 21st annual exhibition, to be held in the Gymnasium, Athletic Grounds, on Thursday, November 4. Secretary, Mr. H. Poole, 50, Somerset Road, Newport.

CATALOGUES RECEIVED.

THE YOKOHAMA NURSERY CO., LTD., Craven House, Kingsway, London, W.C.—Japanese Stove Lanterns.
WATKINS & SIMONSON, 12, Tavistock Street, Covent Garden, W.C.—Annals.
MANSELL & HATCHER, LTD. (formerly Moore Ltd.), Rawdon, Yorks.—Orchids.
TAYLOR BROS., Canterbury—Seeds, Bulbs, and Sundries.
JOHN JEFFERIES & SONS, Cirencester—Roses, Fruit, Forest and Ornamental Trees.

ANSWERS TO CORRESPONDENTS.

APPLES DECAYED: *M. E. M.* The fruits were in a condition of pulp when received, so that the trouble could not be determined.

A SINGLE PEA SEED IN MATCHBOX: *C. Shaw.* The seed is injured by the Pea Weevil, *Bruchus pisi*. The best method of destroying these pests is to fumigate with bisulphide of carbon (inflammable). If a small number of seeds only is infested, place them in an airtight box; put some bisulphide of carbon into a saucer, close the box, and allow it to remain for 48 hours.

BEGONIA GLOIRE DE LORRAINE: *S. W.* The leaves are not affected with Begonia mite, but the damage is the result of too much moisture and insufficient ventilation in the house in which they are growing. Place the plants well apart on the staging, and allow a little warmth to circulate in the hot-water pipes during dull days. Any decayed leaves should be picked off and burned.

CHESTERFIELD SHOW: *S. B.* We thank you for informing us that Messrs. R. W. Proctor & Sons gained the 1st prize at the show held at Chesterfield on September 7 and 8, for the best collection of Roses. Exigencies of space frequently prevent us referring to all the details at a local show. Our reporter at Chesterfield, therefore, sent us a general note, in which only a few of the competitive classes were mentioned.

FERN FRONDS WITH WHITE INSECT: *J. C. M.* We were unable to find any of the creatures on the specimens you sent. As fumigations have failed to destroy them, try dipping the plants in extract of quassa or some other safe insecticide, but do not use tobacco solutions, unless in a very weak form.

FERNS TURNING BROWN: *H. M.* The browning is due to the presence of elworm (*Aphelochus olistatus*). Dust the fronds with a mixture of flowers of sulphur and powdered tobacco when the surface is damp.

MENDELISM: *P. K.* Mendelism is the term applied to the method of study of heredity introduced by Mendel. The essential features of this method are (1) the tracing of the behaviour of individual characters in successive generations, and (2) the determination of the numerical results of breeding experiments by the use of large numbers of individual plants or animals. With respect to (1) it has been shown by Mendel and his successors that the various characters which make up an individual behave, except in certain comparatively rare cases, as independent units, and hence the laws of the inheritance of such characters may be determined experimentally by breeding. Further than this we cannot go in a brief note; but a good account of Mendelism may be found in *Mendelism*, a little book by R. C. Punnett, published by Macmillan & Bowes, Cambridge, of which book a new edition has been published recently.

MILDEW ON VINES: *A. W. R.* Mildew can be prevented by affording early-morning ventilation and spraying the vines with a solution of potassium sulphide when the foliage is young.

MUSCAT OF ALEXANDRIA GRAPES: *A. Y.* No disease is present in the berries.

NAMES OF FRUITS: *I. O. W.* 1, Royal Snow; 2, Red Astrachan; 3, Lady Derby.—*Only Two.* General Todleben.—*J. H. O.* 1, Vicar of Winkfield; 2, Williams' Bon Chrétien; 3, not recognised; 4, Beurré Hardy; 5, Red Doyenné; 6, Catillac; 7, Fondante du Panisel; 8, Forelle or Trout Pear; 9, decayed.—*J. Kidd.* PEARS—1, Beurré Capiaumont; 2, Durondeau; APPLES—1, Colonel Vaughan; 2, Lady Derby; 3, Scarlet Nonpareil; 4, Northern Greening; 5, French Crab; 6, Stirling Castle.—*Treseder.* Fondante d'Automne.—*P. E.* 3, Jefferson; the others were decayed.—*Durfield.* Common or round Damson.—*H. A. R.* 1, Jolly Beggar; 2, Tower of Glamis; 3, not recognised, most likely a local variety.—*A. G.* 1, Peasgood's Nonesuch; 2, Lady Henniker; 3, Warner's King; 4, Fondante d'Automne; 5, Leon le Clerc de Laval.—*W. G. D.* 1, Autumn Josephine; 2, Louise Bonne of Jersey; 3, Conseiller de la Cour; 4, Emile de Heyst; 5, Brockworth Park; 6, Jersey Gratioli.—*Murray.* 1, Scarlet Napoleon; 2, Winter Hawthornden; 3, Waltham Abbey Seedling; 4, Blenheim Pippin.—*C. W. Hook.* 1, Cellini; 2,

New Hawthornden; 3, Blenheim Pippin; Pear Louise Bonne of Jersey.—*E. E.* 1, Sturmer Pippin; 2, Margil; 3, Ribston Pippin; 4, Cellini; 5, Brown Beurré; 6, Beurré Hardy.—*H. T. Ireland.* 1, Beurré Diel; 2, Josephine de Malines; 3, Flemish Beauty; 4, Bramley's Seedling.—*V. R. D.* 1, Tower of Glamis; 2, Blenheim Pippin; 3, Summer Strawberry; 4 and 6, Warner's King; 5, Kerry Pippin.

NAMES OF PLANTS: *W. C. P.* Rhus Toxicodendron, the Poison Ivy. The plant is poisonous to the touch.—*J. Barnard.* Eucalyptus Gunnii.—*E. D.* 1, Linaria Cymbalaria; 2, Olearia Haastii; 3, Polygonum Brunonis; 4, Agrostemma coronaria; 5, Veronica Traversii.—*F. P.* 1, Ardes odoratum; 2, Rhynchosytilis retusa; 3, Eria acervata; 4, Miltonia Clowesii; 5, Oncidium crispum; 6, Odontoglossum Lindlevanum. *W. F.* Helix Soleirolii.—*W. G.* Dumfries. 1, Gongora cassidea; 2, Veratrum nigrum; 3, Chlorophytum elatum variegatum; 4, Tsuga canadensis.—*W. F., Cobham.* 1, Helenium autumnale; 2, Chrysanthemum uliginosum; 3, Helianthus rigidus; 4, Silphium laciniatum; 5, Solidago canadensis.—*Ieronica.* The Abutilon sent last week was *A. Thompsonii*.—*G. B. Clanfield.* Rhamnus catharticus—Buckthorn. We do not undertake to name varieties of Roses.—*A. P.* Phallus impudicus (Common Stinkhorn fungus).

RUNNER BEANS, &c.: *W. S.* The Beans, Strawberries and Violets are badly infested with red spider. No disease is present in either, nor is there in the Pear branches, which are decaying because of unsuitable surroundings or improper cultural conditions. The Apple is known as "glassy Apple," the cause of the complaint not being known.

SHANKING IN GRAPES: *A. R., Osborn Park.* This trouble may arise from one of many causes, but the most frequent one is a badly-made or impoverished border. If you suspect the trouble is at the roots, overhaul the border during the coming season, following the directions given by Mr. Ward in his article on the making of fruit tree and vine borders in the issue for September 18, p. 193. Anything that causes a check to the vine is liable to produce shanking in the Grapes; therefore, draughts or fluctuations of temperature must be avoided in the vine. Be careful not to overcrop the vines, and endeavour to obtain strong, well-ripened canes that will fruit well the following season.

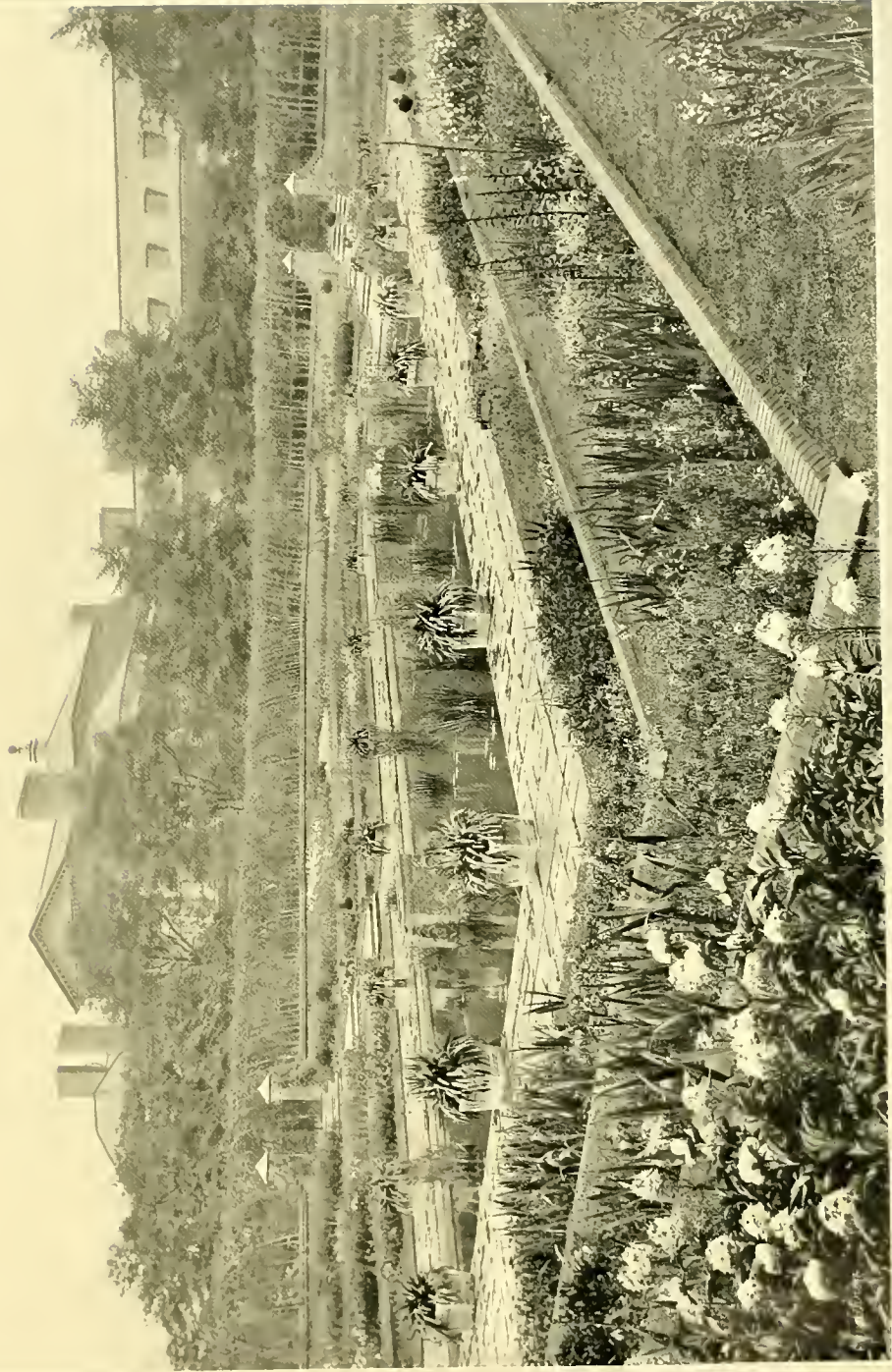
SPOT ON MUSCAT OF ALEXANDRIA GRAPES: *J. Parker.* No disease is present in the berries, the injury being a superficial one. See reply to *A. H. H.* in the issue for September 11, p. 192.

SPRUCE FIRS WITH SWELLINGS: *G. S.* The swelling is the result of the attack of a species of Chermes. Cut off the diseased twigs and burn them.

WINTER WASH FOR FRUIT TREES: *E. B.* The formula recommended by Mr. Spencer Pickering in the article in *Gard. Chron.*, Feb. 16, 1907, is as follows:—Sulphate of iron or sulphate of copper 1½ lb., quicklime 6 oz., paraffin 5 pints, caustic soda 2 lbs., water 9½ gallons. Dissolve the sulphate of iron or copper in the water by suspending it in a bag of sacking over night; at the same time put the lime in a jar with enough water to not quite cover it. Next day, when the sulphate is dissolved and the lime slacked, add a little more water to the latter to make it into a milk, and pour it into the sulphate solution. Add the paraffin, and churn the mixture with a garden syringe. The soda may then be added, and then all mixed well together. It is best to powder the soda before dissolving it in the water. Mr. Pickering has since modified this wash for different purposes.

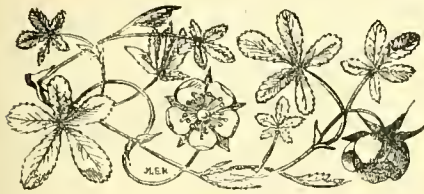
WORMS IN SOIL: *Chas. Lewendon.* The minute worms present in the sample of soil belong to the family Enchytraëida. In relatively small numbers they are perfectly harmless, but a plague of them might perhaps retard the growth of the plants.

Communications Received.—*T. M.*—*F. W. B.*—*J. S. D.*—*A. K.*—*R. M.*—*A. J.*—*H. A.*—*H. W.*—*E. J.*—*Mr. B.*—*H. M.*—*A. B. H.*—*T. E.*—*H. T. C.*—*E. P.*—*W. B.*—*C. G.*—*Bath Gardeners' Soc.*—*W. K.*—*E. H. J.*—*H. S.*—*E. B.*—*F. J. G.*—*A. D.*—*W. G.*—*W. G. S.*—*J. H.*—*Illinois.*—*O. S. M.*—*H. S. T.*—*Geo. Thorne.*—*A. A.*—*H. S.*—*J. W.*—*Geo. F.*—*H. W.*—*E. H.*—*J. E. M.*—*Dr. M. C. C.*—*Brussels.*—*H. F.*—*H. G.*—*D. M.*—*F. M.*—*W. B. B.*—*Y. Y.*—*J. S.*—*Son.*—*W. J. B.*—*E. O. G.*—*E. M.*—*O. O. W.*—*R. P. B.*—*C. M. H.*



Photograph by W. J. Vasey.

NEW GARDEN AT KENSINGTON PALACE, ON THE SITE OF THE FORMER FRAME-GROUND.



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Gardeners' Chronicle

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A MARKET FRUIT-GROWER'S YEAR.

ALTHOUGH we escaped some of the heavy storms of the first half of September, rain was measured on 17 days in the month, and the total reached 3.23 inches, a quantity considerably above the average. Moreover, the rainfall was so distributed over the month that two or more consecutive dry days were experienced on only three occasions, one of the three interludes being of five days' duration. The results of this wet weather in fruit plantations were not entirely bad, though the harm done was considerably greater than the good. The latter consisted in the swelling of late Apples and Pears, which have grown to greater size on the average than they promised to be at the end of August. Late Plums were also swollen by the abundant moisture in the soil; but, on the other hand, the wet weather caused splitting among some varieties, and interfered with the picking, besides doing harm in one particular to be noticed presently. Also on the bad side of the account is the rampant growth of weeds. Where horse cultivation was possible, as in young plantations, frequent operations up and down and across the intervals between trees and bushes and hand-

hoeing around them kept the land tolerably clean; but where hand-hoeing alone was practicable, weeds were re-set by the rains after nearly every day's work. In one case a plantation, hoed thrice each time at a cost of 13s. per acre, is now nearly as green as ever, and the intention to hoe a fourth time has been given up, since, under the continued unfavourable circumstances, it would be a waste of money. It is intended to try early digging with forks, to bury the weeds instead. As there is no Couch Grass, burying in such an autumn as this is the best course to pursue. Hindrance to the raising of the Potato crop and the spread of disease are other disadvantages consequent upon the wetness of the month. Further, the prices of Plums are less than probably they would have been in fine weather, both because of the restriction of the demand and of the presence of large quantities of wet or otherwise damaged fruit in the markets.

Brown Rot.

This season is the worst I have ever known for the prevalence of brown rot in Plums, although the disease has been less common among Apples than it was last year. Pond's Seedling Plum has been particularly punished by this disease in my plantations. Instead of ripening healthily, a great number of Plums began to rot before they were fit to be gathered, and probably the loss is fully 5 per cent. of a heavy crop. A thorough campaign against this disease in Plums and Cherries (also badly affected) will be necessary next season. Possibly, spraying with lime and sulphur-wash, contemplated for all kinds of fruit trees just before the buds burst next spring, will check brown rot to some extent; but subsequent sprayings with Bordeaux mixture will also be necessary. It has never been clear to me why potassium sulphide, a weaker fungicide than the Bordeaux mixture, is recommended for brown rot, while the latter is prescribed for scab.

PRICES FOR APPLES.

While dessert Apples, in consequence of their scarcity, sold well in September, there was a reduction in the prices of cooking Apples for a time. The preponderance of small Apples in the markets caused this class of fruit to be extremely cheap, and this is not surprising; but, as large fruit is scarce, about a penny a pound after the deduction of commission can hardly be regarded as a satisfactory return to the grower for well-graded "firsts," to say nothing of rail charges, market tolls, or portorage. If any reader will refer to the Board of Agriculture list of prices for the last week of September, he will see that only the first of Warner's King and a few other very large Apples made over a penny a pound gross in London, Birmingham, Bristol, or Evesham, and 6d. per bushel must be deducted for commission alone. Where there are facilities for storing, it will probably pay to hold back all good keeping Apples for a month or two, although the waste from rotting may be considerable. Growers are often blamed for marketing their Apples immediately after picking, and there is no doubt that the extent to which this plan is pursued glutts the markets in September and October. But any critic who could realise the large amount of storage-space that is required for all the late Apples on a large fruit

farm would cease to be surprised at the reluctance of growers to build the large storing rooms required; and the loss from storing under any but the best conditions is too heavy to allow of any advantage in holding back the fruit.

A RESULT OF APHIS ATTACK.

To a considerable extent the preponderance of small Apples is the result of one of the worst and most persistent attacks of aphis ever known. One of the many confident mentors of the fruit-grower stated a few days ago that, where spraying was done at the beginning of the aphis attacks, the trees were preserved from damage. My trees were sprayed before there was any considerable open foliage for the pest to attack, and repeatedly later on; but fresh infestations occurred again and again up to quite the end of August, and thousands of trusses of fruit were spoilt by the pest, the Apples being dwarfed beyond recovery. On one large fruit farm visited this season there was an extraordinary degree of immunity from aphis attack, attributed, rightly or wrongly, to spraying with lime and sulphur just before the buds burst. The assumption is that a great many mother queens were killed by this mixture; but this needs verification. It seems more likely that the coating of the trees with lime and sulphur acted as a deterrent to the insects. That, however, is only another conjecture. Still, the plan is worth trying, as there is no doubt that the destruction of the earliest, mother queen aphides is the great desideratum.

GREASE-BANDING.

Just now there is great competition among sellers of insecticides to sell to fruit-growers the requisites for grease-banding Apple trees, and they and many writers strongly recommend the practice. But, does it pay? To me it appears that the answer to this question must be in the negative. In the first place, the expense for grease, bands, string, and labour must be a large item, though I have never seen an account of its amount, and the greasing must be repeated at least once, if not twice, during the winter. Here I have 303 trees to the acre. In one plantation there are bush trees, branching out close to the ground, so that each of several branches per tree would need to be grease-banded. Elsewhere my trees are on short stems, and staked, so that the stakes as well as the trees would have to be treated. In the former case about a thousand grease-bands to the acre would be needed; in the latter over six hundred. Greasing three times would be 3,000 applications per acre in the first case, and over 1,800 in the second. And when all this work had been done at a serious expense for materials and labour, what would be achieved? The destruction of a portion only of the winter and other wingless female moths, for it is well known that some get or are carried on to the trees, in spite of the grease-bands. Against the damage done by the caterpillars of winged female moths the operation would be almost useless, although some of them might be caught. The great point against grease-banding, then, is this—that the necessity of spraying would not be reduced in the slightest degree by the operation, for the reason indicated above. Then why not trust to spraying exclusively, and

save the great trouble and expense of grease-banding?

PREPARING FOR FRUIT-PLANTING.

Frequent falls of rain have hindered the ploughing and subsoiling of a field of 6½ acres to be planted with Apples and Black Currants shortly. Shelter trees were planted three years ago along the outsides where they are needed, in anticipation of what is about to be done this autumn or winter, so that the Apple trees will be protected from gales in their young stage, an advantage not gained when shelter trees are planted simultaneously with the fruit-planting. Nearly all the trees required and the whole of the bushes have been raised on the place. The trees are to be trained in bush shape on stems 3 feet high, to allow of horse cultivation between them for a good many years. *A Southern Grower.*

LILIUM AURATUM.

THE illustration in fig. 120 shows a batch of this Lily in Lady Marcus Beresford's gardens at Bishopsgate, Englefield Green, Surrey. The plants are of the variety known as platyphyllum, one of the finest of the numerous kinds of *L. auratum*. The photograph was obligingly sent by the gardener, Mr. E. Markham, who gives the following particulars:—The photograph was taken on September 8. The Lilies are cultivated in a bed of Rhododendron (*Azalea*) molle, the Lilies being planted in clumps. The plants produced about 120 flower-spikes, and each carried on an average 24 blooms. Several individual spikes had 31 flowers, and one had 46. Many of the inflorescences were from 10 to 12 feet high, and when at their best were a most pleasing sight. The bulbs were planted at a depth of about 14 inches in a well-drained, sandy loam, the site, until three years ago, forming part of the park. Other varieties of Lilies which succeed fairly well at Bishopsgate include *L. Henryi*, *L. Leichtlinii*, *L. dauricum*, *L. elegans atrosanguineum*, *L. pardalinum*, *L. speciosum magnificum*, *L. tigrinum*, *L. auratum rubro-vittatum*, and *L. Brownii*.

NEW GARDEN WORMS.

ONE of the problems which has to be solved in relation to our garden worms may be stated thus:—Plants, introduced from foreign lands, may be accompanied by mould bearing little worms or their cocoons. In many cases these imported eggs and annelids die shortly after their introduction; in other instances, they may live out their usual term, but leave no successors; while, in the case of a third series, the introduced species may become permanently established. Thus, we often find *Perichæta* in botanic gardens, but it has so far never been known to perpetuate the race in England. On the other hand, such worms as *Eisenia veneta*, *Rosa*, may be foreign importations, and may become so thoroughly established that they not only propagate freely, but develop along new lines.

With a view to obtaining light on these questions, I am investigating the worm-fauna of botanic gardens, along with that of market gardens which grow no imported plants. When I visited Chelsea recently, I arranged with the curator for a supply of material, and I am describing in this article a worm received from him on October 2, which has not yet, so far as I am aware, been described in any English journal, though recorded in these pages in 1905.

The name by which the worm has generally been known heretofore is *Allolobophora icterica*. It was first described by Savigny, in 1826, as *Enterion ictericum*, the specific name having re-

ference to the jaundiced appearance of the living animal. In 1837, Dugès called it *Lumbricus ictericus*, retaining the specific name, but changing the generic. In 1886, Dr. Rosa put it in a new genus, and called it *Allolobophora icterica*. In more recent years the genus *Allolobophora* has been revised, but the details are only of interest to specialists, and I will retain in this description the name which is best known.

There has been a good deal of difference in the descriptions which scientific men have given of the species, and especially in relation to the position of the girdle and its attendant glands. These may be best understood if I tabulate the results, using for the purpose the form of a fraction. The numbers above the line denote the segments which constitute the girdle, while those below the line show where the tubercula pubertatis are situated. The worm is evidently a variable one, like *Allolobophora (Eisenia) veneta*, recently described in these pages. The following

ments (33-44), but in my specimens 9 to 11 segments (33, 34-42, 44). *Tubercula pubertatis*, according to Savigny, covering 8 segments (36-44)*; in my examples, 7 or 8 (35-41, 42), in a continuous band. Male aperture with cushion or swelling on segment 15. First dorsal pore between 6 and 7, from which a straw-coloured liquid is emitted." (From the Italian edition of *Revisiione dei Lumbricidi*, pp. 52-3.) I omit the internal characters, as they can only be studied by means of careful dissection; and since Rosa's and Savigny's worms agree in all external points, we may assume, with Rosa, that they are one and the same. Ribaucourt has studied the species and reconciled the differences.

A very full and careful description of this species is supplied by Dr. Ribaucourt, who, in 1896, published in French a very valuable study of the annelids of Switzerland, where it is frequently to be found. It is not necessary to translate his account, but I may supplement that



FIG. 120.—LILIUM AURATUM FLOWERING IN LADY MARCUS BERESFORD'S GARDEN.

are the principal enumerations by our authorities on annelids:—

Savigny, 1826	...	...	<u>35-44</u>
			36-44
Dugès, 1837	...	...	<u>33-44</u>
			(36 44)
Rosa, 1893	...	...	<u>33, 34-42, 44</u>
			35-41, 42
Ribaucourt, 1896	...	...	<u>33, 35-44</u>
			35, 36-41, 44
Friend, 1909	...	...	<u>33-44</u>
			36-42 (44)

It should be noted that Dugès drew his conclusions from the study of Savigny's material, and does not give the segments on which the tubercula occur, or accepts Savigny's enumeration.

Rosa describes the worm in the following terms:—"Length, 6-8 cm.; diameter, 5 mm.; segments, 140-190. Form, cylindrical. Colour, pallid, with a yellowish tinge, owing to the coloured liquid within showing through. Setae strictly paired. Prostomium cutting the first third of the peristomium. Girdle, according to Savigny, covering 10 segments (35-44), according to Dugès, who used Savigny's material, 12 seg-

of Rosa by a few of his statements. Ribaucourt calls attention to the diminished diameter of the body where the male pores are found, to the attenuated form of the segments behind this point, and the greater size of those in front. As a rule, the girdle in the Swiss examples extends from 35 to 44, but it occasionally begins somewhat more in advance, while the tubercula cover 36 to 44, with certain variations. The dorsal pores are not seen (as in *Allolobophora rosea*) on the clitellum of the adult; but while the worm is still young and the girdle is in process of formation, they may be readily observed. This latter remark I am able personally to confirm.

It is of importance to ask where the worm is to be found, as its known distribution may throw light on the question whether or not it is indigenous with us. Savigny found it in the neighbourhood of Paris, and Rosa at Valenciennes. Ribaucourt collected it freely at Gennevilliers (*Bulletin Scientifique*, 1900). It is, therefore, a well-known French species. Rosa has found it in the Piedmontese Alps, and Ribaucourt has collected it at Berne, in the Jura, and in large

* This would make 9 segments. H. F.

numbers "dans les Alpes valaisannes." In September, 1905, I discovered it at Cambridge, and now it is known to occur at the Physic Garden, Chelsea. There is no reason why it should not be found elsewhere in Great Britain.

When living, the worm might easily be mistaken for some of the forms of the green worm (*Allo: chlorotica*), which it resembles in emitting large quantities of yellow liquid. It has, however, a mottled appearance, especially in the hinder part of the body, and, when placed in alcohol, it does not curl into a ring as the green worm does. This is a point of some importance, since it reveals a difference in the arrangement of the muscles, and, therefore, of the habits of life. It is, in fact, very desirable that we should possess a series of accurate delineations, showing all the worms of this country, first in their living condition, and then as they appear when prepared for preservation, without any attempt to straighten them well cut. *Hilderic Friend, St. Asaph, Malvern.*

NOTICES OF BOOKS.

* THE MAKING OF GARDENS.

AMONG the recent additions to garden literature bearing upon the subject of garden design is this little volume of a hundred pages by Sir George Sitwell. It is entitled *An Essay on the Making of Gardens*, and is a study, based on old Italian gardens, of the principles involved in garden design.

The title is perhaps inapt, for those who take up the book with the object of seeking guidance in the practical details of making a garden will be disappointed. Such details the author touches upon but lightly, and in a way that would scarcely be helpful to those engaged upon the difficult task of creating artistic gardens.

But it does not pretend to teach the actual planning of gardens, and therefore stands on a different plane from the many books that have been written of late years on garden design. It may be best described as a thoughtful and delightful study of the principles that should guide a maker of gardens based upon the models of the famous great Italian gardens of the Renaissance. The bulk of the essay is a record of the impressions made upon the author during a long and intimate acquaintance with these classic gardens. He points out in a charming way the subtle beauty of their design which cursory visitors probably overlook. He describes in poetic language the intricacies and beauties of the design, the charm of the architectural features that embellish the gardens, the buildings, the fountains, sculpture and gates, all of which combine to render the famous gardens of Italy unique.

He dwells now and again upon the charming floral effects one continually meets with even in neglected gardens, where a sense of sadness steals over one on contemplating the contrast of former magnificence and the present-day air of neglect, solitude and melancholy. With this book as a companion one may wander through old gardens and appreciate beauties that without such a guide would probably be passed by.

The aim of the author is to uphold the principles of garden design as exemplified in Italian gardens, for which he has such a keen appreciation. He advocates very forcibly the application of these same principles to garden design in England. He opens his essay with a brief review of the history of the art of garden design or landscape gardening in Europe and particularly in England.

He discourses upon the faults and follies of the "landscape school" from the days of Capability Brown and his followers, and belands the virtues of the "formalist school" to such an

extent that he declares himself a "formalist." Yet throughout the essay there runs a vein of appreciation of natural effects unembellished by the builder's art, that one is drawn to the conclusion that the author is a disciple of both schools—the "landscape" and the "formal"—a combination that should characterise every true artist in garden making, an art which is not and never can be governed by any fixed rules.

Here is a passage in the essay which exemplifies the views of the author on this particular point and shows also that he recognises the difficulty of conforming garden design to set rules of straight lines and symmetry. "But the first aim of the designer will always be to consult the genius of the place, to catch the music of the landscape and concentrate it by fitting foregrounds and the concealment of defects, whether it be the blue distance seen between the links of a low chain of hills, the shadowy gulf of a deep river-valley, or the green velvet of a wooded plain."

Such are the principles of the true "landscape" school in dealing with broad landscape in park and garden, and upon such principles was founded the distinct style known as English landscape gardening, renowned throughout Europe and of which happily we have still abundant examples.

The early practitioners of this style have of late been much maligned, and the form of invective applied to them has become familiar, but it must be remembered that the formalist was previously the object of satire, so that the battle of the "styles" is not merely a present-day theme. This and other recent books of a kindred character will no doubt do much to encourage the revival of formal gardening in this country. Towards this revival there has been a decided tendency of late years, due chiefly to the attention architects now give to the garden about the house. Another cause of the change in taste is the revulsion of feeling from the commonplace and meaningless style of laying out gardens practised during the past half century by those who, under the style of "landscapists," abhor all symmetry in design, have no thought for the beauty and dignity of straight lines and whose efforts result in the insipid effects one sees in most gardens laid out during the Victorian period.

Whether Italian gardening so appropriate to the sunny south and so unsuited to our English life and climate will ever take a firm hold here remains to be seen. A thoughtful combination of the regular and irregular in garden design seems to be the rational style, and those who wish to practise it will find much in this book to guide them in producing satisfactory results. *W. G.*

* FRUIT PRESERVING.

UNDER existing conditions soft fruits are generally consigned to commission agents in large centres of industry. They are placed on the market at one time, with the result that it becomes glutted. With the extension of small holdings as the outcome of the Act of 1907, and the consequent increase in fruit growing, these drawbacks, if not remedied, will be still further increased, and the benefits of the Small Holdings Act lessened.

One of the means for meeting the difficulty is to convert a large proportion of the fruit into a preserve, either in the form of jam or jelly, or bottled in a whole condition. We are therefore pleased to note the recent publication of this work. The authoress deals with the whole subject in a thoroughly practical manner, having had considerable experience in the matters about which she writes.

In the Introduction, by G. Cadogan Rothery, care, cleanliness, uniformity, and a high standard of quality are insisted upon as the main points to be observed in the effort to make fruit-preserving a financial success. Care must be

exercised in the selection and handling of fruit. Rigorous cleanliness must be observed in picking, storing, and preserving. In this connection we are pleased to note a vigorous protest entered against the employment of the dirtiest—simplest because it is the cheapest—class of labour for picking fruit, as is the rule at present. Second-rate fruit should never be mixed with first-rate, but both ought to be kept separate and sold distinctly. In addition to these points, co-operation in the making of preserves, and in the marketing of them, is strongly recommended. Few persons who have had any insight into the practical and business side of jam-making and fruit-bottling will disagree with any of these important *dicta*.

Every reader, however, will not be in agreement with the authoress when she makes the following statements:—"The cultivated Apple comes from the wild Crab, and a Crab stock is the best for grafting purposes. . . . Next to the wild Crab the small, hardy, green type affords the finest jelly, both in colour and appearance." Fruit-growers will question this irrelevant statement as to the Crab stock, while housewives, who have used the Siberian Crab for preserving purposes, might deny first place to the wild Crab which is, in every way, inferior to the beautiful Siberian Crab, so commonly used for decorative purposes in pleasure-grounds.

We confess to feeling somewhat nervous regarding the suggested use of sulphuric acid as a means of retaining the colour of Peaches and Apricots during the process of preserving. The fewer chemicals of this description used in the preparation of food the fewer accidents will happen, and the better will the food be for manufacturer and consumer alike.

Nevertheless, *Successful Jam Making* is an admirable treatise on this important subject, and the general directions may be followed implicitly. *A. A.*

* YEAR BOOK OF AGRICULTURE.

WE can cordially commend this useful reference book to all who are interested in agriculture. The work consists of 630 pages and is divided into 11 parts. The subject-matter of the several parts is as follows:—

Part I.—Societies and institutions.—The principal horticultural societies are included in the list, though we note the omission in chapter 14, "Benevolent, &c., Societies," of reference to the Royal Gardeners' Orphan Fund and to the Gardeners' Royal Benevolent Institution.

Part II. deals with "county agricultural information," and gives concise information not only with respect to crops and live stock, but also concerning agricultural education in the several counties, scholarships, local facilities for analysis and advice for farmers, &c. The information shows that, whilst steady progress is being made in the direction of organised education in agriculture, much remains to be done before this country can compare in this respect with the most enlightened foreign states, or even with the younger states of the Empire. In Part III. agricultural education and research is dealt with from the national point of view. The sums granted for these purposes in England and Ireland are instructive and indeed amazing. We should like to know by what process of reasoning a justification can be advanced for the fact that whereas the Department for Agriculture and Technical Instruction for Ireland made for 1907-8 grants of upwards of £144,000, the grants made by the English Board amounted to about £12,000. The paltry sum, given to the various agricultural institutions, in no case exceeding £1,250, accounts for the fact that the work carried on by these institutions is of limited extent and value. Part IV. deals with diseases of animals. Orders of the Board of Agriculture with respect to plant diseases, such as Gooseberry mildew, are dealt

* *An Essay on the Making of Gardens*, by Sir George Sitwell, Bart. (London: John Murray.) 1909.

* *Successful Jam Making and Fruit Bottling*, by Miss Lucy H. Yates. 2s. 6d. net. (Messrs. Robman, Ltd., 129, Shatterbury Avenue, W.C.)

* *The British Year Book of Agriculture and Agricultural Who's Who, 1909-10.* (Vinton & Co., Ltd.) 5s. net.

with in Part VIII., devoted to agricultural statistics, law and general information.

Part V. provides information on the importation and exportation of animals, whilst in Part VI. lists are given of the leading agricultural publications. Information concerning markets, sales and prices is given in Part VII. Colonial agriculture is dealt with in Part IX. Shows in Part X.; whilst Part XI. is devoted to an agricultural "Who's Who" and contains biographical references to some 2,500 persons "officially and prominently connected with agriculture."

CULTURAL MEMORANDA.

RAISING NEW VARIETIES OF THE STRAWBERRY.

STRAWBERRY raisers have of late years forgotten the supreme matter of flavour in the pursuit of large size in the fruit and great productiveness of the plant, together with other excellencies, such as freedom from attack from mildew and from injury by frost. Taking the last point first, we have gained but little by putting stress on height of the fruit-stalk. We have made the flowers more liable to injury from late frosts if less liable to injury from slugs and from damp. Strawberry flowers, when short-stalked, are, to a great extent, protected by the leaves of the plant, and they may easily be raised from the soil and thus rendered comparatively safe from slugs and the splashing with earth during heavy rain by litter placed lightly round the plants. Varieties should be sought as parents for crossing among well-flavoured Strawberries that have the character of being proof against mildew in most kinds of soil, viz., *Auguste Nicaise*, a compact-growing habit, large fruit, of a crimson colour, and a good bearer which forces well. Dr. Hogg has large fruits with the *British Queen* flavour, but the plant is far hardier and a better bearer than the latter variety is in many places. *Elton Pine*, if not exactly a pleasant eating Strawberry, is a hardy, prolific, and strong-growing plant, and might be instrumental in breeding a mildew-resisting variety, and one with other desirable properties. The conical fruit has much firmness, fine colour, and is excellent as a preserve. *Filbert Pine* might be employed as the seed parent in this case, or *James Veitch*, which has a rather sweet, flat flavour, but is large, of good form, with red, solid pulp, and the plant vigorous and hardy. *La Grosse Sucrée*, an early-fruiting variety, one of the best forcing Strawberries, would make a good parent, say, with *President*, a large, handsome-fruited variety, with a firm flesh and moderately high flavour. *Carolina*, and the *Scarlet* or *Virginian*, and the *Chilian* species (*Fragaria chilensis*) might be used in forming a new race. Pure, the *Chilian* species, is too tender for our climate, *vide British Queen*, which is one of its descendants, the result of a cross with a cultivated variety.

Cross-fertilisation should be carried on in a cold frame, as then the flowers are more easily protected from the visits of bees and other winged insects. The seeds should be pared thinly from the ripe fruits, and then rubbed in silver sand in a fine, dry cloth, in order to separate them from the adherent pulp, and should either be sown forthwith in seed-pans, or kept, when dry, in small corked bottles till early spring, and then sown. The best place for the seed-pans is a shelf in a glasshouse having a temperature between 60°-70° Fahr., and, on germination, they should be transplanted in a greenhouse, until the seedlings are ready to be pricked off in May or June in the open ground, or into boxes placed out-of-doors.

The private gardener is required to cultivate the finest-flavoured varieties, but the ordinary man, without a garden, seldom, if ever, partakes in this country of a first-class Strawberry, for the reason that he must rely on the market grower, who, naturally, grows the most prolific varieties, without a great regard to flavour. F. M.

SCOTLAND.

HARDY FLOWERS AT KIRKCONNELL.

THE first week in October is not perhaps the best time to visit the garden of Colonel Maxwell-Witham, near Newabbey, especially as the garden lies low and near the river, and is, therefore, frequently injured by September frosts. But, nevertheless, the *Colchicums* or *Meadow Saffrons* were looking beautiful. In addition to the double and single varieties of *C. autumnale*, there were some very fine groups of *C. speciosum* in different varieties, *C. s. rubrum*, and a few clumps of the still scarce white variety *C. s. album* were just appearing. There were also *C. Bornmulleri*, *C. Bivonæ*, and a few others. *Crocus speciosus*, *C. pulchellus* and other autumn species were not yet in full bloom.

Pentstemons in named varieties have been a feature at Kirkconnell for many years, but this

the plants were giving a fresh display of bloom. *Polygonum baldschuanicum*, which covers an old tree in one of the borders, was just over. Some really good plants of *Veronica longifolia subserilis* were very fine, and *Kniphofia nobilis* and others imparted an agreeable brightness to the garden. *Chelone obliqua* was also in flower, and the tall *Napea dioica*, although not so good as a short time ago, was still giving many of its small, white, mallow-like blooms. The pretty little *Malvastrum lateritium*, also known as *Malva lateritia*, was still bearing some of its neat brick-red blossoms on its dwarf, rather trailing branches. Lilies were nearly over, but there was a long line of *L. tigrinum Fortunei*, together with plants of the double *Tiger Lily*, and an unusually fine single variety, better than any other form of *L. tigrinum* in the garden. A brilliant display was made by large beds of *Lobelia Queen Victoria*, which, however, is scarcely hardy here.



FIG. 121.—NEW DESSERT APPLE "ST. EVERARD."

season they have not done so well as usual, and a change of position is contemplated. The collection includes many new varieties of great beauty. Perennial Sunflowers were well represented, *Helianthus* *Miss Mellish*, *multiflorus*, *maximus*, *tomentosus*, with some of the double varieties, such as *Soleil d'Or* and *Globe d'Or*, looked very well in the long borders. There were large clumps of *Antholyza paniculata*, quite hardy here, and masses of *Anemone japonica* in various colours and varieties. Bold-looking, though coarse in its way, was *Silphium perfoliatum*, a big yellow Composite which I think is better suited for the wild garden than for the herbaceous border. Quite a number of *Montbretias* are grown, and the smaller-flowered varieties are so pretty that they have been retained, notwithstanding that the newer sorts are cultivated by their side. The collection of double *Daisies*, one of the best in the kingdom, proved of interest, as

An unusually fine plant of *Morina longifolia* was superb with its Thistle-like leaves and its singular spikes of flower, while in another border the choicer *M. Wallichiana* was not yet over. *Chrysanthemums* of the *C. maximum* group were numerous. S. A.

APPLE ST. EVERARD.

THIS new variety (see fig. 121) received a First-class Certificate from the Fruit and Vegetable Committee of the Royal Horticultural Society on September 23. It is a seedling from Cox's Orange Pippin crossed with Margil. The flesh is richly flavoured and the variety ranks as a first-class dessert Apple. The fruits are of medium size, round in shape, like its first-named parent, but with the stripes of Margil. It was shown by Messrs. Jas. Veitch & Sons, Ltd.

THE BULB GARDEN.

MERITS OF DEEP AND SHALLOW PLANTING.

I HAVE been asked on several occasions whether I have noticed a certain degeneracy, as indicated by loss of vigour and stature, in some of the more robust-growing Daffodils, for instance, Emperor and Sir Watkin, but particularly Emperor. My reply to the enquiries has been to the effect that, in instances where I have noticed any great loss of vigour or of stature, the bulbs had been grown on too dry a soil, or planted from time to time at too little a depth. Shallow planting is, indeed, a sure cause of shortened growth, whether the bulb be the most diminutive or the largest. At the same time, however, shallow planting has, to some degree at least, become a sort of necessary evil, particularly from

out in a lateral direction. This flattened character is increased proportionately as the bulbs become more deeply buried in the earth, and anyone accustomed to shallow-ground bulbs would hardly recognise them as the same variety after two years. Vigour of growth and stature are as much affected by the annual lifting of the bulbs, and, together, annual lifting and shallow planting are responsible for much of the reduced stature of which complaints are made. But there is still another, and a very fruitful—if avoidable—cause of diminished stature, and this is unnecessarily late planting. Too frequently the planting season is delayed till the last moment, and the bulbs, drying day by day in the bulb shops and warehouses, lose much vitality. Again, no sort of consideration is given to these types of Daffodils which have perpetual, or nearly perpetual, root action. If some of these are left for five minutes out of the soil it is four minutes too long, which

of sickness. But even in their case, the bulbs should not be more than six weeks out of the earth. A bulb in the store-room may exhibit no signs of root development even in November, but its growth, compared with a bulb of the same variety planted early in September, would be a long way behind, and it would form a bulb proportionately weaker for the following year.

As to permanently planted stocks, their vigour may remain unchanged, even after being undisturbed for a score of years, though overcrowding would cause fewer flowers to be produced. I have in mind an instance of Emperor and Empress planted in wet, clayey ground, Emperor attaining to more than 3 feet high at flowering time.

As to the depth of planting bulbous subjects generally, the operator may more frequently err on the side of shallow planting than in the reverse direction, while of recent years a method of planting has sprung up which gauges the cor-



[Photograph by H. N. King.]

FIG. 122.—VIEW OF PORTION OF SIR FRANK CRISP'S ROCK-GARDEN AT FRIAR PARK. SHOWING THE MATTERHORN.

the commercial point of view, and in more than one direction. The commercial bulb-grower has to consider two important matters, viz., the extra cost of labour as between deep and shallow planting when lifting time arrives, and the apparent quality—shapeliness and compactness more particularly—of the bulbs.

Now it is well known to the bulb specialist that the compactly-formed, decanter-shaped, short-necked bulb is the invariable product of shallow planting, and that this apparently well-finished type of bulb is favoured by the purchaser and merchant alike; indeed, such bulbs are usually referred to as "very fine, clean-grown samples," or in equally complimentary phrase. On the contrary, deep planting is not conducive to this shapely outline of form, and, instead, the bulbs, when left a year or two undisturbed, lose their retundity, and acquire a more flattened form, the tunics of the bulbs spreading

is true of all the Poeticus race. Some other types of Daffodil are possessed of roots of a distinctly fleshy and enduring character, which, if retained on the bulbs, even when the latter are out of the soil, rarely perish. The well-known Emperor and Horsfieldii are typical, while not a few of the Incomparabilis varieties show the same characteristic. All these are benefited by being left more or less permanently in the soil, or if they are moved as a matter of necessity, they should be returned to the soil as quickly as possible. The varieties that suffer least from a long rest out of ground are those of the white-flowered class, and such as Golden Spur and Obvallaris, and others, which lose the entire set of root fibres each year. Some of these, indeed, show signs of deterioration when left in the soil all the year through, and in a year of much moisture and sunlessness, like the present, the succeeding year's growth will display signs

rect depth by the size of the bulb to be planted, this often enough being most variable and entirely dependent on the method of its production.

A Snowdrop or a Snowflake may have buried itself to a depth of 18 inches in the soil, or have been accidentally turned in at that depth, and great strength both of leaf and flower is the result. This is true of the majority of bulbs, whether they be Snowdrops, Lilies, or Daffodils. But what the gardener who desires to plant deeply should see to is that there is a good depth of rich soil below the planting level. The mistake that is being made to-day is that the gardener, in these matters of bulb planting, is far too closely imitating the action of the dealer who grows for commercial purposes, and who plants his bulbs at given depths for a specific reason or purpose. Many of the strong-growing Daffodils would be all the stronger if planted 6 or 8 inches deep, and not one of them need be nearer the

surface than 4 or 5 inches. Curiously enough, such deeply-planted bulbs, when established, are not later, but decidedly earlier in their appearing above the soil than those which are planted less deeply. *E. H. Jenkins.*

COLCHICUM SPECIOSUM.

WHEN all is said and done, there is nothing among the autumn-flowering Colchicums or "Meadow Saffrons" to compare with the varieties of *C. speciosum*, whether for attractiveness in the border, or for that perfect form and regular finish which one is wont to associate with the best of English Tulips. That there are species with larger flowers is well known, for such are *C. giganteum*, *C. Sibthorpii* and *C. Bornmülleri*. But, as an accompaniment to their greater size, there is irregularity of flower and lack of refinement. Their greatest garden attribute—and it is no small one—is their showy effect. But the few varieties of *C. speciosum* possess all these qualities and others, for, whilst their colours are more decisive or pure in tone, the flowers are perfect in form and regularity of outline. *Colchicum speciosum* is a somewhat variable species from Asia Minor, the colours ranging between rose and purple. The plant is strong, vigorous and free-flowering, the leafage in spring and early summer being as handsome as the flowers in autumn are effective. To these good attributes must be added an accommodating nature rarely found in any plant, so accommodating, in fact, that the plants may be lifted in full flower and replanted without injuring their prospects of future growth or flowering another year. Moreover, the lifting of a plant in flower scarcely affects its seed bearing. They flower in September and October, and afford grand effects when planted in free groups or colonies in a woodland, on grassy banks or slopes, in the larger rock-garden, or in the forefront of a well-kept shrubbery border. The corms are large, and, as they increase freely in number, it is necessary that the plants should be given ample room to develop. This is the more important because of the large size of the handsome shining leaves; for where the bulbs are crowded the leaves cannot properly develop. When planted for grouping in the woodland, the corms should not be placed at a less distance than 18 inches apart. They require to be planted 5 or 6 inches deep in rich, loamy soil. In such conditions the plants bear blossoms 9 inches and occasionally 12 inches in height. Collected plants are variable in colour, as apart from the best form of the typical plant there is one named *C. s. atro-rubens*, which is of a very deep purplish-red colour. A greatly-increased interest has been given to *C. speciosum* by the recent introduction of the pure white form known as *alba*. *E. H. Jenkins.*

FOREIGN CORRESPONDENCE.

NOTES FROM LA MORTOLA.

DURING last winter and spring the garden of La Mortola was visited by 7,295 persons on public days. Sometimes more than 400 persons came on Monday or Friday afternoons from the neighbouring towns, chiefly from Mentone and Bordighera. Besides this large number of visitors—tourists to the Riviera—many botanists and horticulturists came to the garden for purposes of study. Prof. Warming, Director of the Botanic Gardens in Copenhagen, remained a fortnight, and he was followed by Prof. Dr. O. von Kirchner, Director of the Botanic Garden at Hohenheim, who worked for nearly a month on floral biology. Prof. Strasburger, of Bonn, is one of our most regular and enthusiastic visitors every spring. Mr. D. E. Hutchins, Chief Conservator of Forests in Nairobi, was here in May; and also Dr. Aaronsohn from Haifa, who is about to establish a large agricultural experimental station in Palestine. America sent us Dr. Rehder, the dendrologist, from the Arnold Arboretum in Massachusetts, who visited the garden in order to study the trees and shrubs. Among the

visitors are many gardeners from England, France, Germany, &c., mostly clever young men, who come with their cameras and notebooks.

The distribution of seeds has been gradually increasing. In 1900 we sent out 6,378 packets; in 1901, 7,837; in 1902, 9,351; and so on till we reached 13,085 packets in 1908. Seeds were sent to almost every part of the world, chiefly to botanical gardens, and also agricultural and forestry establishments in the British Colonies. Consequently, the influx of seeds in exchange has also largely increased, and many new trees and shrubs have been tried.

The most important addition to the garden has been the last collection made by Mr. Wilson, in China, which he undertook for the Arnold Arboretum, for Miss Willmott and La Mortola. Among the new plants collected by Mr. Wilson are a great number of good and interesting things. Many of the young plants have been planted out in nursery beds, and some are flowering. Among them, climbers are especially numerous. At the present moment Dr. Brunthaler, of Vienna, is travelling in South Africa, and has undertaken to collect plants and seeds for this garden. Cape plants do extremely well at La Mortola, and, once they have taken root, need little further care. Besides, most of them blossom during the winter or spring, and are much admired on account of their bright and showy flowers.

A new catalogue of the garden is in preparation. The first was published in 1889, the last in 1897. The new catalogue will not only contain the names, but also notes on the more remarkable plants. *A. B.*

The Week's Work.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

The Alpine garden.—Species and varieties of *Dianthus* may be planted at the present season. Sunny positions should be selected, and they should be planted in clumps. If six to twelve plants, such as are taken from 3-inch pots, are grouped together, they will produce a good colour effect. Some of the best *Dianthus*es include *D. alpinus*, which has red flowers an inch in diameter; *D. arenarius*, white; *D. cæsius* (the Cheddar pink), a pretty, tufted plant with pink flowers; *D. fimbriatus*, with white flowers and fringed petals; *D. annulatus*, white and crimson; *D. neglectus*, a miniature plant with bright carmine flowers; and many others. If the soil is not very porous, it will be well to mix with it some sand, gravel chippings, or sandstone. *Androsace Chumbyi* and *A. sarmentosa* being easily injured by damp, should be protected by having a square of glass or small handlight placed over them to keep off the rains. *A. lanuginosa* is perhaps the best growing species. It succeeds well in a position where the growths may hang over the rocks, but it must not be exposed to the north. *A. Leitchlinii* will succeed under similar conditions to *A. lanuginosa*. It is useful to have a stock of such plants as these in cold frames, keeping them fairly dry in winter, as many are apt to damp off in foggy weather. *Saxifragas* are most effective when planted in masses. Many other species may be planted in the Alpine garden at this season, especially if new work is being carried out. Since plants in established gardens become overgrown after a few years, it is necessary to replant the species. For this purpose young plants raised from cuttings are much better than pieces obtained by division. Therefore, as far as the frames will allow, a stock of all such plants should be maintained for this purpose. In all work connected with the rockery time should be taken to eradicate every weed that is seen; in cases where the roots of weeds are already underneath the cultivated plants it is advisable to entirely lift the plants for the purpose of getting every bit of weed root out of the soil. Following the work of cleansing and weeding, a top-dressing should be applied, using a compost of loam, leaf-mould, and granite chippings, first screening all these materials through a sieve with $\frac{1}{2}$ -inch mesh. Make this top-dressing as firm as possible, especially on sharp inclines. When all this has been done, the Alpine garden will appear tidy for the winter, and it will be

merely necessary to afford protection to plants in cases of severe frost. The *Sternbergias* will soon be showing their flowers; it will, therefore, be well to place a little soot and lime around them to prevent injury from slugs.

Climbing plants.—The present is a good season to plant such climbers as *Wistaria*, *Solanum*, *Hedera*, *Lonicera*, *Buddleia*, *Polygonum*, *Azara*, and *Abutilon*. *A. vexillarium* and *A. vitifolium* passed safely through last winter out-of-doors here. *Jasminum primulinum* requires a warm wall, as it is scarcely hardy. *Vitis Henryana* is an excellent plant for covering the trunks of trees; the leaves are most brilliantly coloured this autumn. *Akebia quinata*, *Aristolochia Sipho*, *Berberidopsis corallina*, *Jasminum nudiflorum*, *Lonicera tragophylla*, *Wistaria multijuga*, *Ceanothus*, *Chimonanthus*, *Lespedeza bicolor* (*Desmodium penduliflorum*), *Escallonia*, *Forsythia suspensa*, *Fremontia*, *Grevillea*, *Myrtus communis*, *Pittosporum*, *Olea fragrans*, *Actinidia chinensis*, *Clematis montana* and the variety *rubens*; are choice plants that may be planted in various positions. Before planting, the soil should be deeply dug and some manure and new soil added. Every plant should be given a permanent label bearing its botanical name.

Pits and frames.—Remove the lights on all fine and dry days, tilting them as high as possible during wet days. Carnations should now be kept on the dry side, and, if any fungus disease appears, the leaves on which it shows should be picked off and burned and the others dusted with flowers of sulphur.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Shrubs for forcing.—The many flowering shrubs, such as *Rhododendron* (*Azalea*) *molle*, and other species of *Rhododendron*; *Kalmia*, *Laburnum*, *Deutzia*, *Staphylea*, Japanese *Cherries*, *Xanthoceras sorbifolia*, &c., which are of value for early forcing, should now be given attention. Many of those forced several years ago having been cultivated for the last two summers in the reserve garden, have now set their flower buds, and are in a fit condition for again being forced. In gardens where quantities of shrubs are forced, especially in those establishments where the forced shrubs are cut for furnishing the vases with cut flowers, it will be necessary to purchase a quantity of fresh plants each year to supplement the home-grown supply. When forced plants are to be thrown away after their period of usefulness is over, the manner of potting is not of great importance; but in the case of those shrubs which may be forced many times, the potting should be done well, and good soil should be used. A peaty soil will be needed for the *Rhododendrons*, *Kalmias*, *Andromedas*, and similar genera; but a compost of about three parts loam and one part leaf-mould, with a little decayed manure and sand mixed with it, will be found generally suited to most other shrubs. After the plants are potted, plunge the pots to their rims in ashes, so that there will be no danger of them being broken by frost.

Forcing bulbs.—The bulbs of Roman Hyacinth and Paper White Narcissus, which were potted first, should now be rooted sufficiently to be safely forced. Remove them from the ash-bed, and place them in a frame for a short time until the foliage has become green, at first screening them from sunlight by shading with mats, but gradually reducing the covering. The bulbs may then be removed to the forcing pit, where they should at first be subjected to a temperature of about 50°, which subsequently should be increased gradually. Gradual forcing is desirable, because the best flowers are borne on plants which are not subjected to an excessive amount of artificial heat.

Gloriosa superba.—As this stove twiner finishes flowering the amount of water given should be gradually reduced until, by the time the foliage has matured, the soil is quite dry. The tubers are very brittle, therefore they are better wintered in the pots in which they have flowered. The pots should be stored in a place where the temperature will not fall below 60°.

Mignonette.—The plants which will flower during the winter should be moved from the cold frames and placed in a light, well-ventilated position in the greenhouse, or some similar structure where they will be safe from frosts.

THE ORCHID HOUSES.

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

Fluctuations in temperature.—At this season of the year cultivators should be prepared for the sudden falls in the temperature of the outside air, which occur frequently in the early morning hours, when there may be sharp frosts, although on the previous evening there was no reason to expect frost. On such occasions the temperature of the houses is almost sure to fall a few degrees below what is considered the proper standard. Therefore, no water must be afforded to any of the plants or any damping down done until the proper degree of heat has again been obtained. For several weeks to come the safest plan is to err a trifle on the warm side with the night temperatures in each department, this being particularly applicable to the East Indian house, which contains many rare and tender Orchids, which are easily injured permanently by low temperature, even though of short duration. As regards the Odontoglossum, or cool house, if the temperature is just a trifle warmer at night than usual, there is no fear of the plants being injured, provided that the ventilators have been judiciously used on all suitable occasions. On the contrary, as the majority of the plants are now making their new growths, they may suffer check if the temperature is low and the atmosphere damp for any length of time. A little fire-heat in the hot-water pipes, sufficient to make them just lukewarm to the hand, with extra ventilation, tends to prevent the points of the leaves of Odontoglossums from getting disfigured, and checks the dark-coloured fungus that attacks the underside of the leaves of *O. crispum* during autumn and winter. During October and November the atmospheric temperatures at night should be as follow:—*East Indian house*, 65° to 70°; *Cattleya and Mexican houses*, 60° to 65°; and *Intermediate house*, 55° to 60°, the higher degrees being employed when the external air is about 45° to 50°; when the thermometer outside is falling, and there are indications of frost, the lower figures are preferable. The Odontoglossum house should be kept at about 55°, or, in the event of cold weather, a few degrees less will do no harm. When attending to the fires the last thing at night, clean them out thoroughly, and, if the weather is likely to be cold, set them going for half an hour or so previous to banking them up. The dampers should be so arranged that there will be a fall of several degrees of heat in every department by morning. See that none of the plants are too near to the roof glass, particularly Phalenopsis Angraecum, Renanthera Lowii, Vandas, tall-growing Cattleyas, Lælias (especially *L. elegans* and others of that type), all of which are irreparably injured if they get in the least chilled. Whenever the foliage of these plants gets blackened some distance from their points, a check from cold or damp may be suspected. A plan which may be generally adopted is to lower the plants a foot or more from the roof glass. The *East Indian house* will still require to be moderately ventilated for a few hours in the middle of warm days. The *Cattleya and Mexican houses* should be well ventilated whenever the temperature of the external air is above 50°, and the cool house requires an abundance of air through the bottom ventilators when the outside air is above 45°. Remove all shadings from the north aspects and side lights. The roofs facing south, east and west will still require to be shaded during direct, bright sunshine.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Cucumbers.—The treatment of Cucumbers must now be very different to that given them during the summer months. In order to obtain a constant supply of fruits in late autumn and winter, very careful attention to cultural details is needed. Do not overcrop plants which are just commencing to fruit, as this would seriously weaken them. Cut the fruits before they become too large, and lay them in a cool store, where they will keep in good condition for a considerable time. When roots show themselves on the surface of the bed, apply small top-dressings of loam (from which the fine particles have been shaken out), decayed leaves and well-decomposed

horse manure. In order that the plants may be kept clean, they should be syringed occasionally with a weak solution of soft soap and sulphur. Young plants which it is hoped will supply a crop during winter must especially be preserved from attacks of red spider. Should this pest get established on the plants, it would do irreparable damage, as growth is now very slow. Train the shoots regularly over the trellis, stop them at the second or third leaf, and do not overcrowd them. Do not overfeed the plants, as excessive vigour is not conducive to fertility. There must not be too much moisture at the roots or in the atmosphere, or the plants may be attacked with Cucumber "spot." A little air should be admitted to the house before noon whenever the weather is favourable. The atmospheric temperature at night should not fall below 70°, unless the weather is very cold, when a further fall of 5° will be desirable.

Tomatos.—Plants which are showing signs of exhaustion should be thrown away after cutting off any fruits which are colouring. These fruits will ripen if placed on a shelf in a lateinery. The autumn-fruiting plants must be assisted to swell their fruits by occasional applications of liquid manure and some approved fertiliser. Remove the side shoots and cut away a portion of the leaves if they obstruct light and sun from the fruits. So far the weather has not been favourable for the setting of flowers on the winter-fruiting plants. The flowers must be pollinated every day at noon, and a free circulation of air encouraged during favourable weather. The top ventilators should never be quite closed. There must always be sufficient heat in the water pipes to prevent the temperature declining below 60°. An occasional light sprinkling of artificial manure will be of benefit now that the pots are becoming filled with roots. Later, a light surface dressing of loam, mortar rubble, and wood-ashes will assist the swelling of the fruits. A batch of plants may now be raised for fruiting early next season. A free-setting variety must be selected for this purpose. Winter Beauty, Sunrise and Dwarf Red may all be relied upon. Sow the seeds thinly in pans in a light compost, and always keep the plants growing near the glass in a minimum temperature of 55° or 60°, varying in accordance with the conditions out-of-doors.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Root-pruning.—In most gardens there are some fruit trees that appear in the best of health, make extremely strong growth, yet bear very little or no fruit. Such trees are proper subjects for root-pruning, and the present is the best time for the operation. If it is performed early in the autumn, the roots have time to recover from the check they suffer, and, as the soil is still warm, they start growing at once, thereby, in a measure, getting re-established before the severe weather. The object of root-pruning is, by cutting back the tap root and all strong, thong-like roots, to induce them to make a number of small, fibrous roots, which, being much nearer the surface, are more easily supplied with plant food. By the pruning the tree receives it is checked from making rampant growth in the following season, and its energies are therefore directed into developing fruit buds. Such a tree usually produces a good crop of fruit in the second season after the operation. In the case of very young trees that are growing too strongly and not bearing fruit, the best plan is to lift them entirely out of the ground, cutting the roots back, and replanting them. Use a sharp knife, and see that no mutilated portions of roots remain, as these set up decay. With older trees, transplanting is not advisable. In order to root-prune these, dig out a trench round the tree, and cut all roots found in the trench. Work away the soil from under the centre of the tree, in order to cut the tap root or any stray roots that may be getting down into the subsoil, as these must on no account be overlooked. It is best to do one half first, replacing the soil before disturbing the other section, or otherwise the tree may fall over. When old-established trees require this treatment, the operation must be extended over two seasons, for, if performed in one, the check would be likely to permanently cripple a large specimen. Such a tree should have a trench cut round one half now, leaving

the remaining portion to be treated in the following season. During root-pruning operations, it is seldom necessary to apply manure; but in some instances fresh loam with wood-ashes (lime rubble in the case of stone fruits) is beneficial. In all cases this work should be done when the soil is in a comparatively dry condition, that is, when it will not stick to the feet or tools, because it is necessary that the soil should be rammed quite firm when returning it to the trench, a loose, rich soil being often responsible for the very evils that cultivators try to counteract by root-pruning.

Quinces.—Examine these fruits, but do not pick them till quite ripe, which will be later than usual in most localities. Store the fruits in a cool, dry place, and they will become fit for use after a few weeks.

Medlars.—This fruit is sometimes appreciated, and is usually ready for picking at the end of October. Choose a dry day, as the rough surface of the fruit holds the moisture, which causes decay. Store them thinly, and examine them at intervals; they will be ready for use when quite soft.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Asparagus.—The Asparagus growths may now be cut down close to the ground by means of a pair of garden hedge shears. The ground should be cleared of all weeds and rubbish, and these, with the Asparagus growths, should be burnt on the smother fire. Any special variety of more than usual promise and bearing seed-pods should be saved for sowing early next spring. The growths containing these should be hung up in a dry, well-ventilated place for some time, after which the berries should be picked and the seeds cleaned and stored in a place of safety till sowing time.

Forcing Asparagus.—No kitchen-garden crop lends itself more readily to forcing than Asparagus, and few vegetables are more appreciated. Contrary to most vegetable roots, those of Asparagus should never be exposed to the air one moment longer than is necessary. As soon as possible after they are taken up they should be placed in the position in which they are to be forced, covering them immediately with earth. Or, if the roots have to be purchased and sent a distance, they should be carefully packed in damp moss. Directly they arrive they should be placed in position and covered. Just sufficient top and bottom heat should be provided to start the crowns into growth, either in a forcing house or on a bed of fermenting materials. The plants should receive a good watering, and, in fine weather, be damped over twice each day with tepid water.

Box edging.—This is still used extensively in many places for the edgings of kitchen-garden walks. Provided they are kept in good condition, they present a neat appearance, but involve a considerable amount of labour, not only in keeping the Box itself, but because weed-killer cannot be used on the paths when this form of edging is employed. However well the Box is treated, it requires replanting every now and again, and this work may be performed either now or in the spring, the present time for preference. The old plants should be pulled to pieces, and the top growth and root shortened. A certain amount of skill is required to do this work properly. In cases where the soil is unfavourable for the growth of Box, sufficient fresh material should be placed along either side of the plant to induce quick root action. In planting, the soil should be made thoroughly firm by well ramming. The best form of edging for kitchen gardens, in my opinion, are solid blue Staffordshire edging tiles. These should be set in sufficient concrete to keep them rigid, and they will then last for an indefinite period. They are neat and tidy in appearance, and the paths may be kept free from weeds by an annual dressing of one of the many preparations known as weed-killers.

Horseradish.—Part of the permanent bed of this crop should now be trenched over, and sufficient of the best roots taken up and laid in sand and ashes under a north wall. The small pieces should be cut into lengths and planted at regular distances on the same spot, working in a good dressing of farmyard manure. If this is done, the same site will serve for many years.

EDITORIAL NOTICE.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 25—
Nat. Chrys. Soc. Executive & Floral Coms. meet at Essex Hall, Strand.

TUESDAY, OCTOBER 26—
Roy. Hort. Soc. Coms. meet. (Lecture at 8 p.m. by the Rev. Prof. G. Henslow, on "Remarkable Instances of Plant Dispersion.")

WEDNESDAY, OCTOBER 27—
Croydon Chrys. Sb. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—47.6°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 20 (6 P.M.): Max. 60°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 21 (10 A.M.): Bar. 30.0; Temp. 57°; Weather—Bright sunshine.

PROVINCES.—Wednesday, October 20: Max. 60° Bedfordshire; Min. 50° North Ireland.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Nursery Stock, at the Old Nursery, Wivelsfield Road, Haywards Heath, by Protheroe & Morris, at 12.

TUESDAY—
Unreserved Sale of Duplicate Orchids, at "Arcadia," Charminster Road, Bournemouth, by order of C. H. Rolls, Esq., by Protheroe & Morris, at 1.30.

WEDNESDAY—
Roses at 1.30; Palms and Plants at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

Nursery Stock at Hickmandias Nursery, Knockholt, Kent, by order of Mr. A. Waterman, by Protheroe & Morris, at 11.30.

THURSDAY AND FRIDAY—
Conifers and other Nursery Stock, at Hollamby's Nurseries, Groombridge, near Tunbridge Wells, by Protheroe & Morris, at 11.30.

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

The Sterilisation of Soil.

Ever since it began to be realised that the soil is the home of a great number of minute organisms—bacteria and fungi—as well as of larger organisms like infusoria and eelworms, there have not been wanting experiments in which attempts were made to grow plants in soil which had been deprived of these living agencies. The results, however, that have been reported have been contradictory and difficult of explanation, and when also of late years certain gardeners began to use sterilised soil on a practical scale there has been a similar conflict of evidence as to the value of the treatment. The gardener has tried soil sterilisation, nearly always by heat, for various reasons; in the first place, he hoped to get rid of the seeds of weeds and the spores of the mosses and liverworts which encrust the surface of seed-pans whenever germination is long delayed; again, he hoped to kill off the spores of certain fungoid diseases which harbour in the soil, and the eelworms and similar organisms which often do so much harm to cultures under glass. Any process of sterilisation by heat, involving the heating of the soil, either wet or dry, to the temperature of boiling water, must be expensive, but whether it may prove to be commercially profitable or not, it is only very recently that we have learnt what sort of changes go on in the soil during the process

and have arrived at some understanding of the reasons for contradictory results mentioned above.

The experimental investigation of the subject began with the discovery, in which several men shared, that soil which has been heated to the temperature of boiling water will grow larger crops than the same soil which has not been treated. In this country Russell and Darbishire carried out a long series of such experiments, and showed that the heated soil will produce double the yield of the untreated soil and that the beneficial effect persists as far as four crops after the original heating. All the plants they tried were benefited, except the leguminous species, and all kinds of soils behaved in the same way. Moreover, not only did the gross weight of the crop increase, but on analysis it proved to be richer in such essentials of plant-food materials as nitrogen and phosphoric acid, so that the crop grown on the soil after heating actually contained about four times as much nitrogen as that grown upon the soil which had not been heated. Various explanations of the action were put forward, mostly depending upon changes which were supposed to have been set up in the bacterial flora of the soil; but Pickering, as the result of his experiments, suggested that in the main the action was due to the splitting up of the organic matter (humus) of the soil by the heating. He showed that the germination of seeds is retarded in soil that has been heated, and that the retardation is greater the higher the temperature to which the heating is pushed; he also showed that the soil after heating actually contained more nitrogen compounds in a soluble state. Hence he concluded that the heating had split off from the humus soluble nitrogen compounds which are injurious to germination, but which later will serve as food for the growing plant. Pickering's results are undoubtedly correct, in that ammonia and other soluble nitrogen compounds are split off from the humus by the heating; but some work which has just been published by Russell and Hutchinson, of the Rothamsted Laboratory, shows that this is only part of the story, the increase in fertility of the heated soil being chiefly due to a rearrangement of the living organisms inhabiting the soil. In the first place, it can be shown that heating to the temperature of boiling water for ten hours or so does not sterilise the soil; certain groups of organisms are killed off entirely, but others which exist in the form of spores resist the heat, and as soon as the soil cools down again begin to develop and multiply with great rapidity. For example, the bacteria bringing about nitrification are wiped out entirely, but most of the other groups retain some representatives, especially that class which take the complex organic matter of the soil and break it down into ammonia and kindred compounds. In one of the Rothamsted arable soils used in the experiments the normal number of bacteria in the soil before treatment was about 5,000,000 per gramme; immediately after heating the number had fallen to 60 per gramme, but then followed a very rapid rise; in a fortnight the original 5,000,000 had been reached and a month or five weeks afterwards the number had risen to 26,000,000 per gramme. Step by step with this increase in the number of bacteria in the soil came a

similar increase in the rate of production of ammonia, i.e., of a soluble nitrogen compound on which the plant could feed. It was thus demonstrated that, in the soil that had been heated, the increased crop is due to the greater amount of ammonia which becomes available for the plant, and that this increase in the ammonia is brought about by the larger number of bacteria, chiefly splitters-off of ammonia, which get a footing in the soil. Various experiments, which need not here be detailed, also demonstrated that the increase in numbers of the bacteria is not due to any stimulus derived from the heating, but to the removal of some factor which is at work in ordinary soil keeping down the numbers of bacteria. This new and unknown factor turns out to be the presence in ordinary soil of large non-bacterial organisms like amoebæ and infusoria, which habitually feed upon the bacteria, and thus, by keeping their numbers down, establish a certain numerical equilibrium between themselves and the bacteria. These higher organisms are wholly destroyed by the heating or other sterilisation methods, whereas the bacteria are only partially exterminated and afterwards develop to a much greater extent than before, because they have the field to themselves. With this increase in the number of bacteria goes an increased production of soluble plant food from the insoluble reserves in the soil and a corresponding increase in crop. With certain differences these results are repeated when other methods of sterilising the soil are adopted; if, for example, the soil in a dry state is exposed for some hours to the vapour of chloroform, carbon bisulphide, toluene or other volatile antiseptic, there is a similar rearrangement of the organisms of the soil and a similar increase in its fertility, though not to so great a degree.

We are now in a position to sum up the changes which take place in soil when it is subjected to one of these so-called "sterilisation" processes:—

(1) Seeds of weeds, mosses, liverworts, &c., are killed. Fungi and their spores are also destroyed. It is found, however, at Rothamsted that the soil is very susceptible to re-infection when it is afterwards exposed in pots. Occasionally it becomes covered with moulds, and the usual green algæ rapidly cover the surface with a mat.

(2) The texture of heavy soils is distinctly improved.

(3) The heating gives rise to substances, of which ammonia is probably the chief, harmful to germination. This harmful effect will be less marked if the soil is stored for a time after the heating.

(4) All organisms of an order higher than bacteria are killed off; the soil, for example, is rendered clean of eelworms, at the same time certain organisms which normally limit the number of bacteria in the soil are destroyed.

(5) Thus provided with a clear field, the ammonia-producing bacteria increase rapidly and there is a correspondingly greater production of plant food from the soil and manure, followed by an increase of crop. Certain groups of bacteria are killed off, e.g., those which convert ammonia into nitrates; hence plants which only take in their nitrogen as nitrates do not show increased growth on the sterilised soil; only those plants (actually the

majority) which can utilise indifferently ammonia or nitrates are benefited. Even in their case it is possible to see that they are feeding upon ammonia and not upon the nitrates they obtain from normal soil, e.g., the cereals are shorter in the straw than would be expected from the richness in nitrogen. Nor is it always possible to re-inoculate the soil with the nitrification organisms, heat-sterilisation seeming to produce some substance which inhibits the nitrification bacteria.

Space does not permit of a discussion of the results of greenhouse practice with sterilised soils in the light of these conclusions, but they will be found to illuminate much that has been obscure and contradictory in the reports. At any rate, it is clear that it is impossible to lay down the law beforehand as to whether "sterilisation" of soil will or will not be beneficial in a particular case. Experiment alone can show which of the numerous factors will be involved. Similarly, though a number of applications to practice suggest themselves, it would be unwise to discuss them until more experimental work is forthcoming.

FRIAR PARK.—Our Supplementary Illustration depicts a "Japanese" scene in the gardens at Friar Park. Friar Park is known, at least by name, to most horticulturists, and especially to those who are interested in rock and Alpine gardening, for it contains one of the most remarkable rockeries in the world. This rockery has been often referred to in the *Gardeners' Chronicle*, and in the issue for October 28, 1899, a full, illustrated description of the gardens and rockery was given. Since that time several features of interest have been added, the most important being a representation, built to scale, of the famous peak (see fig. 122) of the Matterhorn. How realistic the effect is may be judged by reference to our illustration. The mountain top appears clothed in snow, the effect being obtained by the use of some alabaster. Appropriate plants are disposed at suitable spots, and the visitor can easily imagine himself to be in the midst of the Alps. Some idea of the extent and design of the rockery may be obtained from the fact that no fewer than 7,000 tons of stone have been used in its construction, whilst it is furnished with 4,000 distinct plants. The scene depicted in the Supplementary Illustration, with the stone lantern, Wistaria, Bamboos, and jutting rockwork reflected in the water pool, will no doubt be a familiar one next season to those who visit the forthcoming Japanese exhibition. Further details concerning Friar Park Gardens will be found in our issue for August 3, 1907.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will be held on Tuesday, the 26th inst. At 3 o'clock p.m. there will be a lecture on "Remarkable Instances of Plant Dispersion," by Rev. Professor G. HENSLOW, V.M.H.

GRAPES AND PEARS FROM WISLEY.—At the last meeting of the Royal Horticultural Society there was shown a very interesting collection of Grapes and Pears from the Society's gardens at Wisley. There were 32 bunches of Grapes and some 60 dishes and varieties of Pears. The latter were not presented as exhibition samples grown under glass or on walls or cordons, but were from bush and pyramid trees, grown on the sandy hillside of the Wisley Gardens. Therefore, they fairly represented what those varieties on similar soil and conditions would usually produce. Much allowance had to be made for the

lack of sunshine which has so much checked the development of outdoor fruits this season. Still, the fruits were very clean and of excellent dessert size. The varieties of Grapes were Golden Queen, Muscat of Alexandria, Cannon Hall Muscat, White Nice, Mrs. Pearson, Syrian, Lady Hutt, and Trebbiano among white varieties; and Lady Downe's, Black Prince, Prince of Wales, Gros Colmar, Gros Maroc, Barbarossa, Black Alicante, and West St. Peters of black varieties. Just a few amongst the many Pears seen were Durondeau, Gros Calebasse, Baltet Père, Beurré Clairgean, Beurré Diel, and Princess, all of these being excellent fruits. A very interesting feature in connection with these Pears was the testing of them for flavour, as against one another and also against the same varieties grown under much more favourable conditions.

TRIALS AT WISLEY.—We are informed that trials of the following fruits, flowers and vegetables will be made at Wisley during 1910-11:—Autumn-fruiting Strawberries (20 runners of each must be sent); early-flowering outdoor Chrysanthemums (two plants of each to be sent in April); Clematis (two plants of each early in April); Gladioli, early, mid-season and late (four bulbs of each to be sent early in February); Rhododendrons, early, mid-season and late (two plants of each in February or March); Potatoes: each variety must be labelled as being early, mid-season or late. Twenty tubers of each to be sent by February. Also, experiments with Ashleaf Potatoes of all forms (20 tubers) secured from as many sources as possible, under different soils and climatic conditions. Salads of all kinds and varieties ($\frac{1}{2}$ ounce of each to be sent early in February); Peas (half-pint of each, early in February); Spinach ($\frac{1}{2}$ ounce to be sent early in February). Everything sent for trial must be named, and the name and address of the sender attached.

APPOINTMENTS.—We learn from the *Kew Bulletin* that Mr. J. W. GALLAGHER, mycologist to the Agricultural Department of the Federated Malay States, has been appointed Director of the Department in succession to Mr. J. B. CARRUTHERS, who has been transferred to Trinidad. Mr. J. W. CAMPBELL, formerly Superintendent of Experimental Plantations in the Federated Malay States, has been appointed Assistant Director, Agricultural Department, Federated Malay States.

LEGACY FOR A GARDENER.—Under the will of the late Mr. GEORGE MOSS, Oak Villa, Beulah Hill, Upper Norwood, his gardener becomes entitled to the sum of £300. Mr. Moss directed in his will that each servant of 10 years service should receive the amount stated, and the gardener is included, although his services were only requisitioned on four days each week.

NERINE APPENDICULATA, BAKER.—An inflorescence of this pretty and distinct Nerine is sent by Mr. F. W. MOORE, Curator of the Royal Botanic Gardens, Glasnevin. It is the second of the species with a rudimentary corona, the first being *N. pancratioides*, described by Mr. J. G. BAKER in the *Gardeners' Chronicle*, November 14, 1891, p. 576, and which has the segments of the white flowers not crimped. *N. appendiculata* was described by Mr. BAKER in the *Gardeners' Chronicle*, September 22, 1894, p. 336. Both are Natal plants having ovoid bulbs furnished with narrow, linear, bright green leaves, and an inflorescence about 15 inches in height. The specimen of *N. appendiculata* sent has an umbel of nine flowers, the segments of which are equally arranged, crisped, and reflexed at the tips, pale rosy-lilac with a central purple line. Good distinguishing features are the downy pedicels and ovaries, and the mem-

branous strap-like processes which surround the anther filaments at the base, forming a rudimentary corona. The anthers are purplish in the early stage. It has some resemblance to *N. flexuosa*, but in the different arrangement of the perianth segments and the other characteristic mentioned it is botanically very widely separated from that species. As a garden plant it has only moderate merit. Like many other Nerines, it flowers in late autumn, grows throughout our winter, and requires to be rested dry during the heat of the summer.

PRODUCE OF HOPS.—The Agricultural Returns of Great Britain, issued by the Board of Agriculture (October 12, 1909) indicate how disastrous, with respect to yield, the present year has been for the Hop grower of this country. Whilst the acreage under Hops in 1909 was but little less than last year (32,529, as against 38,921), the estimated total produce is less than half, viz., 214,484 cwts. (as compared with 470,761 in the preceding year) which gives for this year an average yield per acre of 6.59 cwts., as compared with 12.10 in 1908. The yield continues highest in Mid-Kent and the Weald, where it is 8.6 cwts. per acre, as against 12.14 last year, and is lowest in Hereford, 3 cwts. per acre, as against 9.8 of 1908. It remains to be seen whether enhanced prices will make up for poor yield; if not, the Hop grower is to be commiserated on the miserable returns, which are, of course, attributable to the weather obtaining during the past growing period—we will not call it summer.

"THE BRITISH FERN GAZETTE."—We have received a copy of the first issue of this journal, devoted exclusively to British Ferns. It contains articles on "Our Native Ferns," "The Life History of a Fern," "Wild Sports in British Ferns," "Personal Fern Finds," and illustrations of *Polystichum aculeatum pulcherrimum*. The whole of the matter in this issue is contributed by the Editor, Mr. C. T. DRUERY, V.M.H., but readers are promised contributions from various Fern enthusiasts in the December issue. Probably some readers will be all the better pleased that the first issue is contributed by the Editor, as Mr. DRUERY is so well qualified to discuss British Fern topics. We recommend the journal to all interested in Ferns. It is supplied free to members of the British Pteridological Society. The secretary is Mr. G. Whitwell, Serpentine Cottage, Kendal, Westmoreland, and the subscription 5s. yearly.

CARL POSER, for some years assistant in the Botanical Garden at Breslau, has been appointed to the head gardener's post at the experiment station for plant physiology at the Botanical Garden, Dresden.

BRITISH FUNGI.—During the past 20 years a very considerable number of species belonging to the higher fungi have been added to the British list, mainly owing to the unceasing activity of the mycological section of the Yorkshire Naturalists' Union. This has necessitated the appearance of a concise list of British species brought up-to-date. We are grateful to Dr. COOKE for having undertaken this tedious but extremely useful work, as, tempered by his vast experience, it is free from those modern flights of fancy concerning names which deface and render useless so many mycological works of the present day. The catalogue* can be carried in the pocket, and the list is printed on one side of the paper only, an arrangement which makes it easy to tick off the species as they are met with in the field.

* *Catalogue and Field Book of British Basidiomycetes up to end of 1905*, by M. C. COOKE. (Wheldon & Co., 38, Great Queen Street.) Price 2s. 6d. net.

PROFESSOR DR. LUDWIG WITTMACK celebrated his 70th birthday on September 26. Dr. WITTMACK, apart from his professorship of botany, is well known in gardening circles. He was general secretary of the Berlin Horticultural Society for 30 years, and as such edited the organ of that society, which several times altered its title. He took it over as the *Garten-zeitung*, and later the *Deutsche Garten-zeitung*, &c. Numerous treatises on garden subjects from Dr. WITTMACK's pen have appeared in the various publications, among others the last edition of the *Illustrierten Gartenbau Lexikon*.

THE CONTROL OF THRIPS.—In the series of papers on *Deciduous Fruit Insects and Insecticides*, Bulletin No. 80, Part IV., deals with the Pear thrip and its control. Although this pest—*Euthrips pyri* Daniel—occurs only in the central part of California, we give the results of

tated violently and sprayed under pressure of 125 to 150 lbs. into other barrels. This stock solution is diluted before use with 24 gallons of water to each gallon of solution.

TRAFALGAR DAY.—On 21st inst. the Nelson Column in Trafalgar Square was again decorated in commemoration of this great sea fight, and for the 11th consecutive year the work was done for the Navy League by Messrs. BELLGROVES, LTD., Holly Lodge Gardens, Grove Park, Chiswick. Festoons of Laurel (*Cerasus Laurocerasus*), bunches of autumn-tinted Oak, with groups of flowering plants and foliage, composed the main features of the scheme. At the base of the column were four shields bearing quotations from Lord TENNYSON's and RUDYARD KIPLING's poems, whilst attached to the column were the Union Jack and St. Andrew's, St. Patrick's, and St. George's Crosses.

each season. It is said that they can be sold here at 6d. each, but unless they can be placed on the market at a cheaper rate, they will scarcely succeed in competing with outdoor Peaches grown in this country. The fruit which we had the opportunity of tasting from the recent consignment was the variety known as Crawford, a free-stoned, yellow-fleshed fruit. Judged after being subjected to cold storage, it is not nearly so good as the average English Peach, being less juicy, indifferent in flavour, and rather tough. It is stated that the same variety if eaten in Canada is excellent; indeed, a representative of the Ontario Government described it as being far superior to the very best Peaches grown in English hothouses.

PUBLICATIONS RECEIVED.—*The Estate Magazine* (October), a supplement to *The Country Gentleman's Estate Book*. Edited by William Broomhall. Price 6d.—*General Abstracts showing the Acreage under Crops and the Numbers and Descriptions of Live Stock*. Printed for His Majesty's Stationery Office. Price 2d.—*The Orchid Review* (October). (Marshall Bros., Ltd.) Price 6d.



FIG. 123.—STRAWBERRY "DR. HOGG," FIFTH IN THE CENSUS OF BEST FLAVOUR'D VARIETIES.

the experiments conducted by Mr. DUDLEY MOULTON and published in the above paper, since they may be of service in the combating of other thrips. From an extensive series of trials of various kinds of spray-fluid, Mr. MOULTON comes to the conclusion that though tobacco-leaf extract, one part to 50 of water, is very successful, a yet more penetrating, and hence more efficacious, material consists of making up the tobacco-leaf extract with an oil instead of with water only. The oil spray is forced more easily than the water spray into the buds and penetrates more readily the oily covering of the animals themselves. The oil spray recommended is prepared as follows: Distillate oil emulsion, $1\frac{1}{2}$ to 2 per cent. solution; black-leaf tobacco extract, one part to 60 parts of water. The distillate oil emulsion is prepared as follows: Hot water, 12 gallons; white oil or fish-oil soap, 50 lbs.; distillate oil (28 per cent. Baume), 20 gallons. The soap is first dissolved in a kettleful of boiling water, removed to the spray tank where the oil is added; then the mixture is agi-

AFFORESTATION IN ITALY.—It is interesting to observe that Great Britain is not the only European country in which the afforestation question is exciting attention. According to the *Estate Magazine* IX., No. 10, October, 1909, the Italian Minister, Signor BERTOLINI, is about to ask Parliament for an annual grant of £100,000 for the purpose of tree planting. In justification of this proposal it is pointed out that where not so long ago woodland abounded there are now bare land, regions subject to flood, marshes and malaria, and, moreover, that the same sum which it is proposed to devote to planting is expended at present in protection against floods.

PEACHES FROM ONTARIO.—The first consignment of Peaches from Ontario arrived last week. The shipment was in the nature of an experiment, and the fruit arrived in very satisfactory condition. The fruit growers in Ontario hope it will be possible to find a sale here for a considerable quantity of Peaches in September

* TREES NOTED IN DEVONSHIRE.

STRETE RALEGH.—Amongst other interesting trees growing at Strete Ralegh, the S. Devon estate of Mr. H. Imbert-Terry, the following are specially noticeable on account of their size and rarity: *Larix Griffithii*, *Tsuga Brunoniana*, and *Saxegothea conspicua*. It is considered that these particular examples are some of the original introductions to the British Isles, and that they found their way to Strete Ralegh at the time of the dispersal of the stock of the Exeter nurseries, when the old Veitchian firm dissolved partnership. Of the two first-mentioned species single examples only are found, but of the *Saxegothea*, two specimens exist. All four are growing on sloping ground near the top of a hill, at an elevation of 500 feet, but they are sheltered by other trees from the north and east. The ground is rich and is kept continually moist by means of a spring, the water from which percolates through the ground thereabouts. This, with the natural humidity of the atmosphere and mild climate, appears to provide ideal conditions for these trees, for all are somewhat tender and averse to a hot, dry soil and a dry atmosphere.

The specimen of *Larix Griffithii* is about 45 feet high with a girth of 7 feet at 3 feet from the ground. Himalayan travellers describe the species as a tree growing 40 to 60 feet in height, at an altitude of 8,000 to 12,000 feet in the forests of the inner ranges of the Eastern Himalaya (E. Nepal, Sikkim and Bhotan). It also occurs in Tibet at an altitude of from 9,000 to 13,500 feet. Plate XXI. in *Hooker's Himalayan Plants* gives a good idea of the tree and of the beauty of the half-developed cones. The chief peculiarities of the species are its long, pendulous branches and large cones with prominent scales and bracts which are remarkable for their long reflexed tips. The cones are several times larger than those of other species, being $2\frac{1}{2}$ to 3 inches in length. When young they are purple in colour. As the Strete Ralegh tree is coning profusely this year, it formed a conspicuous object in June. Though introduced as long ago as 1850, very few good specimens are to be found in the country.

Tsuga Brunoniana is also a Himalayan tree and is found in the same forests as *Larix Griffithii*. It attains its largest dimensions in the Lachen Valley, where Sir J. D. Hooker measured a specimen 120 feet high, with a girth of 28 feet (*Gardeners' Chronicle*, July 17, 1886, p. 73). Under cultivation its trunk is not single, but branched at a few feet above

* W. Dallimore in the *Kew Bulletin*, No. 9, 1909.

the ground. The Strete Raleigh specimen is 45 feet in height, with a girth near the base of 9 feet 2 inches. It is of graceful outline, and branched to the ground all round. A larger example is recorded by Elwes and Henry in Trees of Great Britain and Ireland, vol. ii., p. 245, from Bocomnoc in Cornwall. This is 53 feet high, with a girth of 12 feet. S. Brunoniana was first cultivated in English gardens in 1838.

Saxegothea conspicua was introduced from the mountains of Patagonia, by Messrs. Veitch, of Exeter, through the agency of their collector Wm. Lobb, in 1849. The Strete Raleigh examples are supposed to have originated from this consignment, and are now 30 feet in height, the larger of the two having a girth of 4 feet 3 inches at 2 feet from the ground. They somewhat resemble the Yew in appearance, but are lighter in outline. The genus was named in compliment to the late Prince Consort, and from that the common name of "Prince Albert's Yew" has originated. When first introduced it excited considerable interest amongst botanists, and Lindley, in a description which appeared in the Journal of the Horticultural Society for 1851, pp. 258-263, says: "It may be described as a genus with the male flowers of a Podocarp, the female flowers of a Dammar, the fruit of a Juniper, the seed of a Dacrydium, and the habit of a Yew." The Strete Raleigh examples are probably the finest in the country, and from their healthy appearance it is evidently a tree that might be planted more extensively in the south-west counties. Although perfectly hardy at Kew, it grows slowly and has a stunted appearance.

KILLERTON PARK.—Killerton Park, Devon, the demesne of Sir Thomas Dyke Acland, Bart., is situated a few miles east of Exeter, in the midst of a beautifully undulated country, consisting of rich agricultural land. The estate is well timbered, and many fine old trees exist of indigenous and exotic species. In the rich soil of the park Beech and Oak assume magnificent proportions, whilst many fine trees of Pinus insignis, Cupressus macrocarpa, and Cedar are to be seen. It is in the gardens, however, that the more interesting trees are to be noted. A collection of the more tender species of Cupressus is noticeable, C. torulosa being specially worthy of remark. The rare Cunninghamia sinensis is represented by examples 45 feet high covered with cones; Fitzroya patagonica is 30 feet high and well furnished with branches; Thuja plicata is 80 feet high, whilst fine examples exist of Abies cephalonica, Pseudotsuga Douglasii, Quercus Lucombeana, and numerous other trees. Shrubs, too, are well represented. Japanese evergreen Oaks such as Quercus cnspidata and Q. glabra form very large bushes; Kalmia latifolia is 12 to 15 feet high and 23 feet through; Lencothoe Catesbaei is represented by a bush 10 feet through and 3 to 4 feet high, which in June was a perfect mass of white flowers; whilst a large number of the more recently introduced shrubs are making satisfactory growth. A magnificent bush of Berberis aristata was noted; this was 18 feet high with an enormous spread.

STEVENSTONE.—In the gardens at Stevenstone, the North Devon seat of Lord Clinton, a very fine collection of Conifers exists, but the majority are young, 40 years old and under. That they like their position, however, is evident from the fact that many have attained a height of from 50 to 65 feet. About the park are many clumps of coniferous trees which show a remarkable rate of growth, for, though planted but 35 to 40 years ago, Douglas Fir and Larch are to be found between 70 and 80 feet in height, with trunks 12 to 15 inches in diameter. Fine examples were noted of Magnolia Watsoni and Styrax japonica. The former, though usually a slow grower of indifferent constitution, is represented by a free-growing bush 18 feet high with seven main branches which, in June, were carrying over 100 open and unopened flowers. The Styrax is 16 feet high, and a good bush,

A STRAWBERRY CENSUS.

(Continued from page 261.)

WE publish the remaining particulars of the results of the Strawberry census commenced in last week's issue. With regard to the first table, few of our readers will be surprised at the predominant position accorded to Royal Sovereign, it being generally admitted that this is far and away the most satisfactory variety for early forcing. The next on the list is the old favourite Vicomtesse Héricart de Thury, and this is followed by President.

British Queen has long been known as the best flavoured Strawberry, and it remains so to-day. But in the "Flavour" table this variety is only given 67 votes, which is the exact number accredited to Royal Sovereign. This may appear an anomaly, but some allowance must be made

for the fact that, owing to the habit of Royal Sovereign being much superior, few cultivators have any recent knowledge of British Queen, which in many gardens fails to colour well to the point of the fruit. The third place is taken by President, which receives 47 votes against 42 given to Vicomtesse Héricart de Thury and 29 for Dr. Hogg.

As many as 30 varieties were mentioned in the papers dealing with varieties of Strawberries introduced to commerce since 1900, but in the published list (see third table) those which gained but one vote are not shown. The highest number of votes is awarded to Bedford Champion, a large, deeply-coloured fruit; the second on the list is Givon's late Prolific, the third Reward, and the fourth Latest. Three of these varieties were placed in commerce by Messrs. Laxton Brothers.

BEST STRAWBERRIES FOR FORCING.

Table with 12 columns: Scotland N., Scotland E., Scotland W., England N.E., England E., Midland Counties, Southern Counties, England N.W., England S.W., Wales, Ireland, Total Number of Votes. Rows include Royal Sovereign, Vicomtesse Héricart de Thury, President, La Grosse Sucrée, etc.

BEST FLAVOURED STRAWBERRIES.

Table with 12 columns: Scotland N., Scotland E., Scotland W., England N.E., England E., Midland Counties, Southern Counties, England N.W., England S.W., Wales, Ireland, Total Number of Votes. Rows include Royal Sovereign, British Queen, President, Givon's Late Prolific, etc.

BEST STRAWBERRIES INTRODUCED TO COMMERCE SINCE 1900.

Table with 12 columns: Scotland N., Scotland E., Scotland W., England N.E., England E., Midland Counties, Southern Counties, England N.W., England S.W., Wales, Ireland, Total Number of Votes. Rows include Bedford Champion, Givon's Late Prolific, Reward, Latest, etc.

NOTES FROM A "FRENCH" GARDEN.

THE pricking off of the Cabbage and Cos Lettuces is proceeding as fast as the weather permits. Plants of "Little Black Gott" are now well established in their new quarters. They require no ventilation before the end of November, and this is only required to harden them in case of frosty weather. The varieties Passion, Palatine, and all the Cos Lettuces can be afforded ventilation early in November if the plants are progressing favourably. If more plants are required, another batch of seeds should be inserted; it will be found advantageous to make a small hot-bed for the purpose and to sow the seeds very thinly under the cloches. Those planted late in September are doing well; the cloches are covered with mats at night-time, as the ground is damp and cold.

Cauliflowers transplanted early this month have developed three leaves; the lights are kept open day and night to harden the plants and to save transplanting again in December.

Onions planted three weeks ago are fully established and will now withstand frost.

The ground allotted for the cold growing of Lettuces Passion and Palatine next January has been well manured and dug; it should be in fine condition at Christmas, when we shall set the frames and lights in position. This system of growing Lettuces has always given a good financial result, and the crop is ready in April and early May, when there is generally a dearth of Lettuces. It is advantageous to the grower, as it enables him to use the frames and lights afterwards for a very early batch of Melons. Half of the manure required for the making of the hot-beds in January has been collected, and stacked in a heap 12 feet by 40 feet, with three apertures in the centre for the escape of the gases from fermentation. This manure will dry, and then, when mixed with fresh material, the result will be a more lasting heat than where fresh manure is wholly employed. The surplus of the decayed manure from the old beds is also stacked in small heaps to prevent fresh fermentation. It will be used for cold frames and the rearing of young plants next season. *P. Aquatias.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PLANTS HARDY AT WESTON-SUPER-MARE.—

The following list of plants growing all through the year in the gardens of Mr. J. Jackson-Barstow, J.P., The Lodge, Weston-super-Mare, will show the mildness of the winters in this Somersetshire town. *Fuchsia Riccartonii*; *Carpenteria californica*, a fine specimen, planted about seven years ago; *Phormium tenax*; *Osmonthus fragrans*; *Myrtles*, both double and single-flowered kinds; *Choisya ternata*; *Aloysia citriodora*; *Eupatorium fragrans*, a fine plant, has been out-of-doors without protection for five years; *Olearia stellulata*; *Cistus ladaniferus*; *Fabiana imbricata*; *Jasminum revolutum*; *Aralia Sieboldii*; *Eucomis punctata*; *Staphylea colchica*; *Indigofera floribunda*; *Pittosporum Tobira*; *Ceanothus Veitchii*; *C. Gloire de Versailles*; *Macartney Rose*; *Solanum jasminoides*; *Passiflora cœrulea*; *Banksian Rose*; *Abelia rupestris*, specimens 5 to 6 feet high and as much through, covered in flower; *Salvia coccinea*; *Pomegranates*, both single and double varieties; *Chimonanthus fragrans*; *Olearia macrodonta*; *Magnolia grandiflora* Exmouth variety; *Escallonia montevidensis*; *E. macrantha*; *Skimmia japonica*; *Chamaerops excelsa*; *Hydrangea paniculata* and *H. hortensis*; *Arundinaria Metake*; *Mesembryanthemum turbinatum*; *Caryopteris Mastacanthus*; *Cupressus macrocarpa*; *Laurus nobilis*; *Agapanthus umbellatus*; *Eleagnus*; *Euonymus japonicus* varieties; *Rhododendrons* in variety; and *Viburnum Tinus*. All these are planted in the open, without any protection. *Wm. Brooks, White Cross Nursery, Weston-super-Mare.*

TALL HOLLYHOCKS (see p. 266).—At the time of writing, October 19, I have several plants of double Hollyhock growing at the back of the herbaceous border in a rather exposed position. Six plants have attained the height of 14 feet 6 inches, and are now in flower, and several more are 13 feet 6 inches. Hollyhocks have grown unusually high this season, which is, no doubt, attributable to the excessive rainfall. I may add that two plants of Jerusalem Artichoke I measured were 16 feet 4 inches, and in many instances varieties of Peas, which generally grow 6 feet, are 8 feet high this season. *E. R. Squelch, Court House Gardens, Rusper, Sussex.*

CUPRESSUS MACROCARPA.—On p. 252 one of your correspondents gave particulars of the girth, spread of branches, and height of a specimen of *Cupressus macrocarpa* now growing on his property, and asked for information from others to compare with that which he gave. I requested my gardener to measure a specimen of this Conifer, now growing in my garden, which tree was planted by my father about 50 years ago, along with many other varieties of Conifers, most of which are now very fine specimens. His figures are:—Girth, 10 feet 9 inches; spread, 54 feet; and height, 61 feet. It will be noted that my tree is less in spread and girth, but rather taller than that described on p. 252. I may say that this tree is surrounded closely by other Conifers,

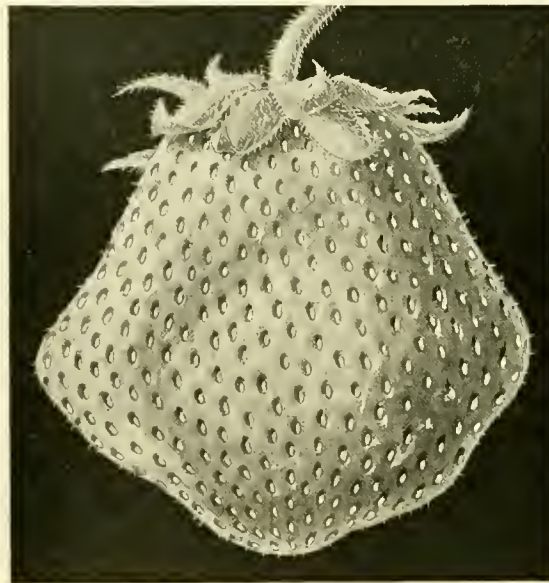


FIG. 124.—STRAWBERRY "REWARD," THIRD IN THE CENSUS OF NEW VARIETIES.

so that it has not had as good a chance of increasing in size as it would have had were it standing alone. *O. O. Wrigley, Wonsfell, Windermere.*

RESULTS OF PLANTING TREES AND SHRUBS

ON POOR SOIL.—About 40 years ago when this institution was built, a considerable amount of ground had to be made up to form the carriage drive leading to the front entrance, the soil used for this purpose consisting chiefly of sand and gravel. When finished, this formed a sloping bank, falling to the level of the vegetable garden, which is about 60 feet below the level of the present carriage drive. On the top of the bank, and skirting the drive, a Holly hedge was planted without any preparation being made for the plants. This hedge is now kept clipped to the height of 4 feet, and makes a good growth each year. Following the planting of the hedge, the bank was planted over with Broom, which does very well, and when the grass began to get a good hold, it was decided to have the Broom taken up and to plant trees and shrubs of an ornamental character. As the ground was not prepared in any way to receive the plants, it is astonishing how well the following species have succeeded. *Ribes sanguinea* grows well and flowers splendidly. *Lilacs*, both blue and white, make very little sucker

growth, but they bloom freely. *Syringas* make plenty of new wood, and, with attention to pruning, are a mass of bloom every summer. *Berberis aquifolium* was planted beneath the trees, and it is all that could be desired, producing a wealth of yellow blossom every year. *Aucuba japonica* and *A. japonica variegata* make a good show, having been planted beneath the larger trees, and where they get more light than the *Berberis*, which has been used for the denser parts. Respecting *Rhododendrons*, I wish particularly to state that these plants were planted in decayed leaf-mould and garden soil, and that they are now doing as well, or better, than many planted in peat, or a mixture of peat and loam. *Laburnum*, *Chestnut*, *Sycamore*, *Lime*, *Austrian Pine*, *Weeping Elm*, and *Purple Beech* are all doing well, especially the *Elm* and *Beech*, these being beautiful specimens. The flowering *Cherry* was planted, but is now making a very poor show, and is evidently not a suitable subject for a poor soil. Two *Pear* trees were planted at the foot of the bank. They are about 40 feet high, are never pruned, and bear good crops of fruit. The variety is *Catillac*. *Thos. Francis, Head Gardener, The Walsall and West Bromwich District Schools.*

PROTECTING OUTSIDE VINE BORDERS.—I have cut ripe Grapes in March from vines growing exclusively in an outside border. In the following May I have cut a succession crop from vines

growing exclusively in an outside border. From these same vines I cut ripe Grapes a month earlier in the following year, but this was because the condition of the vines admitted of them being forced into growth a few weeks earlier than in the previous year. Towards the end of November the outside border had the top 2 inches of the loose surface soil removed and the border picked over with a digging fork. Then a top-dressing of prepared soil was applied to a depth of about 3 inches. On this was laid a similar depth of short manure, which was again covered 18 to 24 inches deep with fermenting stable dung and freshly collected tree leaves, consisting of three parts of the latter to one part of the former. These materials had been thrown together in a heap a fortnight previously and turned over twice during the interval. Some stable litter was placed over all to prevent the leaves being blown about by the wind. The house was closed for forcing early in December. The warmth imparted to the surface of the borders by the fermenting materials caused the roots to push upwards into the covering of prepared soil and the 3-inch deep coating of short manure with the most satisfactory results. In severe weather during the winter the fermenting materials were renewed once or twice.

Early in May rather more than a half of the bulk of the covering of dung and leaves was removed, so as to allow of the full benefit of the sun's rays reaching the border. The autumnal examination of the borders always revealed a network of young fibrous roots in the surface-dressing of prepared soil and short manure laid on in the previous November, this being conclusive proof of the efficacy of the covering of fermenting materials. No reader of the *Gardeners' Chronicle* whose vines are growing in outside borders, and who is anxious to cut Grapes from the plants as early in the year as possible, need have any fear in covering his borders in the manner described above on the supposition that the roots might get burnt by the heat generated by the fermenting material. I know as a fact that many gardeners entertained this idea years ago, but there was no real foundation for the supposition. *H. W. Ward.*

UNCOMMON VEGETABLES.—A seed firm has intimated their intention to offer prizes at the exhibition of the National Vegetable Society next year, for what are known as uncommon vegetables, and it is greatly to be hoped that that intention will be realised. In all vegetable competitions certain kinds of vegetables are prominent

and are repeated over many classes. That such kinds will be strongly in evidence at the show may be taken for granted. These include Cauliflowers, Carrots, Celery, Leeks, Beets, Potatoes, Tomatoes, Peas, Beans, Onions, Parsnips, Turnips, Marrows, Cucumbers, and Brussels Sprouts. That these are all products of the highest importance in the vegetable garden there can be no doubt, but there are others worthy of cultivation and consumption, and which therefore deserve to be brought more prominently before the public. Such, for instance, include Chinese Artichokes (*Stachys tuberifera*), Aubergines, Capsicums and Chillies, Celeriac, Chicory or Witloof, Couve Tronchuda, Butter Beans, Yellow Turnips, Green Corn Cobs or Maize, Salsafy, Scorzonera, Kohl-Rabi, Sugar Peas, Finocchio or Florence Fennel, Long Winter Radish, Lentils, &c. A collection of these vegetables, excluding all common kinds, should have great interest. There is the need also for wide diffusion of information as to the best methods of serving these vegetables to the table. *A. D.*

A LARGE HYDRANGEA.

THE plant of *Hydrangea hortensis* illustrated in fig. 125 is growing in a Devon garden belonging to Dr. G. B. Longstaff, Putney Heath, who sends the following particulars:—*Hydrangea hortensis* grows with great luxuriance in North Devon. A specimen in my garden at Mortehoe, moved some years ago to a round bed on the lawn, has grown with remarkable symmetry, and I enclose a photograph taken on October 7. The shrub had then been in flower for two months. The aspect is south, with shelter on the north, but *Hydrangeas* stand exposure to the west and south-west gales in a remarkable manner, even on the top of the cliff. The flowers are green or white on first opening, turning blue or pink. As far as I can judge, rich soil and moisture favour the blue colour, poor soil and drought the pink. But both colours are commonly seen on one plant, and this is so in the case of my specimen. Trusses of *Hydrangea* blossoms may be cut throughout October and November, and even into the new year, when the autumn is mild. Indeed, I know no shrub that so well repays cultivation. Nevertheless, plants, after disturbance, often take several years before they grow freely again. During the last rigorous winter, when so many plants perished, *Selaginella Kraussiana* var. *aurea*, which had been taken from my hot-house and planted on the rockery here, survived the cold. It has not only lived, but flourished. It has, however, reverted to the green type.

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee.

OCTOBER 12.—*Present*: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair), Dr. A. B. Rendle, Messrs. E. M. Holmes, J. T. Bennett-Poë, W. Fawcett, A. Worsley, J. Fraser, J. W. Odell, and F. J. Chittenden (hon. secretary).

Poecation in Tropaeolum.—Mr. J. W. ODELL showed a specimen of *Tropaeolum tuberosum* with a very broadly fasciated stem. He found that when grown in heavy soil this plant very frequently showed fasciation.

Eucalyptus with intumescence.—Mr. WORSLEY showed leaves of young plants of *Eucalyptus pulverulenta* having small wart-like growths upon the surface. This condition somewhat resembles that shown by vines at times, and is due to excess of moisture in the air.

Datura Stramonium.—Mr. E. M. HOLMES showed a plant of the Thorn-apple with slightly pubescent foliage, which had been attacked by aphides in great numbers, so that the fruit had, owing to their presence, assumed a very unusual appearance.

Spirally-twisted Gentian, &c.—Mr. CHITTENDEN showed a spirally-twisted stem of *Gentiana asclepiadea* from Wisley, and bearing the numerous leaves in a loose spiral round the stem. He also showed regular (peloric) flowers from the apex of the stem of *Pentstemon* similar in character to those often formed in the peloric Foxglove. The flowers usually had two

or three ovaries, and twice or thrice the usual number of stamens.

Malformation in Rubus.—Mr. J. FRASER, referred to a specimen of *Rubus rhamnifolius* which he had exhibited last year with a shortened inflorescence, and which had died since. He showed further specimens from other bushes, however, and remarked upon them as follows:—(1) *Rubus rhamnifolius* plants dying owing to some injury caused to the roots. The flower branches or panicles are exceedingly short, and throwing out roots at the base or at the top bud in an endeavour to form new stools there. (2) *R. carpinifolius* in the same condition. These conditions may possibly be due to the attack of nematode worms. (3) *R. nitidus* var. *opacus*. Flowering stems dying like those already mentioned. The terminal flower-buds have been galled by *Phytoptus* sp., and the flowers have been arrested in growth, while the sepals have undergone phylloidy. The short flowering branches have very much reduced, reflexed leaves, the petioles of which are filled with starch granules in excess, and the inflorescence in

COLE, Althorp Gardens, Northampton, being a close 2nd; his Leeks, Celery, Parsnips, and Carrots were grand.

The class for a collection of eight kinds, open to amateurs and allotment holders, brought together no fewer than 51 collections. Twelve prizes were offered. Mr. T. JONES, of Ruabon, just managed to win with one of the finest collections ever set up by an amateur. 2nd, Mr. T. H. PUGH, Stone Street, Newtown, Montgomery. 3rd, Mr. W. H. JONES, Bryn Street, Newtown, Montgomery. So close were these three exhibits that only half a point, after most careful judging, divided them.

Eight prizes were offered for three specimens of Leamington Giant Onion, and here again the entries were numerous, hundreds of bulbs being staged. The 1st prize was well won by Mr. S. J. BAKER, The Gardens, Weir House, Exeter, with perfect specimens. Mr. T. AVERY was a very close 2nd.

Another class was provided for amateurs and allotment holders for three specimens of the same variety, and the competition was again very



FIG. 125.—SPECIMEN PLANT OF *HYDRANGEA HORTENSIS* FLOWERING IN NORTH DEVONSHIRE.

a condition to form new rooting stools. (4) *R. mucronatus* var. *nudicaulis* with patches of dense, velvety hairs on the stems and leaves caused by *Phytoptus* sp.

Carbolic acid as a fungicide.—A letter was read from Mr. KITLEY, of the Oldfield Nurseries, Bath, recounting the results of experiments carried out with Tomatoes in which the fungi causing "sleepy disease" and other diseases were prevented from developing by watering the soil with a solution of one teaspoonful of carbolic acid to four gallons of water at intervals.

VEGETABLE SHOW AT LEAMINGTON.

OCTOBER 9.—An exhibition of vegetables was held in the Winter Hall, Leamington, on the above date, for prizes offered by Messrs. Rogers & Co. Exhibitors entered from all parts of the country, and some of the best vegetables seen this season were staged.

For a collection of nine distinct kinds of vegetables, Potatoes excluded, Mr. J. HUBSON, of Leicester, won the 1st prize, showing Celery, Cauliflowers, Leeks, Onions, Brussels Sprouts, Tomatoes, Turnips, Beet, and Parsnips, Mr. S.

keen. Six prizes were offered in this class. Mr. T. JONES won the 1st prize with three extremely well-developed specimens.

Prizes were also offered for Leeks, Celery, Beet, and Carrots, and in each case the number of entries was large and the produce excellent. *E.*

HORTICULTURAL CLUB.

ITALIAN GARDENS.

OCTOBER 12.—The autumn and winter session of this club opened with the usual monthly dinner at the Hotel Windsor on the above date, when Mr. E. White took the chair, in the absence of the president, Sir J. T. D. Llewellyn, Bart.

Mr. H. Inigo Triggs, A.R.I.B.A., author of *Italian Gardens* and other works on garden planning, gave a lecture on "Italian Gardens," illustrating the subject by a number of lantern slides, showing the architectural plans of the most noted gardens in Italy, and views of the finished gardens. At the outset, he pointed out that the Italians have always regarded the garden from an opposite point of view from that of English landscape gardeners. In Italy, it is the architectural aspect which is

mainly—if not entirely—considered. The gardens have been planned by famous artists and architects entirely as harmonised extensions of the palaces to which they are adjuncts. The cultivation of plants was a secondary object; vegetation was looked upon as calculated to enhance the architectural effect by forming suitable backgrounds or relieving the eye in the foreground by more or less formalised foliage-plants. To the lover of flowers and foliage for their own sake, the strictly Italian gardens were hardly gardens at all. Despite this fact, however, the views presented on the screen proved by no means unattractive. Although opinions might differ when the lecturer deprecated the use in landscapes of varied kinds of trees massed together, considering that a few kinds afforded a better foliage effect, the effect of tall, steeple-like Cypress and solid-looking Stone Pines as backgrounds was harmonious, though somewhat sombre. A curious effect was produced on the mind when a slide was exhibited showing an elaborately formal plan of a palace and its gardens, a mere skeleton of geometrical figures, followed in the next few slides by most beautiful views, each one a fraction of the whole, therefore giving a vivid idea of what the artist and architect must have foreseen when preparing the plan. In view of the utterly opposed ideas involved in Italian and English gardening, the lecturer strongly deprecated the introduction of the Italian system here. The conditions were so very different. These magnificent gardens were planned and carried out in an age and in a country when and where Art was at its zenith while horticulture was in its infancy. The number of plants available for ornamental culture were then very few; the climate of Italy was by no means so congenial to growth as was generally imagined, the winters being often so severe that Oranges and Lemons and other tender vegetation had to be protected, while grass lawns, which form so grateful a feature in British gardens, were impossible in Italy, owing to lack of sufficient moisture. The value of a study of the Italian style consisted in its salutary effect, where, as in Italy, it is desirable to make architectural adjuncts outside harmonise with the style of the edifice itself; to merely formalise without such an object is a mistake. In Italy the gardens of note numbered only about 200; whilst in this country they were so numerous, so beautiful, and so diversified as to constitute an inexhaustible fund of blended sylvan and architectural charm, such as no other country in the world could boast.

BRITISH GARDENERS' ASSOCIATION. (LONDON BRANCH.)

OCTOBER 14.—The monthly meeting of the London branch was held at Carr's Restaurant, Strand, on this date, Mr. E. F. Hawes occupying the chair. The sub-committee, which was appointed to collect information upon the conditions of employment which obtained in the public parks and gardens of the Metropolis, presented their report. Many injustices and inequalities had been brought to light as a result of the committee's investigations into the hours of labour and remuneration. The chairman read a circular letter drawn up by the executive council which is to be sent to all prospective candidates for the forthcoming Borough and County Council elections.

The object of the circular is to ascertain the views of candidates with regard to a programme submitted. The committee aims at a standard minimum rate of pay for gardeners of 30s. per week.

The chairman thought the time was now ripe for a co-operation to induce the Government to recognise the growing importance of horticulture as a great national industry. He will give a paper dealing with this subject at the next meeting.

The amalgamation of the Richmond branch was next discussed. Mr. Tidy, who represented this branch, said it was the wish of the members to unite with the London branch on the grounds that the two branches were so close together that it was incurring needless expense to hold meetings at both places.

Mr. Frogbrook objected to this proposal; he thought it advantageous for recruiting purposes to have a number of branches, and that some members of the Richmond branch might not wish to incur the expense of coming to London.

The chairman pointed out that the matter had already been discussed at Richmond, and that it was proposed, in the event of an amalgamation, to open a branch a little further from London than Richmond, possibly at Twickenham. The matter was referred to the executive council.

A paper on "Roses for Town Gardens" by Mr. A. C. Hill was read by the chairman. Mr. Hill has been a successful grower and exhibitor of Roses for the past 14 years. In the discussion which followed, Mr. Morrell outlined the system of Rose growing so successfully carried out in Hyde Park. *V. Cockram, Hon. Sec.*

A SIMPLE LAWN RAKE.

THE lawn leaf-rake (see fig. 126), of which I enclose a drawing, does its work admirably and clears a lawn of leaves and other litter in less than half the time required when a broom is used. The implement is very light. In working, the movement is the reverse of that with a broom, as the rake is thrown forward and is afterwards drawn towards the workman, the length of the handle enabling a wide sweep to be taken. The top piece prevents any leaves escaping. The bottom edge of the rake is bevelled (this is essential), and it is also notched to form blunt teeth. These cause the rake to sink into the grass without in any way injuring it and

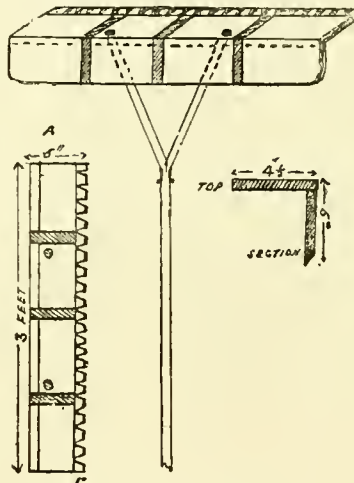


FIG. 126.—A LAWN RAKE.

A, front view showing the blunt teeth notched 1 inch deep;
B, section showing the bevelled tooth edge.

to draw with it any leaves that may be damp or that are lying flat. Any carpenter can make it for a few shillings. Several of my friends have had one made according to my model and are very pleased with it. The handles are best procured from the manufacturers of wood hay rakes and are 7 feet long. The rake and board at the top are made of half-inch planed Beech wood, and are either nailed or screwed together. The bands are of hoop-iron to give strength. *Henry Adams,*

ENQUIRY.

DAHLIA.—We have in bloom in 6½-inch pots a dwarf Cactus Dahlia with flowers like those of Mrs. Carter Page, the disbudded blooms measuring 15 inches in circumference. From the soil to the top of the tallest bloom is less than 12 inches in height. Every plant keeps true although planted out as other Dahlias. Is there such a variety in commerce? *W. F.*

TRADE NOTICE.

WILLIAM BULL & SONS.

The partnership formerly existing between William Bull and Edward Bull, trading as William Bull & Sons, King's Road, Chelsea, has been dissolved by mutual consent owing to the ill-health of Mr. William Bull. The business will in future be carried on under the same name as heretofore by Mr. Edward Bull.

DEBATING SOCIETIES.

BATH GARDENERS'.—This society held its fortnightly meeting on Monday, October 11. Mr. W. S. Parrott presided over a crowded meeting. A paper on "Orchids" was read by Mr. J. S. Franks. The essayist said that the raising of seedlings was the most interesting of all the branches of Orchid culture. The cultural treatment of these plants was fully dealt with by Mr. Franks, who said that the principal requirements of Orchids are a free circulation of air; without draughts, and an abundance of light, although shading from the direct rays of the sun is necessary.

BRISTOL AND DISTRICT GARDENERS'.—A largely attended meeting, presided over by Dr. Shaw, was held on October 14 at St. John's Parish Rooms. The lecturer was Mr. Shackleton, of Forde Abbey, Chard, who gave a discourse upon "Sweet Peas." With respect to the position for Sweet Peas, the lecturer said one partly shaded from midday sun was the best. The Sweet Pea delights in a fairly heavy brown loam, and the ground should be deeply trenched, placing animal manure in layers, also mixing with the soil as the work proceeds, dissolved bones, soot, and superphosphate. The seeds should be sown in mid-February in 6-inch pots, sowing five or six seeds in each, and placing the pots in a cold frame. As a stimulant sulphate of ammonia may be applied at intervals.

READING GARDENERS'.—A largely attended meeting of this society was held in the Abbey Hall, Reading, on October 12, the chairman, Mr. A. F. Bailey, presiding. The lecturer for the evening was Mr. J. Goatley, gardener to Lord Northcliffe, Sutton Place, Guildford, his subject being "Herbaceous Borders." In July last the members of the association visited Sutton Place, and the herbaceous borders and extensive wild garden attracted much attention. Mr. Goatley gave advice on such details as the best position of the border, its preparation, time of planting, harmonious blending of colours, avoidance of formalism, the dangers of overcrowding, and the necessity of careful and proper labelling. To young gardeners he advised the noting in a book of such particulars as the height, duration, time of flowering and other features of any perennials which might come under their care. Mr. Goatley strongly advocated the planting of bulb in the herbaceous borders, by this means the flowering period is extended for quite two months. At the business part of the proceedings several new members were elected.

STIRLING AND DISTRICT HORTICULTURAL.—The monthly meeting of this association was held on October 12. Mr. Geo. Petrie occupied the chair. The lecturer for the evening was Mr. Jas. Boyd, gardener to Sir Allan Seton-Steuart, Bart., of Touch. The subject was "Vegetables." The kinds discussed upon were Potatoes, Leeks, Onions, Celery, Peas, and Cauliflower. After giving the history of these vegetables the lecturer described in detail the proper methods of cultivating them.

SALISBURY AND DISTRICT GARDENERS'.—A meeting of this society was held on the 13th inst. Mr. S. W. Tucker, Longford Castle Gardens, presided over a fairly good attendance. A lecture on the "Cultivation of the Sweet Pea for Exhibition and General Purposes" was given by Mr. Usher. The lecturer dealt with the preparation of the soil and the different methods of cultivating the Sweet Pea, advising the use of shade for certain varieties. Mr. Usher gave a comprehensive list of varieties. *J. Y.*

CHISLEHURST GARDENERS'.—The annual meeting of this society was held at the Park Road Hall, Chislehurst, on Tuesday evening, October 5. The president, Mr. J. Lyne, presided. The chairman said that the association had been in existence for 19 years. They started in a small way, but now there were between 70 and 80 members. The 19th annual report stated that the 32 meetings held during the year had been successful. The sum of £16 10s. had been subscribed to the Royal Gardeners' Orphan Fund during the year. The Cray Valley Hospital had received the amount of £3, the half-profits of the autumn flower show. The income for the year had amounted to £8 13s. 7d., and the expenditure to £20 0s. 9d. This deficiency is owing to the falling off of member subscriptions and to extra expenses. The officials were re-elected and the new committee appointed.

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. H. J. KING, for the past 26 years Gardener to the late W. HART SITWELL, Esq., Ferney Hall, Salop, as Gardener to Sir WM. HONYMAN, Cotton Hall, Whitchurch, Salop.
- Mr. T. PREECE, for the past 3 years Foreman at Heathfield Gardens, Addington, Croydon, as Gardener to E. JOHNSTON, Esq., Mendell, Bromborough, Cheshire.
- Mr. FRANK NOYCE, who for the past 7 years was Gardener and Bailiff to ALBERT G. SANDERMAN, Esq., Presdales, Ware, has been appointed (through Mr. H. W. WARD, of Rayleigh), to fill a similar position to TONMAN MOSLEY, Esq., Bagors Park, Iver, Bucks.
- Mr. C. CAPP, for the past 13 years Gardener to F. E. HOLLOWAY, Esq., Satis House, Yoxford, Suffolk, as Gardener to the same gentleman at Leiston Old Abbey, Saxmundham.
- Mr. EDWIN SIMS, Foreman at Holly Lodge for the past 11 years, has been appointed Gardener to W. BURDETT-COUTTS, Esq., M.P., in succession to Mr. J. WILLARD, who is shortly resigning. (Thanks for 6s. received for R.G.O.F. Box.)
- Mr. C. L. CAWSELL, for the past 24 years Foreman in the Gardens at Grantley Hall, Ripon, Yorkshire, as Gardener to F. STRAKER, Esq., Angerton, near Morpeth, Northumberland.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending October 16, is furnished by the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—The general condition was again very unsettled; rain fell almost daily (often in large quantities), and intervals of sunshine were mostly brief. Thunder and lightning, or lightning singly, were experienced in some parts of Ireland, Scotland and the north of England early in the week, and a thunderstorm occurred at Hull at midnight on Saturday.

The temperature continued above the average, the excess amounting to about 5° in England E., and the Midland Counties. The highest of the maxima were registered at most stations between the 10th and 12th; in England E., N.E., and N.W., and also in the Midland Counties the thermometer rose to 66°, while in the other districts the readings ranged from 65° in England S.E., S.W., and the English Channel to 60° in Scotland N. The lowest of the minima, which occurred generally on the 13th or 14th, ranged from 33° in Ireland N. and 35° or 36° in several other parts of the kingdom to 41° in England N.E. and to 43° in the English Channel. The lowest grass readings reported were 23° at Cambridge, 25° at Cirencester, 28° at Markrae Castle, 29° at Kew, Cretwich and Sheffield, and 30° at Llangamarch Wells, Crathes and Balmoral.

The rainfall exceeded the normal in all districts except England E., the excess being very large in Scotland, Ireland, and the west and south of England. Falls of an inch or more in 24 hours were very numerous and were experienced over a large area in Great Britain—generally on the 12th, 13th, or 14th, but in a few western localities on the 15th. Among the largest daily measurements recorded were 1.4 inch at Douglas and Holyhead, 1.5 inch at Dumfries, and 1.8 inch at Aspatria on the 12th, 1.1 inch at Gordon Castle and Balmoral, and 1.2 inch at Leith on the 13th, 1.1 inch at Bettws-y-Coed, 1.1 inch at Pollalloch, 1.4 inch at Fort William, and 1.9 inch at Laudale on the 14th, and 1.1 inch at Llangamarch Wells, 1.4 inch at Clifton, and 2.2 inches at Arlington on the 15th. Heavy falls were recorded at many places along the south coast, both on the 15th and 16th; at Southampton the aggregate amount for the two days was 1.5 inch and at Westbourne 1.7 inch.

The bright sunshine was less than the average in most districts, the percentage of the possible amount of duration ranging from 33 in the Midland Counties and 31 to England N.E. to 21 in Ireland S. and to 15 in Scotland N. and W.

THE WEATHER IN WEST HERTS.

Week ending October 20.

St. Luke's little summer.—Since the month began the days have been with one exception more or less warm. The night temperatures have been also with three exceptions high, and some of them exceptionally high, for the time of year. On the warmest night of the past week the exposed thermometer never fell below 50°, which is with one exception the highest minimum reading registered by that thermometer during the last 23 years. The ground is still very warm, being 3° warmer at 2 feet deep, and 5° warmer at 1 foot deep, than is seasonable. Rain has fallen on all but five days this month, and to the total depth of 2 1/2 inches. During the same period nearly 11 gallons of rainwater has come through the bare soil percolation gauge, and 9 1/2 gallons through that on which short grass is growing. Although two days proved altogether unless the sun shone on an average during the week for three hours a day, or for about the usual duration at this time of the year. The winds were again as a rule rather high, but in no hour did the mean velocity exceed 13 miles. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 8 per cent. E. M., Berkhamsted, October 20, 1909.

CATALOGUES RECEIVED.

- WHITELEGG & PAGE, The Nurseries, Chislehurst, Kent.—Hardy Herbaceous and Border Plants, Alpine and Rock Plants, Fruit and Ornamental Trees and Shrubs, Bulbs.
KELWAY & SON, Langport, Somerset.—General Plant and Seed Manual, Nursery Stock, &c.
FRANK WOOLLARD, 53 & 54, Lewes Road, Brighton.—Roses, Fruit Trees, Shrubs and Bulbs.
HENRY DREW, Longworth, Faringdon, Berks.—Roses.
JOHN JEFFERIES & SONS, LTD., Cirencester.—Roses, Fruit, Forest and Ornamental Trees.
FRANK CANT & CO., Braiswick Rose Gardens, Colchester.—Roses.
H. LANE & SONS, The Nurseries, Great Berkhamsted, Hertfordshire.—Roses, Fruit and Hardy Trees, Shrubs and Flowers.
W. SMITH & SONS, 18, Market Street, and 1, 3, & 5, Haddon Street, Aberdeen.—Roses, Shrubs, Forest, Fruit and Ornamental Trees.
FOSTER & PEARSON, LTD., Beeston, Notts.—Horticultural Buildings and Heating Appliances.
LANTON BROS., Bedford.—Fruit Trees.
CAVLESS BROTHERS, Havelock Terrace, Battersea Park Road, London.—Telescopic Ladders and Garden Barrows.
GEORGE COOLING & SONS, Bath.—Roses, Fruit Trees, and Ornamental Shrubs.
THOMAS RIVERS & SON, Sawbridgeworth, Herts.—Fruit Trees, Roses and Shrubs.
FOUR OAKS SPRING & SPRAYING MACHINE CO., Sutton Coldfield, Birmingham.—Spraying Machines and Garden Sprayers.
V. N. GAUNTLETT & CO., LTD., Chiddingfold, Surrey.—Hardy Plants.

FOREIGN.

- HENKEL, LTD., Darmstadt, Germany.—Flowers, Trees and Shrubs.
F. C. HEINEMANN, Erfurt, Germany.—Novelties in Seeds.
A. SCHWARTZ, 238, Grande Rue de Monplaisir, Lyons.—Roses.
ALPHONSE LAUNERT, Chaussée de Charleroi, à Nivelles, Belgium.—Roses, Trees, Shrubs, Conifers. Fruit Trees.
FREDERICK ROMER, Quedinburg, Germany.—Flower Seeds.
WILHELM PFITZER, 74, Militärstrasse, Stuttgart, Germany.—Seeds Plants and Vegetables; Gladioli.

MARKETS.

COVENT GARDEN, October 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.—Ees.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Asters, Azaleas, Bouvardias, Carnations, American (var.), second size, smaller, per doz. bunches, "Malmansons", Catleyas, Coropsis, Dahlias, Eucharis grandiflora, Gaillardias, Gardenias, Gladioli, Gypsophila elegans, Heather (white), Lapageria alba, Lilium auratum, longiflorum, lancifolium rubrum, album, Lily of the Valley, Spirea, Stocks, Tuberoses, Violets, Parma, etc.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum cuneatum, Agrostis, Asparagus plumosus, Croton leaves, Cycas leaves, Ferns, Grasses (hardy), Hardy foliage (various), Ivy-leaves, Myrtle, Physalis, Smilax, etc.

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

Table listing various plants in pots and their prices, including Ampelopsis Veitchii, Aralia Sieboldii, Araucaria excelsa, Aspidistras, Asparagus plumosus, Cactos Weddelliana, Asters, Bouvardias, Chrysanthemums, Cinerarias, Clematis, Coccos Weddelliana, Crotons, Cyclamen, Cyperus alternifolius, Dracaenas, Erica gracilis, Euonymus, Ficus, Ferns, Geraniums, Gleditsia, Heliotropium, Hydrangea paniculata, Isoleris, Kenia, Latania borbonica, Lilium longiflorum, Marguerites, Pelargoniums, Selaginella, Solanums, Spiraea japonica, Veronicas, etc.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples (English), Bananas, Damsons, Figs, Grapes, Lemons, Peaches, Pears, Pineapples, Plums, etc.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Beans, Beetroot, Broccoli, Cardoons, Carrots, Cauliflowers, Chicory, Cucumbers, Endive, Horseradish, Lettuces, Marrows, Mint, Mushrooms, Peas, Potatoes, Radishes, Salsify, Spinach, Stachys tuberosa, Tomatoes, Watercress, etc.

REMARKS.—English Tomatoes are a short supply and dearer. Foreign Tomatoes are arriving in a good condition and are selling freely at 10s. per bundle of four boxes, each box averaging about 14 or 16 lbs. Cucumbers are firm in price but they do not meet with a good demand. Home-grown Beans are making good prices. Blackberries are a poor trade, and very plentiful. Grapes are selling well, good samples making fair prices. Pears are a poor trade, there being little or no demand for them. Apples are selling freely. Good Cox's Orange Pippin Apples, packed in trays of about two dozen fruits, sell readily, especially those of the highest grade; small fruits of this variety are very plentiful. Pineapples are a little firmer in prices. West Indian Claret-coloured Bananas arrived yesterday and made good prices. Prune Plums are arriving in very limited quantities, and Damsons are practically finished. There is a good demand for French Walnuts which are now arriving in large quantities. Almeria Grapes are selling freely and consignments are increasing. Large shipments of Nova Scotian Apples and Californian Fruit will be sold at the end of this week. Trade generally is good. E. H. R., Covent Garden, Wednesday, October 20, 1909.

Potatoes.

Table listing various potato varieties and their prices, including Bedfordshire, British Queen, Epicure, Up-to-Date, Blacklands, Lincolns, etc.

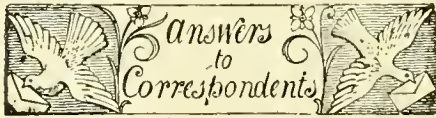
REMARKS.—Although there are large stocks of Potatoes in the London markets, tubers of the best quality are scarce. Trade otherwise is very quiet. Edward J. Newborn, Covent Garden and St. Pancras, October 20, 1909.

COVENT GARDEN FLOWER MARKET.

Supplies are not so abundant, and the value of all good produce has advanced, except for Chrysanthemums cut from the open ground, of which there is quite a glut. Some are very good, but others have been disfigured by the rains. Chrysanthemums from under glass are very good, and white blooms have been making fair prices, some of special quality selling for as much as 5s. per dozen. The yellow and bronze varieties have not sold so well. Roses vary considerably; the best blooms have advanced in prices, those of the variety Mrs. J. Laing to 8s. per dozen. Liberty and Richmond also are in demand, but since white Chrysanthemums have been plentiful Roses have not sold so well. Carnations do not vary much. There are some good flowers of Souvenir de la Malmaison varieties which make from 6s. to 9s. per dozen, but the American varieties are not worth more than 2s. 6d. to 3s. per dozen, and many are sold at 1s. for this quantity. Blooms of Liliun longiflorum have been making rather better prices, but L. lanciflorum (speciosum) is cheaper. Lily of the Valley is again very cheap, except the very finest spikes. Tuberoses are plentiful, also Gardenias, Stephanotis, and white Lapagerias. Michaelmas Daisies would sell better if greater care were taken when cutting and bunching them. Since the Harvest Festivals have past Dahlias scarcely pay for the trouble of cutting them. Late Asters also are of little value.

POT PLANTS.

Chrysanthemums may be had at prices ranging from 30s. to 6s. per dozen, and some for even less. Ericas have not been selling well, except the small plants; there is an increasing demand for well-flowered plants in thumb pots. I learn from the salesman that *E. hymenalis* is not likely to flower well this season. *Begonia Gloire de Lorraine* is seen in well-flowered plants. There are several varieties which have originated as sports, but a selected stock of the original form is still the most desirable. Cyclamen are fairly good. On Saturday last I noticed plants of *C. Cestria*; they were not equal to those seen in the spring, although fairly good. Solanums are well berried, but the plants are small. *Spiraea Queen Alexandra* varies in colour, but is well flowered. *Marguerites* are good. *Bouvardias* are not quite so well flowered as usual at this season. A few Zonal Pelargoniums are seen, chiefly of the variety F. V. Raspail. In foliage plants there is little that is fresh to record. Ferns, Palms, Aralias, *Cyperus*, *Ficus*, *Araucaria excelsa*, and *Aspidistras* are all of good quality. Hardy Shrubs are procurable in great variety, also climbing plants and various creepers. A. H., Covent Garden, October 20, 1909.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ADDRESSES: Brussels. *Revue de l'Horticulture Belge et Etrangère*, rue de Bruxelles, 134, Ghent; *La Tribune Horticole*, 43, Rue Vonck, Brussels. You will find addresses of Belgian nurserymen in the advertisement columns of these weekly journals.

BOUARDIA SHOOTS UNHEALTHY: F. W. B. No disease is present. The trouble has evidently arisen from excess of moisture in the greenhouse.

BOWLING GREEN: C. C. The injury is caused by a minute fungus—*Chlorochytrium graminis*. Soak the ground at intervals of a fortnight with a solution of sulphate of iron, 1 lb. in 1½ gallon of water.

CALANTHE LEAVES DAMAGED: F. W. I. The foliage of the deciduous *Calanthes* decays and drops in the ordinary manner when the pseudobulbs are mature. The leaves sent seem to have been damaged either by cold or some other agency, which has brought about a premature collapse of the tissues. *Calanthes* which have been given strong doses of liquid manure are very apt to decay like those you send. If the growths are fully matured, restrict the water supply, in order that they may ripen.

CARNATIONS DISEASED: H. G. C. The rust is *Uromyces caryophyllinus*. Sponge the foliage with a solution of potassium sulphide. Badly diseased leaves should be removed. The red maggots follow the rust and feed on its spores.

CHRYSANTHEMUMS: J. R. The absence of sunshine this season has had much to do with the backward development of the flowers. The only thing to do is to give fire-heat and plenty of fresh air. Too much surface moisture prevents the proper development of Chrysanthemum flowers.

CHRYSANTHEMUMS UNHEALTHY: E. P. No disease is present, and the damage has not been caused by insects. The trouble must be due to improper cultural treatment.

CONSERVING FRUITS AND VEGETABLES: A. D. C.

You will find much useful information upon this subject in *The Art of Conserving*, by Viscountess Galway, also in a recently published work entitled, *Successful Jam Making and Fruit Bottling*, by Lucy H. Yates (see p. 275). The books can be obtained from our Publishing Department. Almost all the Horticultural Educational Institutions include fruit-preserving in the curriculum, and at Lady Warwick's School of Gardening a special feature is made of this subject. Write to Miss Bradley, Hellingbourne, formerly Principal, who will no doubt be pleased to give you information on the subject.

EMPLOYMENT IN KEW GARDENS: V. C. H. The training and experience you would receive in these Botanic Gardens should be of the greatest value to you in any branch of gardening you may afterwards take up. Those who pass through the term of two years at Kew find employment afterwards in many different walks of the profession, very few being actually employed in botanical gardens, as the opportunities are few.

GARDENER'S NOTICE: A. P. It is customary for head gardeners to receive or to give a month's notice on terminating an engagement, even though the wages are paid weekly.

HEDGE: A. K. There is no disease present on the shoots, but they are covered with algae and lichens. The growth of these lowly plants has been favoured by the drip from the Laburnum tree which overhangs the hedge. If you do not wish to replant the hedge spray the bushes with the winter wash recommended to E. B. in last week's issue, page 272.

MEALY BUG: D. M. You should state what species of plants are affected with this pest. Certain remedies are recommendable in some cases that could not be used conveniently in others.

MELON: J. C. M. There is no disease on the fruit. The splitting or cracking arises from unequal growth, due to imperfect regulation of heat and atmospheric moisture.

MOULD ON GRAPES: W. B. The mould is *Botrytis cinerea*, which only becomes a parasite when excess of moisture is present. Early morning ventilation will prevent the disease.

NAMES OF FRUITS: Yellow Cardboard Box (no letter). 1, decayed; 2, Fondante d'Cuene; 3, Beurré Sterckmans; 4, Nouvelle Fulvie; 5, Reine des Tardives; 6, Hollandbury.—J. Jones. Ribston Pearmain.—R. Jolley. 1, Louise Bonne de Jersey; 2, Autumn Bergamot.—R. Smith. Lady Lennox.—Colonel Cooper. 22, Beurré Clairgeau; 26, Beurré Bachelier; 27, Marie Louise; 28, Vicar of Winkfield; 29, Hanwell Souring; 33, Beurré d'Amanlis; 34, Belle Dubois; 30, Dutch Mignonne; 31, Sturmer Pippin; the remainder are too small, and not sufficiently developed to name with accuracy.—F. L. 1, Olivier de Serres; 2, Brockworth Park; 3, Emile d'Héyst.—J. Clayton. Gros Fenouillet.—F. E. 1, Annie Elizabeth; 2, Greame's Pippin.—W. J. B. 1, Chaumontel; 2, Felle or Trout Pear; 4, Louise Bonne de Jersey; 5, Hyshe's Prince Consort; 6, Nouveau Poiteau; 7, not recognised.—F. T. B. 1, Cullen; 2, Tower of Glamis; 3, Beauty of Kent; 4, Domino; 5, Striped Beefing; 6, Hornead's Pearmain.—W. L. S. 1, Fearn's Pippin; 2, Baxter's Pearmain; 3, Quarrenden; 4, Herefordshire Beefing; 5, Benoni; 6, Nelson Codlin.—H. Henderson. 1, Beurré de Capiaumont; 2, Marie Louise d'Ucle; 3, Beurré Hardy; Apple Emperor Alexander.—W. B. 1 and 2, King of the Pippins; 3, Scarlet Golden Pippin.—W. E. G. 1, Beurré Clairgeau; 2, Beurré Diel; 3, General Todleben; 4, Beurré Superfin; 5, not recognised; 6, Waltham Abbey Seedling.—Wells. 1, Hanwell Souring; 2, Northern Greening; 3, Prince Bismarck; 4, Waltham Abbey Seedling; 5, Kerry Pippin; 6, Golden Noble.—A. R. Your Walnuts are already correctly named—*Juglans regia* and *Juglans nigra*.

NAMES OF PLANTS: H. W. *Cannabis sativa*.—Rondebosch, Cape Town. *Heliopsis laevis*.—A. J. *Prunella vulgaris*.—Exhibitor. *Dianthus Heddewigii* is generally an annual, but under certain conditions it may survive the winter.—A. B. H. 1, *Pentstemon campanulatus* var.; 2, *Erodium Manescavi*; 3, *Geranium Traversii* var. *elegans*; 4, *Symphy-*

andra Hofmannii; 5, *Campanula lactiflora*; 6, *Sollya heterophylla*; 7, *Geranium striatum*.—Tom Martin. 1, *Sidalcea* sp. (cannot name without flowers); 2, *Helleborus foetidus*; 3, *Helenium autumnale striatum*; 4, *Azara microphylla*; 5, *Spiraea filipendula*; 6, *Symphoricarpos orbiculatus variegatus*; 7, *Geranium* sp. (cannot name without flowers).—W. A. D. We do not undertake to name varieties of Roses.—C. J. 1, *Adiantum decorum*; 2, *Adiantum formosum*; 3, *Adiantum Capillus Veneris*; 4, *Selaginella Willdenovii*; 5, *Nephrolepis Todaeoides*; (thanks for one shilling, which has been placed in the Gardeners' Orphan Fund box).—G. J. D. 1, *Saponaria officinalis* fl. pl.; 2, *Arbutus Unedo*.—J. F. S. *Desfontainea spinosa*.—W. E. *Araujia sericea* (syn. *Physianthus albens*); the other specimen cannot be named with certainty—send when in bloom.—E. D. S. *Helix Soleirolii*.—H. O. R. 1, *Sarcanthus erinaceus*; 2, *Bulbophyllum hirtum*; 3, *Oncidium pretextum*; 4, *Masdevallia nidifica*; 5, *Octomeria Loddigesii*; 6, *Pleurothallis* sp.—P. W. I. 1, *Acalypha musaica*; 2, *Acalypha marginata*; 3, *Hibiscus rosa sinensis*; 4, *Chlorophytum elatum variegatum*.—W. J. W. & Co. *Crinum Moorei*.—H. S. *Kenilworth*. 5, *Eranthemum pulchellum*; fruit next week.—Urgent. *Pteris serrulata*.—Foreman. 1, *Oncidium flexuosum*; 2, *Brassia verrucosa*; 3, *Stelis ophioglossoides*; 4, *Lycaste tricolor*.

PEARS SPLITTING: Mrs. C. The Pears are attacked by scab, caused by the fungus *Fusicladium pium*. During winter spray the trees with sulphate of iron, and again in the spring with Bordeaux mixture. The latter specific should be used when the buds are unfolding, again when the flowers are falling, and finally when the fruits have set.

PERNETTYA MUCRONATA: J. P. The flowers are hermaphrodite and not dioecious, as you suggest. The failure to set fruit may be due to more than one reason. Perhaps the plants have not recovered sufficiently from their disturbance, or the weather may have been unfavourable when they were in bloom. Next season tap the shoots when the plants are in flower, in order that the pollen may be dispersed.

RED SPIDER ON LIME TREES: H. A. The insects are true Acarids, known as "spinning mites," and are nearly related to the so-called Red Spider (*Tetranychus*). All the species of this genus spin a fine thread, and when the mites occur in large numbers the threads take the form of a dense web, as in your example. When these Acarids occur in large numbers, they cause injury to the foliage. We advise you, therefore, to destroy the webs with paraffin emulsion applied, if possible, with a stiff brush.

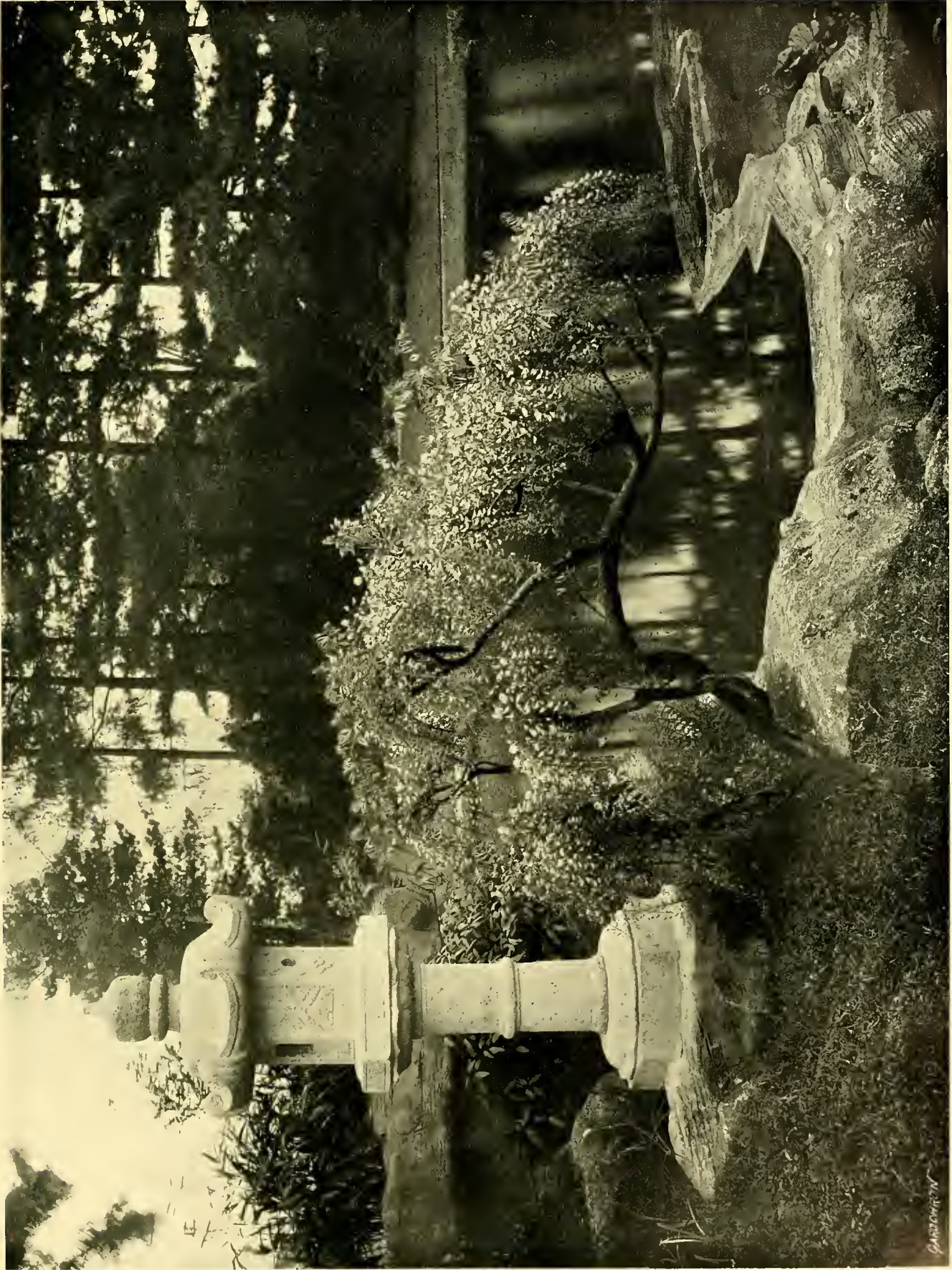
VIOLET CULTURE: A. B. As your soil is gravelly, the plants would not be so liable to damping as those grown on heavier land. It will be necessary for you to employ frames, as by their means you can have the plants entirely under control. In the issue of the *Gardeners' Chronicle* for April 11, 1908, p. 234, the details of successful Violet culture were described. Amongst the best varieties for your purpose are Princess of Wales, Marie Louise, Neapolitan, and White Comte de Brazza.

WALNUTS: J. S. D. No disease is present. Try the effect of an application of lime, preferably in the form of old mortar rubble.

WELCH FERN: J. C. B. The Fern is *Asplenium trichomanes*, or Maidenhair Spleenwort. It is easily raised from spores, produced in short lines on the back of the fronds. It is a common Fern in many places, and it can be got from any nurseryman dealing in hardy Ferns. No heat is required to raise sporelings. The spores should be scattered thinly on loam in small pots or plans, and covered with glass until growth is observed.

WONDERBERRY: R. M. You will find a note on the Wonderberry in the issue for March 27, 1909, p. 204.

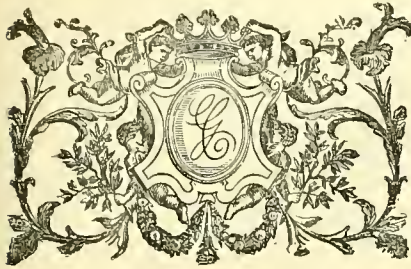
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Photograph by H. N. King.

A JAPANESE SCENE IN THE GARDENS AT FRIAR PARK, HENLEY, THE RESIDENCE OF SIR FRANK CRISP.

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THE

Gardeners' Chronicle

No. 1,192.—SATURDAY, October 30, 1909.

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AMERICAN HAWTHORNS.

SOME NEW ARBORESCENT SPECIES.

DURING the past ten years a large number of new species of *Cratægus* have been discovered and described in North America, from Texas to Quebec, and in the regions around the Great Lakes. In Western New York, Pennsylvania, and Southern Ontario, Canada, to the valley of the St. Lawrence, they are particularly abundant, and these regions perhaps contain a larger number of handsome, arborescent species than are to be found elsewhere in the United States. Most of the species have been described by Dr. C. S. Sargent, Director of the Arnold Arboretum, Harvard University.

The various species in the different groups are all relatively useful in the decoration of parks and gardens, showing much individuality in their branching habits, foliage, flowers and fruit. It is proposed to call attention, in the present contribution, to some distinctively handsome species in the group known as *Flabellatæ*. The species in this group are usually characterised by large, oblong, ovate, and more or less acutely and deeply lobed leaves; large, short-oblong, bright red fruits with succulent flesh; and

more or less villose or pubescent flowering and fruiting corymbs.

The following species have all been observed by the writer in the field:

CRATÆGUS ACCLIVIS, when fully developed, forms a slender tree 30 feet high, with a thin, very pale trunk, usually not more than 6 inches in diameter. The branches are upright, and form a thin, open, irregular head. The leaves are broadly ovate to ovate-oblong, and very deeply and coarsely toothed, truncate to subcordate at the base, 3 inches long, and 2½ inches wide. The five-stamened flowers with pink anthers blossom about May 25. The subglobose to short-oblong, bright red, large, conspicuous, hairy fruits, with coarsely and deeply serrate calyxlobes ripeu about the middle of September. The type tree grows at the Lower Falls on the Genesee River at Rochester, N.Y., and is a common species on the banks of the Genesee River, and throughout Western New York and Ontario, Canada. *C. acclivis* is remarkable for the facts that its flowers have so few stamens (usually five), and that its fruits have as many as five nutlets.

C. AULICA occasionally grows to a tree 20 to 25 feet tall, with slightly spreading and mostly ascending branches, forming a round topped head with a trunk 10 to 12 inches in diameter; but is sometimes a tall, spreading shrub. The leaves are ovate acuminate, round at the base, sometimes subcordate, and are 3½ inches long and 2½ inches wide. It usually blooms from May 28 to June 5. The corymbs are from 15 to 18 flowered, and the flowers are borne on long, hairy pedicels, with eight to 10 stamens and red anthers. The drooping clusters of subglobose, lustrous, orange-red fruits ripen about October 1, and are about ¾ inch in diameter. The calyx cup is distinguished by a deep, wide cavity with persistent lobes incurved towards the centre. The type tree grows in Bracondale, a suburb on the north side of Toronto, Canada. It is quite abundant in the neighbourhood of Toronto, and at Belleville, on the Bay of Quinte, and elsewhere along the valley of the St. Lawrence. *Cratægus aulica* usually occurs in its best condition in open pastures in rich, heavy soil, and grows rapidly in cultivation. It is unusually handsome in October when covered with its brilliant fruits.

C. CONFINIS sometimes forms a handsome tree 25 to 30 feet in height, with a trunk 10 inches in diameter. The branches are usually ascending, but in old trees they form an irregular, broad head. The ovate acuminate leaves, which are abruptly rounded at the base, are normally 3 inches long and 2 inches wide. They are frequently much more decidedly oblong, and in this respect the leaves bear a strong resemblance to those of *C. Holmesiana*, to which species the writer referred it previously. The five to eight-stamened flowers, with rose-coloured anthers, are borne on 10 to 12-flowered hairy corymbs and blossom about May 30. The handsome, short-oblong to subglobose, orange-red fruits, on drooping clusters, ripen about September 25. The type tree grows in the village of Chippewa, Ontario, about five miles south of Niagara Falls. It appears to be quite common on the banks of the Genesee River, in Western New York, in Monroe County.

C. CHIPPEWAENSIS forms a low branching tree, or an arborescent shrub 15 to 20 feet high, with spreading and ascending branches and an irregular, open topped head. The leaves are usually oval in outline, rounded at the base, 2¾ inches long and 2 inches wide. The 20-stamened flowers, with pink anthers, are borne on 12 to 15-flowered, hairy corymbs, and blossom about May 26. The crimson, oblong obovate fruits ripen about the end of September and soon fall. As the specific name indicates, this grows in the village of Chippewa, and, as far as I am aware, it has not been reported from any other locality.

C. DAYANA usually forms a small, low branching tree, from 15 to 18 feet high, with spreading horizontal branches, and a compact, shapely head. The leaves are very broadly ovate, slightly rounded at the base, and about 4½ inches long and 3½ inches wide. On vigorous shoots the leaves attain a large size, and they are perhaps larger than in any other *Cratægus* species with which the writer is familiar. The 20-stamened flowers, with pink anthers, borne on loosely branched 10 to 14-flowered hairy corymbs, blossom from May 15 to May 20. The obovate, lustrous crimson fruits, which frequently taper at the base on the pedicels, and which are quite large, ripen from the end of August to the middle of September and quickly fall. The type tree grows on the east side of the grounds where the Pan-American Exhibition was held at Buffalo, N.Y., and near to the entrance of Delaware Park. According to present indications this species does not appear to be widely distributed. Dr. Sargent named it in compliment to the late David Fisher Day, a Judge of the Supreme Court of New York State, who resided at Buffalo, and who published a catalogue of the flora of Erie County.

C. GLORIOSA frequently forms a tree 25 to 30 feet high, with slightly ascending branches and a broad, symmetrical head; but sometimes in old trees the head is irregular and open, the trunk 7 to 8 feet high, and 15 inches in diameter. The leaves are ovate, and usually rounded at the base, but occasionally inclined to be truncate, somewhat coriaceous and conspicuous with a marked convexity of surface, and normally 4 inches long and 3½ inches wide. The 7 to 10-stamened flowers, with blush-white anthers, are borne on lax, drooping, 10 to 15-flowered, slightly villose corymbs, and bloom about May 25. The large, lustrous, bright crimson, short-oblong fruits, much flattened at the apex, and tapering on the pedicel and usually displaying distinct mammillate processes adnate to the fruit-stalks at the insertion of the fruits, and with comparatively small calyx lobes, distinctly erect, ripens about the middle of September. The type tree grows on the north side of the City of Rochester, N.Y. It is distributed throughout the Genesee Valley to Buffalo, N.Y. The prominent, white flower clusters of *C. gloriosa* are very showy in spring, and when an adult tree is covered with its brilliant fruits in September, it is an object of unsurpassed beauty. *C. gloriosa* is one of the handsomest Hawthorns of North America for parks and gardens. *John Dunbar, Rochester, New York, U.S.A.*

(To be continued.)

THE ALPINE GARDEN.

LIME-LOVING PLANTS

MR. ARNOTT is so keen an observer of the likes and dislikes of Alpine plants, that anything he may say on this subject (see p. 246) is worthy of careful consideration. Experience shows, however, that a considerable proportion of lime is by no means essential to many supposed lime-loving plants; indeed, in some instances, it appears to be a hindrance to cultivation. As Mr. Arnott rightly observes, the Alpine Pinks and hardy Cyclamen are reputedly lime-loving, but we see them in better condition when planted in peat, loam and leaf-mould in about equal parts, and in very sandy soils adjacent to the red-sandstone rock, or in company with *Nephrodium felix-mas* and other Ferns beneath the shade of trees, where much lime is not found. Certain species of hardy Orchids are found growing chiefly in chalk, but in gardens when provided with a similar mixture they fail. *Helianthemums* grow wild on the chalk of Mickleham Downs in Surrey, and on the oolitic limestone of the Cotswolds, yet they grow more vigorously in common garden soils. The clear, golden yellow *Coronilla iberica* is, when seen in good condition, something all gardeners admire, and I have seen plants of it in two widely separated gardens this year under very opposite conditions. In the one it was growing in brick earth on a rockery made of Dartmoor granite; in the other it was on a rockery where the soil was loam over chalk. The plants in the former situation were in the fullest vigour, draping 4 feet or more of the granite rock with blossoms of the richest yellow, whilst those in the latter was so poor in colour as to be unattractive.

Of *Lithospermums*, *L. purpureo-ceruleum* is a lime-loving plant, and rarely happy without it,



FIG. 127.—*SOLANUM NIGRUM* (FROM BRITISH WILD SPECIMENS).

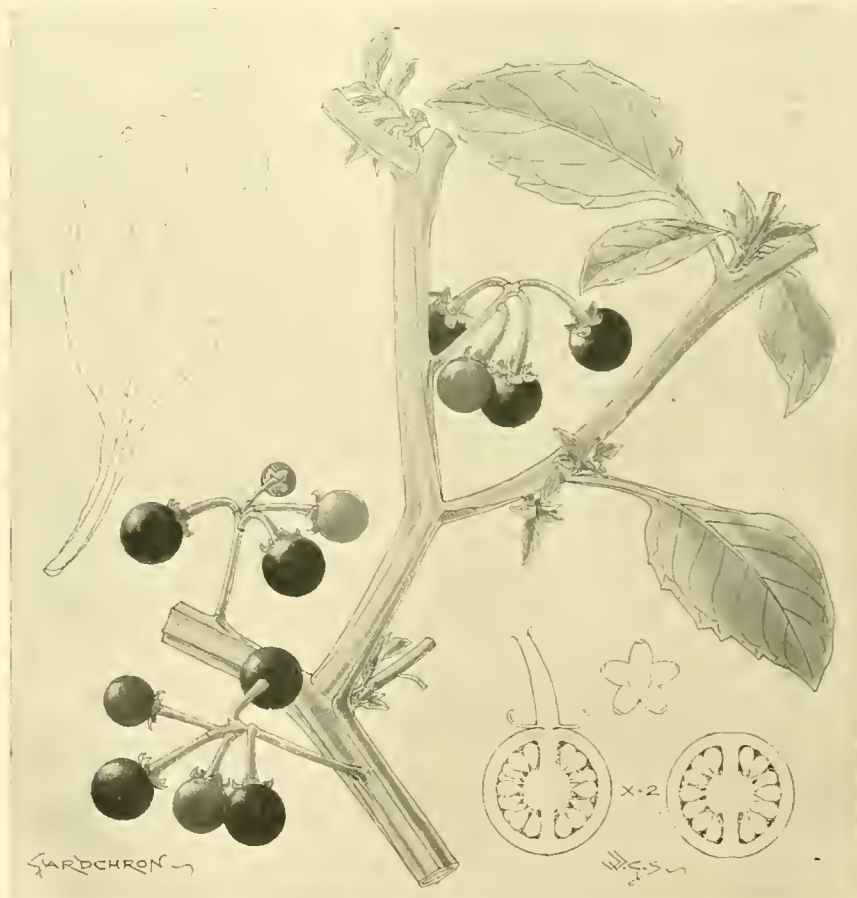


FIG. 128.—MR. BURBANK'S "WONDERBERRY."

whilst *L. prostratum* is often a puzzle, whether growing in much lime or not. At Westwick, near Norwich, in a soil that may be regarded as an ideal, hardy heath soil, the plant is virtually a weed, its extending growths covering the ground by the yard; hence not lime, but some local influence must be causing the remarkable growth. The *Anbrietias* may be seen both draping many feet of a sandstone wall, and forming sheets of colour at the base of the same wall, in a soil of a sticky clay mixture. Some few years ago *Saxifraga Kolenatiana* failed to succeed, and, turning the plant out of its pot, I found the soil composed of nearly one half of chalk. The chalk having been shaken away, the plant was potted afresh in light, sandy loam, and a considerable improvement was observed. Greater success, however, was achieved when subsequently a portion of the stock was planted in nothing more than pit sand and fine gravel. Nearly 30 years ago, when using for potting the then famous Banstead loam, which was taken from chalk land, I was surprised to find that plants generally would not do well in the soil. My greatest surprise was caused by the growth of *Daphne odora* (*indica*) *rubra* and *D. o. alba*, which, usually seen in a yellow and sickly condition, almost at once developed a vigour like that of Laurels. *Daphnes* at that time were invariably potted in a peaty soil, hence this experience was the more striking.

My conclusions are that, while the grower of Alpines may safely regard a list of lime-loving plants as a serviceable basis to work upon, he must not regard lime as essential for any particular species of plants. There are so many other influences at work—altitude, water, environment and the like—that often enough the unorthodox way will be found in not a few instances to produce surprisingly good results. *E. H. Jenkins.*

SAXIFRAGA GRISEBACHII.

PROBABLY owing to the excess of moisture and little sun-heat experienced this year, some fine, mature rosettes of a good plant of this species are making a secondary growth, each being already elongated in its characteristic way to the extent of 1 inch or more. In extending to form the mature, or adult, rosette, the growth which proceeds from the central portion of the old rosette first assumes an erect column-like outline, the apical portion being recessed or

THE WONDERBERRY.

In the *Gardeners' Chronicle* for March 21 (p. 204) attention was called to the danger of accepting as a food-plant a form of *Solanum nigrum* which had been distributed by an American nurseryman under the name of "Wonderberry." Its origin was stated to be as follows:—

"This absolutely new species of berry plant (Wonderberry) is of great scientific interest, having been produced by the combination of two

they are nothing more than forms of *S. nigrum*, a cosmopolitan weed, generally considered to be poisonous. Assuming that Mr. Burbank had in his possession living examples of these two plants, it is extremely unlikely that as the result of crossing them he would obtain seedlings having all the good qualities attributed to the Wonderberry. *Solanum nigrum* is a very variable plant; there are greater differences between some of the forms of it than are evident in the two forms known as the British one and the so-called Wonderberry; for example, the Canadian form, known as Huckleberry,* is quite different from either of them, and yet it is *Solanum nigrum*. Questions of nomenclature and botanical differences do not, however, matter much when the food qualities of a plant are under consideration; the proof of the pudding is in the eating. The Wonderberry might be a form of *Solanum nigrum*, and yet have edible fruit good enough to be made into jams, &c. To test it, therefore, we grew this summer plants of the Wonderberry raised from seeds supplied by Mr. L. Childs, and by the side of them we also grew plants of the Canadian Huckleberry, and some of the common British form of *Solanum nigrum*. When the fruits were ripe, some of each were sent for examination to Dr. M. Greshoff, of Haarlem, one of the first authorities on vegetable poisons. His report, which will be published in full in the *Kew Bulletin*, is to the effect that all three forms contain poison (Solanin), the least poisonous being the British and the most poisonous the Wonderberry! Dr. Greshoff says that he cannot recommend the use of these fruits as food, because, although they may differ in the amount of poison they contain according to the conditions under which they may be grown, it will always be dangerous to eat them, and especially so for feeble children. Vegetable poisons vary in their effects upon different people; for example, the American poison Ivy, *Rhus Toxicodendron*, may be handled with impunity by many persons, including myself (I have rubbed its sap on my face without experiencing any ill effects), yet there are many who cannot touch the plant without suffering severe consequences. W. W.

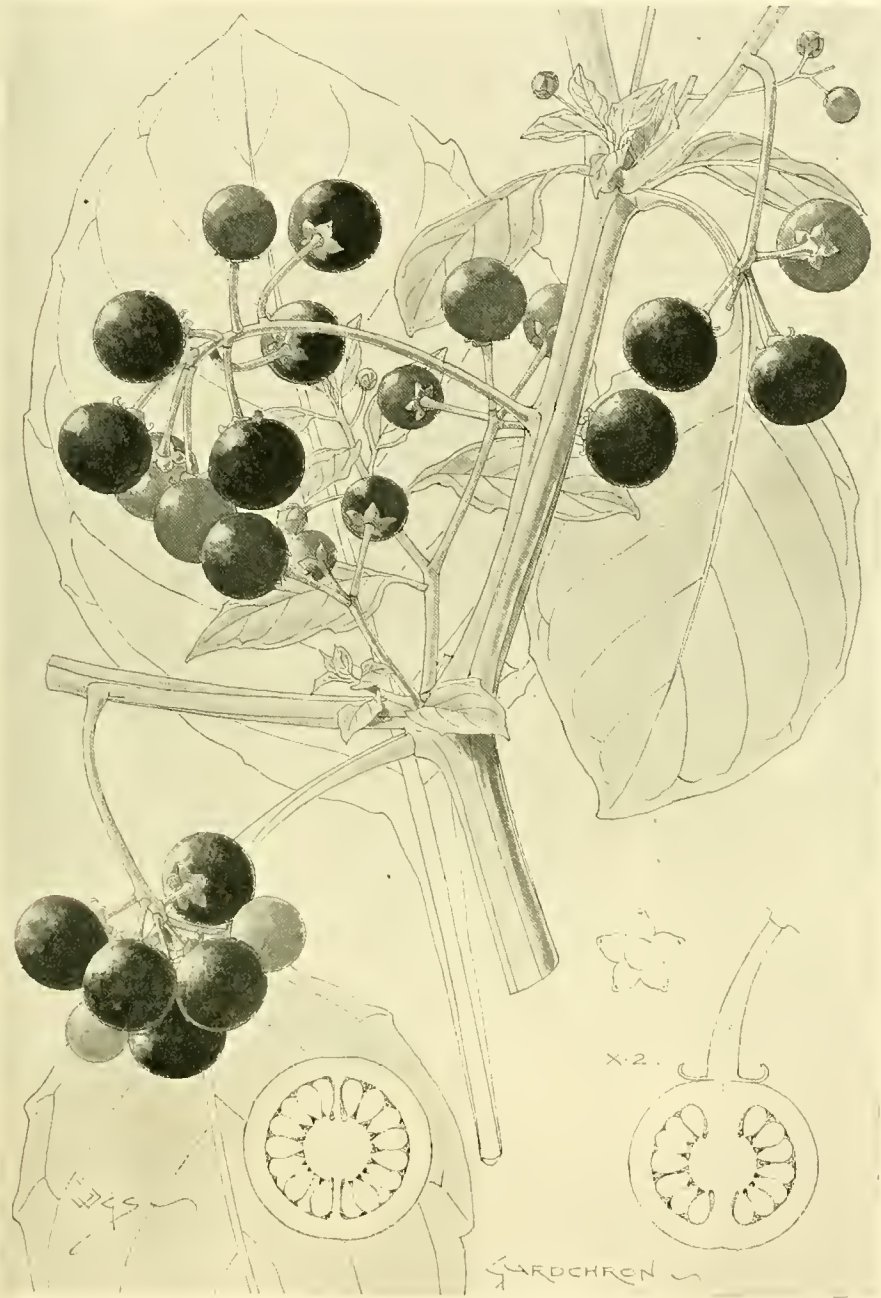


FIG. 129.—SOLANUM NIGRUM (NORTH AMERICAN VAR. KNOWN AS THE HUCKLEBERRY).

cupped, and the entire circumference of the column furnished with linear, imbricated leaves, which finally form the flattish rosettes characteristic of this species. I am interested to know what is likely to happen in such a case, but fear very much that wet and frost may injure this second growth. Some other members of the genus are by no means in character this season, for, instead of being fully mature, with the promise of a good flowering, they appear as in June, when growth is natural. E. H. Jenkins.

very distinct wild species, *Solanum guineense* of West Africa and *Solanum villosum* of the West Coast of America. Neither of these wild species bears edible berries, but this new species bears the most delicious, wholesome and healthful berries in the utmost profusion and always come exactly true from seed." LUTHER BURBANK.
It is extraordinary that Mr. Burbank or any other gardener should have in cultivation these two *Solanums*, and still more so that he should think it worth while to cross them, seeing that

SCOTLAND.

ROSES IN SOUTH-WESTERN SCOTLAND.

ROSES that are usually, but somewhat erroneously termed "perpetual," are in this mild and moist region of Scotland almost worthy of that name. At the present trying season of winds and rains, with occasional interludes of short-lived frost, I have many fine varieties in bloom, conspicuous among these being Margaret Dickson (flowering through old Apple trees, and above very high Hawthorn hedges at a height of 18 feet); Duchess of Albany, a dark-coloured, richly fragrant descendant from La France; Aimée Vibert and Mme. Georges Bruant, blooming, like their Irish contemporary, in a similar situation, at an almost equal elevation; Captain Hayward, a most valuable, late autumn-flowering variety, whose importance at this season can hardly be overestimated; J. B. Clark, whose plum-coloured aspect is highly distinctive; Frau Karl Druschki, the grandest of all pure white Roses, though it has but little fragrance; Caroline Testout, Lady Helen Stewart, the dark-shining Salamander, Mme. Pernet Ducher, Papa Gontier, and Bouquet d'Or. The Roses that succeed best in this district of Scotland are the Hybrid Perpetuals, Chinas, Polyanthas, Wichuraiana Hybrids, especially Hiawatha, Dorothy Perkins and Lady Gay; and, above all, as I have already indicated, the invaluable Hybrid Teas. In this region we have usually a superabundance of moisture in late autumn and early winter. By reason also of our peculiarly peninsular situation, with the sea bringing to us at all seasons from the west the mitigating

* The true Huckleberries are species of *Gaylussacia* (*Vaccinium*).

influences of the genial Gulf Stream, we enjoy, as a general rule, an enviable immunity from severe frost. Even when frost comes upon us with abnormal intensity, it is generally accompanied, and greatly mitigated—as it was last winter—by heavy falls of snow. This has not infrequently proved the salvation of the Austrian, Persian, and Penzance Briars, and the more delicate Teas.

Noisette Roses, in Southern Scotland, are not conspicuously successful; such tender varieties as Cloth of Gold and Marechal Niel needing almost invariably to be grown under glass. The most successful varieties, according to my experience, are Wm. Allen Richardson and its radiant derivative, Mme. Pierre Cochet; Aimée Vibert, which flowers much too late in my garden to be effective, Mme. Alfred Carrière, an almost pure white, sweetly fragrant and floriferous Hybrid Noisette, and Bonquet d'Or. Among Tea Roses, whose name is legion, those that succeed best are Catherine Mermet, Devonensis, Coralina, Anna Olivier, Medea (a magnificent lemon-coloured variety), Perle des Jardins, Molly Sherman Crawford, Souvenir de Stella Gray, Souvenir d'un Ami, and S. de S. A. Prince.

The most profuse bloomers among Hybrid Teas are Viscountess Folkestone, Cheshunt Hybrid, the first introduction of this race, still indispensable as a free-flowering Rose of aspiring habits; Caroline Testout, an enormous variety of remarkable vigour and great floriferousness; and Clara Watson; while other notable Hybrid Teas that succeed well in Southern Scotland are Gloire Lyonnaise, erroneously described as a pale yellow variety, for it is almost pure white; Bardou Job, profusely flowering with dark velvety petals, scarlet flashing through maroon; Marquis of Salisbury, with luminous, miniature, crimson flowers; Gustave Regis and Mme. Pernet Ducher, two of the most charming French Hybrid Teas. *David R. Williamson.*

NOTICES OF BOOKS.

* SPRING FLOWERS AT BELVOIR CASTLE.

IN this book Mr. W. H. Divers, the head gardener to his Grace the Duke of Rutland, has written a very interesting and readable volume of over 100 pages, excellently printed, and adorned with 32 photographic views from the author's camera. Although the gardens at Belvoir Castle, Grantham, have been famous for many years for their delightful displays of spring flowers, Mr. Divers does not confine himself to them, but writes also of the beautiful trees and shrubs—many of them of great historic interest—and of the kitchen garden. The author not only describes the best kinds of plants suitable for spring bedding, but also shows what splendid effects can be produced early in the year by judicious combinations of bulbous and other plants. Tulips, Daffodils, Hyacinths, Violas, Wallflowers, Forget-me-nots, Primroses, Polyanthuses, White Arabis, Yellow Alyssum, Daisies, and many other plants are effectively used to make Belvoir Castle one of the most attractive gardens in the kingdom. This practice, as Mr. Divers tells us, was carried out by his predecessor, the late Mr. W. Ingram, when only very few gardeners in the kingdom attempted anything of the kind.

"Previously, flower-beds were for the most part bare of plants in winter time, or were, in some instances, covered with broken bricks, broken coals, and small white stones. Spring-bedding is a great improvement on this system, as the beds are covered with plants again as soon as the summer occupants are removed, and thus present a green appearance all the winter, with the addition of a number of flowers on many of the plants, whenever the weather is not too frosty."

Mr. Divers points out that level surfaces do not lend themselves so well to landscape effects as a wide range of variation in altitude and undulation, and insists that much may be done by artificial means to produce hills and hollows to be

* *Spring Flowers at Belvoir Castle*, by W. H. Divers. (London: Longmans, Green & Co.) Price 5s.

clothed with suitable plants, including trees and shrubs as well as perennials, herbaceous plants, and Alpines. The development of the garden at Belvoir has been the work of centuries, probably starting with Robert de Todeni, the founder of the estate, who came over from Normandy in 1066 with William the Conqueror. *J. H.*

* THE DOUM PALM.

WE lately presented our readers (p. 87 of the current volume) with some particulars of Dr. E. Beccari's monograph of the Palm genus *Calamus*. Of no less interest is his contribution to our knowledge of the Doum Palm, or, rather, Palms, published in a periodical not likely to come under the notice of many of our readers. It is commonly supposed that there is only one species of Doum Palm, namely *Hyphæne thebaïca*, though it was known that there were several species of *Hyphæne*; but Dr. Beccari describes and figures about a dozen new species, and expresses the opinion that, taking the whole of Africa, the species are numerous, certainly exceeding 50. Preceding the descriptive part is an account of the products of the Doum Palms, all of which are very valuable, though the qualities of the fibre, fruit, and seed vary in different species. The species are spread over the whole of tropical and sub-tropical Africa, from mid-Egypt to Natal; some also occur in Senegal, in the west, and in the district of Bornu and also in the region of Lake Tchad in Central Africa. But, strange to say, as mentioned in our recent notice (p. 265) of Durand's *Flora of the Congo Free State*, the author had no reliable record of any species occurring within that vast area. However, there is a specimen in the Kew Herbarium named *H. thebaïca*, from Gondokoro, British East Africa, close on the north-eastern boundary of the Congo, collected by M. T. Dawe. Outside Africa the genus *Hyphæne* is represented in India and Ceylon, and more numerous in Madagascar and Arabia. A very remarkable species exists in the last-named country, to which Dr. Beccari has given the provisional name of *H. reptans*. It is described by the collector as having a trunk only about a foot high, but already branched with the branches lying on the ground. It was collected by W. Lunt on Theodore Bent's expedition in 1894, and is preserved in the Kew Herbarium. At present the new species are mainly distinguished by the fruit, which varies greatly in shape and size. Some are Pear-shaped, others are broadest at the base or in the middle, whilst others, again, are oblong or almost spherical. In size the fruit varies from 1½ inch to 3½ inches in its greatest diameter.

† THE CULTIVATION AND PREPARATION OF PARA RUBBER.

TO Mr. W. H. Johnson belongs the distinction of having, some four years ago, written the first treatise devoted exclusively to Rubber. As might have been expected, when the rapid growth of the rubber industry and the excellence of Mr. Johnson's text-book were considered, the first edition was soon exhausted.

The present, second, edition has been thoroughly revised and extended to include a wider range of information. The statistics relating to rubber afford the raw material for a striking chapter in the romance of modern industry. From 1770, when Priestly recommended its use for erasing lead-pencil marks, till the twenties of last century, when Macintosh began to manufacture waterproofs, the use of rubber was remarkably limited. The extension of its employment dates from 1836, when Thomas Hancock discovered that crude rubber, cut up, pressed and heated, could be moulded

* *Le Palme dum od Hyphæne*, a più specialmente quelle dell'Africa Italiana. Agricoltura Coloniale, Anno ii., 1908, pp. 137-183. The Doum Palms or *Hyphæne*, and more particularly those of Italian Africa.

† *The Cultivation and Preparation of Para Rubber*, by W. H. Johnson, F.L.S. (London: Crosby, Lockwood & Son.) 7s. 6d.

into almost any shape, and when, in 1874, the method of vulcanising rubber by heating and treating it with sulphur was discovered.

From that date the imports of rubber into this country have increased enormously, and on the whole steadily, from about 150,000 cwts. in 1874 to 194,000 in 1886, 430,000 in 1896, and 600,000 in 1906.

It is a remarkable fact that, of the rubber consumed throughout the world in 1906, almost one-half was derived from rubber imported into this country. It is also noteworthy that more than half of the rubber used is Para rubber, that is, material derived from the latex of species of *Hevea*, and chiefly from that of *H. brasiliensis*. Now that so much capital and industry are being put into the cultivation of rubber-producing trees, it is interesting to note the attempts to produce rubber synthetically. Already various "rubber substitutes," manufactured from the seeds of Poppy, Rape, Flax, &c., are in use for mixing with crude rubber for special manufactures; but, so far, all attempts at the artificial manufacture of the genuine article have failed. He would be a rash man, however, and one ignorant of the wonderful fertility of resource of organic chemistry who predicts that synthetic rubber is an impossibility. The main reason why its manufacture is likely to prove difficult lies in the fact that rubber is not a single substance, but a mixture of complex compounds such as proteins, resins and caoutchouc. The significance to the tree of the latex from which crude rubber is prepared is doubtful. Most authorities regard it as a waste product of vegetable metabolism; but the author, having regard to its widespread distribution in plants, is inclined to think that it plays some part, albeit a small part, in the economy of plants. Mr. Johnson has given a most comprehensive account of the various processes connected with the cultivation and preparation of rubber, and brings out incidentally the prominent part—on which we have more than once insisted in these pages—played by British colonies, particularly by Ceylon and Malaya, in introducing rubber plants for cultivation.

From his estimates of cost it would appear that the cultivation of rubber is an extraordinarily profitable industry; but as to whether at the present prices of rubber shares it is a profitable investment the author is properly silent.

In conclusion, we would say that Mr. Johnson has written an admirable book, interesting not only to the expert but also to the layman who takes an intelligent interest in the progress of agriculture and of commerce.

* DUTCH BULBS AND GARDENS.

FEW could describe Dutch gardens and their bulbs in a more sympathetic manner than Miss Silberrad. The reader does not penetrate far into that portion of this interesting book without discovering that everything Dutch has for her a peculiar charm. Perhaps for that reason she voyaged to Amsterdam in a leisurely-trading Dutch vessel.

It may be that it is owing to her proclivity for the Dutch that the purely English horticulturist will not find much to suit his insular tastes. But then the book is about the bulb gardens of Holland, and certainly little transpires in these that is forgotten. We are told how Crocuses and winter Aconites are produced; all about Anemones and Ranunculi, which the authoress is grieved to see so little thought of at home. How the less hardy bulbs are protected in winter, and the diseased are rogued in summer, by workmen protected with umbrellas and armed with implements with which they uproot the offending plant. How flower-spikes and blooms are destroyed in order that the bulbs may be strengthened, with detailed accounts of their harvesting, storing, and propagation. But these and kindred

* *Dutch Bulbs and Gardens*, painted by Mima Nixon, described by Una Silberrad and Sophie Lyall. (London: Adam and Charles Black.) Price 7s. 6d.

facts are little more than incidents which meet us in our passage through a gallery of pleasantly-arranged word-pictures. Miss Silberrad is a free-and-easy writer, possessed of many adjectives, which are selected with due effect. True, she just escapes being irreverent once or twice, misquotes Gerarde, to his hurt, and while her Parkinsonian allusions are pleasant reading, the difficulty of recognising *Sprekalia formosissima* and *Pancretium maritimum* in their quaint, early designations is as perplexing to the ordinary reader as they are to her. "The Aristocrat of the Bulb Garden," as the Tulip is called, is one of the pleasantest chapters. Miss Silberrad, it may be noted, favours Sir Philip Sidney as introducer of the Tulip, from Vienna, in 1577. Gerarde, of course, implies that his friend Garret was the man, and Clusius, who gives the dates of the flowering of the several varieties he cultivated in Vienna, has none earlier than 1585.

Iris are treated after the same manner as

The frontispiece, a view in the Royal Gardens of the Het Loo, recalls some of the coloured illustrations of 90 years ago. Some of the others are delightfully Dutch, "The Promise of Spring," for instance, and a "Boatload of Fragrance." "A Dutch Garden in Spring," "Darwin Tulips," "Hyacinths on Sand," and "Here are Tulips for You" are remarkable for colouring. The reproductions are beyond praise, and the book is produced in A. & C. Black's well-known style.

HARDY HEATHS.

(Concluded from page 259.)

E. VEITCHII.—This hybrid between *E. arborea* and *E. lusitanica* is figured in the *Gardeners' Chronicle*, April 15, 1905. It was introduced some six or seven years ago by Messrs. Robert Veitch & Sons, of Exeter. The white flowers are

18 inches in height. It flowers in autumn, the colour being bright reddish-purple.

CALLUNA VULGARIS.—The Ling or common Heather is closely allied to the *Ericas*, the distinction being that in *Calluna*, in addition to the calyx, which consists of four, coloured sepals concealing a bell-shaped corolla, there are four bracts suggestive of an outer calyx. The true *Erica* has a calyx of four, green sepals. This distinction is not considered sufficient by many botanists to warrant a second generic name, hence the name of *Erica vulgaris* given by Linnæus is often preferred. In the British Isles thousands of acres on moor, common, and mountain side are clothed with Heather, providing cover for game and honey for bees. The plants vary considerably in growth, 12 inches to 3 feet being about the average, although sometimes they reach a height of 6 feet. In contrast with these comparatively tall-growing forms, there are the low-growing moss-like varieties a few inches high. The



FIG. 130.—THE UPPER TERRACE OR ITALIAN GARDEN AT BOWOOD, WILTS.

(See p. 298.)

(Photograph by H. N. King.)

Tulips, and Daffodils likewise, while Crown Imperials and other Fritillaries find a corner. Tuberos Begonias are not much grown in Holland. The authoress makes the astonishing statement that they were originally introduced from Jamaica!

Miss Lyall's part of the book consists of appendices, the first of which is a translation of almost the whole of St. Simon's *Des Jacinthes, de leur anatomie, reproduction et culture*. The original is a duodecimo published in 1768. Though only of slight value to the British cultivator as a guide to bulb growing, many will be grateful, as they were to Bradley, for rescuing Dr. Beale's rare tract from oblivion, to have, what at one period was esteemed a choice monograph, placed within their reach. Other appendices relate to the Tulip and Hyacinth trade of bygone days. The illustrations from paintings of Miss Mima Nixon are well worthy the letterpress

produced freely from March to May. The one fault of this, otherwise charming, hybrid is that it is, if anything, more tender than either of its parents. Last winter at Kew nearly all the plants were killed to the ground. They have, however, produced plenty of strong growths from the base. Fortunately, treacherous winters such as that of 1908-9 do not occur frequently. Beside its usefulness for outdoor cultivation, *E. Veitchii* is a valuable, early spring-flowering, pot plant, either in 5-inch (48 size) pots, or larger ones. Bushy specimens in 12 inch pots are extremely showy for the cool conservatory or corridors.

E. WATSONII.—Originally found growing wild in the south-west of England, *E. Watsonii* is generally supposed to be a natural hybrid between *E. ciliaris* and *E. Tetralix*. In habit it more resembles the first-named parent, the growths being tall and slender. 12 inches to

leaves are small; the purplish-lilac blossoms appear from July to September, lasting on the plants in good condition for a considerable period. It is also valuable for cutting to use for decoration in winter. The double variety is found wild in Cornwall, and the hoary form var. *tomentosa* on Moseley Common. The varieties are both numerous and varied in habit and colour of the flowers. Many of these forms have been given distinctive names, more or less descriptive of the variation. *Alba* is the popular White Heather, for which there is a considerable demand in a cut state, and whose flowers are at their best in August; other varietal names are *alba aurea*, *alba minor*, *alba pilosa*, *alba prostrata*, *alba pumila*, *alba rigida*, and *alba Serlei*, a splendid upright-growing variety with rich green leaves and pure white blossoms produced in September. Amongst the numerous varieties, *alba tomentosa* is the most free-flowering of the white

forms; as the name implies, the stems and leaves are tomentose, covered with hairs. *Alba spicata* and *alba tenella*, a strong grower. All the foregoing have white flowers. *Alportii*, upright in habit, tall grower, rich red flowers; *argentea*, silvery leaves; *aspera*, coppery leaves; *aura*, the "Golden-leaved Heath"; *carnea*, flesh-coloured; *coccinea*, cuprea, with a distinct golden-bronze tint in the foliage; *decumbens*, *dumosa*, *elata*, *flore pleno*, a charming free-flowering double variety with purplish-lilac blossoms; *Foxii*, a dwarf moss-like variety—old specimens form a perfectly green, moss-like cushion speckled with purplish-lilac flowers in August and September; *Hammondii*, white; *hypnoides*, low-growing, moss-like shoots; *lanulosa*, *minima*, a small form of the type; *pygmaea*, a compact-growing form; *rosea*, *rubra*; *serotina*, *spica brevis*, *spica longis*, *tennis*, deeper in colour than the type and more branching in habit; *tenuifolia*, and *variabilis*.

DABECIA POLIFOLIA.—The popular names of this plant are the "Irish Heath" and "St. Dabec's Heath." It is a widely distributed plant, occurring in Ireland, specially abundantly in Connemara, Spain, Portugal, the west of France, and the Azores. It grows from 1 foot to 2 feet in height and is very floriferous, being clothed with purple flowers from June to September. These are drooping, borne on upright terminal racemes, loosely arranged; a single raceme being as much as 7 inches in length and bearing 20 elegant blossoms. The plants are evergreen, the leaves green above and white beneath. There are three synonyms for this plant—*D. cantabrica*, *C. Koch.*, *Andromeda Dabecia*, *L.*, and *Menziesia polifolia*, *Juss.* The varieties are *alba*, white; *bicolor*, purple and white; *purpurea*, deeper in colour than the type; and *pygmaea*, a small, dense-growing form. With the exception of the last-named, these are similar in habit to the species. *A. O.*

FRUIT REGISTER.

PLUM DECAISNE.

This variety is not so good in flavour this somewhat indifferent season. I accordingly tried it for cooking, and was agreeably surprised at its good quality when cooked in a pudding. The flesh is yellow, and almost as good as Washington, which I consider the best Plum for puddings, if Gages are not to be had. Decaisne is not much grown, for some reason which I have failed to discover. It is mentioned in Scott's *Orchardist*, second edition, which is not dated, but was certainly printed before 1876. Decaisne is there described as "One size, one quality, September to October. Fruit shortly oval, skin yellow speckled with red, flesh freestone, yellow, juicy, melting, and of excellent quality; shoots smoothish. A French Plum of 1860, described as being of first-rate quality, dessert." The tree grows and bears well here on a wall with a S.E. aspect, and the fruit was gathered on October 14, but would have hung longer. It is, therefore, a very useful variety for the end of the season, and in favourable years I have used it for dessert. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

SOME OLD GOOD APPLES.

AMONGST old varieties which still grow vigorously and crop well and that Mr. Brotherston might have instanced to show that Mr. Knight's theory as to the decadence of Apple varieties was not of universal application, are *Emperor Alexander*, *Hambleton Deux-ans*, *Norfolk Beefing*, *Scarlet Nonpareil*, *Fearn's Pippin*, *Adams' Pearmain*, *Red Quarrenden*, *Blenheim Pippin* and *Cockle Pippin*. These are only a few of the varieties still widely grown, yet they were in cultivation long before 1834. Some Apples like the old *Hawthornden*, displaced by *Stirling Castle* and others; *Manx Codlin*, largely displaced by *Lord Suffield*; were comparatively weak or sparse growing varieties, but heavy croppers. It is not surprising that these, when left to produce heavy crops year after year with very little manuring, eventually became weakened, or were ousted by larger fruited. There are few varieties of Apple that will not endure for generations if proper cultivation is given them. *A. J.*

The Week's Work.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Hard-wooded plants.—These plants will require especial care and attention from now until the spring to maintain them in good condition. Insect pests rarely attack hard-wooded plants, and mildew is the chief disease to which they are liable. The simplest method of dealing with mildew is to dust the affected parts with flowers of sulphur. In order that the sulphur may adhere to the foliage, the plant should be slightly sprayed with water. As mildew is influenced by cold draughts, or a close atmosphere, plants which are wintered in a light, airy structure, in which fire-heat is only employed when absolutely necessary, are rarely, if ever, subject to attacks of it. Water must be afforded with extreme care, but whilst hard-wooded plants are better kept a little on the dry side during the winter months, they must on no account be allowed to become dry at the roots, for, with these plants, and especially in the case of *Ericas*, root-action is rarely altogether inactive.

Freesias.—A small batch of the more forward plants may be moved into a warm house, but they must not be subjected to a higher temperature than 50°, or they will fail to flower. Place the plants as near to the glass as possible to induce sturdy growth and dwarf foliage. During the growing season the Freesia requires plentiful supplies of water. Afford supports to the foliage of the later batches as soon as the shoots are a few inches high.

Aquilegia.—The new hybrid Columbines are useful subjects for decorating the greenhouse or conservatory in spring-time. The largest crowns should be lifted carefully, potted into pots of a suitable size, and the pots plunged in ashes. Afford protection to the plants during severe frosts. When growth recommences in the spring they should be brought into a warm house to flower.

Campanula media may be treated in the same manner as *Aquilegias*. After being potted, both the *Campanulas* and the *Columbines* should be kept moist at the roots, and when growth has started freely they should be assisted by weak doses of manure water.

Humea elegans.—This plant should never be allowed to become root-bound until in its final pot. A suitable soil for seedling *Humeas* is composed of three parts loam, with one of leaf-soil, and a sprinkling of sand or lime rubble, or broken charcoal. Keep the plants in a cool house where they will be exposed to light and air, and apply water at the root only when necessary, keeping the foliage dry.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Planting Currant and Gooseberry bushes.—A plot of ground devoted exclusively to these useful fruits is found in most gardens, and it is a good plan to arrange to have always some young trees coming on, either to replace failures or for planting up a new garden or portion of garden. If these are propagated at home, some will have been transplanted from the cutting bed last year, and should now be useful bushes for making a permanent plantation. Where birds are troublesome, this should be borne in mind when selecting a piece of ground, so that protection can be conveniently afforded during periods when it is necessary. Protection is essential for *Gooseberries*, for, apart from the toll taken by birds in the fruit season, the *tomtits* and *bullfinches* often attack the buds in the spring, and in the absence of protection by netting or other means, the prospects of a crop might be ruined. For bush fruits the ground should be treated more liberally than is desirable in the case of Apples or Plums, but if the plot has been used for vegetable cultivation for some years previously, very little further preparations will be necessary. Having chosen the site, the ground should be deeply dug or bastard-trenched, digging in plenty of rotten manure and leaving the surface rough for a few days. It will be an advantage if the ground has been trenched some time previously, since it will have settled down. Nevertheless, the work may be done now, but the ground should be trodden firm

and levelled before planting. If there is a choice of soils, a good and rather retentive loam is the best, but small fruits will succeed in almost any ordinary soil, and in most situations. The most profitable plan for the main crop is to plant bushes, but in addition to this, *Gooseberries* and *Red Currants* should be grown on north walls, or on strained wires as cordons. As a rule the *Currants* will be best on a north wall, for in this situation the fruit will hang late and thus the season will be lengthened. Some of the late sorts of *Gooseberries*, such as *Warrington*, should also be grown on a cool wall, but dessert *Gooseberries* of the best quality are better grown on wires in an open situation. A convenient system is to have the cordon *Gooseberries* on wires enclosing the remainder of the small fruits, so that the uprights serve as supports to the netting in the summer. In this manner all the bushes are enclosed with a minimum of labour. In planting small bushes, it must be remembered that they grow rapidly, therefore, unless it is intended to remove alternate bushes in a year or two, it is of no advantage to plant closely; a distance of 6 feet between each will not be too much to allow for proper attention being given to the bushes and for the cleaning and hoeing of the ground. *Boskoop Giant*, *Lee's Prolific*, and *Black Naples* are reliable varieties of *Black Currants*, and *The Comet*, *Cherry (La Versailles)*, *Red Dutch*, and *La Constante* are four, good, red varieties which will yield fruit over a long season, while *Versailles* and *Transparent* are good white varieties. If *Gooseberries* are wanted specially for dessert fruits, a number of early mid-season and late varieties must be planted in various situations.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Celery.—Although this crop has grown remarkably well during the present season, there have been few opportunities for earthing-up the plants in weather conditions favourable for the operation. Especially is this the case on wet, heavy land. Much depends upon the circumstances under which the earthing-up is carried out, for if these are not favourable the keeping qualities of the *Celery* is depreciated. Therefore, as far as circumstances will allow, cultivators should wait for suitable conditions. All blanching operations should be carried out at frequent intervals, this being far better than applying a great quantity of earth to the stem at any one time. It will be safe to leave the earthing up of the latest plants for another fortnight or three weeks, but, in the meantime, the plants must be kept clear by removing all superfluous growths, decayed leaves, or weeds that may be present. It will not be safe after this date to use brown paper for blanching *Celery*, as so thin a covering would not protect the plants from frost. At the same time the advantage of using brown paper has been obvious during the present wet season; not only is the operation less costly, but the quality of the blanching is superior, provided a little soot is sprinkled about the stem of the plant to prevent injury from worms and slugs. During the past season I have made a trial of the various varieties of *Celery*, to determine which is the best both for exhibition purposes and for home use. It is perhaps not altogether becoming of me to state that there is no variety to equal that which I introduced some few years ago under the name of *Aldenham Pink*; but this is my experience.

Celeriac.—If the late plants of this crop have not been already lifted and stored, this work should be done at once, as the roots are liable to be injured by the first severe frost. Trim back the long roots and growths, and store the *Celeriac* in sand or ashes in a cool place free from frost.

Lettuces.—Any plants of *White Cos Lettuce* in the open should be lifted and stored under glass. Plants from the latest sowing should be ready for pricking out in unheated frames. In order to obtain a constant supply during winter and spring, a small quantity of seed of both *Cos* and *Cabbage* varieties should be sown at the present time. Sow the seed in boxes and raise the seedlings in gentle heat.

Other salads.—Sow seeds of the *Silver Skinned Onion* for salad purposes and place roots of *Chervil* in boxes under glass. Box up some roots of *Mint* and *Tarragon* to furnish a supply in winter.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Figs.—These fruits are a welcome addition to the dessert table at this season, and the latest trees should be encouraged to furnish a supply of fruits for as long a period as possible. To do this, the house should be kept dry, and it will be advisable to allow a little heat to circulate in the hot-water pipes whenever the weather is cold or wet. The trees should be given very little water, but they must not be allowed to become too dry at the roots. Keep the ventilators open always, more or less, according to the outside weather conditions. Any trees which have given unsatisfactory results should be attended to. The Fig needs a restricted root run, and does best in a shallow, well-drained, inside border. If the trees are making gross wood, the roots must be partly lifted, and, if necessary, given a smaller rooting space. Great care must be exercised not to disturb the roots more than is necessary, as the Fig resents root disturbance. Examine the drainage, and see that it is in proper order. Mix plenty of old mortar rubble and broken bricks in the new soil, and make the border firm.

Early pot Fig trees.—Some of the earliest trees should be selected and got ready for placing in the forcing-house early in November. For success in forcing Figs, the trees must be perfectly healthy, and must have been forced more or less in former years. The most suitable trees for this purpose are those having hard and well-matured shoots of medium strength. Little pruning will be necessary if the growth was properly stopped and regulated during the growing season, but any weak shoots may be removed and the trees trained into shape, which may be done in large measure by tying out those branches which are close together. See that the trees are quite free from insect pests before placing them indoors. A weak solution of soft soap and sulphur, applied carefully with a soft brush, is a suitable specific, unless the trees are affected with scale, when more vigorous measures must be taken. The utmost care must be exercised in the application of insecticides not to damage the young fruits. Forcing must be done very gradually, till both shoots and roots are active. A temperature of 45° or 50° will be ample for a few weeks, and, if this can be maintained without the use of fire-heat, so much the better. It will be better to dispense with a hot-bed till growth is active, as this may cause the plants to grow too quickly, to the prejudice of good fruiting. Spray the trees lightly with clear water on fine mornings, but avoid excessive moisture in the house, as this, with the absence of fire-heat, will cause a cold, stagnant atmosphere. Water must also be applied to the roots with care, especially if they have been re-potted this season. Make sure that moisture is needed before it is given, then give sufficient to soak the soil thoroughly. About the middle of December the trees may be plunged in a hot-bed, made of leaves and stable litter in equal proportions. The materials should have been previously turned several times to allow the gases of fermentation to escape. It will then form a hot-bed with a temperature of about 60° or 65°, which will be sufficient till growth is active. A house not too roomy, and having a southern aspect, is the most suitable structure for early Figs.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Planting Roses.—Roses will grow fairly well in most kinds of soils, but the question of the staple is very important, as in some kinds of ground the plants will flourish well for 30 years or more, whilst in others, even with the best cultural management, they last well for a few years only. Ground intended for the planting of Roses cannot be prepared with too much care. It should be trenched deeply and plenty of rich manure incorporated with it, using cow dung if the texture is light. The manure should be well broken up and thoroughly mixed with the soil. If the ground is wet and requires draining this must be attended to, as the roots of Roses, in common with other plants, will not grow in a water-logged soil. Any large clods should be

broken finely, but if the soil is of a light, sandy character some heavy loam should be incorporated at the time of digging. In preparing beds for Roses, it should be borne in mind that large beds are more effective than smaller ones, and that fancy designs are not to be preferred to square, oblong, or round beds. It is better to plant each bed with one, or, at the most, a few varieties only. If the plants are received from the nursery before it is convenient to plant them they should be unpacked and laid on damp soil, preferably where they will not be exposed to sunshine or drying winds. When planting, examine the roots and remove with a sharp knife all damaged or diseased portions. Make the holes of sufficient size to accommodate the roots when they are spread out evenly. Cover the roots with some of the finer particles of soil and plant firmly. After the planting is finished, spread some litter over the roots in order to protect them from frost. Tea varieties should be given the warmest positions, and on no account should they be planted under the shade of trees. It is a suitable time to plant wall Roses, treating the soil in the manner recommended in the case of beds. Established Roses on walls should be detached and pruned if they require it. It is best to untie all the branches, as this allows of the pruning being done more easily, and of the shoots being regulated afresh. Established Roses in beds are often benefited by being lifted so that the ground can be manured and dug deeply. Whilst rejuvenating the plants, this treatment will only slightly affect their flowering in the following season. Where mildew exists the plants must be dressed with flowers of sulphur or sulphide of potassium.

Sweet Peas.—Seeds that were sown as advised in a previous Calendar have germinated well. Insect pests are unusually troublesome to Sweet Peas this season, and are best checked by dressing the seedlings just before nightfall with a little lime and soot. A further sowing of seeds should be made in pots in a cool frame.

Spring bedding.—The planting of bulbous and spring-flowering plants should be completed as soon as possible. At the present time the ground is warm, but a few frosts will cause the temperature to drop very considerably. Although this has been a cold and damp autumn, the temperature of the soil at 2 feet deep is 56°, which compares favourably with most seasons.

Herbaceous border.—Perennial Asters, Anemone japonica, Sunflowers, and other autumn-blooming plants, make the borders very attractive at this season, but other subjects that are past will spoil the effect unless their old flowers and dead leaves are removed. In the case of tender subjects that have finished flowering it will be advisable to place a few ashes over their crowns, as the growths this season are unusually soft, and will not be so capable of resisting frost as in ordinary seasons.

THE ORCHID HOUSES.

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

Catascum, Cynoches and Mormodes.—Plants which have done flowering, or are past the stage at which they should flower, should now be placed in a drier atmosphere, such as is generally maintained in the Cattleya house during winter, selecting the lightest position possible. These plants require direct sunshine, now that the growths are approaching maturity. They will only need watering at long intervals till their leaves have fallen; then, if the pseudo-bulbs remain plump, water must be withheld entirely for some weeks. To keep these difficult plants in good health for any length of time it is necessary to give them first a generous growing treatment, and afterwards a long and decided rest. Strong plants of *Catascum*, after producing their first flower-spikes, frequently develop others a few weeks later, but these should be pinched off to prevent the new pseudo-bulbs being weakened.

Mexican Orchids.—In the house or division devoted to such Mexican species as *Laelia albida*, *L. autumnalis*, *L. Marriotiana*, *L. anceps*, and its varieties, many of the plants have their flower-spikes well advanced, and from this time onward they require to be watered very carefully. If too much water is afforded during the flowering period, many of the old roots will decay; it

will be sufficient if the potting materials are kept just moist. The temperature at night should be kept at between 55° and 60°, but by day, with sun-heat, it matters little how high the temperature may rise, if plenty of ventilation is given. After flowering, a very small amount of water will preserve the pseudo-bulbs plump until such time as growth recommences. *L. Gouldiana*, being in full growth, should be placed well up to the roof glass, and given copious waterings until the flower-spikes appear. *L. rubescens* (acuminata), now producing spikes from its partially-matured breaks, thrives well when suspended in a light position in the warmest house. Strong plants of *Cymbidium Lowianum*, *C. eburneo-Lowianum*, *C. giganteum*, &c., that are showing their flower-spikes, should be afforded plenty of water at the root, and those not yet showing for flower kept rather dry at the root for several weeks longer, otherwise they will recommence to grow, and, in consequence, fail to flower. Arrange these plants on the lightest side of the intermediate house, with their foliage nearly touching the roof glass. The present is a good time to examine these *Cymbidiums*, and to thoroughly sponge the leaves, so as to clear them of small scale insects that are liable to infest them.

Dendrobium Falconeri.—Plants that have completed their growths should now be sprayed over just often enough to prevent undue shrivelling. In order to obtain a fair amount of bloom, suspend the plant in a light position in the Cattleya house, and, during winter, give it a good watering, if it is growing in a pot or basket, once every week, but if it is on a raft it will need moisture about every other day. Do not over-rest this plant, for if it is kept cool and quite dry for several months it will produce an abundance of bloom in the following season, but generally when the new growths appear they are too thin and weak to ever form flowering pseudo-bulbs. The rare *D. Falconeri giganteum* and *D. venus* should be treated similarly.

Odontoglossum.—Plants of *Odontoglossum* which, owing to insufficient sunlight, have not made their usual progress, may be removed from the Cattleya house to a light, airy position in the East Indian house or warm stove, keeping them well supplied with water at the root. Such plants, under the influence of increased heat and moisture, will finish up in good time, and become properly matured before the winter. On the completion of growth, remove them to cooler, drier and more airy quarters.

THE APIARY.

By CHLORIS.

How to winter bees successfully.—There are many losses by death among bees which, with care, could be avoided. If we have secured young queens, plenty of broods, a strong and vigorous colony and a larder of well-filled and sealed stores there remains very little to be done before the period of inactivity sets in, but, on that little, much of the success of next year depends.

Quilts.—First the quilts must be seen to. These should be of woollen material, cut to fit the top of the brood chamber exactly so that no gaping corners are left. Greater warmth may be secured by placing some brown paper between two of the quilts. Some apiarists place over the quilts a cushion, loosely filled with cork dust such as is used for packing foreign grapes, and which costs a few pence. Before placing on the quilts it is wise to place above the frames some pieces of wood to raise the quilts, so that the bees may move from frame to frame without exposing themselves to the cold draughts which come through the entrances.

Painting.—Having seen to the internal heat we must now make the hives watertight. The summer sun has perhaps caused the wood to split, or a joint to gape. These spaces, after the first coat of paint, should be well puttied and the hives again painted.

Clearing grass, &c., from the front of the hives.—Hives that are in fields need to have the front cleared of grass for at least 2 feet in front of them, and the present wet weather forms a favourable opportunity of removing this growth easily with a spade. When the warmer and drier weather comes in the spring the operation will take more time, when it can be ill spared.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors 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 Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

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

APPOINTMENTS FOR NOVEMBER.

TUESDAY, NOVEMBER 2—

West of England Chrys. Sh. at Plymouth (2 days). Brighton and Sussex Hort. Soc. Autumn Sh. (2 days). Bournemouth Chrys. Sh. (2 days). Southend-on-Sea Chrys. Sh. (2 days).

WEDNESDAY, NOVEMBER 3—

Nat. Chrys. Soc. Autumn Ex. at Crystal Palace (3 days). Liverpool Chrys. and Fruit Sh. (2 days). Cardiff Chrys. Sh. (2 days). Portsmouth Chrys. Sh. (3 days). Bath Gard. Soc. Chrys. Sh. (2 days). Doncaster Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 4—

Torquay Chrys. Sh. Forest Gate and Stratford Chrys. Sh. (3 days). Linnean Soc. meet.

FRIDAY, NOVEMBER 5—

Windsor, Eton and District Chrys. Sh. Nottingham Chrysanthemum Sh. (2 days). Altrincham Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 6—

Soc. Franc. d'Hort. de Londres meet.

MONDAY, NOVEMBER 8—

United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 9—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Edwin Beckett on "Some Beautiful Shrubs"). Ulster Hort. Soc. Chrys. Sh. at Belfast (2 days). Southampton Chrys. and Fruit Sh. (2 days). Chesterfield Chrys. Sh. (2 days). Clevedon Chrys. Sh. (2 days). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, NOVEMBER 10—Bromley Chrys. Sh.

FRIDAY, NOVEMBER 12—Bradford Chrys. Sh. (2 days).

MONDAY, NOVEMBER 15—

Nat. Chrys. Soc. Executive and Floral Coms. meet at Essex Hall, Strand.

WEDNESDAY, NOVEMBER 17—

York Chrys. Sh. (3 days). Chester Paxton Soc. Chrys. and Fruit Sh. (2 days). Roy. Meteorological Soc. meet.

THURSDAY, NOVEMBER 18—

Scottish Hort. Soc. Chrys. Ex. in Waverley Market, Edinburgh (3 days). Barnsley Chrys. Sh. (2 days). Linnean Soc. meet. Manchester Chrys. Sh. (3 days).

FRIDAY, NOVEMBER 19—

Bolton Chrys. Sh. (2 days). Leeds Paxton Soc. Chrys. Exh. (2 days).

TUESDAY, NOVEMBER 23—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. J. A. Alexander, on "Spices").

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—46.7°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, October 27 (6 P.M.): Max. 47°; Min. 45°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 28 (10 A.M.): Bar. 29.6; Temp. 48°; Weather—Dull.

PROVINCES.—Wednesday, October 27: Max. 45° England South; Min. 36° Scotland North.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY to FRIDAY—

Unreserved Sale of Nursery Stock at St. John's Nurseries, Worcester, by order of the Receiver for Debenture Holders re R. Smith & Co., by Protheroe & Morris, at 11.30.

WEDNESDAY—

Eleventh Annual Sale of Nursery Stock at Shortlands Nursery, Shortlands, Kent, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11.

WEDNESDAY—

Duplicate Cypripediums from the "Rann Lea" Collection of Orchids, at the Coal Exchange, Manchester, by Protheroe & Morris, at 1.30.

FRIDAY—

Choice Cypripediums, also Established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

David Thomson.

In the death of David Thomson this country loses one of its greatest exponents of practical gardening. Like Peter Barr, whose death we had to announce but a few weeks ago, Thomson had outlived almost all his contemporaries, and doubtless most of the younger generation of gardeners know little of the great fame attached to the gardens of Archerfield and Drumlanrig during the period they were under David Thomson's superintendence. The question is sometimes asked whether there are men among present horticulturists equal in their knowledge and prac-

same degree as was possible when the art of gardening in England was in an earlier stage of development. But, whilst such thoughts as these are suggested by the passing away of David Thomson, they do not lessen our appreciation of his great personality. Those who enjoyed a close acquaintanceship with him at any period of his life must have been impressed by his superior intelligence, his great knowledge of horticulture, his indomitable perseverance and integrity.

Thomson was born on March 5, 1823, at Torloisk, in the Island of Mull. His father held a position as assistant steward, to which



THE LATE DAVID THOMSON, V.M.H.

tical skill to the giants of last century. Some are apt to conclude that there are no such men, because the same degree of fame is not attached to a few names as was formerly the case. We can hardly imagine, for instance, a gardener's influence dominating through the length and breadth of the land, as did that of David Thomson! But it must be remembered that gardening is more widely practised than formerly, there being hundreds of private establishments of repute where there used to be but few. In such circumstances there are, perhaps, fewer opportunities for men to distinguish themselves in the

post he had been recommended by Sir Walter Scott. The lack of educational facilities in the neighbourhood must have been felt very keenly by the lad who afterwards showed a persistent desire to study. At the early age of 14 he became employed in the gardens of Carstairs House, Lanarkshire. On leaving Carstairs, he worked next at Bothwell Castle, under Andrew Turnbull, the most celebrated plant grower of the day. To Turnbull's example and methods Thomson doubtless owed much of his subsequent success in plant culture. In 1844 he proceeded south to the Royal Botanic Gardens, Regent's Park.

It is clear that, in going to the Botanic Gardens, Thomson was merely seeking further experience, for his wages whilst there amounted to only 14s. per week, and that only when the weather permitted of a full week's work being completed. Out of this sum he was required to pay for food and lodging. The Botanic Gardens, then under the care of Marnock, offered first-rate opportunities for young men seeking practical knowledge in the laying out and management of pleasure gardens. Two years later, Thomson became foreman to his brother William, who was then gardener at Wrotham Park, Barnet, and who subsequently returned to Scotland and established the business now known as W. Thomson & Sons, Clovenfords. At the age of 22 David Thomson was appointed head gardener to Mr. Drummond, the noted banker, but soon afterwards removed to the more important charge of Dyrham Park Gardens, belonging to Captain Trotter. There he remained for eight years, during which time he remodelled the gardens and grounds. In 1858, he returned to Scotland, to become head gardener at Archerfield, East Lothian. It was at Archerfield that Thomson made his reputation. The gardens had been left in a state of neglect, hence there was just the opportunity the energetic young gardener appreciated. Being allowed a free hand and adequate means, he carried out many alterations. In a few years Archerfield became widely known for its successful fruit growing, particularly for its Vines and Pine-apples; the flower gardening at the Castle grounds at Dirleton, which were also under his charge, achieved equal celebrity. Here Thomson practised what is now described as the old-fashioned system of flower bedding in first-class style. He it was who first made an extensive use of East Lothian Stocks, and they ever afterwards occupied a dominant place in his flower schemes. In 1868, Mackintosh having retired from Drumlanrig, Thomson was asked by the Duke of Buccleuch to accept one of the most important positions in private gardening in this country. For nearly 30 years afterwards Thomson maintained Drumlanrig in the forefront of British horticulture. Every type of gardening known in those days was practised there. Fruit cultivation was carried out on a large scale, vines being treated as a speciality. The enormous glass structure which was erected on the place where the south wall of the kitchen garden stood gave him extraordinary facilities for experimental fruit culture under glass. Stove and greenhouse plants, a good collection of the species of Orchids then in cultivation, and Zonal and Regal Pelargoniums are only a few of the features which made the garden famous. Drumlanrig having obtained such notoriety, young gardeners were attracted to the place for the purpose of gaining experience. There were plenty of changes, for Thomson was always in a position to obtain situations for those under him. Gardeners were anxious for journeymen who had passed a period at Drumlanrig, and owners of gardens were not less eager in seeking Thomson's advice when changing their gardeners. In this way many of the most important gardens were placed under the care of pupils from Drumlanrig.

So things continued for 29½ years, until, May, 1897, when Thomson was obliged, on

the urgent advice of his doctor, to tender his resignation to the Duke. We have seen the reply to that letter in which the Duke expressed his appreciation of the services rendered by Thomson, and begged him to remain for a longer period in his situation. But, having once made up his mind, Thomson invariably held to his resolution, and in this case, knowing that the time had come when he was unable any longer to continue his work with the same vigour as formerly, he would not consent to hold the position. He left Drumlanrig with the good wishes of all, not only of those in the neighbourhood, but of gardeners throughout the country. This feeling was expressed by the presentation of an illuminated address, enclosed in a silver casket, from 75 of Thomson's old pupils who were scattered over various parts of the country.

We have dwelt upon the practical side of Thomson's character, but he would never have succeeded as he did if his intellectual capacities had not been of the highest order. His contributions to horticultural literature for a period covering more than half a century are sufficient to show that his mind was devoted to study. Sixty-four years ago he contributed his first article on Heaths. He was a contributor to the *Scottish Gardener* from its establishment, in 1854, and he became Editor of that journal in 1870, in succession to his brother, continuing as Editor until, in 1882, Messrs. Blackwood ceased to publish the journal, whose title had been altered to *The Gardener*. His published books include *The Handy Book of the Flower Garden*, published by Blackwoods in 1868, whilst Thomson was still at Archerfield, *Fruits under Glass* (1881), and a *Practical Treatise on the Culture of the Pineapple*.

Thomson was awarded the Neill Prize, the Veitch Memorial Medal, and the Victoria Medal of Honour, and was a life member of the Gardeners' Royal Benevolent Institution.

He died on the 22nd inst., at his residence, at Esk Bank, in his 87th year. The remains were interred at Dalkeith Cemetery on Monday last, in a grave close to that of Malcolm Dunn, in the presence of many of Thomson's old pupils. Deceased's only son, David William, is the well-known Edinburgh nurseryman who recently contributed to these columns a summary of the history of the Royal Caledonian Horticultural Society.

ROYAL HORTICULTURAL SOCIETY.—We have received from the Rev. W. Wilks the following list of successes gained this summer by the second-year students at Wisley:—Diploma examination (in order of merit).—A. W. Simmonds (diploma and demonstratorship of £40 for one year); W. G. Kent (diploma and prize); J. Ridley (diploma and prize); H. W. Abbiss (diploma and prize); G. A. S. Brookes (diploma); S. B. Gorringe (diploma); H. L. Robson (diploma); N. A. Phillips (diploma). Nicholson's prize for observation.—A. W. Simmonds. General examination.—J. W. McCaig (scholarship of £25 per annum for two years, Silver-gilt Medal, certificate and prize); W. Miles (certificate and prize); W. G. Kent (certificate and prize); H. L. Robson (certificate and prize); A. W. Simmonds (certificate and prize); and 12 other certificates. In the absence of the president, these awards were distributed a few days ago by Mr. HARRY J. VERTCH, V.M.H., who was accompanied by other members of the Council, together with the Right

Hon. ARTHUR C. DYKE ACLAND, ex-Minister of Education, who gave a short address. Mr. JAMES HUDSON, V.M.H., also gave advice arising from a lifelong experience as a practical and scientific gardener. One of the students, Mr. SEATON, after a three-years' course, was this summer appointed by the British Columbia Government to superintend one of their public parks at a commencing salary of £200 a year.

LINNEAN SOCIETY.—The first meeting of the forthcoming session will be held on November 4, at 8 p.m., when a lecture by Professor H. H. W. PEARSON, M.A., Sc.D., will be delivered on "Some Account of the Field-botany of Namaqualand, Damaraland, and South Angola," illustrated with lantern-slides. Mr. CECIL CARUS-WILSON, F.G.S., will make an exhibit illustrating the natural inclusion of stones in woody tissue.

JUBILEE FLOWER SHOW AT HAARLEM, 1910.

—In preparation for the great bulb show to be held at Haarlem next spring, we are informed that nearly one million bulbs were planted during the first half of the present month. These are distributed in about 1,500 beds and borders of various shapes and dimensions. A portion of the grounds is laid out in the regular French style in connection with the imposing building of the palace at the north side of the show ground and formerly belonging to King LOUIS NAPOLEON during his short stay in Holland. The other part of the show is designed in natural landscape style, affording an opportunity for a great number of picturesque groups and clumps of all kinds of bulbs, growing naturally at the feet of the old trees, which are the pride of the Haarlem Park. The nurserymen of Boskoop and Aalsmeer and other centres of the Dutch nursery trade will plant Conifers and flowering shrubs and trees early in spring. The temporary shows will be held in two spacious buildings specially erected for the purpose. The show is being held to celebrate the half-centenary of the Dutch Bulb Growers' Society, and it is hoped the principal horticultural centres of the world will send delegates. Deputations have already been announced by the Royal Horticultural Society, the Société Nationale d'Horticulture de France, the Société Royale d'Agriculture et de Botanique de Gand, and others. The deputation from the Royal Horticultural Society will consist of Sir ALBERT ROLLIT and Messrs. HARRY J. VEITCH, E. A. BOWLES, JAMES HUDSON, and Rev. W. WILKS. The prospects for the show are said to be favourable, and it is hoped that the show will prove of great interest to horticulturists.

FRUITERS' COMPANY.—The old custom of presenting a collection of fruit by this City company to the Lord Mayor of London was observed on the 20th inst. Sir GEORGE TRUSCOTT was accompanied by the Lady Mayoress, the presentation being made by Dr. ORWIN, Master of the Company. At the close of the ceremony, the Lord Mayor and Lady Mayoress entertained the master, wardens and members of the company to dinner. Formerly the Lord Mayor demanded a toll upon all fruit sold in London, and this annual ceremony is a reminder of this right, which is no longer enforced.

WARLEY PLACE GARDENS.—Mr. BERNARD QUARITCH announces that he will publish early in December a selection of 41 colotype views of Miss E. A. WILLMOTT'S interesting garden at Great Warley. These will be issued in one volume, the folio measuring 16 inches by 12 inches.

FRUIT-GROWING IN NEW BRUNSWICK, CANADA.—This business having been taken up seriously by the Government of New Brunswick, a horticulturist will be appointed during November, part of whose duty it will be to visit different parts of the province and encourage the farmers to begin or develop fruit growing.

MR. A. DEAN, V.M.H.—The many friends of Mr. ALEXANDER DEAN will be interested to know that he and Mrs. DEAN will attain the 55th anniversary of their wedding on Thursday next, November 4.

HYBRIDS OF KNIPHOFIA.—We have received some flowers from Messrs. R. WALLACE & Co., Colchester, representing hybrid Kniphofias, obtained from *K. modesta* and *K. Nelsonii*. The flowers vary from pure white to shades of amber, but there are no deeply-coloured flowers. Messrs. WALLACE describe the height as being 3 feet, and the leaves as being similar to those of *K. Nelsonii*. *K. modesta* is a Natal species, figured and described by Mr. J. G. BAKER in *Bot. Mag.*, t. 6716, and *K. Nelsonii*, a native of the Orange River Colony, was originally described by the late Dr. MASTERS in *Gardeners' Chronicle*, April 30, 1892, fig. 83. These hybrids bloom from early in September until the end of October. They are described as perfectly hardy at Colchester, although *K. modesta* itself is not hardy. Whilst the flowers received are small in comparison to some of the larger-growing Kniphofias, they are extremely dainty in appearance and tint.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE CRYSTAL PALACE COMPANY.—I have read paragraphs and letters in many newspapers regarding the winding-up order made by Mr. Justice Swinfen Eady, and I should be grateful if you would allow me to inform the public by means of this letter, that the order only refers to the Crystal Palace Company, and does not affect the Crystal Palace itself, or me, its receiver. I should like further to state that it is intended that the business of the Palace shall go on as before; in fact, I am at this moment in negotiation with influential people, with the object of holding at the Palace next year a function of world-wide interest. *Ernest J. Hussey, Receiver and Manager.*

PRUNUS PISSARDII.—I do not agree with Mr. Williamson (see p. 270) that the fruiting of *Prunus Pissardii* is a rare achievement in Scotland. There is a large specimen in my garden which bears fruit in most years; and at Culachy, Fort Augustus, I saw last September a tree about 15 feet high loaded with fruits, and was informed that it bears fruit every year in profusion, so much so that it is used for preserving. There are also self-sown seedlings under this tree. *Prunus Pissardii*, Carrière, first appeared at Tauris, in Persia, and was sent to France about 30 years ago by Mons. Pissard, at that time head gardener to the Shah of Persia. It is really a coloured-leaved variety of the common Cherry Plum, its proper name being *P. cerasifera atropurpurea*, Dieck. The fruit is round and red, about 1½ inch in diameter, with a long stalk like a Cherry. *H. Clinton-Baker, Bayfordbury, Herts.*

DIMORPHOTHECA AURANTIACA.—History repeats itself, for in Curtis's *Botanical Magazine*, t. 403, this plant was figured under the name of *Calendula Tragus*, and it is there stated that it was first introduced by Mr. Masson in 1774. Later on in the *Bot. Mag.*, t. 1961, another form with white flowers was figured as *Calendula Tragus*, B., and by this the writer meant that it was a second form of that plant. The white flowered plant was really *Dimorphotheca Tragus*. A third one was described with the rays orange-coloured on both surfaces, and the writer took it for granted that this was the *Calendula flaccida* of Ventenat, and he was right, but many of the old species of *Calendula* have now been removed to *Dimorphotheca*, because the fruits are of two or more forms, as implied by the name, and the *Calendula flaccida*, Ventenat, is now *Dimorphotheca aurantiaca*, De Candolle. This is the plant that was reintroduced by Messrs. Barr & Sons in 1905. In its native home,

Namaqualand, in South Africa, it forms a shrubby plant, with branches 12 inches to 15 inches long, with large erect heads of bright orange-coloured rays and a black disc. In the early days of its introduction it was readily propagated by means of cuttings, and grown as a greenhouse perennial. Such being the case, it might be raised in quantity for planting out in summer in beds of light soil and sunny situations, such as most South African plants like. The past summer was too wet and sunless for this plant to succeed well. *J. F.*

THE NATIONAL VEGETABLE SOCIETY AND THE ROYAL HORTICULTURAL SOCIETY.—Late on Tuesday last, after attending a business meeting of the National Vegetable Society's Committee, I learned that it is the intention of the Council of the R.H.S. to hold a vegetable exhibition at Vincent Square next autumn. Having regard to the comparative indifference with which vegetables have been treated by the Council as competitive subjects (for the small competitions of the present year have brought very few entries), the announcement will cause surprise to many. There will surely be comment on the Council's action, seeing that the National Vegetable Society has recently applied for the use of the Horticultural Hall in September next for a great national vegetable exhibition, and the request has been granted. Prior to the intimation that the Vegetable Society would hold a show, no reference to the R.H.S. arranging such a show had been made. It is difficult to avoid the conclusion that it is a case of stealing clothes. Had the R.H.S. shown that interest in vegetable exhibitions it seems now so anxious



FIG. 132.—THE GARDENERS' DOTHY, BOWOOD.

to evince, no other proposal to hold exhibitions in London would have been made. Obviously, two shows cannot be held next September in the same place. Had the Council (having knowledge of the intentions of the Vegetable Society to hold an exhibition) approached this latter body and intimated its intention earlier, a great deal of hard work might have been saved. Those growers who have been organising the proposed exhibition have been actuated by the best motives. They have realised the enormous value of vegetables as food, and desired to popularise them for such purpose in a way that no other society has striven to accomplish. No body of men ever merited the confidence and support of their fellows more than does the committee of the Society. Already many valuable prizes have been offered to the committee. Assuming, therefore, that, owing to the proposed action of the R.H.S., the National Society's exhibition falls through, these will be lost. *A Member of Both Societies, Oct. 20.*

NICOTIANA SANDERA AS A HARDY ANNUAL.—Until the present year I have treated this plant as a half-hardy annual, raising the seedlings under glass in the spring under cool conditions, and gradually hardening them for planting out in May. But, having observed that self-seeded plants grew and bloomed well, I determined, as an experiment, to treat them as hardy annuals. Accordingly, a dry south border, which has a retaining wall, was prepared for them. The seed was sown in October an inch deep in rows, and covered with fine soil. The border was left in this condition until sharp frosts occurred, when a thick covering of straw was placed on the top, the straw taken from the Strawberry

beds being used for the purpose. When the seedlings appeared, the straw was removed, and when large enough the plants were thinned so that the plants were 2 feet apart. By treating them thus they came into bloom about the same time as those which I have previously sown under glass in spring. But they were more stocky, and had a better constitution. These plants are blooming profusely at the present time (October 11), and have every appearance of continuing to do so until destroyed by frost. Should the coming winter prove milder than that experienced last year (which was rather severe here), the plants raised out-of-doors may commence blooming even earlier than those raised under glass in spring. *Thomas Francis, Wednesday, Staffs.*

BOWOOD.

(See figs. 130, 132 and 133, and Supplementary Illustration.)

Bowood, the seat of the Marquess of Lansdowne, lies on the Calne branch of the Great Western Railway from Chippenham, but the visitor should alight at the little station of Black Dog, which takes its name from an inn that used to exist there. Bowood was purchased in 1754 by John Earl of Shelburne, whose son William became the first Marquess of Lansdowne, the present owner being the fifth marquess. The mansion, one of the private treasure houses of the country, is rich in paintings and other works of art by the great masters. The original house was a plain structure, but many additions and improvements have transformed it into the imposing mansion represented in the Supplementary Illustration. The buildings on the left, which dominate the garden front, although relatively modern, form one of the most interesting features of the place. They are almost a replica of the villa which overlooked the Adriatic Sea at Spalatro, Italy, built or used by the Roman Emperor Diocletian. They are arranged in two hollow squares, separated by a chapel. Almost the whole of the south front of this villa is formed of an orangery, the remaining part being the library. Between the library and the original house are the drawing-room and a gallery which connect the old and new buildings.

The most important gardening features at Bowood are the two terraces, the upper of which is shown in fig. 130, and the lower one in the Supplementary Illustration. The lower terrace has eight rectangular lawns, and on each lawn are flower-beds, some of which are formed in the turf and others enclosed with stone, the centre being planted with a Standard Rose. Each design includes a pair of fastigate Yews, there being sixteen in all.

The low wall which divides the upper from the lower terrace is covered with Roses, Magnolias, *Viburnum macrocephalum*, *Loniceras*, and other suitable plants. The upper terrace, known as the Italian garden, is laid out with two bold designs, each with a marble fountain as a centre-piece, about which four Irish Yews are grouped. The beds are planted in summer-time with *Pelargoniums*, *Begonias*, and *Verbenas*, edged with *Lobelia*, *Iresine*, and *Pyrethrum*. The view from the upper terrace is over a wide sweep of the park with the broad lake, and, in the distance, the Cherhill Downs. In order to provide glimpses of the park and the distant country, vistas have been opened up in appropriate places, and one of these affords a delightful glimpse of a rustic building used as a boathouse on the borders of the lake. Herons frequent this water, and they build and breed in the trees near its margin, the heronry being one of the finest in the country. A good view of the lake is obtained from the stone steps, on the side of the old mansion opposite the terrace (see Supplementary Illustration).

Extending some distance from the back of the "old-house" is a broad plateau with scroll

beds in the turf, and a large tree of Ayrshire Rose in the centre of each bed. Looking at the mansion from this spot, the walls, almost to the top, are covered with large specimens of *Vitis* (*Ampelopsis*) *inconstans*, the autumn colours of which are magnificent. On the walls also are many large plants of *Vitis* *Coignetiae*. The walls of the library and orangery are furnished with a variety of climbers, including *Lonicera* *Halleana* (in flower), *L. flava*, *Escallonia* *langleyensis*, *E. exoniensis*, *E. angustifolia*, *Vitis* *Coignetiae*, *V. inconstans*, and *Roses*. In the orangery are several old Orange trees, which have been cut back to the main stems, and are sending forth strong shoots, and promise to develop again into good specimens. Passing through the orangery, the first of the two courtyards is reached, and in this there is a remarkable plant of *Vitis inconstans*, the spread of branches on two walls of the

for growing Melons, Tomatos, and Cucumbers in the summer season, and for housing bedding plants during the winter. One of these pits is planted with Violets of the varieties Princess of Wales and Cyclops; others contain Carnations, *Streptocarpuses*, &c. There are several small plant houses, and, in the centre, a larger greenhouse. Some of the plants contained in these structures were *Clerodendron fallax*, *Cantua dependens*, *Cypripedium insigne*, of which there were several excellent plants in flower, *Plumbago rosea*, *Gloriosa superba*, *Chironia exifera*, *Calanthe Veitchii*, *Euphorbia pulcherrima*, *Bouvardias* in variety, seedling *Gesneras* with a profusion of flowers, and *Jacobinias*. Two of these houses were filled with Carnations, one wholly with the variety Winter Cheer. Another was filled with stove plants, including *Codæums*, *Colens*, *Dracænas*, *Ruellia macrantha*, *Begonias*, and other plants needing a warm tem-

The pleasure grounds and flower gardens embrace about 70 acres. They were laid out by "Capability" Brown. But many alterations have been carried out by the present owner with the aid of his gardener, Mr. George Brown, who has been at Bowood upwards of 30 years. Flowering shrubs have been planted in recent years in great numbers, and improvements carried out in other directions. To the tree lover the pinetum at Bowood is especially interesting. Some of the more remarkable Conifers, with their dimensions, are as follow:—*Pinus insignis*, height 75 feet, girth 15 feet; *P. Lambertiana*, 74 feet, 7 feet; *Abies Smithiana*, 87 feet, 7 feet 6 inches; *A. sitchensis*, 75 feet, 10 feet 6 inches; *A. excelsa*, 124 feet, 10 feet 6 inches; *Pseudotsuga Douglasii*, 105 feet, 11 feet; *Taxodium sempervirens*, 70 feet, 15 feet; *Sequoia* (*Wellingtonia*) *gigantea*, 85 feet, spread of branches 15 feet 6 inches; *Thuja gigantea*, 70



FIG. 133.—ENCLOSED GARDEN AT BOWOOD.

[Photograph by H. N. King.]

rectangle measuring 144 feet. There are also several large plants of *Vitis* *Coignetiae* which have been raised at Bowood from seed.

The kitchen gardens include about five acres, divided by high walls into four portions. A very fine floral effect is obtained in the kitchen garden by broad flower-borders on either side of the main pathway. Many of the plants were still beautiful a fortnight ago. On the walls around this garden are trained a great variety of fruits, and even the Fig gives crops of good fruit in favourable seasons.

Many of the older Apple trees in the kitchen garden were grubbed up a year or two ago and replaced by young trees, which are growing with a freedom that betokens a favourable and rich soil. In one of the divisions a range of glass-houses has been erected, from designs by Mr. Brown, the gardener. There are six pits, each divided into two portions. These are employed

perature, the sides of the staging being draped with *Lotus peliorhynchus*. The largest structure was filled with *Chrysanthemums*, which were just coming into flower, the side stagings being furnished with varieties of *Zonal Pelargoniums*. But the prettiest of all was a house of *Begonias Gloire de Lorraine* and *Turnford Hall*, the plants being admirable specimens and covered with their pretty rose-coloured and white flowers.

There is also a range of houses used as vineries and Peach and Fig houses. This range measures 160 feet, and is divided into five compartments. Two of the vineries have been newly planted, one with *Black Hamburg* and the other with *Muscat of Alexandria*. A third vinery is planted with *Lady Downe's*. Close to the glass-houses are the potting sheds, fruit room, and other garden structures, among which is the bothy (see fig. 132), a new building, containing every convenience for the young gardeners.

feet; *Cedrus libani*, 98 feet; *C. atlantica glauca*, 80 feet; and *Abies grandis*, 80 feet.

There are large Beeches and Elms in the pleasure grounds which are supposed to be remnants of the old forest of which Bowood once formed a part. We noticed a remarkable specimen of the *Lucumbe Oak*, 90 feet in height, and many noble examples of the *Tulip tree*, *Liriodendron tulipifera*, all in their full autumn glory. The enclosed garden shown in fig. 133 is known as *Her Ladyship's garden*, and is very pretty with its flower-beds and plant-clothed walls.

The lake has been formed by damming a stream, the overflow, tumbling over precipitous rocks, forming a charming cascade. The banks of the stream and lake are planted with *Hypericum calycinum*, and with shrubs, including many choice varieties of *Rhododendron*. In the dell near by Ferns thrive in great luxuriance.

Carnation May Day.—This magnificent, rosy-pink tree Carnation is the best of its type we have seen. The flowers, of excellent form, have large, unfringed petals, and the colour is very pleasing. Shown by Messrs. J. PEED & SONS, Messrs. BATH, LTD., and Messrs. STUART LOW & Co.

Chrysanthemum Altrinchan Yellow.—A large, single-flowered variety, of rich yellow colour. The individual flower-heads are 4 inches across.

C. Mrs. R. Luxford.—A purplish-red Japanese variety, of moderate size. The two varieties already mentioned were shown by Messrs. WELLS & Co., Merstham.

C. Mrs. Thornton.—A large Japanese flower, showing considerable refinement. The florets

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, W. Boxall, R. G. Thwaites, J. F. Alcock, W. Cobb, A. A. McBean, J. Cypher, W. H. Hatcher, A. Dye, C. H. Curtis, H. Ballantine, Gurney Wilson, W. H. White, W. Bolton, F. J. Hanbury, C. J. Lucas, and Sir Jeremiah Colman, Bart.

One of the best Orchid shows for a considerable time past was made at this meeting. The fine group for which Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), was awarded the Gold Medal, was the best display of hybrid Cattleyas ever staged. It comprised about 150 plants of Cattleyas, bear-

aurea and *C. labiata*, the parents of *C. Fabia*, including *C. labiata* G. G. Whitelegge, with a spike of four, fine, white flowers with richly-coloured lip. Other Cattleyas noted were several good *C. Mantinii*, *C. fulvescens* Westonbirt variety (F.C.C., 1907), *C. Hardyana*, and *C. Iris*, *C. Dusseldorfei* Undine, of which three plants were staged. Among the *Lælio-Cattleyas* were two very fine forms of the Westonbirt strain of L.-C. Berthe Fournier, the var. *tigrina* already certificated being very distinct; L.-C. Ophir, L.-C. Pactolus, L.-C. Pizarro, L.-C. Ortrude (anceps x aurea), L.-C. Gwennie, L.-C. luminosa, and L.-C. Priam, a distinct and pleasing hybrid of *C. Harrisoniana* and L.-C. *callistoglossa*. The Brasso-Cattleyas were represented by B.-C. Madama



FIG. 134.—*COLUMNNEA MAGNIFICA*: FLOWERS FLAME-COLOURED.
(Obtained R.H.S. Award of Merit on Tuesday last.)

are rather narrow, white, or bearing a cream shade; the effect is good. Shown by Mr. H. PERKINS, Greenlands Gardens, Henley-on-Thames.

Columnnea magnifica.—Sir TREVON LAWRENCE, Bart., exhibited a plant of this showy, Gesneraceous species. It appeared to excite considerable interest, and we therefore reproduce our published figure of a specimen which bloomed in Mr. Gumbleton's collection. The plant succeeds in a cool greenhouse, and produces its bright, flame-coloured flowers very freely. A full description of the species will be found in *Gardeners' Chronicle*, February 1, 1908.

ing together 175 spikes, with an aggregate of about 600 flowers, the specimens representing the highest state of perfection both with respect to the varieties shown and to the cultural skill bestowed upon them. Cattleya hybrids and *Lælio-Cattleyas* raised at Westonbirt formed the main feature, the gorgeously-coloured forms of *C. Fabia* (*labiata* x *aurea*), of which 60 plants, with an aggregate of about 300 flowers, were staged, in themselves constituting a remarkable exhibit. All were of the highest order of merit, the best noted being *Sunset*, *flammea*, *fulvescens*, and *Westonbirt* variety. With them were several plants of *C. Dowiana*

Hyc, B.-C. *Mrs. J. Lecann*, B.-C. *Digbyano-Warszewiczii*, *Brasso-Lælio-Cattleya Rowena* (L.-C. *Doris* x B. *Digbyana*), a pleasing, yellow-tinted hybrid, and B.-C. *Siren* (B. *Digbyana* x C. *Skinneri*), a very pretty rose flower, and one of the few really satisfactory hybrids of *C. Skinneri*. The *Cypripediums* in the group were six plants of the delicate greenish-yellow *C. Rossettii*, *C. Leeanum Corona*, very fine, *C. L. Staffordianum*, *C. Niobe* Westonbirt variety, *C. Leander*, *C. Hitchinsiae* Holford's variety, *C. Chas. Rickman magnificentum*, *C. Charlesianum superbum* with five flowers, *C. insignis Sanderæ*, *C. triumphans*, *C. Hera Euryades*,

several good *C. Fairrieannum*, *C. vexillarum* with three flowers, and the new *C. Beacon magnificum* with four flowers (see Awards). Bright colour in the front of the group was given by pretty dwarf plants of *Sophro-Lælio-Cattleya Medea superba*, *S.-L.-C. Dana*, *Sophro-Cattleya saxa* and others. Specially fine species were represented by six, finely-flowered plants of the large, white *Dendrobium formosum giganteum*, the white *Dendrobium Phalenopsis hololeucum*, and six good spikes of *Phalenopsis amabilis Rimstadiana*.

ERNEST R. ASHTON, Esq., Broadlands, Camden Park, Tanbridge Wells (gr. Mr. Wright), was awarded a Silver-gilt Flora Medal for a very pretty group of showy things, comprising *Cattleya Bowringiana* with seven spikes, and other smaller specimens of it; good *C. Dowiana aurea*, *C. Mastersonia*, *C. Piltiana*, *C. Fabia*, *Lælio-Cattleya Lady Rothschild* with six flowers; *L.-C. luminosa* and other pretty hybrid *Cattleyas* and *Lælio-Cattleyas*; *Brasso-Lælia Mrs. M. Gratrix*, good *Cattleya Mantinii* and *C. Portia*; *Vanda cœrulea*, *Epidendrum vitellinum*, some well-flowered *Lælia pumila*; *Odontoglossum Lambeauanum* and other *Odontoglossums*, including some spotted *O. crispum*. Also prominent at the back of the group were the graceful sprays of yellow *Oncidium varicosum*; the white and rose-coloured *Dendrobium Phalenopsis*, and a number of interesting smaller species.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver-gilt Flora Medal for an excellent group of well-grown plants, including many rare varieties. Among them were good forms of *Cattleya labiata*, the white varieties being represented by *C. I. Amesiana*, *C. I. cornlea*, and *C. I. Goodsonia*, a very fine white flower with a veined blotch of violet-purple on the lip. Some excellent specimens of *Cattleya Bowringiana* and the hybrids of it, *C. Mantinii nobilior* and the lighter *C. Brownie* being specially fine; also *C. Alicia*, a very remarkable flower with a showy ruby-crimson lip; *Odontoglossum eximium* and other hybrid *Odontoglossums*. Other plants included *Sophro-Lælio-Cattleya Marathon*, with a very distinctly coloured flower; a scarlet *Odontodia*; a selection of good *Cypripediums*, *Oncidium*, and *Lycastes*.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for an attractive group, in which the most beautiful object was their new *Cypripedium Elatior* var. *Rex* (see Awards). The group was principally composed of good forms of *Cattleya labiata*, *C. Bowringiana*, *C. Fabia*, *C. porphyrophlebia*, *Brasso-Cattleya Digbyano-Warszewiczii*, *Lælia pumila*, *Oncidium varicosum*, and *Cypripediums*.

Messrs. SANDER & SONS, St. Albans, secured a Silver Flora Medal for a representative group of the Orchids of the season, the forms of *Cattleya labiata* having among them the variety *Ruby*, an intensely dark form without the usual light-yellow disc to the lip. *Cattleya Klondyke* (*Harrisoniana* × *Marriottiana*) bore a spike of several, creamy-yellow flowers tinged with rose and with a prominent Buttercup-yellow lip. *C. Empress Frederick* var. *Sanderæ* had a fine, white flower with yellow disc and rose marking on the lip. Others noted included a distinct light form of *C. Hardyana*, *Vanda cœrulea*, *Cypripedium J. Wilson* Potter, and other *Cypripediums*, *Brasso-Cattleya Mad. Chas. Maron*, *Lycaste macrophylla*, *Cattleya maxima*, and *Cirrhopetalum refractum*.

Mr. E. V. LOW, Orchard Nursery, Vale Bridge, Haywards Heath, was awarded a Silver Flora Medal for a group of white varieties of *Cattleya labiata*, which included *C. I. The King*, *C. I. Purity* (a very fine, clear white), *C. I. Reedleyensis*, *C. I. R. I. Measnes*, *C. I. G. G. Whitelegge*, *C. I. Amesiana*, and *C. I. Mrs. E. V. Low* (a fine white variety with clear light-pink flush on the lip). Mr. Low also showed *Cypripedium Gaston Bultel* and several others.

Messrs. J. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for a good group, the centre of which consisted of hybrid *Lælio-Cattleyas*, *Brasso-Cattleyas*, and *Cattleyas*, including good dark *C. Fabia*. Among the *Cypripediums* were *C. Minos Veitch's* variety, some fine forms of *C. insigne*, including the yellow variety *Sanderæ*, *C. Maudie*, *C. Fairrieannum*, *C. Niobe superbum*, and others. Effectively arranged with these were forms of *Dendrobium Phalenopsis*, *Oncidium varicosum*, *Phaio-Cymbidium Chardwarensis*, &c.

Messrs. CHARLESWORTH & Co., Haywards Heath, received a Silver Banksian Medal for an interesting group in which were a new *Miltoniodes* from a cross between *Cochlioda Noëziana* and *Miltonia Schroderiana*, with narrow reddish sepals and petals; a fine scarlet *Sophro-Cattleya Doris*, the beautiful *Odontoglossum ardentissimum xanthotes*, and other hybrid *Odontoglossums*; *Cattleya Fabia*, *C. Rhoda*, *C. Lord Rothschild*, a very handsome blotched *O. crispum* seedling; the true *Cypripedium purpuratum*, and *Odontodia Bradshawia*.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, staged an effective group, for which a Silver Banksian Medal was awarded. Among other interesting species noted were *Cirrhopetalum appendiculatum*, with seven of its singular flowers, *C. refractum*, *Bulbophyllum Dayanum*, *E. Godseffianum*, *Grohya galeata*, *Cycnoches chlorochilon*, *Miltonia Clowesii*; and, among the hybrids, *Cattleya Maronii*, *Cypripedium Rossettii*, and other *Cypripediums*.

Messrs. J. & A. A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a select group, at the back of which were several grand specimens of their fine, dark, rose-purple type of *Cattleya Bowringiana*. With them were *Cattleya Portia Perfection* (*labiata* × *Bowringiana*), a handsome rose-purple flower nearly as large as *C. labiata* and with a white base to the lip.

The Duke of MARLBOROUGH, Blenheim, Woodstock (gr. Mr. Hunter), showed *Cattleya Fabia*, Blenheim variety, a white form with finely coloured lip, and another light variety.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House (gr. Mr. Hudson), sent *Cattleya Armstrongia superba*, a very handsome rose-coloured flower with yellow disc to the lip.

Sir JOHN EDWARDS-MOSS, Roby Hall, Torquay, sent a flower of a white *Cattleya* raised between *Schröderæ* and *Harrisoniana*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent four white forms of *Cattleya labiata*, *C. I. Lady Leese* being a fine pure white flower with a large violet blotch on the lip margined with white; *C. I. Her Majesty*, *C. I. The Empress*, and *C. I. Miss Ethel Harting* being all pure white with a pale pink tint on the lip.

Monsieur MAURICE MERTENS, Ghent, showed several hybrid *Odontoglossums*.

J. FORSTER ALCOCK, Esq., Northchurch, showed a hybrid *Cypripedium* between *Harrisonianum superbum* and *insigne Sanderæ*, which was very near to the former parent, whilst others of the same origin are said to be nearer *C. insigne Sanderæ*.

AWARDS.

AWARDS OF MERIT.

Cypripedium Beacon magnificum (*J. Hovey* × *nitens-Lecanum*), from Lieut. Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A very fine flower, somewhat resembling a good form of *C. Charlesianum*. The ground colour is pale greenish-yellow, slightly tinged with pale purple; the base of the dorsal sepal is emerald green, the upper half white, the lower with brownish-purple spots.

Cypripedium Elatior var. *Rex* (*Lecanum* × *Baron Schröder*), from Messrs. JAS. VEITCH & SONS.—A superb hybrid, with some resemblance to the fine *C. Thalia* Mrs. Francis Wellesley in its perfect form and fine substance. The broad dorsal sepal is pure white, with an emerald green base, the back being heavily tinged with purple and the surface bearing dotted claret-purple lines. The lower sepals are broad and circular, whitish, with a few purple lines; the petals are broad, primrose-yellow, tinged and spotted with purple, the lip being similarly coloured.

CULTURAL COMMENTATION

To Major G. C. ROBERTSON, Widmerspool, Nottingham (gr. Mr. F. Wotton), for a very fine plant of *Cymbidium Gammieanum* with five spikes.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the chair), and Messrs. J. Cheal, C. G. A. Nix, P. D. Tuckett, E. Beckett, H. Parr, A. R. Allan, H. Markham, G. Hobday, J. Jaques, W. Crump, C. Foster, W. Pope, G. Wythes, G. Woodward, G. Reynolds, A. Dean, G. Kelf, H. S. Rivers, J. Willard, and J. Davis.

Mr. R. FENN, Sulhampstead, the veteran Potato raiser, sent several seedling varieties of

this vegetable. They are to be grown under trial in the Society's gardens at Wisley next year.

Mr. W. POPE, on behalf of Mr. Charles Ross, sent from Welford Park, Newbury, two seedling Apples, one named Charles Eyre, a fine, conical, green fruit, and the other Double X, a dessert variety of handsome appearance. The Committee expressed the desire to see the fruits again next year.

A very handsome Pear named Roosevelt was shown by Mr. G. PINE, Topsham, who also exhibited a clear, conical-shaped Apple named Denver Beauty. Both the fruits were, presumably, of American origin. Various other Apples were sent, but no award was made.

Mr. W. KNIGHT, Hailsham, Sussex, sent fruiting canes and picked fruit of a hybrid Raspberry named Hailsbanbury.

Messrs. MASSEY & SONS sent plants in pots of their fine Parsley Dwarf Perfection. This variety received an Award of Merit at Wisley last year.

M. DRUMMOND, Esq., Welwyn, Herts. (gr. Mr. G. Kelf), staged a collection of about 70 dishes of Apples and Pears. Of the former, the best samples were Peasgood's Nonesuch, Striped Beefing, The Queen, Annie Elisabeth, Fearn's Pippin, Jas. Grieve, Lady Sudeley, Wyken Pippin, and Blenheim Pippin. There were also good examples of the following Pears:—Duron-deau, Louise Bonne of Jersey, Pitmaston Duchess, Marie Louise, Doyenné du Comice, Beurré Diel and Ferelle. (Silver Banksian Medal.)

From the HORTICULTURAL COLLEGE, Swanley, Kent, was exhibited a table of capital fruit, chiefly Apples, of which excellent samples were seen in fruits of Warner's King, Peasgood's Nonesuch, Bismarck, Golden Noble, Catshead, Alfriston, Cox's Orange Pippin, King of the Pippins, Blenheim Pippin, and Court of Wick. The Pears included Louise Bonne of Jersey, Pitmaston Duchess, Beurré Hardy, and Marie Louise d'Uccle. (Silver Knightian Medal.)

W. WHITLEY, Esq., Torquay, an amateur grower, set up a very large collection of Apples and Pears, the fruits being rather small—so favoured a district. The best Apples were (culinary) Crimson Bramley, Bramley's Seedling, Stone's Pippin, Peasgood's Nonesuch, Emperor Alexander, Royal Jubilee, Wolf River, Mère de Menage, Annie Elisabeth, Stamford Pippin, Sanspareil, and Golden Nugget of cooking varieties, and (dessert) Ben's Red, Mother Apple, Winter Pearmain, King of Tompkins County, Honblon, Rival, Rougemont, Charles Ross, and Adams's Pearmain. The collection also included Monarch and Cox's Emperor Plums. (Silver Knightian Medal.)

A. E. HUMPHREYS, Esq., Owenluyr, Montgomery, staged a dozen dishes of Apples, the samples being very good for the district. (Silver Banksian Medal.)

Messrs. LAXTON BROS., Bedford, filled a table some 50 feet long with hardy fruits and Grapes, thinly but neatly displayed. There were some 70 dishes of Pears and Apples, with some half dozen bunches of Black Alicante Grapes. The best Apples were (cooking) Peasgood's Nonesuch, Lord Derby, Cellini, Hornead Pearmain, The Queen, Bismarck, Warner's King, Newton Wonder, Emperor Alexander, Golden Spire, and Pott's Seedling, and (dessert) Gascoyne's Scarlet, Wealthy, Blenheim Pippin, Allington Pippin, Cox's Orange Pippin, King of the Pippins, Winter Quarrenden, Worcester Pearmain, and Charles Ross. Good Pears were Beurré Clairgean, Marie Louise d'Uccle, Emile d'Heyst, Conference, and Beurré Bachelier. The method of staging was especially pleasing, the exhibit being very attractive. (Silver Knightian Medal.)

Messrs. W. SEABROOK & SONS, Chelmsford, filled a long table with fine samples of hardy fruits. The exhibit included about 100 dishes of Apples and Pears. Of the former we noticed good dishes of Newton Wonder, Warner's King, Ecklinville Seedling, Beauty's Seedling, Lord Derby, Royal Jubilee, Beauty of Kent, Stirling Castle, Bismarck, New Hawthornden, Peasgood's Nonesuch, Allington Pippin, Blenheim Pippin, Cox's Orange Pippin, Lord Burghley, Claygate Pearmain, Worcester Pearmain, Jas. Grieve, Charles Ross and American Mother. The best Pears were Beurré Superfin, Beurré Diel, Le Lectier, Charles Ernest, Conference, Durondeau, Beurré Bose, and Mme. Treyve. (Silver-gilt Banksian Medal.)

Messrs. AMROSE PALMER & Co., Grosvenor Square, displayed several dishes of Apples and

DEBATING SOCIETIES.

MARKETS.

ROYDON & DISTRICT HORTICULTURAL.

One of the principal aims of this society is to cultivate an interest in the minds of its younger members...

WARGRAVE GARDENERS.

At the last meeting of the above association Mr. J. A. Hall, Gardener at Ship-lake Court, read a paper on "Temperature and Ventilation in Connection with Fruit and Plant Culture."

BULLEIGH SALTERN HORTICULTURAL.

On the 20th inst. Mr. A. Hope, Messrs. R. Veitch & Son's Nursery, Exeter, gave a lecture on "Bulb Culture in Pots and in the Open."

FARNHAM & DISTRICT HORTICULTURAL.

A lecture, illustrated by lantern slides, on "Vegetables—Old and New," was delivered before the members of this society on October 25, by Mr. W. F. Giles, of Messrs. Sutton & Sons Nursery, Reading.

GARDENING APPOINTMENTS.

Mr. HENRY SMITH, for 24 years Gardener and 3 years previously as Foreman to the late CHARLES EVAN-THOMAS, Esq., The Gnoil, Neath, Glamorgan, as Gardener to HERBERT ECCLES, Esq., at the same place.

Mr. F. H. MANNERS, as Gardener to E. M. EVERSFIELD, Esq., Denne Park, Horsham, in succession to Mr. H. HARRIS, retired.

Mr. DUNCAN BARBOUR, for the past 4 1/2 years Gardener to F. D. S. SANDEMAN, Esq., Benchie, Broughty Ferry, Forfarshire, as Gardener to D. R. GARDNER, Esq., Tillicoultry House, Clackmannanshire.

Mr. C. Y. RICHARDS, for 4 years and 8 months Pleasure Ground Foreman and decorator at Hoar Cross, Burton-on-Trent, as Gardener to the Rev. REGINALD FAWKES, Parkstone House, Poole, Dorset.

Mr. WILLIAM FREDERICK MATTHEWS, for the past 9 years Gardener at Hill Court, Edenbridge, Kent, as Gardener to GEORGE ING, Esq., The Gardens, Lewins, Edenbridge, Kent. (Thanks for 1s. received for R.G.O.F. Box.)

Mr. S. W. ALEXANDER, previously Foreman at Paddockhurst, as Gardener to G. B. YATE, Esq., Bere Court, Pangbourne, Berks. (Thanks for 2s. 6d. received for R.G.O.F. Box.)

Mr. MARTIN RAWSON, for the past 2 years Gardener to F. S. BRICE, Esq., J.P., Middlemeade, Stoughton Drive, Leicester, as Gardener to H. A. FOSTER, Esq., Littlemore, Queensbury, Bradford, Yorkshire.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending October 27.

The first keen frost of the present autumn.—The early part of the week proved warm, but since then both the days and nights have been cold for the time of year. On the coldest day the temperature in the thermometer screen did not rise above 45°, which is 9° lower than the average; and on the two cold nights the exposed thermometer registered respectively 6° and 8° of frost—the latter being the lowest reading registered as yet by that thermometer this autumn.

COVENT GARDEN, October 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.

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Asters, Azaleas, Bouvardia, Carnations, American (var.), and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum cuneatum, Asparagus plumosus, Berberis, Croton leaves, Cycas leaves, Ferns, and others.

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

Table listing various plants in pots and their prices, including Anemone, Aralia Sieboldii, Araucaria excelsa, Aspidistras, Asparagus plumosus, Asters, Bouvardias, Chrysanthemums, Cinerarias, Clematis, Cocos Weddelliana, Crotons, Cyclamen, and others.

Pears, including, of the former, Bismarck, Newton Wonder, Chas. Ross, Peasgood's Nonesuch, Jas. Grieve, Blenheim Pippin, and Cox's Orange Pippin. (Silver Banksian Medal.)

The only exhibit of vegetables was one of Onions shown by Messrs. G. MASSEY & SONS, Spalding. The bulbs were evidently cultivated in a field, but they were excellent examples.

COMPETITIVE CLASSES.

These were limited to varieties of Apples and Pears introduced since 1892, but they resulted in quite a small competition. Of 15 classes, seven were open to the trade growers only, but not a single exhibit was staged.

In the class for six dishes of Apples, open to amateurs, W. J. WILLIAMS, Esq., Tring, Herts. (gr. Mr. F. G. Gerrish), was awarded the 1st prize for good samples of Norfolk Beauty, Bramley's Seedling, Charles Ross, Baron Wolsley, Rival, and Christmas Pearmain. Sir MARCUS SAMUEL, Maidstone (gr. Mr. W. H. Bacon), was placed 2nd, his varieties including Byford Wonder, Christmas Pearmain, Rival, Allington Pippin, and Charles Ross. An extra prize was given to Mr. WHITLEY, of Torquay, who, under a misapprehension, had staged dessert varieties only.

In the class for three dishes the only exhibitor was Lord CLINTON, Bicton, Devonshire (gr. Mr. Mayne), a 2nd prize only being awarded. The varieties were Hambling's Seedling, Allington Pippin, and King's Acre Pippin.

In the single-dish class for any cooking Apple, Earl BEAUCHAMP, Madresfield Court, Worcester (gr. Mr. W. Crump), was well 1st with handsome fruits of King Edward VII.; 2nd, Mr. MAYNE, with the same variety.

In the single-dish class for dessert Apples, Mr. BACON was placed 1st, having the variety Charles Ross; 2nd, Mr. CRUMP with the variety W. Crump.

A variety shown as Castle Major was disqualified.

In the class for three dishes of Pears, Lord HILLINGDON, Uxbridge (gr. Mr. A. R. Allan), won the 1st prize, having St Luke, Charles Ernest and Le Lectier. Mr. BACON was 2nd with Directeur Hardy, St. Luke, and Charles Ernest.

In the class for one dish of Pears, Mr. BACON was placed 1st with the variety St. Luke; 2nd, Mr. GERRISH with Princess.

DUTCH BULB-GROWERS'.

The following awards were made at a recent meeting of the Floral Committee of this Society held at Haarlem:—

First-class Certificates to Cactus Dahlia Flora, Brigadier, Debantante.

Award of Merit to Cactus Dahlia Snowstorm.

Obituary.

FREDERICK MEADE.—The following appeared in the obituary columns of The Times of the 21st inst.:—On October 17, at the General Hospital, Birmingham, Frederick Meade, for 34 years gardener and faithful friend in the family of the Rev. B. Jones-Bateman, Sheldon Rectory, Warwickshire.

SCHEDULES RECEIVED.

Bromley Chrysanthemum Society's twenty-eighth annual exhibition, to be held in the Grand Hall, Bromley, on Wednesday and Thursday, November 10, 11. Hon. secretary, Mr. R. S. PATTERSON, The Gardens, Bromley Place.

Royal Botanical and Horticultural Society of Manchester's Chrysanthemum exhibition, to be held at the Botanical Gardens (White City), Manchester, on November 18, 19, 20. Secretary, Mr. P. Weathers, Botanical Gardens, Manchester.

CATALOGUES RECEIVED.

HORACE J. WRIGHT, 82, Daul Road, Wandsworth, London, S.W.—Sweet Peas. WM. WATSON & SONS, LTD., Clontarf Nurseries, Dublin—Fruit Trees, Roses, Shrubs, Forest Trees, &c.

FOREIGN.

WILLY MULLER, Nocera Inferiore, Italy—New and uncommon Plants. SLUIS & GROOT, Enkhuizen, Holland—Vegetable, Flower, and Agricultural Seeds.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples (Nova Scotia), Lemons, Pears, Bananas, and Grapes. Columns include item names and prices in s.d. and s.d.s.d.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Asparagus, Beans, Cabbages, Carrots, and Lettuce. Columns include item names and prices in s.d. and s.d.s.d.

REMARKS.—The best English Apples continue to sell freely. The last consignment of Apples from Nova Scotia were of better quality than previous shipments.

Potatoes.

Table listing potato varieties and their prices, including Bedfords, British Queen, Epicure, and Sharpe's Express. Columns include variety names and prices in s.d. and s.d.s.d.

REMARKS.—The Potato remains about the same as last week. Edward J. Newborn, Covent Garden and St. Pancras, October 27, 1909.

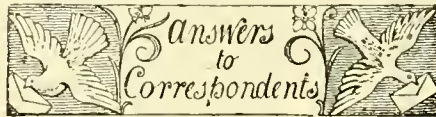
COVENT GARDEN FLOWER MARKET.

The unfavourable weather not only exerts a bad influence on trade, but also checks the development of the plants.

have suffered damage. The splendid exhibits of Begonias from the open ground shown at the R.H.S. meeting on Tuesday, 26th inst., were indicative of the mildness of the season.

CUT FLOWERS.

The recent frosts have spoiled the Dahlias in most districts, and also many other tender flowers in the open. Some varieties of Chrysanthemums have also been damaged.



** The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

BOWLING GREEN: Florist. You have omitted to give your name and address, which is required as a guarantee of good faith.

CHRYSANTHEMUM: T. L. The specimen shows a state of proliferation similar to that known as the "Hen and Chicken" Daisy.

DAFFODIL: Bicolor. The true Daffodil is Narcissus Pseudo-Narcissus. N. poeticus is known as the Poet's Narcissus.

EIGHTEEN FLOWERING SHRUBS FOR A NORTH BORDER: W. J. P. Ribes sanguineum, Daphne Mezereum, Spiraea arifolia, S. Douglasii, S. chamaedrifolia, Berberis Aquifolium, B. Darwinii, Cydonia japonica, Olearia Haastii, Skimmia japonica, Nuttallia cerasiformis, Viburnum Tinus (Laurestinus), Rhododendron molle, R. ponticum, Leycesteria formosa, Philadelphus grandiflorus, Halesia tetraaptera and Lilac (Syringa) alba grandiflora.

FERN MITE: G. O. P. The best plan to eradicate this pest is to dip the leaves in an insecticide. Tobacco water is efficacious, but there is a danger of injuring the plants unless it is used in a very dilute form.

MARIGOLD BLOOMS: S. S. Very few Marigold blooms are sent to Covent Garden Market, and it is now too late to procure them, unless they can be got direct from some of the nurseries who specially cultivate hardy flowering plants.

MUSHROOMS: G. T. The new process of raising Mushrooms to which you refer is described in the Gardeners' Chronicle, January 23, 1909, p. 59. Under this system, minute pieces of tissue are taken from the centre of a Mushroom planted in a suitable bed, and the growth from these utilised as spawn.

NAMES OF FRUITS: T. B. 1, Northern Duple; 2, Washington; 3, Belle de Boskoop;—H. Speight. 1, Bergamotte Esperen; 2, Win-

ter Nelis; 3, French Crab; 4, Mère de Ménage.—Torbon. 1, Cox's Orange Pippin; 2, Gascoyne's Scarlet Seedling.—Llanover. Jean van Geert; 2, decayed; 3, Louise Bonne of Jersey; Apple Warner's King.—J. J. 1, Hornead's Pearmain; 2, Blenheim Pippin; 3, Red Astrachan; 4, Reinette de Canada; 5, Wyken Pippin; 6, Dutch Mignonne.—R. Roberts. Apple Hollandbury; Pear Beurré d'Amanlis.—Selsdon. 1, Green Chisel; 2, Marie Louise d'Uccle; 3, Maréchal de Cour; 4, Duchesse d'Angoulême; 5, Doyenné du Comice; 6 and 8, Marie Louise; 7, Beurré Bosc.—T. H. 1, Gascoyne's Scarlet Seedling; 2, Bietigheimer Red; 3, Pile's Russet; 4, Prince Bismarck; 5, not recognised; 6, Allington Pippin.

NAMES OF PLANTS: J. F. M. 1, Adiantum excisum multifidum; 2, Pteris argyrea; 3, Cyrtomium falcatum; 4, Lastrea lepida; 5, Lygodium scandens; 6, Adiantum affine.—F. T. 1, Oncidium cheiroporum; 2, Bletia hyacinthina; 3, Oncidium Wentworthianum; 4, Odontoglossum gloriosum.—J. G., Sandwich. Metrostideros floribunda (Bottle-brush).—W. P., Stroud.—Maxillaria picta.—F. G. 1, Selaginella viticulosa; 2, S. caesia; 3, S. denticulata; 4, Helxine Soleirolii; 5, Epidendrum fragrans.—T. G. 1, Pteris cretica; 2, Lygodium dichotomum; 3, Asplenium Belangeri; 4, Adiantum Capillus-veneris var. Veitchianum magnificum; 5, Selaginella umbrosa; 6, Pteris cretica albo-lineata.—W. B. 1, Send when in flower; 2, Fittonia argyrea; 3, Peperomia arifolia; 4, Erica persoluta alba; 5, Agathaea cœlestis; 6, Chlorophytum elatum variegatum.—Bryn. 1, Hibiscus Cooperi; 2, Maranta Massangeana; 3, Panicum variegatum; 4, Hibiscus rosa-sinensis; 5, Cœlogyne cristata.—A. W. Gomphocarpus fruticosus.

NURSERY BUSINESS: H. S. S. It is difficult to recommend any particular locality, there being so many good centres in which you might start with every likelihood of finding a ready and remunerative sale for the Tomatos, Chrysanthemums, and Roses you wish to cultivate. Success will depend upon your practical knowledge of plant culture and your energy and capacity for work and general business.

SCOTCH FIR: H. G. There is no disease present on the needles, neither do they suggest injury from a lime-kiln. Examine the root and collar, and if white, the mycelium of a parasitic fungus is present under the bark.

SEQUOIA DISEASED: H. M. The Sequoia is attacked by a fungus—Botrytis Douglasii. Remove the affected shoots and burn them, and spray the tree with sulphide of potassium, at a strength of 1 ounce in 3 gallons of water, commencing in March.

Communications Received.—W. A. C.—A. W. P.—A. D.—J. J. W.—Dr. K., Berlin—J. D. G.—W. W.—W. H. Y.—W. R. D.—Chloris—M. B., Java—Sir F. C. Sir C. D.—P. N.—F. N. G.—H. F.—H. J. G.—H. F.—W. H. L.—E. C. P.—J. F. MacD.—J. W. M. M., Ltd.—Constant Reader—H. G.—F. C. H., Erfurt—J. K. K. & Son—W. J. B.—W. W. P.—R. G. W.—C. R.—W. & Son—W. B.—H. W.—X. Y. Z.—S. W. & Co.—H. W. W.—W. E. R. J.—Nat. Chrys. Soc.—E. C.—P. W.—A. M.—H. G.—S. F. W.—J. H.—H. & S.—H. W.—P. M.

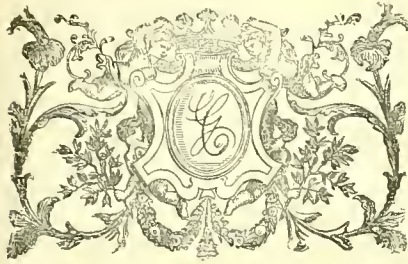


Photographs by H. N. King.

BOWOOD, WILTSHIRE, THE SEAT OF THE MARQUESS OF LANSDOWNE, K.G., P.C.

THE UPPER PICTURE SHOWS THE "ITALIAN" GARDEN AND PART OF THE MANSION.

BELOW IS A VIEW OF THE LAKE FROM THE TERRACE.



THE

Gardeners' Chronicle

No. 1,193.—SATURDAY, November 6, 1909.

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A MARKET FRUIT-GROWER'S YEAR.

October was a month of phenomenal rainfall. In our district of Sussex it fell on 23 days, and the total registered was 7.51 inches, or about three times the average for the month. This is the largest quantity registered at my station for any month in the present century. The nearest approach was 6.72 inches in October, 1903, when rain fell on 30 days, and the next was 5.78 inches on 26 days in October, 1907. In this south-eastern district we had the greatest rainfall that occurred in the country in the three days ending with October 28, or rather at 7 a.m. on the 29th, though it was bad enough in most other localities. For one of these days and for the three together the measurements were records—the first, one of 2.28 inches for the 24 hours ended at 7 a.m. on the 27th, and the second, 3.69 inches, for three days ended at 7 a.m. on the 29th. These quantities, however, were beaten at a few other stations in the south-east of England. Brighton had 2½ inches in 24 hours and 5.14 inches in the three days, while Margate had 5.43 inches, and Ramsgate 5.14 inches in the same three days. The floods which prevailed in low-lying dis-

tricts were the most extensive for some years past.

GALES AND THEIR RESULTS.

There was a great gale from the south-west on October 23, which blew quantities of late Apples and Pears off the trees, and did further damage. The effects, however, were insignificant in comparison with those done by the north-eastern gale of the night of the 28th. It will be noticed that this second gale occurred immediately after the great, three-days' rainfall mentioned above, and this sequence accounts for its astonishing effect now to be reported. In a field of nine acres of Apples, planted partly in the autumn of 1905 and partly in that of 1906, the soil was in a state of fine division at the beginning of October, as left by horse cultivation and hand hoeing. It was full enough of water before the week of the tremendous downpour, but that converted it into a perfect ooze, although the field is drained. Consequently, there was no firmness in the soil to resist the force of the gale, and hundreds of trees were blown partly down, while some were laid flat on the ground. They were staked, but this made only a little difference, as stakes that were half rotten from age were snapped off at their bases, while such as were new were driven through the soft soil with the trees tied to them. In other cases, the ties were burst, and the trees driven down while the stakes remained standing. A great number of the trees had been freshly staked in consequence of the effects of the earlier gale, but this did not save them. The greatest damage was among trees planted three years ago, partly because they are on the north-eastern side of the field, and partly because they had not acquired so good a root-hold as those planted a year earlier. Among those that suffered most were free-growers as Bramley's Seedling, Warner's King, and Gascoyne's Scarlet, splendidly furnished young trees, and densely covered with foliage. They caught the full force of the gale, and hardly one of them, 260 in all, remained upright after the wind subsided. Varieties of less rank top growth, and particularly those that had lost most of their leaves, such as Cox's Orange Pippin, Allington Pippin, Duchess of Oldenberg, and Lane's Prince Albert, suffered comparatively little, though many of them had their stakes snapped off or their ties broken, and a few were blown down. Worcester Pearmain was blown out of position to a considerable extent. All the trees are trained in bush shape on stems about 3 feet high. It must not be supposed that the stakes were little sticks. On the contrary, most of them were cut out of 14 feet Hop poles, and are very stout. In consequence of the two gales, it will be necessary to provide fully a thousand new stakes, and quite half a hundred-weight of stout rope-yarn.

A MONTH'S WORK LOST.

So far as work on the land is concerned, October may be regarded as having been washed clean out of the season. An attempt was made on two of the few fine days to horse-cultivate one fruit plantation, but rain followed immediately, and more harm than good was done. The field is smothered with chickweed and grass, although it has been cultivated several times in two directions, and hand-hoeing has been done twice in the spaces around trees and bushes left by the implement. Another plantation is also covered with

chickweed, which will now have to be left to grow till frost kills it. If cultivation and hand-hoeing had been practicable in October, both fields would have been clean. A plantation of Plums is more like a pasture than cultivated land, although it has been hoed three times by hand at a great expense. Since the middle of August both cultivation and hand-hoeing have been wasted labour, as rain has reset the weeds after each operation.

DAMAGE TO GROWTH BY APHIS.

In pruning young Apple trees, the enormous damage done by the unusually severe attack of the aphis in the past season is distressingly obvious. Many trees have to be cut back severely, to take off the twisted growths due to the attack, and to get down to clean and vigorous wood. These twisted growths are covered with feeble and distorted buds, which would develop into miserable, little fruit buds if left, and the trees would be permanently dwarfed. Lord Grosvenor is one of the worst punished of the varieties, and in consequence of the partiality of the aphis for this Apple, with its great liability to scab, it is not to be recommended for planting. A much finer Apple, Royal Jubilee, is another badly-injured variety, while Warner's King, Worcester Pearmain and Beauty of Bath have suffered much damage. Bramley's Seedling is the most nearly immune of the free-growing varieties, with Duchess of Oldenberg and Early Julyan as fair seconds. Lane's Prince Albert and other feeble growers have suffered only slightly. Cox's Orange Pippin, Allington Pippin and Charles Ross, are among the least liable to serious injury from the aphis of any dessert varieties on my farm, but the two former varieties discount this advantage by their susceptibility to scab.

AN ASTONISHING VERDICT.

In glancing into Lodeman's classical work on *The Spraying of Plants* the other day, I was astounded to read, under the heading of "Aphis," the following remarks:—"They are supposed to cause considerable damage by sucking the juices from the blossoms and young leaves, but the injury done by them has probably been over-estimated. . . . Unless the lice are very abundant, it is not necessary to try to destroy them, for they do not cause any serious damage, and in a short time they naturally disappear." No serious damage indeed! They do more damage among my trees than all other insects together.

PREPARING FOR FRUIT PLANTING.

Fortunately, a field of 6½ acres was mostly ploughed and subsoiled for Apples and Black Currants before the land became waterlogged. The crop of this season was one of second-early Potatoes, cleared off, all but a small corner, by the end of August. The soil was not as dry as could have been desired for the work of ploughing and subsoiling during the latter part of the time, but nearly all of it was done before the heavy rainfall of the latter part of September occurred. Unfortunately, the soil has been run into a compact mass by the enormous rainfall of October, and several dry days will be needed before it can be harrowed and marked out for planting. The prospect of getting the work done in November, the most desirable of all months for planting fruit trees, is not brilliant at present. The leaves have not yet dropped off

the young trees, so a start could not be made at present, even if the land were ready.

DIGGING UP TREES AND BUSHES.

One kind of work that was not stopped by the wet state of the land was that of digging up a number of Damson trees and Gooseberry bushes. Damsons, in my opinion, are not worth growing, as they make only 1s. to 1s. 6d. per half-sieve when there is a fair crop, and they cost at least 6d. to gather. The trees dug up were planted mainly to shelter Apple trees, but are not needed for that purpose now, as an outside row of evergreens and a very high hedge are all that are needed, while the Damsons were shading the Apple trees next to them. The Gooseberry bushes taken up have been ruined by the

NOTICES OF BOOKS.

* FRENCH GARDENING.

A FEW weeks ago (see p. 152) a larger and more detailed treatise on *French Market Gardening*, by Mr. J. Weathers, was reviewed in these columns. Mr. Smith's book, which is the subject of the present notice, runs into about 160 pages and contains 22 full-page photographs of scenes in the "French" garden at Mayland. The author has managed this garden during the two or three years it has been established. With such a means of obtaining valuable information at his disposal, it is somewhat disappointing to find that Mr. Smith has not lifted the veil very much to show how it is possible to secure as good results in England as in France by intensive methods of cultivation. It is true that

Smith tells us that he has secured £216 15s. 9d. from one-third of an acre, £120 17s. 8d. from one-seventh of an acre, £44 12s. 1d. from about one-tenth of an acre, and, in the open air, £14 16s. 1d. from rather more than one-twentieth of an acre. These figures were recently seized upon by one of the daily papers, and quoted to show that it was possible to make as much as £850 per acre by intensive methods of cultivation—and this not in 12 months, but in half that time. The fallacy of quoting returns from small parcels of land, and of then estimating those of larger areas at that rate, is well known to practical growers, but does not appear to be quite so obvious to the novice.

Considering the excellent way in which the garden at Mayland is furnished with all the necessary means of intensive cultivation, it is rather disappointing to find that Radishes and



FIG. 135.—INTERIOR OF FRUIT-ROOM IN DOVER HOUSE GARDENS.

fungus *Botrytis*, and are to be replaced by Black Currants.

CLEARING DRAIN OUTLETS.

A very important work was fortunately done before the flooding rains occurred, namely, the clearing of outlets of drains partially blocked by silt washed up to them or by the scraping of rabbits, rats, or mice. Many a drain has been burst or filled with silt through the neglect of seeing to the outlets regularly. Quite a large number of such drains, put in and neglected by a predecessor, have been discovered since my occupation of the farm. In some cases it has been possible to make them good by opening the outlet ends for two or three rods, and removing the drain pipes. The outlets should be examined twice during the year, and cleared where there is any approach to blocking. *A Market Grower.*

figures and estimates are given showing that the cost of a two-acre garden would run into £1,290 (including £300 for manure) and that about £700 more would be required for working expenses for 18 months, bringing the total up to close on £2,000. Unfortunately, no estimate of receipts is given; but if one may judge from the figures returned for produce sold from the Mayland garden itself between September, 1907, and September, 1908, the outlook is not rosy. During this period the value of the produce sold amounted to £766 4s. 6d., all but about £40 being realised by the sale of Cabbage Lettuces, Cos Lettuces, Carrots, Cauliflowers, and Melons. This left a balance of £51 9s. after the expenses had reached a total of £714 15s. 6d.; but this balance was subject to a rent-charge and depreciation. It may, therefore, be assumed that the profit from the Mayland garden is not yet very considerable. And yet, immediately preceding the general financial statement, Mr.

Cabbage Lettuces were not marketed until March; Cos Lettuces not until April; no Carrots until May; and no Cauliflowers before June. Surely some of these crops could have been ready earlier, and, if so, would have realised better prices.

Short chapters are given on the questions of site, water, manure, frames, lights, cloches, mats, tools, packing and seeds; but cultural details are lacking. Such crops as Lettuces, Cauliflowers and Melons have altogether 12 pages devoted to them, while such highly important crops as Carrots and Radishes appear to have been overlooked, except in the way of odd references.

Owing to the short time at their disposal, their insecurity of tenure, their lack of knowledge in most cases, it is doubtful whether French gardening for allotment holders would prove a success, but Mr. Smith, from the five pages he devotes to this particular point, seems to be sanguine.

The book is well printed, and generally free from mistakes, but it would have been far more useful if it had been provided with an index. *J.*

* *French Gardening*, by Thomas Smith. (London: J. Fels and Utopia Press.) 1909. Price 2s. 6d.

FRUIT-ROOM AT DOVER HOUSE.

NEXT in importance to getting a good fruit harvest is the provision of a store in which the fruit may be preserved in perfect condition for as long a period as possible. The value of a particular fruit usually increases gradually from the moment the harvest is past; therefore, its proper conservation, important as it is from the point of view of maintaining a supply, is also to be recommended as good business practice. Most of our readers know that late Apples may be kept in excellent condition if stored simply on the damp soil with a covering of straw in a thatched hut or outhouse. But this method is not to be recommended for early maturing Apples, much less Pears. For general purposes, a properly-constructed fruit-room is needed in most gardens, it being desirable that most of the fruits shall be directly under observation, in order that any which show signs of decay may be removed, and that varieties which show signs of ripening may be used for consumption in preference to others that are capable of keeping for a longer time.

In figs. 135, 136, and 137 is illustrated a new fruit-room erected in the gardens at Dover House, Roehampton, the residence of Mr. Pierpont Morgan, by Messrs. Mackenzie and Moncur, Ltd., from designs by Mr. J. F. McLeod, gardener at Dover House. The building is 36 feet long, 16 feet wide, and 6 feet 6 inches high at the eaves, the ridge being 13 feet 6 inches from the ground. The structure rises from a low brick wall, 1 foot above the floor level, the walls being set in a foundation of concrete. Above this arise walls of woodwork lined with narrow matchboarding, and, outside, with Norfolk reeds. The roof, also of reeds, is 10 inches in thickness; and the reeds on the walls are 8 inches through.

The thatching is a splendid example of reeding, every reed being selected and laid in its place with extreme care and patience. Ventilators are placed on each side, in the base walls, and there are movable shutters at each gable over the doors, the ventilators in all cases being covered inside with perforated zinc, to exclude wasps and flies. The path around the interior is of gravel, so that moisture arises from the ground naturally and without the obstruction which a concrete floor would offer. Ample shelving is provided around the sides and at the ends, whilst a central table gives accommodation for the display of the finer or more interesting fruits. The windows are screened by heavy shutters, it being well known that light is only needed in a fruit store during occasions when an inspection is made of the fruit. Electric arc lamps are provided for use at these times.

TREES AND SHRUBS.

SCHIZOPHRAGMA.

THERE are two known species of Schizophragma, one from China and Japan and the other from China. Neither is at all common or

ably smaller number of sterile ones, which consist of a single bract only, and not of several bracts as is the case in the allied genus Hydrangea. These bracts are white in colour, 1 to 1½ inch long and an inch or so wide. They form the conspicuous part of the inflorescence, the fertile flowers being cream coloured and not showy.



FIG. 136.

THE FRUIT-ROOM IN DOVER HOUSE GARDENS; EXTERIOR VIEW WITH INSET SHOWING ENTRANCE DOOR.

well known, although the older of the two species was collected 50 years ago. A somewhat similar plant in general habit, *Hydrangea petiolaris*, has been confused with the older species, *S. hydrangeoides*, and what was thought to be the true *Schizophragma* turned out to be the commoner *Hydrangea*. It has, however, existed here and there, and, occasionally, flowering specimens have been recorded. The earliest description of the genus appears in Siebold and Zuccarini's *Flora Japonica*, p. 58, tab. 26, published in 1855. In this *S. hydrangeoides* is described and a good figure of it is given.

Subsequently in 1859 specimens were collected by Wilford in Hakoadi, and in 1862 it was gathered by Oldham in Nagasaki. Although original descriptions recorded it as Japanese only, later explorations have revealed it to be a native of China also. It resembles *Hydrangea petiolaris* by being of climbing or trailing habit and producing roots from the branches, by which it attaches itself to rocks or trees in a similar manner to Ivy. The leaves are large, broadly ovate or almost cordate, coarsely toothed, 5 to 7 inches long and 4 inches or more wide. The flowers are produced in large, terminal corymbs, an indefinite number of fertile flowers being intermixed with a consider-

The second species, *S. integrifolia*, was collected by Dr. A. Henry in Szechuan, and was figured in Hooker's *Icones Plantarum*, t. 1934, in 1890. It was not, however, until after Mr. E. H. Wilson had sent seeds to Messrs. Veitch some 10 years later, that living plants were seen in English gardens. From native specimens it promises to be a more ornamental plant than the older species. It is of similar habit to its relative, with opposite, ovate or ovate-lanceolate leaves, the largest of which are 8 or 9 inches long and 4 inches wide, dark green above, glaucous beneath and, together with the bark, pubescent in the early stages. The margins are sparingly armed with fine teeth. The inflorescences are large and the bracts of the sterile flowers are 3 inches long and 1½ inch wide. As in the other species, the sterile flowers are composed of single, white bracts. A good illustration of it appeared in vol. xxviii. of the *Journal of Royal Horticultural Society*, p. 62, fig. 21. Both species thrive in loamy soil and may be grown against a wall, the bare trunk of a tree, or over the reversed butt of a tree. Both species are in cultivation at Kew, and are, apparently, perfectly hardy. W. D.

ESCALLONIAS.

THESE excellent flowering shrubs thrive best in the warmer counties, and especially in situations near to the southern coast. The varieties include white, rose, and pink flowers, which are produced in abundance throughout the greater part of the summer and early autumn months. *Escallonia macrantha* is the best known variety, and forms immense bushes throughout Devonshire and Cornwall. It makes an excellent hedge plant, and may be subjected to annual clipping as ordinary Privet, but even in such warm parts as Devonshire, frosts often damage the foliage. There is a white-flowered variety and another

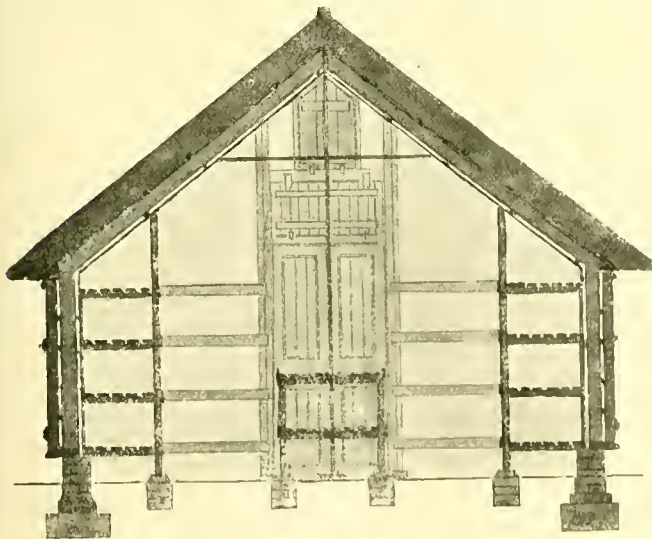


FIG. 137.—SECTIONAL ELEVATION OF FRUIT-ROOM.

with pink flowers, the latter named *Ingramii*. *E. illinita* is a good, white-flowered variety which branches freely. *E. rubra* has beautiful, red flowers, while *E. philippiana* bears an abundance of tiny, white flowers amongst its small leaves, and is well suited for training against a wall. *E. organensis* has deep rose-coloured flowers and branches of a reddish-brown. *E. montevidensis* is an excellent, white-flowering variety, somewhat resembling *Choisya ternata*, the Mexican Orange Blossom. It is usually in bloom about July, but a plant here is now (October 16) in full flower on a south-east wall. There are several other varieties, but those enumerated comprise the best for garden purposes, with the exception of *E. langleyensis*, which has slender, elongated branches thickly studded with side shoots, each carrying some half-dozen, bright, rose-carmine flowers. Escallonias are easily increased by cuttings of half-ripened wood inserted at this time of the year in sandy loam and covered with a handlight. *J. Mayne, Bilton.*

FLORISTS' FLOWERS.

THE DAHLIA.

THE need of stout flower-stems has long been insisted upon in the case of the Cactus Dahlia, and the present season has witnessed a definite advance in this direction. Many writers and other fault-finders overlook the fact that, to the exhibitor, the stem is often less trouble if flexible, and for this reason there must be two distinct sections. Very few exhibitors would discard a Dahlia merely because it was of indifferent habit, provided the flower was a valuable one when staged, and thus it is not always fair to condemn a flower on account of its weak stem. Indeed, it is almost useless to expect the finest flowers to possess the strongest stems, as strength of stem and refinement of flower seem to be antagonistic qualities, although it is possible that, in time, this trouble may be overcome. A peculiar feature of Dahlia judging is the fact that, despite the yearly wail of the need of a strong stem, very little encouragement is given to the production of stout-stemmed varieties. It would be foolish indeed for a raiser to wilfully ignore a weak-stemmed flower if it is valuable from a commercial point of view, and to offer to the public a flower with strong stem, yet with no recommendation from the Floral Committees. In every other branch of floriculture there is a marked distinction between show and garden varieties. What a difference there is, for instance, between the Rambler and the exhibition Tea Rose. The very fact of a raiser aiming at the production of the highest forms of Cactus Dahlia in a great measure bars the probability of raising hardy, garden kinds. The parents are probably of soft growth, they are disbudded, and treated unnaturally in every way; under these conditions it is scarcely likely that the progeny will be of a type suitable for the garden. It is not that the raisers do not realise the necessity of harder Dahlias, but rather, as I have mentioned before, because of the scanty measure of popularity accorded to varieties with every good quality except the finest floret and latest incurved form. I have for years had in my mind's eye the typical garden Dahlia, a variety which is bushy, yet makes a strong stem, and, what is of the utmost importance, a flower which holds good in the centre even when not disbudded or thinned. The only way to secure this latter feature is to raise flowers which, if thinned and grown under exhibition rules, would become so heavy in the centre as to be useless, but which, when left with abundance of buds, would be so toned down as to retain sufficient florets to cover the

pollen. It is evident, then, that this section must be developed on quite distinct lines from exhibition flowers, and it is a most hopeful sign for the future prosperity of the Dahlia that one or two leading raisers are introducing sorts which can be left to grow naturally.

It may be said with truth that anyone who troubles to plant Dahlias can surely also take the trouble to stake and thin them, but one has only to look round even in the public parks to see that a number of Cactus Dahlias are simply tied round like a bundle of straw, and left to do as best they may. If varieties of pendant habit and soft wood are so treated, the result is unsatisfactory. So, in some measure to rectify the shortcomings of the average grower, and in order to keep the Dahlia in the forefront of autumn flowers, wiry-stemmed varieties must be raised, and, it is not too much to say, may be raised. It would, however, be quite foreign to my intention to seem to advocate garden Cactus varieties in preference to the magnificent exhibition flowers. These are, and will remain, the perfection of form in Dahlias, and their production the ultimate aim of all who are Dahlia lovers in any but a general sense, either as raisers or grovers. Prosperity is not bound up in any one form, and so it behoves the Dahlia raisers, now that form, colour and floret are so beautiful, to turn their attention to raising a more hardy race, which shall withstand, at any rate, in some degree, the adverse weather which may be expected in early autumn, and, at the same time, stand erect. *P. P.*

AMERICAN HAWTHORNS.

SOME NEW ARBORESCENT SPECIES.

(Concluded from page 289.)

C. LETCHWORTHIANA reaches a height of 20 feet, bears mostly ascending branches, and forms a broad, dense head, usually branching low. The leaves are ovate, and somewhat rounded at the broad base, 2½ inches long and 2 inches wide. The 10 to 15-stamened flowers, with pink anthers, are borne on 10 to 15-flowered, hairy corymbs and blossom about May 29. The scarlet, obovate fruit, rounded at the apex and tapering towards the base, ripens in the second week in September. The type tree grows at Portage, on the Genesee River, 50 miles south of Rochester, N.Y. This is a highly ornamental species, and was named by Dr. Sargent, in compliment to William P. Letchworth, who takes a great interest in American dendrology, and who owns a large and beautiful wooded estate at Portage, 1,000 acres of which he has lately presented to the State of New York to be used as a State park.

C. MACOUNI is frequently a tree 25 to 30 feet high with a slender trunk 10 inches in diameter at the base, with the branches usually ascending, and with an open, spreading head. The leaves are ovate, slightly rounded, to subcordate at the base, 4 inches long and 3¼ inches wide, and very thin in texture. The 20-stamened flowers with rose or pinkish-red anthers are borne on 12 to 15-flowered, hairy corymbs, and open about May 30. The oblong-obovate, scarlet fruits, slightly mottled with greenish-yellow and tapering towards the base on long, drooping stalks, ripen about October 1. The type tree grown on the banks of the Humber river in Lambton on the west side of Toronto, and is quite common in the neighbourhood of Toronto. A large and beautifully-developed specimen, showing a clear stem 7 to 8 feet, grows near the grand stand at the racecourse, Gananoque, Thousand Islands. One distinguishing, specific characteristic is the remarkably thin leaves. This handsome Hawthorn is named in compliment to John Macoun, the distinguished Canadian botanist.

C. PEDICILLATA is a tree 20 to 30 feet high, with intricate spreading and ascending branches, and usually forms a low-branched

stout trunk not more than 3 feet in length and about 15 inches in diameter. The leaves are broadly ovate to oval, and distinctly rounded at the base, with a slight convexity of surface, 3½ inches long and 3 inches wide. The 7 to 10-stamened flowers, with rose anthers, are borne on 12 to 15 loose, villous corymbs, and open about May 20. The oblong, bright scarlet fruits, which are much rounded at the summits, ripen about September 15 and soon fall. The type tree grows in Genesee Valley Park, Rochester, N.Y. It is a common species throughout Western New York, and is widely distributed throughout Ontario, Canada. This handsome Hawthorn in its general characters bears some resemblance to *C. gloriosa*, but it can easily be distinguished by its rose-coloured anthers and by the ripe fruits, which are not mammillate, and by the leaves, which are only slightly convex, and always prominently rounded at the base.

C. PRINGLEI sometimes assumes the dimensions of a tree 40 feet high and 20 inches in diameter at the base of the trunk. When it attains this size it develops an open head with remote branches. It is frequently seen about 20 feet high, with a compact, oval head branching low. The leaves on the fertile shoots are oval to orbicular, and rounded at the base; on vigorous shoots they are somewhat truncate to subcordate. The 7 to 10-stamened flowers with pinkish-red anthers are borne on 10 to 15-flowered, tomentose corymbs, and open from May 15-20. The subglobose to oblong, orange-red fruits, usually impressed with yellowish blotches, are distinguished from the fruits of most of the Flabellatae species by a narrow, constricted calyx cup. The fruit is usually ripe about the last week in September, and soon falls. The type tree grows in the Champlain Valley, Vermont. It is a common species in the New England States, New York, and Ontario, Canada. A number of well-developed and handsome individuals are indigenous in the parks at Rochester, N.Y., and form an important, ornamental feature. It can be readily recognised by its convex, thin, drooping leaves.

C. SEJUNCTA is usually a low-branched tree or a tall shrub, with slightly ascending branches. The leaves are ovate, rounded or cuneate at the base, 3 inches long and 2½ inches wide. The 7 to 10-stamened flowers with rose-coloured anthers are borne on 8 to 10-flowered, hairy corymbs, and open about the end of May. The subglobose to oval, crimson, lustrous fruits on stout, hairy pedicels, ripen about the middle of September. The type tree, which I have not seen, grows on the west side of the City of Albany, N.Y. There are a number of well-developed, low-branched trees growing on the east side of the old Pan-American exhibition grounds at Buffalo, which were pointed out to me by Dr. C. S. Sargent a few years since. The species is pretty well distributed throughout the New England States and Ontario.

C. TARDIPES frequently grows to a height of 30 feet, with spreading and ascending branches, forming a wide and somewhat open head, and a trunk of from 6 to 7 feet, and about 12 inches through at the base. The leaves are oblong-ovate and often narrowly oblong, slightly rounded at the base, distinctly thin in texture, 3 inches long and 2 inches wide. The 5 to 8-stamened flowers with purplish-rose anthers, are borne on 12 to 14-flowered villous corymbs and open about May 25. The oblong, scarlet fruits, much narrowed towards the base, and slightly narrowed towards the apex, ripen at the end of September. The type tree grows on the Black Creek Flats near Toronto. The species, which is common from Toronto to Quebec, is a handsome, arborescent form, and in the outline of its leaves and in the shape of the fruits resembles *C. Holmesiana*. *C. Holmesiana* has, however, pink-anthered flowers, and ripens its fruits three or four weeks earlier. *John Dunbar, Rochester, New York, U.S.A.*

NOTES FROM A "FRENCH" GARDEN.

WE have pricked off all the Lettuces and the early batch of little "Black Gott" and Cos Lettuces is already established. The Lettuces may now be afforded ventilation, admitting air very carefully at first and increasing the quantity as the plants get bigger, and raising the cloches about 2 inches early in December. In the event of cold weather the cloches must be lowered, or closed altogether. The grower must endeavour to prevent his plants suffering a check during the course of development. On several occasions last week it was necessary to spread the mats over the cloches, but this was not done until the glass frames appeared white with frost; they are removed again directly the

weather is milder. These details can easily be attended to, at any rate, where the garden cloches do not exceed two thousand. In the course of 8 or 10 days the Cos Lettuces may be pricked out a second time, 14 plants being placed under each cloche. They will be pricked out in the cloches in which the Cabbage Lettuces have been growing since September, as we expect to market the Cabbage Lettuces shortly. In transplanting Lettuces the seed leaves and any decayed leaves are removed, the plants are put rather deeply in the ground, and the lights of the frames are kept closed until the plants have made fresh roots.

The Cardoons have been wrapped with straw for bleaching them and protecting them from frost. They will

be allowed to remain in their present quarters, as, since they are very sappy, decay would soon set in were they lifted and stored in a shed.

We are now bleaching the Batavian Green; this crop has succeeded well, and we expect it will sell at satisfactory prices. Owing to the unfavourable condition of the ground, we have to defer the planting of the Ox Heart Cabbages, although they are in a capital condition for removing. *P. Aquatics.*

FOREIGN CORRESPONDENCE.

NOTES FROM LA MORTOLA.
SUCCULENTS.

A GROUP of succulents on the terrace in the south front of the Palazzo was replanted last year. It contains a large number of rare and interesting plants. The chief features are a big *Cereus giganteus*, which is 5½ feet high, a tall *Aloe ferox* var. *xanthostachys*, and *Euphorbia candelabrum* var. It is impossible to enumerate all, but the following may be mentioned:—*Aloe Marlothii*, an unique plant with extremely spiny leaves from British Bechuanaland. It was discovered by Dr. Marloth, and sent to La Mortola in 1905. It is remarkable for its nearly horizontally-spreading flower-spikes, which, however, it has not yet produced at La Mortola.

Another *Aloë* (*A. rubrolutea*) has lately been figured in the *Botanical Magazine*. It is a native of German South-west Africa. *A. Greenii*, *Greatheadii*, *somaliensis*, *longiflora*, *lateritia*, *percrassa*, *abyssinica*, *Eru*, &c., adorn the group at various times with their beautifully-coloured flower-spikes. Besides these taller plants a far greater number of smaller succulents, *Stapelias*, *Euphorbias*, *Crassulas* are to be found in the group. A small part of the group has been planted with those peculiar *Mesembryanthemums* which resemble stones in their appearance, and which suggest "mimicry" in plants. There is a considerable number of these *Mesembryanthemums*, and their likeness to the surrounding stones of their native haunts is said to be absolute.

We have planted a number of *Mesembryanthemum Bolusii* between pebbles from our seashore, and so great is their resemblance that, from a certain distance, it is not possible to distinguish stones from plants. This fact is even more evident in the case of *M. pseudotruncatellum*, from German South-west Africa, and *M. minimum*, *minutum*, *obcordellum*, *obconellum* and *Wettsteinii* from the Cape. These plants are covered with a greyish, rough coat when at rest, and are then apt to be completely overlooked. I spoke about this case of mimicry at some length last year in my little handbook on *Mesembryanthemums*, and also of the curious method by which the seeds are thrown out from the very hygroscopic capsules of these plants.

M. Bolusii has most beautiful yellow flowers, which appear in September and open before sunset. We owe our specimens of this interesting, and at one time very rare, succulent to the kindness of its discoverer, Mr. Harry Bolus, who some years ago sent us a number of seeds. Whilst all the other species mentioned above are perfectly at rest, and are best kept without any water, *M. Bolusii* grows during part of the summer. It has been much admired by visitors to the garden, who soon baptised it the "living stones." J. B.

FEIJOA SELLOWIANA IN SOUTHERN CALIFORNIA.

This plant, belonging to the Myrtaceæ, was introduced into Southern California several years ago from Uruguay by Dr. F. Franceschi. Of the three original plants which Dr. Franceschi imported, all have borne fruit, and several seedlings



Beschorneria Yuccoides

FIG. 138.—*BESCHORNERIA YUCCOIDES* FLOWERING IN MR. GUMBLETON'S GARDEN, CO. CORK. (See p. 312.)

from them are beginning to bear regularly. The fruit is about the size of a small hen's egg, and in character closely resembles that of the Guava, to which plant Feijoa is closely allied. It is dull green in colour, with sometimes a touch of crimson on the cheek. The seeds are very minute, being very little larger than Strawberry seeds, and the pulp is most delicious and aromatic. It is so aromatic that a few specimens will scent a whole room. The plant grows to a height of about 6 feet, and its beautiful flowers, which open in May, render it very ornamental. The plant has proved perfectly hardy wherever planted in Southern California. The fruit is likely to become of commercial importance, as it stands shipment well and is liked by almost all who taste it. *F. W. Popenoe.*

THE ROSARY.

ROSE MRS. F. W. FLIGHT.

I CAN corroborate all that was said on p. 213 in favour of this Rose, having seen the original plant on many occasions in Mr. Flight's garden. Mr. Flight has a strong penchant for raising new varieties of the climbing section. This season he has named one Mrs. Nut-hall, a white, free-flowering variety of compact growth, that is certain to make its mark when better known. Another novelty that I saw there this summer and that cannot fail to meet with appreciation is a rich, yellow-flowered variety of the multiflora type. To return to the subject of this note, as a Pillar or pergola Rose it would be difficult to find a superior to Mrs. F. W. Flight. The growth is robust, yet compact, the foliage a deep green, and the blossoms are produced in huge clusters which last a long time in a fresh condition; indeed, the rosy hue becomes deeper with age, which is contrary to the general rule. As a pot plant, too, in either a large or small state, this Rose is valuable. *E. Molyneux.*

The Week's Work.

THE ORCHID HOUSES.

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

Vanda.—The Java Vandas such as *V. tricolor* and *V. suavis*, if well grown, attain to 4 or even 6 feet in height, and, being furnished with foliage down to the rim of the pot, they are stately specimens. Moreover, they furnish fragrant flowers that will last a considerable time for table or other indoor decoration. The present is the best time to overhaul and attend to the repotting of these plants, there being less likelihood of losing any foliage than when the operation is deferred until spring. The old potting materials should be kept somewhat on the dry side for a week previous to disturbing the roots, during which time the plants should be carefully sponged over so as to effect a thorough cleansing, especially if there are any scale insects upon them; the small, brown species adheres very firmly to all parts of the plant, and sometimes to the roots that are out of the potting material. If it is necessary to repot a plant through loss of foliage at its base, remove the old material and drainage, then carefully lift the plant out of the pot, and cut the stem off at the base so as to bring the leaves close to the rim of the pot. This should be done only when there are plenty of living roots above the severed part to support the plant. If there are but few roots on the stem, it is advisable only to cut off such of the lower part that may be dead or rootless. In some cases there will be plenty of living roots inside the pot, some clinging firmly to the sides. After removing the drainage, &c., the grower, with care, may cut off the lowermost part of the stem without removing the roots from the sides of the pot; then, by gently pressing the plant down in the pot to its proper position, there will be less disturbance of roots than if the plant had been taken from the pot. During the operation, there are sure to be several roots cracked, but this will not affect the plant in the least. Place a few large pieces of crock over the bottom of the pot, which may then be covered with some rough Sphagnum-moss; replace the loose and lowermost

roots over this, and carefully work in amongst them a mixture of unchopped Sphagnum-moss and crocks of moderate size, pressing them down rather firmly. Then distribute more roots likewise, bringing them up toward the surface, and finish off with clean, freshly-gathered Sphagnum-moss, well mixed with finely-broken crocks. Most of the roots will be inside the pot, but it is not advisable to bury all the aerial roots that are on the stem; those that are long enough may be pegged down on the surface of the moss, and in time these will send lateral roots into it. The more roots that are enticed down in this way the better it is for the retention of the lower leaves and for the health of the plant generally. Plants that need no root disturbance by repotting should be examined as to the condition of the potting materials. If the Sphagnum-moss has become decomposed, it should be carefully picked out from between the roots, and fresh material substituted. After repotting, secure each stem in an upright position to neat Bamboo stakes, it being essential that the plant shall be quite firm in its position. These Vandas must be well shaded from all direct sunshine, especially after root disturbance. No water need be afforded for several days, after which give each plant a thorough soaking with tepid rain-water, which will be sufficient for the needs of the lowermost roots for several months to come. Whenever the moss on the surface becomes dry, it should be lightly sprinkled over, and by this means kept growing as luxuriantly as possible. During the winter months the plants require the temperature of a Cattleya house; but during the other seasons of the year a cool, moist stage in the cool intermediate house is the more suitable place for them. Damp well between the pots several times a day so as to keep their immediate surroundings moist.

Odontoglossums.—The remarks printed last week under this heading were intended to refer to *O. citrosimum*.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Strawberries in pots.—Some provision must be made for protecting pot-Strawberries from frost. The present season has not been favourable for the ripening of the crowns, therefore the earliest plants should be left out-of-doors as long as possible, so that the crowns may mature better. In gardens where only small numbers are grown, the affording of protection may be left until frost actually occurs, remembering that after they are packed closely together the plants are apt to lose some of the foliage during spells of dull, wet weather; but, in other cases, where there are very many plants to handle, the work must be commenced at once. Perhaps the best way to protect them from frost is to plunge the pots in coal-ashes to the rim. This method entails considerable labour, but it will be found that there are few broken pots at the end of the season. Common Bracken is sometimes used for strewing over the plants, and this material would answer if it could be kept always dry; but, being exposed to the weather, the fronds quickly decay, and become unsuitable for the purpose. An excellent method of protection is that of plunging the pots in cold frames in a bed of leaves. The plants can then be sheltered from snow and heavy rains. If this method is adopted, the lights must be left off whenever the condition of the weather will permit. During severe frosts it will be necessary to cover with dry Bracken the Strawberry plants that are plunged in the open air, removing the Bracken as soon as the frost has disappeared, and keeping the material dry for further use.

The forcing.—If ripe fruits are required very early in the season, it will be necessary to place a batch of plants under glass at the end of the present month, or, at the latest, early in December. As a rule, ripe Strawberries are not expected until the commencement of March, neither is it desirable to attempt to obtain them at an earlier date, unless circumstances compel one to do so. Be careful to select the most forward plants for the earliest batch, and only those which have a single crown. Examine the drainage material and see that, in every case, it is left in a perfect condition. Before taking them indoors, lay the pots on their sides, and thoroughly syringe the plants with an insecticide. The best structure for the plants at the first is a shallow, heated pit, where the plants can be placed near

to the glass. They may be moved into a warmer house when the flower-spikes are in course of development. The pots should be plunged in a bed of Oak leaves, which will give just sufficient heat to excite the roots into growth. The atmospheric temperature should be kept at about 45° or 50° for the first few weeks. After forcing has commenced, spray the foliage with lukewarm water on the mornings of fine days, and exercise the greatest care in applying water to the roots until the plants are actively growing.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardsllee, Sussex.

Weeping trees.—Trees and shrubs with pendulous branches have a very good effect, provided they are planted in suitable places. How beautiful, for instance, is a large specimen of the Weeping Birch! Weeping trees are effective on hillsides and occasionally in mixed groups, but they are never seen at their best except as isolated specimens. Weeping Ashes, Beeches, Limes, Willows, and weeping varieties of Prunus, Sophora, Cytisus scoparius, Halesia tetraptera, Desmodium, Corylus, Cupressus, Sequoia gigantea, Taxodium distichum, and others are all useful for various decorative purposes. Occasionally, such trees show a disposition to produce erect branches; these should be cut away. Some of the prettiest weeping plants are the weeping Roses, especially of the Rambler section. These should be budded on tall Briars 6 to 10 feet high, and will soon make good heads, which will have a very fine effect when in flower. Some of the prettiest varieties are Hiawatha and Dorothy Perkins. Such Standards should be supported with strong poles which have had their bases dipped in creosote; they should in every instance be tied with strong string. Standard Roses of this height should now be planted in exposed positions. Some plants, like the common Laburnum, have drooping inflorescences, and present, when in flower, an effect similar to pendulous trees.

Variegated shrubs and trees.—When trees and shrubs are being planted in numbers for pleasure-ground ornamentation, care should be taken to select a sufficient number with variegated foliage for the sake of variety in colour. There are so many species that have forms of this nature that the choice is as wide as could be desired.

Bamboos.—Bamboos may be transplanted at any time between October and April, but, preferably, during moist weather. Bamboos should be planted where they can be easily watered in the event of dry weather, and where they will relieve the monotony of other evergreens.

Palms.—Palms may be shifted at this season, and will take very little harm, provided that a good ball of soil remains attached to their roots. Do not, however, allow the roots to be exposed to the atmosphere for one moment longer than is necessary.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Tree Carnations.—The cuttings of such varieties as America, C. J. Thornton, Enchantress, Fair Maid, and Mrs. S. J. Brooks, which were rooted early in the spring, have developed into plants now on the point of flowering. They require an atmospheric temperature of 55° at night with a rise of 5° or more during the day, according to the conditions out-of-doors. The plants from which the early supplies of blooms are expected must not be coddled at this stage of their growth. Advantage must be taken of every favourable opportunity to ventilate the structure in which they are growing. On dull, damp days a little fire-heat is necessary to dispel the superfluous moisture and to render the air buoyant, and on these occasions the leeward ventilators should be opened to insure that there is a free circulation of air amongst the plants. Timely attention must be paid to disbudding; it is waste of energy to allow the superfluous flower-buds to become larger than necessary before removing them. Occasional doses of weak liquid manure should be given to all the forward plants. Neither aphid nor red spider should be allowed to obtain a hold on the plants.

Carnation Souvenir de la Malmaison.—Layers rooted early in autumn, and now growing

in 3-inch pots, should be transferred to others of a larger size as soon as the roots have penetrated the soil. For various reasons this work is often postponed, but, to obtain really good results, there must be no delay in shifting the "Malmaison" varieties into their flowering pots as soon as the young plants have made sufficient roots. For this potting the soil should consist of such a mixture as three parts loam and one of leaf-soil, to which has been added a dusting of lime rubble, sufficient sand to keep the soil porous, a 6-inch potful of bonemeal, and nearly as much soot to each barrow-load. In gardens where Carnation culture is a speciality, a light and well-ventilated house will be available for the plants. In other establishments they have to be accommodated in a cool pit, or, perhaps, in an unheated frame. In these conditions the plants will successfully pass through the winter, if proper attention is given to watering, but it will be wise to plunge the pots to the rims in ashes. To obtain early flowers, artificial heat is necessary, and these plants must be given more water at the root and be grown in a moister atmosphere than would be beneficial to the more naturally grown plants.

Primula obconica.—The plants which are on the point of flowering must be given a good position in a light house having a temperature of from 45° to 50°. They should be given some stimulant to enable them to produce a succession of flowers. Many persons, including myself, have to be careful not to touch the foliage of this beautiful plant, since it sets up severe irritation to the skin.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Raspberries.—The present season is the best for forming new plantations of Raspberries. In planting early, the grower has the double advantage of open weather for the operation, and a moderately warm soil is likely to cause the roots to make some growth before severe frost. Apart from these important considerations, if canes are planted early they seldom lie about many days unprotected, but when the planting is delayed till well into the winter, or till the following spring, this exposure is often unavoidable, owing to inclement weather; the result is injury to the roots and failure in the plants. Though many of the fibrous roots of Raspberries are found near the surface of the soil, thoroughly established canes penetrate a good way down into the ground; therefore, and bearing in mind that a plantation is required to last for a number of years, it is necessary, in the first place, to thoroughly trench the soil. As the trenching proceeds, a liberal quantity of manure should be placed at different levels in the soil. If the subsoil is of an inferior character, do not bring this to the surface, but break up and leave it in the bottom of the trench, working in some light soil or manure. Rubbish obtainable from the potting shed might well be utilised in this way. A suitable method of training Raspberries in private gardens is that of tying the canes to strained wires or upright posts. The canes are thus fully exposed to sunshine and air, and the system so disposes the canes that the fruit can be gathered from them with convenience. Such canes are easily protected from the birds when the fruit is ripe, especially if the uprights are left about a foot higher than the wires. When young canes are being taken from existing plantations for replanting, preference should be given to the smaller ones, if they possess a good quantity of fibrous roots. These, when planted, start into growth much better the following season than large, stout canes, which often suffer from the check of removal. See that the ground is made firm again before planting, giving the surface a dressing of wood-ashes or fine, light soil. If this is well raked in, it will place at the disposal of the planter some fine material to place round the roots when planting. Allow a distance 5 to 6 feet between the rows, and plant the canes 2 to 3 feet apart, according as to whether the clump or wiring system is followed. Where gaps exist in established plantations, the old soil should be removed and a barrowful of fresh loam put in, in which to plant the new canes. Varieties to be recommended are Superlative, Baumforth's Seedling, and Hornet, and, if yellow kinds are

appreciated, Queen of England, Yellow Antwerp and The Guinea.

Autumn-fruiting Raspberries.—Though the weather this autumn has been exceptionally cold and wet, these have produced good crops. Autumn-fruiting varieties require a warm and open situation, as the fruit is produced on the growth of the current year, and this must be encouraged. The best varieties are Belle de Fontenay and November Abundance. Queen Alexandra is a new variety, which has been given an Award of Merit by the Royal Horticultural Society.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

The season.—Seven degrees of frost on the night of October 25 in this district put an end to all the more tender vegetables, such as Marrows, Beans, and Tomatos. The chief work in the kitchen garden during fine days will be to clear up and remove all remnants of crops that are passed, and burn them on a vacant piece of ground at the nearest convenient spot.

Seeds.—The seed harvest is likely to be deficient in this country. Runner Beans especially must be very scarce, owing to the bad weather and the lateness of their coming into bearing. Care should be taken to preserve every seed-pod that is ripened sufficiently. For the purpose of increasing any particular variety of this vegetable, it is a capital plan to cut off the top, lift the roots, which, by the by, are said to be very poisonous, place them in boxes, covering them with sand, and keep them during the winter in a cool cellar or some other frost-proof building. They may be started gently into growth at about the end of April. These succeed very well, and come into bearing much quicker than plants raised from seed.

Vacant ground.—Take the earliest opportunity when the land is dry or frosty to dress it with whatever material it is intended to use, which will depend on the kind of crop to be grown. In cases where manure can be had in plenty, it is frequently used in excess of the requirements, and, as frequently, it is next to impossible to get as much as is needed. It ought, however, to be borne in mind that for soil which has been heavily cropped and manured for many years, lime, soot, and burnt garden refuse will do a great deal to renovate and improve the soil, and, indeed, are often more valuable than ordinary stable manure.

Trenching.—A certain amount of this work, and the more the better, should be carried out each season. As is known to many readers of the *Gardeners' Chronicle*, I am a firm believer in deep trenching, and in bringing the bottom soil to the surface. I am more convinced than ever that such is the right practice to pursue, but whether others differ from me or no as to the method, there can be no two opinions as to the value of trenching. On heavy soils the operation should be delayed until the New Year, if this is convenient, but, on light, stony ground, it should be performed during the autumn; the earlier after this date the work is carried out the better.

French Beans.—Now that the outside plants are past, the value of any which were sown late in slightly-heated pits, or in pots, will be appreciated. Providing the plants are strong and not over-forced, they will continue bearing for some time to come. Admit a little air whenever possible. Maintain a temperature of 50° to 55°, and, when water is needed at the roots, it should be always given in a warm state. Where convenience exists for their cultivation—and Beans are often in demand the whole year through—seed should be sown once a fortnight in well-drained 5-inch pots, using a light soil. Water must be given with extra care in the early stages, and the young plants must be raised in heat. Canadian Wonder and Ne Plus Ultra are good varieties for this season.

Cauliflowers.—Cauliflowers have suffered very little indeed so far from frost, but the plants should be examined at least twice each week, and all those of sufficient size should be lifted and placed under cover. Any heads which are now formed should be well screened from frost by placing spare leaves upon them and tying up the tall ones in such a manner that they will shield the centre. Any late plants which do not

show signs of "turning in" should be lifted with a good quantity of earth attached to their roots and laid in spare frames. When they are planted, apply a good watering and keep the frames closed for three days, after which time the lights may be removed during favourable weather. If a sufficient number of plants are treated in this manner they may supply small Cauliflowers right into the New Year.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Lost and found property.—Park officials, like others whose calling brings them into constant touch with the public, have many opportunities of realising something of the great complexity of human nature. The carelessness, thoughtlessness, and oftentimes absolute dishonesty of the public can hardly be better exemplified than in the case of property, lost and found, in public parks. Hardly a day passes without lost articles of some description being picked up in public pleasure grounds, a large percentage of which is never even enquired after by the owners. At the same time numerous enquiries are made by visitors regarding property left or lost in the parks, which is never restored to them because never returned by the finders. This is so commonly the case that—here at least—visitors seeking lost property are frankly informed by the officials that the more valuable the article the less the likelihood of its being returned, and this notwithstanding notices inviting finders to hand over everything so found into the custody of the parks department. From this it would appear as if many adults still cling to a belief in the school-boys' adage that "finding is keeping."

Proposed by-law.—As a means of helping to remedy this kind of thing, we tried a short time ago to include in our by-laws one making it compulsory on the part of every person finding property in the parks to hand it over to the safe keeping of the department. While a good deal might be said in favour of such a by-law, legal opinion was entirely against it, so the idea had to be abandoned. Most authorities have their own method of dealing with "found" property. Here, an account of all found articles is entered into a book kept specially for the purpose, and the names of the persons finding the same, together with date, when, and where found, are entered against each article. Persons claiming found property must satisfy the officer in charge that they are the bona fide owners before it is surrendered and they must then give a receipt. If any article is not claimed within a month the finder—if not a member of the parks staff—is allowed to take charge of it after signing a receipt, as in the case of an owner. Property not claimed by owner or finder is handed over at the end of each month to the police, who dispose of it, along with other found property, &c., by public auction each year.

THE APIARY.

By CHLORIS.

Bee-keeping as an art.—Many persons attend agricultural and horticultural shows and witness exhibitions of bee-driving, and imagine they know all that is required to make a good bee-keeper. With this superficial and rudimentary knowledge they make a start with a hive of bees, only to fail, and they then spread the story that bees are not a success, neither from a business point of view, nor as a hobby. No man became a gardener after once witnessing some simple horticultural operation. There are excellent opportunities for learning the practical side of bee-keeping, for most of the County Councils are desirous of rendering practical help in all such branches of rural industry. At the same time no lecturer on bees, however desirous he may be of telling his pupils all that is known about bee culture, can tell them the many small details which can only be learned by practice, and it is these small details that make or mar success. Having gained a theoretical and a practical knowledge of bee-keeping, it is then well to make a small beginning, and as the apiarist's knowledge and experience increase, so can he profitably multiply the number of his stocks. There are many who make a good start, but later their interest decreases, and then they find the amount of honey in their hives also decreases in even a greater ratio.

EDITORIAL NOTICE.

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

Local News.—Correspondents will greatly oblige by sending to the Editors 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, NOVEMBER 8—United Hort. Ben. and Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 9—Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Edwin Beckett on "Some Beautiful Shrubs"). Ulster Hort. Soc. Chrys. Sh. at Belfast (2 days). Southampton Chrys. and Fruit Sh. (2 days). Chesterfield Chrys. Sh. (2 days). Cleveon Chrys. Sh. (2 days). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, NOVEMBER 10—Bromley Chrys. Sh.

FRIDAY, NOVEMBER 12—Bradford Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—44.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 3 (6 P.M.): Max. 55°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 4 (10 A.M.): Bar. 30.2; Temp. 53°; Weather—Dull.

PROVINCES.—Wednesday, November 3: Max. 54° Scotland N.; Min. 52° Lincolnshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—Dutch Bulbs at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—Consignment of Japanese Lilliums at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1. Nursery Stock at Bickley Hill Nursery, Bickley, by order of Messrs. Maier & Sons, by Protheroe & Morris, at 12.

TUESDAY AND WEDNESDAY—Nursery Stock at Arthur's Bridge Nursery, Woking, by order of Messrs. Spooner & Sons, by Protheroe & Morris, at 12.

WEDNESDAY—Fruit Trees at Perry Hill, Cliffe, near Rochester, by order of Messrs. Horne & Sons, by Protheroe & Morris, at 11.30. Roses at 1.30; Palms and Plants at 5; at 67 & 68, Cheapside, by Protheroe & Morris.

THURSDAY—Nursery Stock at Portland Grange Nurseries, Matlock, by Protheroe & Morris, at 11.30.

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

The
Operation
of the
Small
Holdings
Act.

A summary of the recently published Report of the Small Holdings Commissioners is printed in the October number of the *Journal of the Board of Agriculture*. It is unfortunate that the Report gives information on the administration of the Small Holdings Act only up to the end of last year (1908). So much criticism has been directed from various quarters on the slowness with which the provisions of the Act are being put into practical operation, that it is greatly to be desired that more recent data should be issued, in order that the criticisms may be rebutted or confirmed.

When it is remembered that the Act only came into operation in 1907, it cannot be said that the results of the first year's work are inconsiderable. Though, as will be seen when we summarise these results, the quantity of land purchased and the numbers of holders actually in possession are, at present, extremely small, yet it has to be remembered that a very considerable amount of preliminary enquiry was necessary before a start could be made. If the progress made during the present year indicates a moderate acceleration on that of 1908, the adverse criticisms will, in our opinion, be adequately met. If, on the other hand, the rate of settling men on the

land does not show an increase, then it will be evident that something is wrong with the machinery or mode of administration of the Act. For the Commissioners themselves are convinced, as the result of personal interviews with a large number of the applicants, that there is a very real and considerable demand on the part of "industrious, self-reliant and capable men" for small holdings. They point out, further, that "it is just this type of man who too often in the past has despaired of obtaining land in this country and has emigrated to the colonies."

Turning to a consideration of the facts, we find that, during the first year of operation of the Small Holdings and Allotments Act of 1907, some 23,000 applications were received by the county councils for 373,000 acres; and, of these applicants, 13,000, or about 56 per cent., were approved, provisionally, as suitable. The estimated quantity of land required by the approved applicants is 185,000 acres. Of this amount, 21,400 acres have been acquired by county councils; rather more than half (11,300 acres) having been purchased for £370,000, and the remainder, about 10,000 acres, leased at a total rent of £11,000.

The land thus acquired will provide for 1,500 applicants. By December 1, 1908, 504 men were in actual possession of holdings and about 12,700 of the selected applicants were not.

It is noteworthy that over and above the 500 men provided with land by the councils, another 700 have been supplied with holdings by landowners direct. Since the councils have helped also toward the settlement of these latter applicants, their number may properly be added to the 504 who have been provided with land directly by the councils. Thus, the net result of the first year's work is the provision of 1,200 small holdings.

Other points of considerable interest in the Report are that, of the 13,000 approved applicants, no fewer than 4,470, or about 34 per cent., are agricultural labourers; and that their applications are mainly for quite small holdings, to which the men do not propose to devote their whole time, and out of which they do not expect to obtain their whole livelihood. An unprejudiced consideration of the Report leads us to the opinion, already indicated, that it is premature to pass any confident judgment on the success with which the Act is being administered. Common fairness would appear to demand a suspension of judgment till the figures for the current year are available.

Perhaps the most important of all the observations made by the Commissioners is that in which they express their conviction that the not inconsiderable demand for small holdings already disclosed is only part of the demand which actually exists.

BESCHORNERIA YUCCOIDES (see figs. 138 and 139).—The *Beschornérias* are Mexican plants, with the habit of the soft-leaved Agaves, and drooping, fleshy, urn-shaped, greenish flowers, arranged on a paniculate raceme, the stem and large bracts being the most attractive parts. They are hardy in the warm parts of the British Islands, where they form tufts of leaves and develop annually their striking flower-spikes. One of the best species is *B. yuccoides*. In Mr. GUMBLETON's garden at Queenstown, Ireland, the plant has grown into quite a big clump, and last May

it bore no fewer than six flower-spikes. Mr. GUMBLETON likens the flowers to big, brownish Fuchsias, with great tips. In the garden at Tresco, this *Beschornéria* is a most striking feature, forming a magnificent fringe to the top of a terrace wall by the side of one of the principal paths. When in flower, the bright crimson, partly-developed spikes hang over the wall in most picturesque fashion, suggesting long-necked birds, or, as one imaginative visitor put it, red snakes peering over it. *B. yuccoides* and *B. tubiflora* are the two best of the half-dozen or so species known. They are all polycarpic, that is, they do not die at once after they have flowered, as many of the Agaves and *Furcraea*s do. Where they cannot be grown as hardy plants, the *Beschornérias* are worth pot culture for the conservatory. They are sun-lovers, and like a strong, loamy soil. *B. yuccoides* appears to be the best known in gardens. It was first introduced about 60 years ago by Lord LECHESTER, and was first flowered in 1860 in the garden of the late Mr. WILSON SAUNDERS, at Reigate. The flower-scapes are from 3 to 5 feet long.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on Tuesday, November 9, in the Society's Hall, Vincent Square, Westminster. At 3 p.m., a lecture on "Some Beautiful Shrubs" will be given by Mr. E. BECKETT, V.M.H.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—At a committee meeting held on Saturday, the 30th ult., it was decided that the show for 1910 be held at the R.H.S. Hall on Tuesday, July 26, and that the schedule remain as for 1909, with the addition of a class—open to amateurs only—for 12 distinct varieties of Sells, Fancies and Yellow-ground Picotees. The 1st prize in this new class will be the Martin Smith Memorial Challenge Cup and Medal, 2nd prize 25s., and 3rd prize 15s. The Challenge Cup will be the property of the winner for one year only.

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION).—A committee meeting of this society was held on the 30th ult., when it was resolved to hold the show for 1910 on Tuesday, May 3, in conjunction with the Royal Horticultural Society, the schedule to remain the same as for 1909.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner will take place in the Royal Venetian Chamber, Holborn Restaurant, on Monday, November 29, at 6.45 p.m. The President, Sir ALBERT ROLLIT, D.C.L., LL.D., will preside. The Challenge Trophy, the Holmes Memorial Cups and Medals won at the Society's exhibition will be presented during the evening. Tickets may be obtained from the secretary, Mr. RICHARD A. WITTY, 72, Savernake Road, Gospel Oak, London.

TOMATO.—We have received from Messrs. J. K. KING & SONS three fruits of a Tomato described as a cross obtained from the varieties Lord Roberts and Beauty of Wales. The fruits are moderate-sized specimens of the Perfection type. They have brightly-coloured, thin, smooth skins, and firm flesh. Messrs. KING describe the plants as being very free croppers, and the variety as suitable for market growers.

GOVERNMENT ORDER FOR ABERDEEN NURSERYMEN.—Our Aberdeen correspondent writes that his Majesty's Commissioners of Woods and Forests have recently placed extensive orders with Messrs. BENJAMIN REID & Co., Aberdeen, for transplanted forest trees for the Crown forests in Scotland and England, amounting in all to 410,000 plants.



FIG. 139.—*BESCHORNERIA YUCCOIDES* FROM SPECIMENS SUPPLIED BY MR. GUMBLETON: FLOWER-STEM AND BRACTS RED; FLOWERS BROWNISH, WITH GREEN TIPS.

(See p. 312 and fig. 138.)

LEGACY TO A GARDENER.—We are informed that by the will of the late Mr. C. G. RICHARDSON, Beech Hill, Englefield Green, Surrey, the sum of £200 is bequeathed to his head gardener, JOHN RECORD.

BLACK SCAB.—In answer to a question by Mr. STANIER, in the House of Commons on Monday last, Captain NORTON made the following statement:—"The disease is unfortunately very prevalent in allotments and cottage gardens in Cheshire, North Shropshire, Staffordshire, South Lancashire, and parts of Warwickshire, Derbyshire, and Notts. It has been found in certain parts of Fife, but to a much smaller extent. A few isolated cases have been reported from other parts of the country. In none of the districts named does the disease exist except to a very small extent in fields under rotation. We hope that our information as to the results of the investigations which have been instituted will be available in the course of the present week, and they will be at once communicated to every occupier of premises on which the disease is known to exist.

WOMEN'S AGRICULTURAL AND HORTICULTURAL INTERNATIONAL UNION.—The annual meeting of the Union will be held at the club room of the Royal Botanic Gardens, Regent's Park, on Tuesday, November 9, at 3.30 p.m. A paper will be read by Mr. THOMAS SMITH, entitled, "Some Remarks on French Gardening in England." A stall for the display and sale of members' produce will be arranged in the conservatory.

UNFAVOURABLE SEASON FOR BELGIAN RHODODENDRONS (AZALEAS) AND JAPANESE BULBS.—According to a note published in the *Florists' Exchange*, Belgian Azaleas have been adversely affected by the cold, wet summer. The plants are not so well furnished with flower-buds as usual; moreover, the price has risen. Japanese bulbs, especially those of large size, are also scarce. The prices of *L. giganteum* have advanced, and even at the enhanced prices are not easily obtainable in quantity.

UNITED STATES DEPARTMENT OF AGRICULTURE.—The Hon. JAMES WILSON, who has been Secretary of Agriculture, U.S.A., since 1897, is about to resign his office. According to the *Florists' Exchange*, which makes the announcement, Mr. WILSON'S greatest success has lain in making his Department popular with farmers. It is doubtless due to this fact that the scientific information on agriculture disseminated by the Board in their well-known and numerous *Bulletins* has had such a considerable influence on the farming community.

NEW CALIFORNIAN SEED FARM.—We learn from the *Florists' Exchange* that the firm of W. AILEE BURPEE & Co. has completed the purchase of a 40-acre ranch, near Lampoc, Santa Barbara County, California, for the growing of winter seeds, including Sweet Peas. Mr. LONSDALE, who was president of the Society of American Florists in 1895, has been appointed to superintend the work of the farm.

THE PROGRESS OF FORESTRY.—MR. WILLIAM DAWSON, M.A., lecturer on Forestry in the University of Aberdeen, in opening his class for the winter session, reminded his students that within the past twelve months forestry matters had made a great advance. He said the period of national indifference was past, and the true significance of forestry as a national question was becoming more generally understood. We have all the elements necessary for successful timber production in Great Britain, yet we are content to buy from other countries, whilst our own resources remain undeveloped. In Scotland

several million acres of land would realise the full use if planted with trees. Increased activity in forestry, Mr. DAWSON contended, will lead to the development of many other industries. In Germany three-fourths of the forest workers follow some other occupation, many being small-holders.

THE FORESTS OF BRITISH EAST AFRICA.—It will not be disputed by those who have occasion to study them that Blue Books are among the most interesting of all books, and that the truths that they contain are more romantic than the inventions of the novelists. This is certainly the case with the Report on the Forests of British East Africa, which has just been published, and which contains a masterly account of the forest flora of the Protectorate. Mr. HUTCHINS has, alas! the usual story to tell of stupid exploitation of forest land and the usual wise counsels to offer as to measures to be taken to put an end to it. Whilst the neighbouring State, German East Africa, has a well-organised and self-supporting forestry department, British East Africa is thinking about organising an adequate forestry service. Fortunately the Uganda



MR. JESSE WILLARD.

railway, which is dependent at present on wood fuel, is already feeling the consequences of reckless felling, and the authorities are becoming alive to the importance of replacing the happy-go-lucky methods of pioneers by the more economical practices of scientific forestry. With such admirable reports as those by Mr. HUTCHINS and his predecessors, it is difficult to understand how the British system of administration, which seems to involve a general neglect of the development of the natural resources of new territories, can go on much longer. To Mr. HUTCHINS' report is added a series of appendices dealing with the Conifers of Mexico and Central America, the indigenous timbers of the Protectorate, and the foreign trees suitable for planting. In these Dr. MAXWELL MASTERS is recognised as the first authority on coniferous trees, a tribute which will be peculiarly gratifying to readers of this journal.

PUBLICATIONS RECEIVED.—*Contributions to the Flora of the Congo*, by Em. De Wildeman and Th. Durand. Published by the Secretary of State, Brussels.—*In a Yorkshire Garden*, by Reginald Farrer. (Published by Edward Arnold, London.) Price 10s. 6d.—*The Agricultural Gazette of New South Wales*. (Sydney: W. A. Gulliek, Government Printer.)

RETIREMENT OF MR. WILLARD.

AFTER serving the late Baroness and Mr. Burdett-Coutts, at Holly Lodge, Highgate, for 45 years, Mr. Jesse Willard has just retired with a pension. Mr. Willard is well known to visitors to the London shows, and is one of the oldest members of the Fruit and Vegetable Committee of the Royal Horticultural Society.

He was born at Hawkhurst, in Kent, and at 12 years of age left the village school and commenced his career as a gardener. Later he obtained employment in Hutton Court Gardens, near Maidstone, the seat of Henry Bannerman, Esq. The gardener was the late Mr. R. Goddard, and the lad started in the kitchen garden. With a view to obtaining wider knowledge, he volunteered to do duty in the glass houses on Sunday, and also assisted with the stoking of the garden fires.

A vacancy soon occurred on the indoor staff, and young Willard was offered the post of journeyman. In course of time he was appointed foreman of the glass department. He attended the Mutual Improvement Society at the neighbouring town of Maidstone, occasionally reading a paper on some gardening subject. His ability attracted the notice of Mr. Thos. Frost, nurseryman in the district, who, when applied to for a foreman by Mr. Hutt, gardener at Holly Lodge, recommended Willard. After being about a year at Holly Lodge, Mr. Hutt retired, and the late Baroness Burdett-Coutts offered the post to Mr. Willard. After a time he was entrusted with the care of the farm also, and he thus became responsible for the management of the whole of the Holly Lodge gardens and estate. At this time the Baroness Burdett-Coutts had a house and gardens at Torquay, where the late Dr. Ramsay also had a residence, and Mr. Willard was directed to send a collection of rare plants, not considered quite tender, to Dr. Ramsay. These plants formed the nucleus of Dr. Ramsay's famous collection, which has often been referred to in these pages.

During the time Holly Lodge was famous for its garden parties throughout the length and breadth of Great Britain, the task of the gardener was no light one. Exotic fruits and flowers were required in abundance, and Pineapples were cultivated extensively. The feature of the flower garden was the herbaceous borders, but, in addition, many beds were filled with Fuchsias, Pelargoniums and Heliotropes, which were fashionable as bedding plants at that time. Many of these were grown as tall standard plants. There were always Roses in abundance, as the owner delighted in these flowers.

Mr. Willard's duties as bailiff caused him to become acquainted with stock, and the goats and Guernsey cows at Holly Lodge were amongst the finest in the country. At one time the Nubian goats at Highgate numbered 30, forming the largest herd in Great Britain. For about 30 years Mr. Willard has served on the committee of the British Goat Society, and is looked up to as a high authority on these animals.

Mr. Willard has been a member of the Executive Committee of the Gardeners' Royal Benevolent Institution for more than 30 years, and in recent years has fulfilled the duties of auditor. He has also subscribed to the Royal Gardeners' Orphan Fund since its commencement.

On the 30th ult., on leaving Holly Lodge to take up his residence at Reigate, Mr. Willard was entertained by Mr. Burdett-Coutts in company with his friends and fellow employes at dinner, the occasion being also selected to present him with a number of gifts for himself and family. The friends and colleagues at Holly Lodge presented him with a clock and armchair. Mr. Burdett-Coutts's gift consisted of a silver inkstand. In making the presentation Mr. Burdett-Coutts made an appropriate and deservedly eulogistic speech, from which we reproduce the following extracts:—

"I was not content that a man who has held the responsible and honourable position for so

long with infinite credit to himself should drop away into the shadow of declining years, unmarked and unnoticed, merely because his lot had happened to be cast in personal or private service. That would not have been consistent with my conception of the dignity of labour. I do feel most strongly that this kind of work, or 'service' as it is commonly called, is as much entitled to that noble phrase 'the dignity of labour' as work in any other field. In one sense more so; because the man who is so placed works without any hard and fast rule of time and quantities, knowing that his daily output cannot be measured, his sense of loyalty his only inspiration, his desire to do his duty his only guide, his conscientiousness that he has done his best and—as in this case—the knowledge that he has entirely satisfied his employers, his only reward. Is it not right and fitting when such a man is at length compelled by the iron hand of time to lay down his life's task that the honour that is his due should be paid to him.

"Just a word or two as to the personal aspect of this case. It is not needful, after having paid a tribute to the great part he has played in the fame of Holly Lodge, to say anything about his ability as a gardener. He has gained a position of some distinction in the floral world. He is a master of the most ancient art that history can suggest to us—the art of gardening. He could not have gained that without a good deal of hard work, constant application, determination to do his duty, and constant use of his brain.

"I need not say anything about Mr. Willard's personal qualities. I shall miss him greatly. He has been a familiar figure to me in these grounds through all these years, and it will be a real loss not to see him here habitually, as in the past. But I am assured he will not infrequently revisit these pastures, in which he has spent so many happy years, and I hope he will still give his successor, Sims, who has been here for many years, the benefit of his advice.

"I have now nothing more to say except the saddest word of all—the word 'Good-bye.' Willard's life and character have been an example to those who in the future, if they follow that example, may rise to better positions than they now occupy; and what is better than a high position, the appreciation, friendship and goodwill of all with whom they have been brought in contact.

"Willard, full of years and full of honour—such honour as comes from having done one's duty and from having deserved and received the appreciation of one's fellow-men—I now have the pleasure of presenting you with these beautiful and useful presents given by your friends, and I wish to add a small memento of my own in this inkstand. There is one word I have inscribed on it—'Friendship'—which perhaps illustrates better than anything else what I feel for you. There are certain men who, whatever their relations with you may be, you feel are your friends."

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PATRIPIA GIBBOSA.—In addition to the species of *Patrinia*, referred to by W. I. on p. 244, there is also in cultivation in this country *P. gibbosa*, a native of Japan and a pleasing, although not showy, plant with yellow flowers and growing rather more than a foot high. It is quite hardy with me, and has been in my possession for a number of years, having been sent, if I remember aright, by Mr. Max Leichtlin. It blooms about August and lasts in flower until about the beginning of October. The plant succeeds in loam, and looks best on a rockery. S. Arnott, *Sunnymead, Dumfries*.

GREASE-BANDING OF FRUIT TREES.—I am sorry to read that *Southern Grower* (see p. 275) does not consider grease-banding pays. In the case of bush trees or trees on short stems possibly it might pay best to rely entirely on spraying, but with half-standards or standards, I am sure many southern growers will agree with me that it pays to catch the female moths by means of banding. Even if some of the females do find their way into the branches by other means, the necessity for spraying is reduced by grease-banding. If we can catch 75 per cent. of the female moths on the bands, surely we shall not suffer

wards have so many caterpillars to fight against. I think the wise grower will continue to grease-band, notwithstanding his spraying operations. E. C. Parslow, *County Council Educational Committee, Dorchester*.

ROSES IN SCOTLAND.—I am surprised that the Rev. Williamson, in his interesting and useful note about the best Roses for Scotland, makes no mention of H.T. Mme. Abel Chatenay, which, if I were obliged to confine myself to a single variety, would be my choice. It is exceedingly hardy and floriferous, early and late; the quality of its blossoms leaves nothing to be desired, and it is the only Rose I know, except the Sweet Briar, whose perfume scents the open air for many yards around. *Herbert Maxwell, Monreith, November 3*.

ROSE CORALLINA.—As a late autumn-flowering variety, and for bedding purposes, this is first-rate. It is an equal grower too, thus preventing the "gappy" appearance seen in beds of some varieties. The colour is very pleasing. *Yorkshire Gardener*.

LILIUM GIGANTEUM.—As there is a large quantity of seed on the Giant Lilies here this autumn, I shall be happy to send some to anybody who cares to forward an addressed envelope. My plants are all from home-saved seed, sown in a cold frame and pricked out in the open when a year old. It should be remembered that the seed usually lies a year before germinating. In the autumn of 1908 I planted a number of bulbs in the woods in order to test whether rabbits would devour the early and attractive foliage. In no single instance have they done so, although rabbits, I regret to say, have been undesirably prolific this year. I may mention that *Antholyza paniculata* has proved an excellent woodland plant, as immune from rabbits as its well-tried relatives, *Montbretia*. *Herbert Maxwell, Monreith, Wigtownshire*.

PEONIA OBOVATA.—I do not think this charming plant is very widely spread in cultivation, and so, as it has just contributed its essential glory to the garden, I should like to reward it with a word of notice. For, most delicate, freely-borne and delightful as are its single, pearl-white globes of blossom, it is in the dying days of the year, perhaps, that *P. obovata* makes its finest display. For all the seed vessels suddenly gape wide and reveal a gorgeous effect which makes those of *Iris foetidissima* look poor, dowdy things by comparison. They are filled with barren seeds of a glossy-vermilion-scarlet—apparently, as they are all empty, designed by their brilliance to allure birds into eating the whole seed-pod, and interspersed among these scarlet lures are packed the true seeds, which are of a rich black, bloomed with the blue film which one sees on a Grape. The reader may imagine how startling is this revealed contrast of blue-black with glittering, coral-scarlet. For the rest, this simple, wild *Pæony* is content with any cool, comfortable soil, in a corner not too arid and sunbaked. It is a Japanese species, and I saw its blossoms gathered at Shoji, where it abounds in the coppice all along those slopes which in open places are so fertile in *Cypripedium ventricosum*. *Reginald Farrer, Ingleborough*.

DEEP PLANTING OF BULBS.—I endorse Mr. E. H. Jenkins's remarks in his interesting article on the merits of deep planting of bulbs in the issue of the *Gardeners' Chronicle* for October 23, p. 277. A fair proportion of the beds in a famous Italian garden, as well as a few large beds outside its boundary, that I am acquainted with were planted with bulbs. These included Daffodils, Tulips, Hyacinths, and Crocuses, which, prior to the year 1871, were planted from 12 inches to 15 inches deep, with the obvious intention of saving the labour that shallow planting would annually incur to make room for spring-flowering plants. The deep planting of the bulbs admitted of a coating of short manure being annually forked into the beds after the bulbs had flowered. During 25 years I had a close acquaintanceship with the floral display made each succeeding spring, and I noted that, each year, the flowers became not only more plentiful, but also finer in size and stoutness of stems. They also flowered earlier than would have been the case had the bulbs been taken up and replanted annually. This is not to be won-

dered at, seeing that the growth experienced no check of any kind, and that, being 12 or 15 inches below the surface of the beds, the soil in which they found themselves was more uniformly moist and warm than would be the case were the bulbs planted only 5 inches or 6 inches below the surface. The soil in which the bulbs were planted was deep, light, rich, and fairly moist. *H. W. W.*

DIMORPHOTHECA AURANTIACA.—Having grown this most brilliant and beautiful annual for the last four years, since it was first introduced by Messrs. Barr & Sons, who sent me seed of it for trial, and before its great merits were known, I cannot agree with your correspondent J. F. (see p. 298) that plate 403 of vol. xii. of *Botanical Magazine* entitled *Calendula Tragus*, at all correctly represents this plant, the flower there figured being of a much lighter shade of colour, larger size and thinner texture. The flower figured on plate 1981 of vol. xiv. of the same work, under the name of *Calendula Tragus* β , which is pure white, with a greenish-brown under petal, looks to me much more like an *Arctotis*, and will, I hope, soon be introduced into cultivation, as it would be a most desirable acquisition. On plate 23 of the first volume of Edwards' *Botanical Register*, under the same name of *Calendula Tragus* β , an altogether different flower of fine, deep-orange colour, which seems to me to be what we now know as *Dimorphotheca aurantiaca*, and on plate 20 of Ventenat's fine, old folio work entitled *Jardin de la Malmaison*, I find the same plant figured under the name of *Calendula flaccida*. All the plants that have come under my notice have been of an entirely annual nature, showing no trace of perenniality, the stems withering away immediately the flowering ceased, and rendering all idea of propagation by cuttings impossible. The plant, however, seeds very freely, and the seed germinates easily and promptly. *W. E. Gumbleton*.

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee.

OCTOBER 26.—*Present*: Mr. E. A. Bowles, M.A., F.E.S., F.L.S. (in the chair), Messrs. E. M. Holmes, A. W. Sutton, A. Worsley, G. Gordon, J. Fraser, J. T. Bennett-Poë, F. J. Chittenden (hon. sec.), and Rev. Aikman Paton, M.A. (visitor).

Hybrid Solanums.—Rev. AIKMAN PATON, M.A., Souleseat, Castle Kennedy, N.B., showed a series of *Solanums* raised by himself to illustrate the result of crossing *Solanum tuberosum* (a wild form from Mexico) and the white-flowered variety of *S. Commersonii*. He also showed plants and fruits of *S. verrucosum*, *S. etuberosum*, &c. The following is a description of the parents used and the resulting progeny:—

S. TUBEROSUM (Mexico), wild. [The Mexican variety used has larger portions of the rachis bare between the leaflets, fewer leaflets, and the terminal leaflet tapering from the base where the lamina is often adnate to the rachis, and fewer interspersed, small leaflets than the Chilean variety.]—Stems, green to purplish, speckled or streaked with green, with wavy green-winged edges. Leaflets, oval, very short stalked, the lamina much raised between the venation, giving the leaves a crumpled appearance, glossy; edges, crenate. Calyx, hairy, with long, tapering, awl-like points, which turn back from the berry. Corolla, rotate-pentagonal; edges, arcuate. Colour, dark lilac [R.H.S. Colour Chart 202, 2 and 3]. Anthers, short, orange-coloured. Style, slightly projecting beyond the stamens. Berries, somewhat rounded, pointed, heart-shaped, with sloping shoulders at stalk end, covered with white spots, especially at the lower half. Tubers, reddish.

S. COMMERSONII (Uruguay), white flowering.—Stems, pale green, violet at nodes, especially in axils; edges, slight, straight, green-winged. Leaves, pale green, sparse. Leaflets, shortly stalked, widely separated on the rachis, few or no interspersed leaflets, oval obtuse, flat, dull; edges, plain. Calyx, short, blunt, shouldered with short claws. Corolla, star-shaped, deeply segmented, white (sometimes with a violet tinge

on base of back of petals). Stamens, long, thin, lemon coloured (paler than those of *S. tuberosum*). Style, much exerted. Berries, larger than those of *S. tuberosum*, heart-shaped, dimpled at stalk end, with sulcus down the middle always visible at stalk end, and, especially if seedless, few spots. Tubers, yellowish white, warty (lenticels).

HYBRIDS of above.—Stems, dark violet, rounded triangular; edges, winged, green, straight. Leaves, dark green. Leaflets, oval obtuse, flat, plain-edged, dull. Calyx, short, blunt, shouldered, with short claws (sometimes triangular tapering with longer claws). Corolla, always lilac [No. 202, 4 and 3], rotate-pentagonal. Style, much exerted. Stamens, pale yellow, long. Berries, bluntly heart-shaped, full at top, covered with whitish spots on lower half. Tubers, white, with large lenticels, like *S. Commersonii*. A comparison of the hybrids with their parents shows that the hybrids have the form of stem, the form and colour of foliage, the venation of the leaflets, and the habit and general appearance of *S. Commersonii*. The calyx is generally that of *S. Commersonii*. The flower in form and colour is that of *S. tuberosum*, the shade only different [No. 202, 4 and 3]. The berry is intermediate, shaped like that of *S. Commersonii*, if but blunter and thicker, and spotted like that of *S. tuberosum*.

The cross above described is particularly interesting, in view of the fact that very rarely has *Solanum Commersonii* been got to produce fertile seed. Mr. A. W. SUTTON has obtained some, but, besides this, no one appears to have done so, although the plant has been widely grown. The Committee, on the motion of Mr. A. W. SUTTON, unanimously recommended the award of a Silver Knightian Medal to Mr. PATON for his interesting exhibit.

Potato tubers.—Mr. A. W. SUTTON showed a series of tubers of various *Solanums* as follows:—1, *Solanum Commersonii* (white-flowered form); 2 (seedling from No. 1), *Solanum Commersonii* (white-flowered), selfed 1906. These tubers showed a distinct break from those of the parent, the skin being of a different colour and the tubers of a different shape. 3, *Solanum Commersonii*, Fitzherbert's form; 4, *Solanum Commersonii* (violet-flowered form); 5 (seedling from No. 4), *Solanum Commersonii* (violet-flowered), selfed; 6, *Solanum Ohrendii*; 7, *Solanum Maglia*; 8, *Solanum Maglia* × commercial Potato; 9 (seedling from No. 8), *Solanum Maglia* hybrid × commercial Potato, selfed; 10, *Solanum etuberosum*.

Virescence in *Crepis virens*.—Mr. E. M. HOLMES showed a plant of *Crepis virens* in which the individual flowers had become stalked, and in place of a pappus a calyx had developed. The capitulum looked very like the inflorescence of an Umbelliferous plant.

The colonisation of a river bank.—Mr. J. FRASER made some remarks concerning the colonisation of the bank of the River Thames. A piece of the bank had fallen away, and this year upon the newly-bared earth the following plants had appeared. The first two are exceedingly uncommon colonists of such places. *Platanus acerifolia*, or London Plane; *Coronilla varia*; seedling of *Salix alba, fragilis, Caprea, cinerea, viminalis*; *Alnus glutinosa*, Mill; *A. glutinosa*, Gærtu; *Radicula (Nasturtium) amphibium* and *N. sylvestre, palustre, amphibium*; *Melilotus officinalis* and *indica*; *Solanum Dulcamara* and *S. nigrum*; *Mentha aquatica* and *M. subglabra* and *arvensis*; *Polygonum Convulvulus*, *P. Persicaria*, *P. arietaria officinalis*, *Angelica sylvestris*, *Lycopus europaeus*, *Sambucus nigra*, *Senecio aquaticus*, *Scrophularia aquatica*, *Enanthe crocata*, *Lythrum Salicaria*, *Veronica Anagallis*, and *Barbarea vulgaris*.

***Salix lunata*.**—Mr. FRASER recounted how he had discovered this rare Alpine Willow, and showed specimens. The plant does not appear to thrive in many gardens, but there are fine specimens in the garden of the Society at Wisley, and in the Botanic Gardens at Birmingham.

Pruning after planting.—A communication dealing with the question of the wisdom of pruning immediately after planting trees was received from Mr. J. LANDSELL and will be printed in the Society's *Journal*.

***Dorstenia Walleri*.**—Mr. CHITTENDEN showed a plant of this interesting species from the

Society's garden, grown from a tuber received from Central Africa. The species was first described in the *Gardeners' Chronicle*, August 12, 1893, p. 178, plants having been raised at Kew from seed received from Central Africa. Like other plants of the genus, the green inflorescence is flattened, and bears the flowers like an opened Fig upon the flattened stem; the margin of the inflorescence is raised somewhat, and gives rise to four or five coarse, long, tapering filaments.

Acorns refused by stock.—Mr. BOWLES showed some Acorns from three trees at Myddleton House, Waltham Cross, which neither cattle nor sheep would eat. Mr. HOLMES took them for further examination.

Abnormal bulb formation in *Nerine*.—Mr. A. WORSLEY showed a curious bulb of *Nerine* which had developed at the apex of a flattened process somewhat similar to that seen in the bulbs of *Vallota*. The occurrence of a bulb in the position assumed by this is unique in Mr. WORSLEY'S experience of *Nerines*, and he considered it probable that it was owing to the diseased condition of the basal part of the bulb.

CROYDON CHRYSANTHEMUM.

OCTOBER 27, 28.—The 22nd annual exhibition of this society was held in the Park Lane Schools, Croydon.

The Champion Challenge Class was one calling for 30 cut blooms of distinct Japanese varieties. The 1st prize was won by Mr. G. HALL, Melchet Court Gardens, Romsey, Hants., who showed Geo. Mileham, Reginald Vallis, Valerie Greenham, Rev. R. D. Eaves, Edith Jamison, Rose Pockett, Mrs. W. Knox, Mme. G. Rivol, Algeron Davis, Mrs. Coster, Lady Talbot, Mme. P. Radaelli, Mrs. L. Thorne, F. S. Vallis, Hon. Mrs. Lopes, Mrs. F. W. Vallis, H. Perkins, C. H. Totty, Leslie Morrison, J. H. Silsbury, Mme. M. de Mons, President Loubet, Edith Smith, Mrs. M. Davies, Mrs. A. T. Miller, Sensation, Miss D. Fairweather, Melchet Beauty, Lady Henderson, and W. Watson. The white varieties were, perhaps, the finer blooms, although none was of poor quality. 2nd, J. NEWTON MAPPIN, Esq., Headley Park, Epsom (gr. Mr. T. Beeson), whose best blooms were Mme. P. Radaelli, Mrs. A. H. Lee, Mrs. W. Knox, Geo. Mileham, J. H. Silsbury, Mrs. A. T. Miller, Mrs. G. Mileham, Lady Talbot, Mme. G. Rivol, and Walter Jinks. The 3rd prize was awarded to Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr. Mr. H. G. Bassett).

The President offered a Challenge Cup in the class for 20 cut blooms of four varieties of Japanese Chrysanthemums shown in vases, Chrysanthemum foliage only to be employed as greenery. The blooms in the 1st prize exhibit, shown by B. F. SMITH, Esq., Streatham (gr. Mr. E. Croft), were the finest in the show, and consisted of Mrs. A. T. Miller (white), Mme. G. Rivol (yellow), Mme. Radaelli (blush), and Reginald Vallis (crimson). The 2nd prize fell to M. G. EDWARDS, Windmill Cottage, Shirley, who showed excellent blooms of Mrs. A. T. Miller, Mrs. N. Davies, and Mrs. W. Knox.

Mr. T. BEESON excelled in the class for 15 blooms of Japanese Chrysanthemums in three varieties with extremely fine blooms of Mrs. A. T. Miller (one of which was adjudicated the best white Japanese Chrysanthemum in the exhibition), Lady Talbot, and Reginald Vallis. 2nd, Mr. H. G. BASSETT, his best examples being Reginald Vallis and Mrs. George Mileham.

There was also a class for 10 blooms of Japanese varieties, and in this the 1st prize was won by Mr. G. EDWARDS for moderate blooms of Mrs. N. Davies and Mr. W. Knox.

The best group of Chrysanthemum plants growing in pots was shown by G. PAICE, Esq., 101, Park Lane, Croydon (gr. Mr. C. Miarling), the blooms being of Japanese varieties and quite up to exhibition quality; 2nd, D. NICHOLS, Esq., Limne Court, Park Hill (gr. Mr. W. Bentley).

For five incurved blooms of one variety, Mr. PAICE was placed 1st with Romance, of fairly-developed proportions; 2nd, Mr. G. EDWARDS, with large, loose blooms of Chas. Curtis.

For five blooms of incurved Chrysanthemums of one or more varieties, Mr. FINCH was placed 1st with capital blooms.

The best 10 blooms of incurved varieties were shown by Mrs. HAYWOOD. We noticed a fine bloom of Buttercup, an incurved Japanese, and Romance, of the ordinary incurved type.

NON-COMPETITIVE EXHIBITS.—Messrs. W. WELLS & Co., Mersham, Surrey, displayed Chrysanthemums of all types as cut blooms. Amongst these were noted the new variety Miss E. King, Japanese, with reflexed, yellow florets.

Messrs. J. CHEAL & SONS, Crawley, Sussex, showed several stands of single and Cactus Dahlias, all attractive and usefully decorative.

Mr. THOMAS BUTCHER, South Norwood, showed numerous floral devices. This exhibitor also furnished decorative plants for the stage.

Winter-flowering Begonias were well shown by SYDNEY SMITH, Esq., Werndee Hall, South Norwood (gr. Mr. F. W. Hart). The plants were 1½ feet high and covered with blooms.

There were also many exhibits of vegetables, roots, hardy fruits, and Grapes.

BRIGHTON CHRYSANTHEMUM.

NOVEMBER 2, 3.—The 27th annual exhibition was held in the Dome and Corn Exchange on the above dates. The number of exhibits was below that of previous years, especially in the classes for groups, the principal class being unrepresented. In respect to pot plants the quality was much below the average; this, however, was made up for in the cut bloom classes, the winning stands and vases of which contained many blooms of a high order of merit and excellence, which caused a good deal of comment in view of the unfortunate season. Fruit and vegetables were exceedingly well shown.

In the class for a circular group of Chrysanthemums arranged with Ferns or other green foliage plants, or foliage, in a circle of 8 feet 6 inches in diameter, S. C. WITTING, Esq., Hollingbury Copse, Brighton (gr. Mr. Geo. Chandler), obtained the premier award, and P. H. BAYER, Esq., Hatch Beauchamp, Withead (gr. Mr. Geo. Bennett), the 2nd prize.

For 36 Japanese cut blooms in not fewer than 24 varieties or more than two of one sort, Mrs. L. C. GOAD, Patching, Worthing (gr. Mr. Charles Hack), was placed 1st, thus securing the handsome silver bowl to be held for one year till won three times, also the society's Silver Medal. The varieties most noticeable in this collection were Mrs. W. Knox, Bessie Godfrey, F. W. Lever, Formality, Mrs. A. T. Miller, Mrs. F. W. Vallis, and Sir Frank Crisp. The Rev. F. S. SCLATER, Newick Park, Lewes, won the 2nd prize.

In the class for 25 Japanese blooms, as cut from the plant, in not fewer than 18 varieties, in five vases, Messrs. JAS. STREDWICK & SONS, St. Leonards-on-Sea, won the 1st prize, and the Rev. F. S. SCLATER was 2nd. Messrs. STREDWICK had excellent blooms of Reginald Vallis, Mrs. Geo. Mileham, H. J. Jones, Lady Crisp, Snowdon, Exquisite, and Monarch.

For 12 Japanese blooms, Col. C. P. HENTY, Avisford, Arundel (gr. Mr. J. Harris), was 1st; whilst for 12 incurved blooms, distinct, the premier honour fell to E. LAKE WALKER, Esq., Hoisted Place, Oakfield (gr. Mr. M. Gourle). Mrs. BRIGDEN, Uckfield, Hassocks (gr. Mr. T. Brackley), secured an easy first for three vases of single varieties.

In a class for three vases of Chrysanthemums, five in a vase, one variety of each, Miss E. FITZHUGH, Streat (gr. Mr. A. Bish), secured the 1st prize. In the class for one vase of Chrysanthemums, nine blooms, not fewer than six varieties, O. E. D'AVIGDOR-GOLDSMID, Esq., won the 1st prize for excellent blooms of F. S. Vallis, Mrs. Norman Davis, Mrs. G. Mileham, Mary Mason, &c.; 2nd, HARRY YOUNG, Esq., Withead Grange, Brighton (gr. Mr. Edward Jones).

In the classes for Grapes, O. E. D'AVIGDOR-GOLDSMID, Esq., was 1st for three bunches of a white Grape, any variety, and C. R. SCRASE DICKENS, Esq., Horsham (gr. Mr. A. Kemp), for Black Grapes.

A new class for British-grown fruit, open to all retail fruiterers, met with only a poor response, the sole exhibitors being Messrs. W. MILES & Co., Brighton, whose collection well merited the 1st award of a Silver-Gift Medal.

The best collection of Orchids, arranged with Ferns or other foliage plants on a table 8 feet by 4 feet, was shown by G. W. RYDER, Esq., Keymer (gr. Mr. Wm. Hill), and was deservedly awarded the 1st prize.

The non-competitive exhibits attracted a good deal of attention, and included displays from Messrs. J. CHEAL & SONS, Messrs. WELLS & Co., THE BARNHAM NURSERIES, LTD., and others.

National Chrysanthemum Society.

NOVEMBER 3, 4, 5.



CHRYSANTHEMUMS, as Sir Albert Rollit said at the luncheon on the opening day of this exhibition, at the Crystal Palace, are everybody's flowers, because of the ease with which they are cultivated, their great diversity and usefulness, and their period of blooming. It is small wonder that the Chrysanthemum has held

a high place as an exhibition flower, but it cannot be contended that its popularity is as high as formerly. Even the National Chrysanthemum Society has felt the wane of interest, and we noticed some falling off in the exhibition, especially in the amateur classes. Against this must be placed the unfavourable season, for many who had intended to exhibit were unable to do so. The nurserymen's exhibits appeared as fine or finer than ever, and the method of staging certainly showed improvement. One of the most pleasing exhibits was a group of small plants in 5-inch pots, each specimen furnished with seven or eight good blooms. This system of cultivating the flower should commend itself to those who have to furnish pot plants for decorative purposes in the dwelling-house. New varieties were as numerous as ever, and several were granted the Society's Certificate of Merit. The opening day was a typical one for a Chrysanthemum show, the weather being foggy and damp, but visitors appeared as numerous as usual. The arrangements were excellent, and the secretary, Mr. R. Witty, and the management are to be congratulated.

GROUPS OF PLANTS.

The first class was for a floral display of Chrysanthemums and suitable foliage plants in pots, with the addition of cut blooms and appropriate sprays of foliage. Each group was allowed a space of 200 superficial feet. Lady TATE, Park Hill, Streatham Common (gr. Mr. W. Howe), had no competitor on this occasion, and, as last year, received the 1st prize. The group was a good representative collection of useful decorative Chrysanthemums, including many of the large Japanese varieties, with handsome Codiaums, Cordylines, Palms, Ferns, and other plants of a like nature for relief. It was arranged as a circle, with the centre rising and terminating with a fine specimen of a Kentia Palm. The border was furnished with elegant-leaved varieties of Nephrolepis exaltata, with clumps of the single-flowered variety, Ladysmith, surmounted by a Codium, at intervals.

There was also a class for pot plants of Chrysanthemums in not fewer than six varieties, but the exhibits were poor. The 1st prize was awarded to Mr. H. G. HEDGES, Sydenham. 2nd, Mr. BRAZIER, nurseryman, Caterham, Surrey.

AFFILIATED SOCIETIES' COMPETITION.

There was a class for a display of cut blooms, occupying a table space of 18 feet by 3 feet, for societies in affiliation with the National Chrysanthemum Society. There was only one society represented, namely, THE DULWICH CHRYSANTHEMUM AND HORTICULTURAL SOCIETY. It made a pleasing exhibit, but the varieties were not named. Ferns, Palms, Codiaums, and Cordylines were freely employed for decoration, and these were as noteworthy as the Chrysanthemums.

OPEN CLASSES: CUT BLOOMS.

INCURVED VARIETIES.—The largest class for incurved Chrysanthemums was for 36 blooms of distinct varieties. There was only one exhibit, this being shown by J. B. HANKEY, Esq., Fetcham Park, Leatherhead (gr. Mr. W. Higgs). The collection was worthily awarded the 1st prize, the majority of the blooms being of high quality, although, perhaps, not so fine as at some previous exhibitions of this Society. The largest blooms were in the back row, which contained the following varieties: H. W. Thorp, a finely-formed white flower, a little past its best condition, some of the lower florets showing signs of deterioration; Mrs. B. Hankey; Butter-

cup, one of the most striking of the yellow varieties; Miss E. Holden; May Phillips, a very large yellowish-rose bloom; Mrs. G. Denyer, Flock Trestian, W. J. Higgs, the largest of the reddish blooms; Emblème Poitevine; Lady Isabel, faint blush; Mrs. J. Hygate, a large white flower; and Clara Wells, a choice specimen of this finely-shaped variety, yellow with a tinge of rose. Other good blooms were Mrs. F. Ashworth, G. F. Evans, Topaze Orientale, pale yellow; Nellie Southam, and Romance, yellow.

There were three exhibits in the class for 12 blooms of incurved varieties, two of the displays being very close in point of quality. The 1st prize was awarded to A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease), with moderately good examples of Mrs. G. P. Bryce, white; G. F. Evans, a rather shallow, yellow flower; Mrs. J. Hygate, white; Emblème Poitevine, the largest of the yellow varieties shown; Clara Wells, a refined bloom; Lady Isabel, Buttercup, Miss Cora Stoop, Mrs. J. Wynn, Mrs. F. Ashworth, Mrs. G. Denyer, and Romance. 2nd, J. B. HANKEY, Esq. (gr. Mr. W. Higgs), with H. W. Thorp, Lady Isabel, Mrs. G. Denyer, Clara Wells, and Miss E. Holden as his best specimens. Not more than half a point separated the two exhibits. 3rd, J. L. BURGESS, Esq., Hill House, Maisey Hampton, Gloucester (gr. Mr. J. A. Humphries).

For six blooms of Incurved varieties of one kind only, there were six competitors. These included some of the finest flowers of the type in the show. A very fine set of the white H. W. Thorp, shown by J. B. HANKEY, Esq. (gr. Mr. Higgs), received the premier award, all the other stands being of yellow varieties. Buttercup, shown by A. TATE, Esq. (gr. Mr. W. Mease) was placed 2nd, and Romance, exhibited by A. T. MILLER, Esq., Leatherhead (gr. Mr. Geo. Mileham) 3rd.

JAPANESE VARIETIES.

The large exhibition blooms of this type are generally regarded as the feature of the show, and the finest efforts of the Chrysanthemum grower are seen in the largest class, which is for 48 blooms of distinct varieties. There were six admirable displays, and we could detect no falling off in quality in the leading exhibits. Collectively they made a fine and imposing show. It was an easy task to select the winning stand, and it was additionally interesting in that the exhibitor, A. C. HAMMERSLEY, Esq., Abney House, Bourne End (gr. Mr. T. Waller), had never before won the premier prize in this class. Although shown on stands of regulation size, the blooms were so large as to appear crowded, and it was the general opinion that they constituted the finest 48 Japanese blooms shown at these exhibitions. The 1st prize included a Holmes Memorial Challenge Cup and the Dean Memorial Gold Medal. The varieties were as follow:—Lady Talbot, George Terry, Edith Smith, Australe, Bessie Godfrey, Leigh Park Wonder (a remarkable specimen of this choice red variety), Mrs. A. T. Miller (a superb white flower), Reginald Vallis, Mrs. R. Hooper Pearson, Henry Perkins, Mme. Gustave Henry, Mildred Ware, W. E. Crossley, Daphne, W. H. Whiteham, F. S. Vallis, President Viger, Mrs. Chalk, Mrs. A. H. Lee, Mrs. F. G. Coster, W. A. Etherington, Mrs. Geo. Mileham, Geo. Lawrence, Beatrice Sapho, Valerie Greenham, Mrs. Norman Davis, Sapho, Mrs. A. Knight, Harold Wells, Walter Jinks, Miss Alice Edwards, Mary Inglis, Mrs. Beckett, Mme. G. Rivol, Rev. R. D. Eves, Marquise V. Venusta, Norman Davis (a lovely reddish tint), Mrs. W. Knox, Miss Edith Moore (a charming white bloom), Lady Mary Conyers, Mrs. R. F. Felton, Geo. Mileham 1908 (a massive, broad-petalled yellow flower), Mrs. F. W. Vallis, Mme. P. Radaelli, Splendour, Chrys. Montigny, J. H. Silsbury, and Frank Payne. The 2nd prize group, shown by E. G. MOCATTA, Esq., Woburn Place, Alderstone (gr. Mr. T. Stevenson), was characterised by bright, fresh blooms, not so large, generally, as those from Bourne End, but nevertheless highly meritorious. Especially good were F. S. Vallis, W. A. Etherington (faint rose), Miss Annie Lunt (white), Mrs. G. Penford (deep yellow), Henry Perkins, Lady Talbot (a very deep, lemon yellow bloom),

James Lock, Mrs. Geo. Mileham, Master James, and Walter Jinks. 3rd, Exors. of Lady ASHBURTON, Melchet Court, Romsey, Hants. (gr. Mr. G. Hall). The outstanding feature in this stand was a bloom of Hon. Mrs. Lopes, of clearest yellow colour. 4th, A. TATE, Esq. (gr. Mr. W. Mease).

The President, Sir Albert Rollit, LL.D., offered a silver cup for the best exhibit of 24 blooms of Japanese varieties, and for this trophy six growers competed. A. C. HAMMERSLEY, Esq. (gr. Mr. T. Waller), again excelled, beating all the other competitors easily. He had magnificent blooms of Lady Talbot, Leigh Park Wonder, Edith Smith, Reginald Vallis, J. H. Silsbury, Mrs. A. T. Miller, Henry Perkins, F. S. Vallis, President Viger, Bessie Godfrey, Valerie, Mary Inglis, Mme. G. Henry, Mrs. G. Mileham, Daphne, Sapho, Mrs. Beckett, W. A. Etherington, Mrs. A. H. Lee, Harold Wells, Norman Davis, Mme. G. Rivol, Mildred Ware, and Mme. P. Radaelli. 2nd, E. MOCATTA, Esq. (gr. Mr. T. Stevenson), with a choice set, including Mrs. C. Penford, F. S. Vallis, James Lock, Lady Talbot, Mrs. A. T. Miller, Master James, Mdlle. J. de la Crouee (pink), Walter Jinks, and Mrs. Norman Davis. 3rd, Rev. A. C. COOPER-MARSDEN, 60, Wickham Road, Beckenham (gr. Mr. W. Rigby), Mrs. L. Thorne and Mrs. A. T. Miller being his best varieties.

In the smaller class for twelve blooms, nine exhibitors staged, the 1st prize being won by Rev. A. C. COOPER-MARSDEN (gr. Mr. W. Rigby) with very large flowers, notably Mrs. L. Thorne (yellow), Mrs. Norman Davis (white), Mrs. C. Penford (yellow), and Mrs. G. Mileham (rose). The Ichthem Guano Company offered a special prize in this class. The 2nd prize was awarded to E. WORMALD, Esq., Grass Farm House, Finchley (gr. Mr. J. Kirkwood). 3rd, A. TATE, Esq. (gr. Mr. W. Mease).

REFLEXED VARIETIES.

There were two exhibits in a class for twelve large-flowered varieties of this type, shown by Miss LANGWORTHY, Gay's House, Holyport (gr. Mr. T. J. Brown), and J. L. BURGESS, Esq. (gr. Mr. J. A. Humphries), respectively, who were awarded the prizes in the order of their names. Miss LANGWORTHY showed King of Crimson, Miss F. Lunn, Golden Elise, Dr. Sharp, Chevalier Domage, Charles Tutt, and others. The 2nd prize flowers were rather uneven in size.

BLOOMS SHOWN IN VASES.

The class for 12 vases of specimen blooms of Japanese varieties, three flowers of a distinct sort in each vase, makes an imposing display, and this manner of showing large Chrysanthemums appears to be most appreciated by visitors. There was not so good competition as usual, four growers only competing; still, the forty-eight vases filled one of the largest tables.

The 1st prize was awarded to Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, Somersetshire, who had massive blooms of William Geo (pink), Gladys Blackburne, Mrs. Norman Davis, Lady Talbot, C. H. Totty, Mme. G. Rivol, Mme. P. Radaelli, F. S. Vallis, Mrs. A. T. Miller, Reginald Vallis, Frank Payne, and Mrs. W. Iggulden. 2nd, Exors. of Lady ASHBURTON (gr. Mr. G. Hall) with Edith Smith (white), Algernon Davis (yellow), F. S. Vallis (yellow), Annie Hamilton (white), and Mrs. Geo. Mileham (pink) as his best flowers. 3rd, J. B. HANKEY, Esq. (gr. Mr. W. Higgs).

The best vase of five Japanese blooms of a white variety was of the peerless Mrs. A. T. Miller variety, shown by Miss LANGWORTHY, the 2nd prize being awarded to the variety Mrs. Norman Davis, shown by Mr. H. J. HEDGES, nurseryman, Sydenham. The better of two vases in a similar class for a yellow variety was shown by Marquis CONYNGHAM, Bifrons, Canterbury, who had exceptionally large flowers of Mr. F. S. Vallis. 2nd, Mrs. W. Iggulden, shown by Mr. W. IGGULDEN, Frome.

In the similar class for any colour other than white or yellow, the 1st prize was given for a vase of the beautiful soft pink variety, named after Mme. P. Radaelli, magnificently shown by Mr.

W. IGGULDEN. 2nd, the variety J. Lock, shown by A. T. MILLER, Esq. (gr. Mr. G. Mileham). Four exhibits were staged in this class.

INCURVED VARIETIES.—The only class for Chrysanthemums of this type shown in vases was for 12 vases of distinct varieties, three blooms of each sort. There was only one exhibit, and this was awarded the 1st prize. It was shown by J. B. HANKEY, Esq. (gr. Mr. W. Higgs), who staged average specimens of Clara Wells, Lady Isabel, Embleme Poitevine, Romance, Mrs. J. Hygate, Nellie Southam, Topaze Orientale (very fine), Miss E. Holden, H. W. Thorp (three remarkably good blooms), Mrs. G. Denyer, Mrs. B. Hankey, and very large, finely-coloured blooms of Buttercup.

Messrs. W. Wells & Co. offered prizes in a class for six Japanese varieties distributed by this firm during 1908-1909. The 1st prize was won by A. TATE, Esq. (gr. Mr. Mease), with Pockett's Supreme, Rose Pockett, C. H. Totty, Mrs. L. Thorn, Leslie Morrison, and Merstham Blush. The only other exhibitor, PANTIA RALLI, Esq., Ashtead Park, Epsom (gr. Mr. G. Hunt), was awarded the 2nd prize.

Anemone-flowered Chrysanthemums.—There were three competitors in the class for 24 large-flowered varieties, the biggest blooms, shown by J. L. BOYD, Esq., North Frith, Tonbridge (gr. Mr. A. C. Horton), being placed 1st, the 2nd prize being awarded to C. DOUGLAS CLARK, Esq., Bromley (gr. Mr. A. Henderson). Mr. BOYD's best flowers were Mdle. N. Brun (very choice flowers), Souvenir de Mme. Blandinieres (crimson), Sir Walter Raleigh (pink), and Mrs. Judge Benedict (tipped with yellow and basal petals bluish).

Three growers staged in the smaller, similar class for 12 varieties. Mr. BOYD again winning the 1st prize, followed by J. L. BURGESS, Esq.

The class for 12 large-flowered Japanese varieties in as many blooms, brought three entries, and again Mr. BOYD excelled, showing much the best flowers, having John Bunyan, Mrs. H. Eland, Souvenir de Mme. Blandinieres, Le Chalonnaise, Duchess of Westminster, Sabine, Owen's Perfection, W. W. Astor, Souvenir des Norgeot's, Sœur Dorothee, Souille, Mrs. Shimmis, and Mr. A. Gardiner. 2nd, J. L. BURGESS, Esq. (gr. Mr. J. A. Humphries).

A class was provided for six varieties of Chrysanthemums as grown for market without budding, 12 blooms constituting a vase. The only exhibit was put up by J. L. BURGESS, Esq. (gr. Mr. J. A. Humphries), who had highly decorative and useful-sized blooms of Soleil d'Octobre, Crimson Source d'Or, Moneymaker, Chas. Davis, Caprice du Printemps, and Vivian Morel.

Only two exhibitors staged in the class for six vases of Pompon Chrysanthemums, and of these the 1st prize flowers were exceptionally good. The exhibitor was F. BRABY, Esq., Bushey Lodge, Teddington (gr. Mr. F. Fitzwater), who had splendid blooms of Mdle. Elise Jordan (pink, the most perfect in form of its class), William Westlake (yellow), Comte de Morney (crimson), Prince of Orange (bronzy-orange), Mdle. Marthe (white), and Wm. Sabey (deep yellow). 2nd, J. L. BURGESS, Esq. (gr. Mr. A. J. Humphries), with shorter bunches, in consequence not so effective. He showed Wm. Sabey very finely.

In the class for six vases of Anemone-pompons, F. BRABY, Esq. (gr. Mr. F. Fitzwater), had no competitor, and he was awarded the 1st prize for blooms of mediocre quality.

SINGLE-FLOWERED CHRYSANTHEMUMS.—Two classes were provided for these pretty flowers, but the response was poor. The large class was for 12 vases, and only two growers entered. The 1st prize went to Mr. F. BRAZIER, nurseryman, Caterham, for tall bunches of E. Nettle, Florrie Stevens, A. Howard, Mrs. H. Redden, Chas. Graves, Nellie Riding, White Pagram, and several seedlings. 2nd, Marquis CONYNGHAM (gr. Mr. D. Fairweather), with brighter-coloured flowers, which we preferred to the 1st prize set.

For six vases of these varieties the premier award was made in favour of E. G. MOCATTA, Esq. (gr. Mr. T. Stevenson), who had large varieties, all finely shown. Bronze E. Pagram was seen in beautiful form, also Hilda Lawrence (pink), White E. Pagram, Mary Richardson (rose and orange, the finest of the set), and

Edith Pagram. 2nd, J. L. BURGESS, Esq. (gr. Mr. J. A. Humphries).

AMATEUR CLASSES.

SECTION A.

In this section three classes were provided, for 18 Japanese blooms, distinct, 12 Japanese blooms, distinct, and 12 incurved blooms, dissimilar, respectively. The better of the two exhibits shown in the largest class for Japanese blooms was staged by Rev. A. C. COOPER-MARSDIN (gr. Mr. W. Rigby), who had very good flowers, including Reginald Vallis, Mrs. C. H. Totty, Mrs. Norman Davis, F. S. Vallis, Henry Perkins, Mrs. A. T. Miller, Mrs. Geo. Mileham, Formality, and Henry Perkins, all these being very well shown. 2nd, A. GROVE, Esq., M.P., Chalfont St. Giles (gr. Mr. E. Dennis), with much smaller flowers.

For 12 varieties of Japanese Chrysanthemums there were three entries, the 1st prize being again awarded to Rev. COOPER-MARSDIN, followed by J. GARDNER, Esq., Croxsted House, Dulwich (gr. Mr. E. Houlton). 3rd, W. H. STONE, Esq., Donnington, Sydenham (gr. Mr. T. W. Stevens).

No exhibit of incurved blooms was staged in this section.

SECTION B.

The president, Sir Albert Rollit, offered a cup for a decorated display of Chrysanthemums, with any suitable foliage arranged on a table. The only exhibit, staged by Mrs. BREWSTER, Canterbury, was not considered worthy of the 1st prize, the 2nd being awarded. The Chrysanthemums were small, inferior blooms, but the table was prettily arranged with sprays of Vitis hederacæ, Grasses, &c.

For 12 Japanese blooms, distinct, only one group was forthcoming, this being shown by C. FOX, Esq., Richmond Lodge, Tunbridge Wells, who had some good blooms, those of Mrs. A. T. Miller, A. H. Broomhead, Beatrice May, Lady Talbot, and Mrs. F. S. Vallis being the best.

There were numerous other small classes for amateurs, but these do not call for special remark.

DECORATIVE CLASSES.

Table decorations figured largely, there being six exhibits arranged with yellow and bronze blooms, and four with varieties of other colours than those mentioned.

The best exhibit in the bronze and yellow class was arranged by Mr. T. W. STEVENS (gr. to W. H. STONE, Esq., Laurie Park Gardens, Sydenham), who employed Source d'Or and yellow Pompon varieties with Asparagus, Vitis sprays, Codium leaves, Grasses, and panicles of Humea elegans. 2nd, Mrs. R. ROBINSON, Carshalton, with pretty end pieces, but a rather weak centre.

In the other class Mrs. BREWSTER, Canterbury, excelled, using white Chrysanthemums pleasingly disposed with greenery and coloured leaves. This exhibit was awarded a piece of plate presented by Mr. Felton for the best table in the two classes.

Rev. A. COOPER-MARSDIN showed fine blooms of Mrs. A. T. Miller in the class for a vase of five Japanese blooms, arranged with other foliage.

The best pair of bride's bouquets were displayed by Mr. STEVENS (gr. to W. H. STONE, Esq.); and Mr. HOULTON, Croxsted House Gardens, Dulwich, exhibited the best large vase of decorative Chrysanthemums.

There were several exhibits of a vase of large-flowered, single, white Chrysanthemums, the 1st prize evidently being given for quality of flowers. The successful exhibitor was Mr. F. G. OLIVER, 97, Tollington Park, N., who had superior blooms. The best vase of mixed singles was shown by Mr. J. W. HARRISON, Ashbourne Gardens, Sydenham. The best basket of autumn foliage or berries was shown by Miss J. MARTIN, Norwood, Mrs. BREWSTER following with an almost exact replica, but smaller.

FIRST-CLASS CERTIFICATES.

Mrs. Colles (single).—A pretty flower of the shade known as crushed strawberry. Shown by A. W. BIRD, Esq., Manor House, West Wickham (gr. Mr. H. Redden).

Geo. Hemming (Japanese).—The florets are rosy-claret coloured, with a silvery reverse.

Shown by Mr. GEO. MILEHAM, and exhibited in Mr. Davis's group.

J. H. Greswold Williams (single).—A large, bright yellow variety. Shown by Mr. H. TRIBE, Bradenbury Court Gardens, Worcester.

Francis Joliffe (Japanese).—Colour, straw-yellow shaded with rose. From Mr. M. SILSBURY, Shanklin.

Mrs. R. Luxford (Japanese).—A market variety of chestnut colour.

Phosphorescens (decorative).—The colour is bronzy-terra-cotta. Both these shown by Messrs. W. WELLS & Co.

FRUIT AND VEGETABLES.

The best three bunches of black Grapes were shown by J. L. BOYD, Esq., in three finely-shaped but small-berried bunches of Mrs. Pince. 2nd, Sir WALPOLE GREENWELL, Bart., Caterham (gr. Mr. W. Lintott) with Alicante. Mr. BOYD also showed the finest bunches of Gros Colman Grapes.

No entries were forthcoming for white Grapes. Dessert Apples were best shown by Sir WALPOLE GREENWELL, Bart., whilst the best culinary Apples were exhibited by W. E. ALLAN, Esq., Chipperfield (gr. Mr. J. Clement). Mr. BOYD showed the choicest Pears.

Messrs. Robt. Sydenham, Ltd., Tenby Street, Birmingham, offered several prizes for vegetables.

For a collection of eight kinds some splendid produce was shown, a magnificent lot of Parsnips, Potatos, Celery, Carrots, Brussels Sprouts, Cauliflowers, and Onions shown by Earl SPENCER, Althorp Park, Northampton (gr. Mr. S. Cole) winning the 1st prize in keen competition. The best Brussels Sprouts were shown by Rev. O. TURNER, Weybridge (gr. Mr. A. Basile), who also showed the best Red Cabbage, Savoy, Carrots, and Cauliflowers. Celery, Parsnips, and Leeks were finest from Earl SPENCER's garden. R. H. KING, Esq., Berkhamsted, excelled in the class for Beet. The best Onions were exhibited by JOHN KING, Esq., Rickmansworth (gr. Mr. T. Avery).

For Messrs. Webb's prizes for a collection of vegetables, three growers competed, the 1st prize being awarded to Hon. VICARY GIBBS, Elstree (gr. Mr. Ed. Beckett), for one of his usual high-class collections. 2nd, Rev. O. TURNER, who had magnificent Parsnips.

NON-COMPETITIVE EXHIBITS.

Mr. NORMAN DAVIS, Framfield, Sussex, showed Chrysanthemums in superb style, the quality of the flowers being of the highest. Large epergues of Mrs. N. Davis, Miss Lillian Hall, Mrs. A. T. Miller, Mrs. Robert Brown, and other large Japanese blooms arose from a groundwork arranged with artistic effect. (Large Gold Medal.)

Mr. H. J. JONES, Hither Green, Lewisham, staged an equally beautiful and somewhat similarly-arranged group of Chrysanthemums. Some of the choicer blooms were arranged in large china vases and some on tall tripods. All the most popular and choicer varieties were seen in this extensive group. (Gold Medal offered by Messrs. Clay & Son for the best exhibit in the show, also the Society's large Gold Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., put up a circular group of Chrysanthemums of all sections. The centre was pyramidal in shape, and around the outside were epergues at intervals. A good selection of varieties was displayed in well-grown blooms. Messrs. PEED also showed Carnations and about 70 dishes of well-grown Apples and Pears. (Large Silver Medal.)

Messrs. H. CANNELL & SONS, Swanley, made a very large exhibit of Zonal Pelargoniums and Chrysanthemums. In the centre of the display were single varieties most charmingly shown. Messrs. CANNELL also showed 215 varieties of Apples and Pears, with specimen fruit trees. (Gold Medal.)

Mr. PHILIP LADDS, Swanley Junction, Kent, displayed Chrysanthemums as grown for market, the group ranking as one of the finest in the show. It was arranged with perfect taste, and the flowers were of the finest quality. (Gold Medal.)

A large group of Chrysanthemums was set up by Mr. W. J. GODFREY, Exmouth, Devon. (Gold Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, exhibited a large group of Chrysanthemums,

having numbers of the pretty single varieties raised at Merstham. (Gold Medal.)

Messrs. BUTLER BROS., Bexley Heath, arranged a charming floor group of small Chrysanthemum plants in 5-inch pots carrying seven or more fine flowers and not more than 1½ foot high. (Silver-gilt Medal.)

Mr. FRANK BRAZIER, nurseryman, Caterham, showed Chrysanthemums interspersed with hardy foliage, Vitis species and Oak, with coloured flowers. (Silver Medal.)

Messrs. JOHN LAING & SONS, Forest Hill, Norwood, showed pot plants of tuberous-rooted Begonias.

Mr. H. W. THORP, Durrington, Worthing, showed Chrysanthemums arranged formally in rows with epergnes and Palms at the back. (Large Silver Medal.)

HOBBIES, LTD., Dereham, Norfolk, staged Roses in variety, having a large group that provided a pleasing change. (Silver-gilt Medal.)

Messrs. H. SCOTT & SON, Woodside, South Norwood, exhibited horticultural sundries and garden furniture. (Silver-gilt Medal.)

Mr. G. W. RILEY, Herne Hill, displayed horticultural buildings, garden seats, pergolas, arches, &c. (Large Silver Medal.)

Boxes of Apples as shipped for market were displayed by the Government of British Columbia, all highly coloured and attractive fruits, the grading and packing being an object lesson to home growers. (Silver-gilt Medal.)

HEREFORD FRUIT AND CHRYSANTHEMUM.

OCTOBER 27.—The annual show was held on this date in the Shire Hall, Hereford. The classes were well filled, though more exhibits of fruit have been staged at some previous shows. Apples and Pears were splendidly exhibited, but Grapes, taking them collectively, were not of first-rate quality, although some fine bunches of Gros Colman were shown by Mr. C. LIDDLE. The Chrysanthemum blooms were shown in vases.

APPLES.

The class for a collection of 50 varieties (not more than 12 nor fewer than five fruits to form a dish) brought three exhibits, Mr. WHITING, Credenhill, being awarded the 1st prize with a splendid exhibit. The best samples included Houblon, Cox's Orange Pippin, Barnack Beauty, Pickering's Seedling, Lord Hindlip, King's Acre Pippin, Rival, Charles Ross, Newton Wonder, King Edward VII., Mrs. Barron, Warner's King, Washington and Stirling Castle. 2nd, Messrs. PEWTRESS BROS., Tillington Nursery. Mr. J. LEE, who staged some fine fruits in this class, was disqualified for mixing on one dish Mabbott's Pearmain and American Mother. A special prize was awarded this exhibitor.

In a class for 30 dishes of Apples, Mrs. HILL, Moreton Court (gr. Mr. T. Jones), took the lead with a capital collection, in which culinary varieties predominated. Some of the best dishes consisted of Baumann's Red Winter Reinette, Wealthy, Cox's Orange Pippin, Charles Ross, September Beauty, Royal Jubilee, Annie Elizabeth, Lord Derby, Warner's King, and Mère de Ménage; 2nd, J. RILEY, Esq., Putley Court (gr. Mr. H. Taylor).

There was only one exhibitor, viz., Sir G. CORNWALL, Moccas Court (gr. Mr. Talbot), in a class for 12 dishes of culinary Apples, and he worthily secured the 1st prize.

No fewer than nine exhibitors staged exhibits of eight dishes of dessert varieties, the Rev. S. H. DEVONPORT (gr. Mr. R. Currie) being placed 1st with beautiful, clean fruits of Egremont Russet, Ribston Pippin, Cox's Orange Pippin, American Mother, King of the Pippins, Allington Pippin, Adam's Pearmain and Wealthy. A. G. BURNEY, Esq., The Weir (gr. Mr. Holder), followed closely, and Col. HENRY, Hatfield (gr. Mr. Sykes) was placed 3rd.

In a special class for eight culinary and four dessert varieties Mr. J. BOTT, Brunton, secured the lead amongst three exhibitors; 2nd, Mrs. BLASHILL, Bridge Pollars.

For three varieties of recently-introduced Apples, Mrs. HILL (gr. Mr. J. Jones) was placed 1st with Rival, Houblon and Charles Ross; 2nd, Mrs. WHITING.

There were 18 single-dish classes, and amongst them were to be found many of the best Apples in the show.

There were two entries in a class for a decorative group of fruits, preserved or fresh, arranged in a space of 50 square feet. Messrs. PEWTRESS BROS. won the leading honours with 50 varieties of Apples and Pears, arranged in baskets, intermingled with small decorative plants. The KING'S ACRE NURSERY Co., the only other exhibitors, staged a fine lot of bottled fruit.

PEARS.

In the class for a collection of not more than 12 varieties, four good exhibits were staged. Mr. CURRIE was awarded the 1st prize. He showed splendid dishes of Glou Morceau, Doyenné du Comice, Beurré Bosc, Easter Beurré, Beurré Diel, Marie Louise, Beurré Superfin, Le Lectier, and others. A. W. FOSTER, Esq., Brockhampton Court (gr. Mr. H. Parrott) followed closely.

In the smaller class for eight varieties of dessert Pears there were three entries, the chief one being made by the Rev. Prebendary BRIERLY, Bridetow Vicarage (gr. Mr. Paxton), who staged Mme. Teyre, Emile d'Heyst, Doyenné du Comice, Duroondeau, Beurré Bachelier, Pitmaston Duchess, Beurré A. Lucas, and Marie Louise; 2nd, Mr. SYKES.

Three exhibitors staged in the class for a collection of fruits of six kinds. Black and white Grapes were allowed to count as two kinds. Mr. SYKES led with Muscat of Alexandria and Gros Maroc Grapes, a fine fruit of Emerald Melon, Doyenné du Comice Pear, Cox's Orange Apple, and late Admiral Peach. 2nd, Mr. CURRIE.

The champion dish of dessert Apples was Cox's Orange Pippin, shown by Mr. C. THOMAS; the best culinary variety, Peasgood's Nonesuch, shown by Mr. NELME.

Mr. CURRIE showed the finest dish of Pears, the variety being Doyenné du Comice.

GRAPES.

The best three bunches of Gros Colman were shown by Mr. C. LITTLE; 2nd, Mr. H. PARROTT.

Four exhibitors staged in the class for any other black variety, Mrs. WOODHOUSE, Burghill (gr. Mr. NUNN), being placed 1st with medium-sized bunches of Black Alicante; 2nd, Mr. T. JONES with the same variety.

Mr. CURRIE won the 1st prize in the class for a variety of white Grape, Mr. SYKES being 2nd. Both exhibitors showed Muscat of Alexandria.

VEGETABLES.

These were shown in excellent condition. Seven entries were staged in the class for 10 kinds, the prizes being offered by Mr. J. Wilson, Commercial Street, Hereford. A. G. BURNEY, Esq., The Weir (gr. Mr. Holder), secured the leading place with Cauliflowers, Celery, Leeks, Parsnips, Onions, Potatos, Beetroots, Peas, Brussels Sprouts, and Tomatos; 2nd, Mr. W. STANSBURY.

Messrs. Sutton & Sons also offered prizes for six kinds, and here W. C. KING KING, Esq., Graftonbury (gr. Mr. Davies), led, followed by Mr. STANSBURY.

Tomatos, in an open class contested by 10 exhibitors, were best shown by Mr. SIDDLÉ.

NON-COMPETITIVE EXHIBITS.

These were not numerous. The KING'S ACRE NURSERY Co. were the largest contributors, staging a grand collection of fruits, including 110 dishes of Apples and 16 of Pears, backed by Apple and Pear trees, also Grape vines, in pots, all splendidly furnished with fruits. This firm also staged a large group of decorative plants, cut flowers, and floral devices.

Mr. JOHN WILSON staged a large stand of bouquets, wreaths and other floral designs.

In the agricultural section were exhibits of cider, perry, grain, Beans, Hops, and roots.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT. (ANNUAL DINNER.)

OCTOBER 28.—The twenty-third anniversary dinner of this institution took place at the Waldorf Hotel under the chairmanship of Mr. J. B. Slade. In spite of the unfavourable weather which prevailed, there was a fairly large number of members and their friends present.

At the close of the dinner the Chairman proposed the toast of "Continued success to the

United Horticultural Benefit and Provident Society." In the course of his speech, the Chairman remarked that nothing stands out so conspicuously in the history of the past hundred years as the great rise in friendly, benefit, and other societies connected with the working classes. The existence of benefit societies was advantageous to the nation. He had been connected with a benefit society ever since he was eligible to join one. He felt sure we should be pursuing the proper course if we could teach young gardeners what an immense value it would be to them if they would join the United Horticultural Benefit and Provident Society at an early age. Not only would they have a benefit fund to assist them in sickness, but, on arriving at the age of 60 or 70 years, they would have a substantial amount in the bank standing to their credit, which might do much to brighten the declining years of their life. The Benevolent Fund was founded to assist members in distressed circumstances, and the Convalescent Fund to help members obtain a change of air, when required, after sickness, which is often the means of effecting a more complete and speedy recovery to health. The Management Fund was also worthy of attention, because it showed that one special contribution of half-a-crown per year from each member defrayed all cost of administration. A special levy is made from the members' yearly contributions for sickness, and the remainder is placed on the society's books to his personal credit, together with the yearly interest which has accrued.

Mr. C. H. Curtis, chairman of committee, responded, and thanked the Chairman for the sympathetic manner in which he had proposed the toast.

"The Honorary and Life Members" was given by Mr. J. Harrison Dick, who stated that, in addition to the money subscribed by them, their names would doubtless be regarded as a "hall-mark" by gardeners who are not members of the society. Mr. Thos. N. Cox made a suitable reply. The next toast, that of "The Visitors," was proposed by Mr. Riley Scott, and replied to by Mr. A. Dawkins. Mr. E. F. Hawes proposed "The Press" in a few well-chosen words, which were responded to by Messrs. G. Gordon and F. W. Harvey. "The Chairman" was given by Mr. R. J. Frogbrook, and, after a suitable reply, Messrs. Collins, Winter, Redfern, and the "Waverley" Glee Party were cordially thanked for their contributions to what had proved a most pleasant evening.

CARDIFF CHRYSANTHEMUM.

NOVEMBER 3, 4.—This society held its 23rd annual show at the Park Hall, Cardiff, on the foregoing dates. The entries this year were quite as numerous as on former occasions, but while there were more exhibits of fruit, there was a slight falling away in the cut bloom classes. There were more groups of plants in evidence than usual, and the competition was correspondingly keen. In spite of the dull, damp season, those best qualified to judge gave it as their opinion that the whole of the exhibits were well up to the average.

In the open classes, Mr. GEO. DRAKE, Cardiff, was awarded the 1st prize and a Challenge Cup for a stand of specimen blooms consisting of eight varieties of Japanese Chrysanthemums arranged in a like number of vases, each variety represented by three blooms. The varieties shown were Mrs. A. T. Miller, F. S. Vallis, President Viger, Bessie Godfrey, Reginald Vallis, Lady Talbot, Mme. P. Radaelli, and J. H. Silsbury. The 2nd prize went to H. I. H. Prince HATZFELD, Chippenham (gr. Mr. F. Bible), and the 3rd to L. E. TRAHERNE, Esq., Coedriglan (gr. Mr. S. H. Brown).

For a collection of 24 blooms, Incurved, containing not fewer than 12 varieties, there was but one entry made, and that by Mr. DRAKE, who was accordingly awarded the prize. Some fine blooms of Boccasia, Mrs. Wynne, W. Biddle, Nellie Threlfall, Lady Isabel and Pantia Ralli were staged in this exhibit.

In the class for 12 distinct Japanese blooms, Messrs. G. WILLIAMS & SON, Nurserymen, Cardiff, secured 1st place with, among others, fine blooms of Miss Faith Moore, Valerie Greenham, Mrs. G. F. Coster, and F. S. Vallis. H. I. H. Prince HATZFELD and Mr. H. A. JOY, Court-ralla, Cardiff, were 2nd and 3rd respectively.

DEBATING SOCIETIES.

A. F. HILL, Esq., Cardiff won the 1st prize and a Challenge Cup for a stand of 24 Japanese blooms of not fewer than 18 varieties. First-rate blooms of F. S. Vallis, Mand Jefferies, Purity, Master David, J. W. Molyneux, Mrs. W. Knox, and Mrs. Geo. Mileham found a place in this collection. Mr. H. A. ALLEN, Penarth, was 2nd.

As in other classes for Incurved blooms already noted, there was only one exhibitor who set up a stand of 12 blooms, in not fewer than six varieties. The exhibitor in this case was H.I.H. Prince HATZFELDT, and the blooms being of high quality, were awarded 1st prize. Mrs. Judson, Boccasio, Clara Wells and Pantia Ralli were some of the best flowers shown. His Highness also staged the only exhibit in the class for 24 specimen blooms—12 Incurved and 12 Japanese—for which he obtained 1st prize and a Silver Challenge Cup. Buttercup, Boccasio and Topaze Orientale were among the best Incurveds, and Master David, Hon. Mrs. Lopes, Mrs. Hooper Pearson, and Mme. G. Rivol the most striking of the Japanese.

For a stand of six vases of cut blooms, three blooms of each, distinct, A. F. HILL, Esq., received the 1st prize and a Challenge Cup. Four of the best were F. S. Vallis, Mrs. N. Davis, Mrs. Geo. Mileham, and the Hon. Mrs. Lopes. The 2nd prize went to F. PRIMAVESI, Esq., Cardiff (gr. Mr. W. Webber).

Messrs. G. WILLIAMS & SONS, Cardiff, were placed 1st for a group of large-flowering Chrysanthemums arranged with foliage plants, occupying a space of 60 square feet. In addition to the prize, a challenge cup was also awarded. Mr. W. TRESEDER, nurseryman, Cardiff, was placed 2nd.

For a group of Chrysanthemums covering an area of 50 square feet, the 1st prize and a challenge cup were awarded to the executors of the late JAMES HOWELL, Esq. (gr. Mr. A. Brown), Cardiff. Messrs. J. EDGINGTON and HATHERDALE, of Cardiff, were placed 2nd and 3rd respectively.

In addition to the foregoing prizes, Messrs. W. THOMAS and W. TRESEDER, nurserymen and florists, Cardiff, received numerous awards for floral designs.

FRUIT.

Mr. H. PITT, Abergavenny, showed a very good collection of dessert fruit, consisting of five distinct dishes, for which he received the 1st prize. The following were the kinds of fruit staged:—Grapes, Muscat of Alexandria; Melon, Taunton Hero; Fig, Negro Largo; Pear, Doyenné du Comice; and one dish of Medlars. J. H. MULLINS, Esq., Llanishen (gr. Mr. Huxtable), 2nd; and P. S. LYSAGHT, Esq., Wellington (gr. Mr. C. J. Curtis), 3rd.

Mr. H. PITT also had 1st place for a collection of six dishes of culinary Apples, four of the most striking varieties being King of Tompkins' Country, Emperor Alexander, Gascoyne's Seedling, and Lord Derby. L. LYNN THOMAS, Esq., C.B., Cardiff (gr. Mr. Malpas), was placed 2nd, and S. LYSAGHT, Esq., 3rd.

With the varieties Durondeau, Louise Bonne of Jersey, Pitmaston Duchess, Doyenné du Comice, Marie Louise, and Beurré Diel Pears, E. H. EBSWORTH, Esq., Cowbridge, won the 1st prize for a collection of six dishes. The 2nd award in this class went to S. LYSAGHT, Esq., and the 3rd to Sir JOHN GUNN, St. Mellon's, Cardiff (gr. Mr. Dobbs). This last competitor was successful in securing the premier prize and a silver challenge cup for a collection of Apples and Pears.

HONORARY AND TRADE EXHIBITS.

J. J. NEALE, Esq., Penarth, staged a beautiful and interesting collection of Orchids and insectivorous plants, which added considerably to the attractiveness of the show. Of the Orchids the most striking blooms were those of Vanda cerulea and Oncidium varicosum, while a good deal of interest was taken by visitors in the New Holland Pitcher plant (*Cephalotus follicularis*), *Pinguicula cordata*, and numerous species and forms of Sundews. (Gold Medal.)

Messrs. CYPHER, of Cheltenham, put up a fine collection of rare and showy Orchids, for which they received a Gold Medal.

Mr. W. TRESEDER was the recipient of a Silver Medal for a miscellaneous collection of flowering and foliage plants. A Gold Medal was also obtained by Messrs. CLIBRAN, of Atrincham, for a fine assortment—about 80 dishes in all—of different kinds of vegetables.

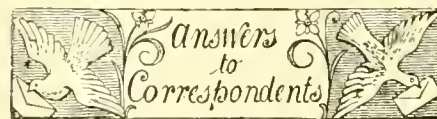
BATH GARDENERS'.—A well-attended meeting of this society was held on October 25 at the Foresters' Hall. The treasurer, Mr. H. Spary, presided. Mr. P. Parrott, chairman, read a paper on "Mushrooms." If a supply of Mushrooms is required in winter, a house or shed, furnished if possible with means for warming it, should be set apart for them. If artificial heat is not available the shed would require to be well covered with straw or litter. Water should be given the beds sparingly, and not until the manure is really dry. If the paths and bare spaces are well sprinkled very little moisture will be required on the beds. A. B.

BRISTOL AND DISTRICT GARDENERS'.—The fortnightly meeting was held on October 28 at St. John's Parish Rooms. Mr. S. Shaddick presided. Mr. Curtis, gardener to Sir W. Howell Davis, Down House, gave a lecture on "Stove and Greenhouse Bulbs." Mr. Curtis included in his remarks *Amaryllis*, *Vallota*, *Hæmanthus*, *Nerine*, *Lachenalia*, *Eucharis*, and *Pancreatum*. The lecturer stated that most of these plants require an abundance of water in their growing season, but they should be dried off afterwards. *Eucharis*, *Vallota*, and *Pancreatum* should not be allowed to become excessively dry. All the plants are easily propagated from offsets. *Lachenalia* are useful for furnishing hanging baskets. H. W.

READING GARDENERS'.—A large number of members assembled at the meeting held in the Abbey Hall on Monday, October 25, the vice-president, Mr. Leonard Sutton, occupying the chair. The president, Mr. Alderman Parfitt, was to have lectured, but owing to his absence from Reading, Mr. F. Townsend, gardener to the vice-president, gave a paper on "Annuals and Perennials Grown as Annuals." First dealing with annuals grown in pots, Mr. Townsend enumerated *Clarkia*, *Scizanthus*, *Godetia*, *Stock-flowered Larkspur*, annual and perennial *Chrysanthemums*, *Nicotiana*, *Balsam*, *Nemesia*, and *Dimorphotheca aurantiaca* as suitable for the purpose. Passing to half hardy and hardy annuals raised under glass for summer bedding, the lecturer spoke of *Rehmannia angulata*, *Carnations*, *Dianthus*, *Antirrhinum*, *Penstemon*, *Salvia*, *Lobelia*, fibrous-rooted *Begonia*, *Petunia*, *Nicotiana*, *Cosmos*, *Arcotis grandis*, *Chicory*, *Mimulus*, *Verbena*, *Phlox Drummondii*, *Salpiglossis*, *Scabiosa*, and *Zinnia*. Instructions as to sowing, the proper compost to be used, and advice as to subsequent treatment were fully given. For the raising of annuals a preponderance of leaf-soil may be, with advantage, used in the compost, at the ratio of two parts leaf-soil to one of loam. The paper was brought to a conclusion with instructive remarks as to the treatment of annuals sown in the open, where they are intended to flower.

BRITISH GARDENERS' (LONDON BRANCH).—A smoking concert in aid of the branch funds will be held at Carr's Restaurant on Saturday, November 27, at 7 p.m. Tickets may be obtained from the branch secretary, Mr. V. Cockram, 19, Rosenau Road, Battersea Park, S.W.; or from the general secretary, Mr. J. Weathers, Talbot Villa, Isleworth. The next meeting takes place at Carr's Restaurant, 254, Strand, on Thursday, November 11, at 8 p.m., when a paper will be read by Mr. E. F. Hawes, entitled: "Should we have Independent State Recognition of Horticulture?"

KINGSTON GARDENERS'.—The second lecture of the session was delivered to a large gathering of the members on Thursday, October 28, by Mr. A. Dean, V.M.H., whose subject was "The National Vegetable Society: Its Aims and Objects." The president, Mr. E. H. Jenkins, occupied the chair. Mr. Dean said one special object of the new vegetable society was to promote from time to time trials of diverse vegetables, to ascertain which was the most profitable and suitable methods of culture, as well as the best varieties to recommend for general culture. Three trials of autumn-sown Cabbages and Onions were in progress, one at Twickenham, one at the "Times" Experiment Farm, Sutton Green, Guildford, and one on stiff Essex land at Romford. Each trial was being conducted on exactly similar lines, and with the same varieties. Great efforts are being made to hold at Westminster next September a representative exhibition of vegetables. Special emphasis was laid on the unsuitable manner in which, as a rule, good vegetables are presented for sale to consumers. With improvements in that direction the amount of vegetables consumed might be speedily doubled.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ASPIDISTRA: C. P. Kindly send specimens of the insect and we will advise you.

BAMBOOS: Constant Reader. You will see it stated on p. 310 that Bamboos may be safely transplanted at the present season.

CELERY DISEASED: Constant Reader. The plants are attacked by a fungus—*Septoria petroselinii*. Burn the diseased leaves and select a fresh site, as far away from the old one as possible, for planting Celery next season.

CLUBBING IN CUCUMBER ROOTS: H. J. G. The galls on the roots are caused by elworm or an allied pest. Follow the advice given to H. J. G.

ELWORM ATTACKING CUCUMBER PLANTS: H. J. G. Turn all the old soil out of the borders and bury it deeply in some out-of-the-way part of the garden. Thoroughly cleanse the house with carbolic acid in warm water, using plenty of soft soap, so that the liquid will run into the crevices. If possible, obtain your loam from a fresh source, or, if this is not practicable, stack the turf in layers and cover each layer with gas-lime and allow it to remain for one year before using it for planting.

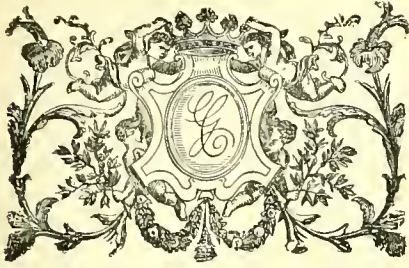
NAMES OF FRUITS: E. O. S. 1, We cannot name these inferior fruits; 2, Norfolk Stone Pippin; 3, White Nonpareil; 4, Yorkshire Greening; 5, Cullen; 6, Colmar d'Été.—J. Don. Beurré Bosc.—W. Baxter. 1, Dumelew's Seedling (Wellington); 2, Fearn's Pippin.—W. D. Ecklinville.—X. Y. 1, Potts's Seedling; 2, Peasgood's Nonesuch; 3, Waltham Abbey Seedling.—Walshaw. Huyshe's Princess of Wales.—X. Y. Z. Small's Admirable.—C. B. 1, General Todleben; 2, Marie Louise d'Uccle; 3, Conseiller de la Cour; 4, Jubilee.—W. E. T. 1, Sturmer Pippin; 2, Northern Greening; 3, Lord Lennox; 5, Dutch Migronne; 6, Prince Bismarck.—P. J. P. 1, Warner's King; 2, Harvey's Wiltshire Defiance; 3, Brabant Bellefleur; 4, Lord Grosvenor; 5, Franklin's Golden Pippin; 6, Court Pendu Plat.—A. F. C. 1 and 2, Marie Louise; 3 and 4, Doyenné du Comice; 5, Beurré Diel; 6, General Todleben.—Postmark. 45, Beurré Capiaumont; 45, Doyenné du Comice; 143, Fondante de Cuerne. The Plums were in a condition of pulp. The other Pears deformed, and it was impossible to name them. Soft and hard fruits should not be packed together. F. Edgington. 1, Bramley's Seedling; 2, Wealthy; 3, Lane's Pine Albert; 4, Welford Park Nonesuch; 5, Pine Golden Pippin; 6, Hornead's Pearmain.—E. Smith. 1, Beurré Hardy; 2 and 4, Beurré d'Amanlis; 3, Doyenné Boussoch; 5, Prince Bismarck; 6, Potts's Seedling.—Bawtrej. Decayed.—W. A. N. 1, Beurré d'Amanlis; 2, decayed.—Constant Reader. 1, Ribston Pippin (a well-grown fruit); 2, Grange's Pearmain.—C. A. F. 1, Pitmaston Duchess; 2, Court Pendu Plat; 3, Waltham Abbey Seedling; 4, Annie Elizabeth; 5, Scarlet Golden Pippin; 6, Melon Apple.

NAMES OF PLANTS: H. W. *Pyrus torminalis*, "Wild Service Tree" (a fine specimen, according to the dimensions you give).—G. G. *Argyrea hirsuta*.—R. J. 1, *Physalis Alkekengi*; 2, *Pyrethrum* sp.—H. G. 1, *Pyrus domestica* (Service tree); 2, *Ptelea trifoliata*.—J. C. B. *Cosmos bipinnatus*.—H. W. *Salvia leucantha*.—Leigh. *Eupatorium Weinmannianum*.—F. W. T. *Cupressus funebris*.—J. W. 1, *Bryophyllum calycinum* (it will grow readily, even in the dwelling-house); 2, *Eugenia Ugni*; 3, send when in flower.—W. W. One of the garden forms of *Veronica Andersonii*.—J. W. *Hæmanthus Kalkbreyeri* should, when the foliage is turning yellow, be kept perfectly dry until the spring.—F. M. 1, *Crataegus coccinea*; 2, send another specimen with foliage; 3, *Rhus Cotinus*; 4, *Populus albus*; 5, not recognised; send when in flower; 6, *Cotoneaster Simonsii*; 7, *Cornus sanguinea*.

NURSERY TRADE JOURNALS: Chas. E. Nurseryman, Florist and Seedsman (Milton House, Surrey St., Strand, W.C.); *Fruit, Flower and Vegetables Trades' Journal* (1, Mitre Court, E.C.); *Fruit Grower, Fruiterer, Florist and Market Gardener* (Geo. Tucker, Salisbury Court, Fleet Street, E.C.); *Horticultural Trade Journal* (Horticultural Printing Co., Burnley); *Horticultural Advertiser* (Chilwell Nurseries, Lowdham, Notts.).

TENNIS LAWN: H. F. As you intend to prune the large roots as described in your letter it will be certain to make the trees less secure in the soil; therefore if the bigger branches are lopped it will render the trees less liable to be uprooted by winds.

Communications Received.—H. M. (Many thanks, our notice was published in the last issue).—Mae, (next week).—W. H.—H. J. G.—R. G.—G. F.—H. M. Y.—A. A. P.—C. E.—F. W. C.—F. B.—W. F.—Awkward Predicament.—E. W. D.—W. E. B.—G. F.—T. F. M.—R. J. T., Paris.—W. B.—J. G. W.—G. H. H. W.—J. Y.—R. P. B.—I. J.—O. W. M.—C. P.—E. C. P.—J. F.—J. W.—W. A.—A.—W. W. P.—A. G.



THE

Gardeners' Chronicle

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NERINES IN GUERNSEY.

THESE beautiful members of the Amaryllidæ are generally referred to as greenhouse subjects. A few of them, however, are almost hardy bulbs, and a number may be so treated in the southern parts of England. At the same time it must be admitted that most success will be obtained by treating Nerines as cold-house plants; for, in the open beds, the bulbs do not obtain the thorough drying-off and rest which are essential to their proper flowering.

It is unfortunate that Nerines are not popular plants, and undoubtedly their habit of blooming erratically militates against their popularity; but with a little care their cultivation should offer no difficulty. In Guernsey, which may be looked upon as the European home of Nerines, and where they are far more extensively cultivated than elsewhere, nearly

everyone grows them, the Guernsey Lily, *N. sarniensis* (*Sarnia* being the old name of that lovely island) being the special favourite. Many a poet and many a writer have sung its praises, but these panegyrist are in error in describing *sarniensis* as the most beautiful of the species; it has rather earned its laurels through its hardiness and the ease with which it may be grown and flowered. The story of the introduction of the bulb to Europe is that, about the time of Charles II., a Dutch vessel was bringing a general cargo from Japan to Amsterdam, and was wrecked off the western coast of Guernsey. In the cargo was included some cases of bulbs. These were thrown up on the beach, where many took root, grew, and bloomed. The Governor of Guernsey at that time was Lord Hatton, and his son, who was an enthusiastic botanist, saw the Nerines in flower, and, greatly admiring the then quite unknown plants, collected them, sent some to English botanists, and planted others in the gardens of La Haye du Puits, a famous and beautiful old mansion, dating from Richard I.'s time, in which Prince Charlie had once been concealed in a secret hiding-hole. The self-same bed of Nerines has remained in the gardens, and is to-day about 100 yards long and some 6 feet wide; but the bulbs were frost-bitten a few years ago and have never since bloomed well. Mr. Gaspard Le Marchant, the owner, is very proud of the old bed, and a Gaspard Le Marchant lived at La Haye du Puits when the Nerines were first planted there.

Nerines need very little attention or care. The less they are disturbed the better. The soil should be sandy, mixed with a little loam, leaf-mould, some charcoal, and cow-dung, and the bulbs should be fairly thick in the pot. Only bulbs which throw up six, or occasionally five, leaves will bloom. During the period of growth and flowering water must be given freely, and some growers also keep the soil moist with moss. After flowering, the quantity of water must be gradually reduced, until all the leaves are dead; then the dried foliage should be carefully cut off, and there must be no more water given until the growth recommences, and then in small quantity at first. Some lay the pots on their sides, others stow them in the packing shed, or under the propagating bench. It is well to give a top-dressing every other year, and when the flowers are open the plants appreciate plenty of sun.

Nerines are easily hybridised and crossed, and readily raised from seed. But the length of time before first flowering is very variable. Some have flowered in four years, others have taken 10 years or more. The earliest to bloom are *N. Fothergillii elegans*, and *corusca*. They are generally fully out by the end of August. The latest to flower is *Mansellii*, which is often in full bloom in January, but it is an erratic plant. This year several growers have had flowers of *Mansellii* in the middle of September. This lovely pink bloom was brought out by the late J. Mansell, a Jurat of the Guernsey Royal Court. It was said to have been raised by him, but Mr. Mansell's head gardener, Mr. Peters, always declared that it was bought with some mixed and unnamed seedlings from Messrs. Henderson & Co. A peculiarity of *Mansellii* is that the foliage is fully developed before the flower is expanded. This year a notable discovery has been made

by Mr. W. J. Gill, of the Varendes Nurseries, Guernsey. He has been for years one of the leading raisers of new varieties, and has crossed *flexuosa alba* with *corusca major*. The hybrid bulbs have now bloomed, and Mr. Gill and others declare that they are true *N. Mansellii*. Other experts, however, contend that the colour is not quite the right tint. Mr. Gill had about a dozen of the new bulbs in flower in September.

The flowers of a Nerine are arranged in an umbel, the number of florets varying from five or six up to 12 or 20 in different kinds. *N. pudica* (white) has flowers more Amaryllis-shaped than the others. *N. crispa rosea* is more feathery-looking, the florets being erect, with twisted petals standing above the stamens and forming almost a ball. The colour is a pretty rose-pink. The stems of most Nerine flowers are about a foot to 18 inches in length. Mr. Gill has a new variety which was raised from *N. Plantii*, and which he has named *Carrei*, with stems 2½ feet in length, and 10 to 12 florets in each umbel. It is a rich crimson in colour. Mr. W. Foote, of Ashburton, the largest grower of Nerines, has many thousands of bulbs and over 100 varieties. Another good raiser is Mr. H. Smith, of Messrs. C. Smith & Sons, Caledonia Nurseries, Guernsey. A good sort is *N. Bowdenii*, figured in *Gard. Chron.* Nov. 26, 1904, fig. 164. Mr. N. W. Prialux, Brock Road Nurseries, has two new scarlets, from W. Le Page and Mrs. Le Page, somewhat after the type of *Fothergillii*. Messrs. Manger & Son, Brookdale Nurseries, and Messrs. Hubert & Co., Doyle Road Nurseries, catalogue many varieties. The latter firm has a good hybrid in *Excelsior*, with flowers of a rich carmine and borne in great numbers. They also grow *japonica* (syn. *Lycoris radiata*), a purplish-red of large size. Messrs. Manger's speciality is *alba*, a very beautiful flower of great purity, which should find a place in all collections. But if any one variety only is grown, then *Fothergillii major*, the most intense scarlet of all, should be the one. Like *N. sarniensis*, the flowers of *Fothergillii*, when seen in the sunlight, appear to sparkle with diamonds, and the long, crimson stamens, with pinkish-white anthers borne at right angles, like those of the Passion Flower, greatly enhance the beauty of the blooms. Mr. Frank Lilley, of Les Ménages Nurseries, has the largest export trade in Nerines. He possesses a good novelty in *Purple King*, a break from *Purple Prince*; the flowers are rich pink, with a purple flush; the umbels are large, and the flowers last very long in water. His *Salmon Queen* is a bright and sparkling flower, about the best of the deep salmons. *Sarniensis* is also a deep salmon, inclined to carmine, and not a scarlet, as it is often described.

At the Guernsey flower show, held on the 3rd and 4th inst., Nerines were one of the leading features. Mr. Foote had a trade exhibit of 50 of his own seedlings; he also took 1st prize for Nerines. Messrs. Wheadon & Sons and Mr. F. Lilley put up trade exhibits of their own seedling Nerines, while Nerines were largely used in groups for effect, in table vases, in decorated baskets, and in bouquets.

A grand seedling of Mr. Foote's is *Kathlenii*, a light salmon, umbel 6 inches across, stems 2 feet long, and with 20 florets in umbel. Another is *Ashburtonii*, from *coruscans major*, with quite the largest florets of any scarlet.

An unnamed bicolor of his is sure to draw attention; it is a slaty-purple with a wide magenta streak in centre. A Vier-rose seedling is also an unusual colour, and a good bicolor is deep salmon with very pale rose-pink centre stripe. Mr. Gill has a new seedling from *corusca major* crossed with *flexuosa alba*, which has three or four flower-spikes from a single bulb; the foliage is very broad and abundant, and one stem measured 3 feet and the umbel contained 22 florets. A peculiarity about *N. Bowdenii* is that the foliage does not die completely down until growth starts again. Of elegans there are two colours, the pink, which is early, and the scarlet, late flowering, which some contend is the original *corusca*. But the whole nomenclature of *Nerines* is much confused, and there are many synonyms. *Humilis*, of the *crispa* type, is unknown by some, or termed *C. undulata humilis* by others. Mr. F. Lilley's *elegantissima*, salmon-pink, with carmine stripe, and long, stiff stems, is one of the best.

Of the leading varieties the best are *N. delicatissima*, pink, with narrow petals and star-like flowers; *elegans*, very fine rose, rather rare, and said to be a break from *sarniensis*; *venusta*, rather dwarf with scarlet flowers; *crispa undulata*, carnation coloured, with white blotches; the *flexuosa alba*, sent by Mr. W. J. Gill, is also very beautiful; *curvifolia*, a good white, of the *Fothergillii* type; and *flexuosa pulchella*, striped red. Of hybrids there are many. *O'Brienii* is small but of good salmon hue, with long stems; *Garibaldii* an Indian red, with darker centre line and umbels very spreading; *Allenii*, a strong grower and free flowering, and *tardiflora*, shy bloomer but of graceful habit.

I was informed by the manager of Messrs. Hubert & Co.'s floral farm at Jersey, that by far their best customers for *Nerines* are the French. Not only do the French nurserymen purchase largely, but the private French visitors to Jersey are always calling and buying small quantities of bulbs. *Nerines* can be grown as well in seedling boxes as in pots. W. S. B.

NOTICES OF BOOKS.

* THE BOOK OF NATURE STUDY (VOLUME V.).

THE latest instalment of the *Book of Nature Study* maintains the high standard reached by the volumes already issued. The subjects dealt with are practically all botanical, and include, in chapters i.-iv., the types of vegetation met with on the sea-shore, in water and in meadows and pastures. Miss Lawrie, who is responsible for this section of the work, has given an admirably readable account of the plants typical of these situations, and has illustrated her descriptions by means of excellent photographs. The section concludes with a chapter on the weeds of cultivation. The prevalence of different weeds in certain kinds of soils is pointed out and the results of experiments and observations made at Rothamsted recorded. The chapter might have been rendered more useful if the weeds had been classified into annuals and perennials, and if their several modes of vegetative propagation—on a knowledge of which methods of eradication are based—had been described.

Chapters v.-xii., by Mr. Hennessey, are devoted to the school garden and occupy about 100

pages. It would be too much to expect a thoroughly adequate treatment of the subject within so narrow a compass, and though, on the whole, the treatment is good and the information trustworthy, certain statements err on the side of unqualified brevity. For example, on p. 108, it is stated that "nitrogenous, phosphatic, and potassic" compounds tend to become deficient in the soil and must therefore be supplied *either by means of farmyard manure or . . . artificial manures.*" The words which we italicise are misleading, for it scarcely needs to be said that farmyard manure is itself very deficient in phosphates. Again, the space—11 pages, chap. xii.—devoted to insect and fungoid enemies of the garden is so meagre as to make the treatment of this important subject almost valueless. Indeed, the only fungus-disease mentioned is the late blight of Potatoes, *Phytophthora infestans*. The volume concludes with an excellent account of the work of the soil by Mr. Hall, of Rothamsted. Mr. Hall's book on the soil is recognised generally as a classic, and his treatment of the subject in the present volume leaves nothing to desire.

Inasmuch as the *Book of Nature Study* is not yet complete, we shall reserve for a subsequent occasion our remarks on the work as a whole,



FIG. 141.—ONCIDIUM ABORTIVUM: FLOWERS PALE YELLOW, MARKED WITH BROWN.

and content ourselves with the observation that this delightful series of volumes reflects the greatest credit on editor, contributors, and publisher.

* THE SMALL GARDEN USEFUL.

THIS manual, intended more especially for the owners of small gardens, such as are attached to houses in the suburbs of London and other large towns, contains in its 200 pages much useful information. Being the work of a practical horticulturist, it affords precisely the kind of assistance so much needed by the non-professional gardener, including the small-holder and villa resident. The possibility of an area of land of about one-tenth of an acre providing an annual supply of vegetables for a family of six persons is dealt with; how best to arrange the crops that should be raised from seeds, or planted; and the areas each may occupy are described, and plainly shown by plans. Methods of dealing with the various kinds of soils are given; how land may be dealt with according to its nature; the kinds of manure to employ; and how to dig and trench. On all these subjects the author is most practical

* *The Book of Nature Study*, edited by J. Bretland Farmer, F.R.S. (The Caxton Publishing Company). Price 7s. 6d.

* *The Small Garden Useful*, by A. C. Curtis. Large post 8vo., with four half-tone illustrations and two plans. (Smith, Elder & Co.) Price 3s. 6d.

in his instructions. The chief points insisted upon are those concerned with intercropping, otherwise successional cropping, by which no portion of ground remains without its crop for any length of time. This is the best mode of making the most of limited areas.

Every man should make his own experiments in intercropping; "so much," as the author says, "depends upon soil, position, aspect, and climate, that it is impossible to dogmatise, or, indeed, to do more than suggest. In chapter iii. we are given the yearly routine of cropping, and a list of the seeds required; nothing of importance is omitted, unless it be the Penzance Early Broccoli, which comes in so usefully in south-country gardens, following, as it does, in the south border, the last of the Cauliflowers. It is estimated that the seeds for one-tenth of an acre would cost £1. The yearly routine is simplified by divisions into months, and includes sowing and planting, full instructions being given for each crop.

ORCHID NOTES AND GLEANINGS.

ONCIDIUM ABORTIVUM.

WE are indebted to Sir Frank Crisp, Friar Park, Henley-on-Thames, for the opportunity of illustrating this singular and rare *Oncidium*, which was described by Reichenbach in *Linnaea*, xxii. (1849), 847, the habitat being given as Venezuela. The striking peculiarity of the species is that the greater number of the flowers on the slender paniced inflorescence are abortive, the perfect flowers being sparsely distributed amongst them. The ground colour of the flower is pale yellow, the markings chestnut-brown.

Its nearest ally is the Peruvian *O. heteranthum*, which also exhibits the peculiarity mentioned. Several other species show it in a less degree, and notably *O. Jamesonii* of quite a different group, whose rather large, yellow flowers have these curious abortive growths scattered amongst them.

CYPRIPEDIUM EVE.

A FLOWER of a very beautiful *Cypripedium* is sent, under the above name, by J. Shorland Ball, Esq., Under Fell, Burton, Westmoreland (gr. Mr. Herdman), who obtained the plant from Messrs. Sander & Sons as of unrecorded parentage. It evidently has *C. insigne* Sanderæ in its composition, and the other parent might have been *C. aureum* Surprise. The dorsal sepal, which is large and perfect in shape, is pure white with a small gamboge-yellow base on which are emerald-green lines. The lower sepals are greenish-white with a few emerald-green lines; the petals are greenish-yellow, with thin, longitudinal, green lines, a thin, pale purple line extending through the middle, and some blackish hairs at the base. The lip is pale green with slightly darker green veining. Staminode primrose-yellow with a small green boss in the centre.

CATLEYA FABIA

(LABIATA × DOWIANA AUREA).

ARRANGED with a fine group of *Cattleya labiata*, *C. Dowiana aurea* and other showy Orchids, there are, in the gardens of Mrs. Bischoffsheim, the Warren House, Stanmore, several flowering specimens of this handsome hybrid *Cattleya*. The plants were obtained from seeds sown four years ago by Mr. Taylor, the Orchid grower at the Warren House. The ordinary forms of *Cattleya Fabia* have the sepals and petals of a purplish-rose colour as in *C. labiata*. Those raised in Mrs. Bischoffsheim's gardens have white sepals and petals, and the ruby-crimson labellum has gold lines running from the base. The flowers are, moreover, delicately fragrant. A plant of *Cattleya Portia* (*Bowringiana* × *labiata*) has two spikes bearing together 16 flowers; *C. Parthenia* Prince of Wales and many other showy Orchids are also in bloom in this collection.

TRANSPLANTING APPLE TREES.

It is surprising the improvement that can be wrought in unhealthy and unfruitful Apple trees by lifting, root-pruning, and transplanting them. I often notice fruit trees either badly caskered or making too gross wood, which, with careful treatment, might be brought into a healthy and fruitful condition. The operation is quite simple in regard to young trees, but is not so easy in the case of older and larger trees.

On taking charge of these gardens some few years ago, I found a number of the Apple and Pear trees in an unsatisfactory condition. Many bore dead leading shoots indicating that the roots were down in the clay subsoil. Though some of the trees had been planted 15 to 20 years previously, I, nevertheless, transplanted them to other stations some distance away, and with good results.

When transplanting, a good heap of compost should be prepared beforehand. I use a mixture consisting chiefly of good turfy loam (that raked from Vine borders when giving the new, annual top-dressing answers well) mixed with some hard mortar rubble and a liberal addition of wood-ashes, garden refuse and road grit.

Holes are made some 3 feet or 10 feet in diameter, according to the size of the tree. When the trees mentioned above were shifted, the top-spit of soil only was removed, the holes being dug not more than 1 foot deep. At the bottom of the holes, and resting on the clay, a layer of old roof-slates was placed, the slates being used to prevent the roots from penetrating into the clay subsoil. The bed having been prepared in this manner, a layer of about 6 inches of the prepared soil was placed on top of the slates, and part of the excavated top-spit mixed with it as the work proceeded. The trees were carefully lifted by taking out a trench all around the tree some 6 feet from the stem and gradually working the soil away, care being taken to avoid damaging the roots during the operation. The means employed to transport the tree are as follows: The tree is turned on its side, and a pole placed crossways under the stem, the former being covered with sacking where it comes into contact with the bark. Two or more men at each end of the pole easily carry the tree in this manner to its destination, other men steadying and supporting the head or branches during the journey. The tree should be placed in an upright position attached firmly to a stake before placing the soil on the roots. This is important, for if the stake is not driven in the soil until after the tree is planted the roots may become damaged by the stake.

Care is taken to cut away all damaged roots and also to shorten all strong, fibreless ones. As planting proceeds, all the roots are spread out in their natural position and covered with some of the prepared soil. When the work is finished the trees are above the level of the surrounding ground. This is necessary because our soil is wet and retentive. When all is finished a mulch of rotten farmyard manure is placed over the roots.

In this manner we have transplanted several trees during the last eight years, some of them being 15 feet to 20 feet in height, and all have survived the operation. Most have been improved thereby, and have furnished excellent crops of fruit after the first year of transplanting. October and November are the best months for this work, as the trees then have a chance of establishing themselves before winter, and thus are the better able to withstand any period of drought that may occur during the following summer. In our own case, it has only been necessary to water two or three trees out of the many we have transplanted.

Each succeeding autumn our transplanted trees receive a light dressing of basic slag, followed by a mulch of well-decayed farmyard manure or old vine-border compost to encourage the roots to grow to the surface. *Wilmot H. Yates, Rotherfield Park Gardens, Alton, Hants.*

THE HAY CROP OF 1909.

THE meteorological records of the Rothamsted Experimental Station, Hertfordshire, show that the year 1909 started with a deficiency of rainfall amounting to 284 tons of water per acre. January and February of 1909 recorded a further deficiency of 2½ inches of rain, equal to 276½ tons of water per acre. March altered the condition of things, and probably saved the Hay crop from being a complete failure by yielding 3½ inches of rain, including nine falls of snow, which was 1½ inch in excess of the average for that month. This large and welcome rainfall was followed by April and May, each recording a deficiency of rain amounting to 194½ tons of water per acre. June gave an exceedingly large rainfall, measur-

age in January and April, but deficient in February, March, May and June. The first six months of the year 1909, therefore, which embraces all the growing period of the first crop of Hay, revealed in this district a deficiency of rain, a much lower than average temperature, but 80½ hours excess of bright sunshine.

Under these climatic conditions the experimental Hay crop at Rothamsted was, in each of the 24 plots under different manurial treatment, below the average yield, and in some cases very considerably below the normal bulk.

The greatest deficiency was shown on those plots which received no potash in the manurial mixture. The application of ground burnt lime, applied at the rate of 2,000 lbs. per acre two years ago to certain portions of these permanent



FIG. 142.—NEW TREE CARNATION "MAY DAY," WHICH OBTAINED THE R.H.S. AWARD OF MERIT ON THE 26TH ULT.: COLOUR, ROSY-PINK. (Photograph by J. Gregory.)

ing slightly over 4 inches, being 170½ tons of water in excess of the average for June for the past 57 years at Rothamsted.

Taking the first five months of the year, January to May, together, the rainfall was 179 tons of water per acre deficient, which, added to the 284 tons deficient with which the year started, made a total deficiency of 463 tons of water per acre. But the heavy rainfall of June considerably reduced this enormous deficiency, and certainly assisted the mixed herbage of Grass lands.

The bright sunshine was in excess of the average in January, February, April and May, but less than the normal record in March and June. The mean temperature was slightly above aver-

age in January and April, but deficient in February, March, May and June. The first six months of the year 1909, therefore, which embraces all the growing period of the first crop of Hay, revealed in this district a deficiency of rain, a much lower than average temperature, but 80½ hours excess of bright sunshine.

Grass plots, has effected a great improvement both in the yield and the character of the herbage. The yield has in some cases been increased by the lime, to the extent of three-quarters of a ton of Hay per acre, and its stock-feeding quality improved. Taking a few of the most characteristic of the Rothamsted experimental Grass plots which have received the same manurial treatment for the past 54 years, we find that the plot of land which has had no manure whatever for the whole of this long period yielded but 6½ cwt. per acre, being 9½ cwt. of Hay less than the average for this plot. Even on this soil-exhausted plot, the addition of lime to one-half the area increased

the yield by 4 cwts. per acre. Superphosphate alone at the rate of 3 cwts. per acre produced 12½ cwts. of Hay per acre, being just about double the quantity of the unmanured plot. The addition of sulphate of ammonia, 400 lbs. per acre, to the superphosphate gave no increase over the plot receiving superphosphate alone. This fact was doubtless owing to the lack of potash, which ingredient, in such an unfavourable season as the present, appears to have considerable influence on the total yield of Hay, as well as its cattle-feeding value.

The soil of this plot, which has received for so many years superphosphate and ammonia, but no potash, has become distinctly acid, so that the vegetation, which consists mainly of shallow-rooting Grasses growing in tufts, namely, Sheep's Fescue, Sweet Vernal, smooth-stalked Meadow Grass, Common Bent, and Yorkshire Fog, has generally a rusty and unhealthy appearance, and there is an entire absence of Clovers in the herbage.

The addition of ground lime to one-half of this plot resulted in an increased amount of Hay of 11½ cwt. per acre.

The plot receiving a complete mineral manure, of which the chief ingredients were 3 cwts. of superphosphate and 5 cwts. of sulphate potash, gave 24½ cwts. of Hay, being 5 cwts. per acre less than average. On this plot an application of lime to one-half increased the yield of Hay by half a ton per acre. On an adjoining plot, where the potash was omitted, the weight of Hay fell to 15¼ cwts. per acre, and on this plot, with its soil-exhaustion of potash, the lime had no effect.

Superphosphate, sulphate of potash, and 400 lbs. sulphate of ammonia produced 29½ cwts. of Hay, being 14½ cwts. per acre less than the usual average. On the adjoining plot, where potash was omitted, the yield of Hay was reduced to 17 cwts. per acre only, being nearly a ton of Hay per acre less than the average record for this plot.

Superphosphate, potash, and 550 lbs. nitrate of soda per acre yielded 48½ cwts. of Hay, which is very nearly the average produce for this plot.

The same amount of superphosphate and potash, with one-half the quantity of nitrate of soda, namely, 275 lbs. per acre, gave 31½ cwts. of Hay, being 7½ cwts. below average.

These experiments prove that on this class of Grass land nitrate of soda is a much better manure than sulphate of ammonia, more especially in a season of deficit of rainfall. The probable reason for this fact is that nitrate of soda dissolves more rapidly than sulphate of ammonia, and thus descends more deeply into the soil, whither the plant-roots follow it, for, where the food is, there go the plant-roots to feed upon it; thus a larger soil area and a greater supply of soil-moisture become available to the growing crop. *J. J. Willis, Harpenden.*

THE ROSARY.

CULTURAL HINTS FOR NOVEMBER.

Owing to the heavy rains, the ground is too wet for planting, but if it was well trenched and manured last month the excess of moisture will soon pass away, and planting can be resumed. When planting Rose trees, care should be taken to examine the roots and to cut out all thick and sucker-like growths. Standard Briars, Manetti, de la Grifferie, and Seedling Briar stocks for budding next season may be planted when the ground is in a fit condition. Standard Briars should be selected carefully, choosing those with hazel and green-tinted bark and straight stems. One-year-old suckers and those that are black and hide-bound should be thrown out. Two and three-year-old stocks are generally the best for planting; they can be had from 2½ to 5 feet in height. All the fibrous roots should be preserved,

but thick ones should be shortened, and any parts that appear likely to throw up suckers should be cut off. Plant in lines drawn 3 to 4 feet apart, allowing 1 to 1½ foot between the stocks, and place them 9 inches to 1 foot deep. Tread the ground before levelling it, and finish off with a good mulch of manure on the surface. The strongest of the dwarf stocks raised from cuttings planted last autumn, viz., de la Grifferie, Manetti and Briar should be now ready to plant out for budding the coming season. Place them 2 feet apart in the rows and 6 to 9 inches from plant to plant in the rows, well treading the roots. The Seedling Briar takes three years from the time of sowing to produce a stock of sufficient strength for budding, and an annual sowing should be made to keep up the supply. The present or a little later is a good time to gather the hips of the common Dog Rose for seed purposes. The fruits should be put in a heap, mixed with sand and lightly covered with soil until the fleshy covering rots. The seeds should be stored for sowing in drills during early spring. If the soil of the seed-bed is at all chalky or of a peaty nature it should be, as far as possible, replaced by, or mixed with, good sandy loam, and the drainage made effective. If the soil is of a retentive character, some road grit, wood-ashes, and burnt

vigorous growers and climbers such as Gloire de Dijon, W. A. Richardson, Climbing Nipheto, and Reine Marie Henriette, whilst the Manetti and Briar stocks should be used for Hybrid, Perpetual, Bourbon and similar varieties. The scion and stock should be about equal in strength and girth, so that when grafted they cover each other. When finished, a little French mastic should be placed over the union. It is best to graft when the stock is a little more active than the scion. The temperature in the frames at first should not exceed 50° to 55°, gradually increasing it after Christmas to 60°. Damp is one of the greatest enemies to the early graft, and after the first week the sashes should be left open during the early morning so as to dispel excess of moisture. The best position for the plants is under frames with movable sashes in a light span-roof house, on stages covered with iron sheets or plates covered with fine ashes, and immediately over the hot-water pipes. Manetti and other stocks rather more than 1 inch in girth may be potted up in 3-inch pots for later grafting, and can be plunged outside till after Christmas. These will come in for herbaceous grafting when established during the early months of the New Year if brought under glass a few weeks before they are required for use.



FIG. 143.—GARDEN WALL WITH SHRUBS AT OAKLANDS.

ballast mixed with it will greatly improve the texture. It is now a good time for planting cuttings, shoots for the purpose being obtained by cutting off the tops of the budded plants of last summer. Make the cuttings 9 inches in length, and disbud them to within a few eyes of the top. Plant them to two-thirds of their depth and a few inches apart in rows made 1 foot apart, and work in some sand and leaf-mould near the base of the trench. They are most conveniently planted in beds 4 feet wide. I favour shallow planting of Standard and Dwarf Roses, provided they are well secured to stakes and a mulch is afforded them.

GRAFTING UNDER GLASS.

I have dealt with this subject at some length in former issues, and I will now merely reiterate the salient points to be observed to ensure success. One important item is that the stock, whether Briar, Manetti or de la Grifferie, for dormant grafting, should have been established in a 3-inch pot and stood out-of-doors during the summer. If unestablished stocks are used for grafting early in the season the work will result in failure. Those of the Tea and Noisette sections do best on the Briar and de la Grifferie stocks. The latter stock is specially suited for

Established pot Roses brought under glass for early forcing last month will soon be breaking into growth, and the temperature may now range from 50° to 55° in the daytime with top ventilation during favourable weather and a circulation through the bottom ventilators near the hot-water pipes. For the present the top ventilators may also be opened a trifle during the night. No attempt should be made to unduly force the plants until the turn of the New Year. On bright mornings give the shoots a light spraying with clean water to keep down red spider. At other times, and during dull weather, damping the stages will suffice to maintain a humid atmosphere. On the first appearance of mildew it must be promptly checked; a warm solution of soft soap is a good antidote if well sprayed on the top as well as under the foliage.

Roses planted out under glass will now be breaking freely, and on bright mornings the heads of the plants should be syringed: the moisture will be dried up before evening. Vaporise occasionally to destroy insects. The temperature may remain at 50° with plenty of fresh air admitted during the daytime and a little from the side and top ventilators at night-time, but this must not be allowed to reduce the temperature more than a degree or so. *J. D. G.*

OAKLANDS.

THE gardens at Oaklands, near Patchway, Bristol, contain a number of interesting and well-grown plants, Mr. Hiatt Baker being a keen horticulturist and a great friend of Canon Ellacombe, whose noted garden at Bitton is the Mecca of all flower-lovers. Amongst the curiosities noted recently in the Oaklands garden were three Thistles, *Cnicus candelabrus*, from Bosnia, 9 feet in height; *C. Falconeri*, from Cashmere, with 10 or 12 towering flower-heads, and *Onopordon anatolicum*, a handsome Thistle, 8 feet high. *Kniphofia erecta* was very bright, with its glowing scarlet heads, and *Euphorbia Wulfenii* made a handsome plant. *Geranium Lowii* has very ornamental foliage, its leaves being deeply cut and over a foot across, but the flowers were poor. *Cistus laxus* was a pretty, white-flowered species, and *C. ocymoides* had small yellow blossoms with a dark spot on the petals, very similar to those of *Cistus* (*Helianthemum*) *algavense*. *Clematis Davidiana* was represented by a hybrid raised by Lemoine, which is better than the type and forms a good permanent bush. There was a good plant of the new *Viburnum rhytidophyllum*, and Christ's Thorn, *Paliurus aculeatus*, was flowering and fruiting. There was a good collection of the *Berberis* family, including *B. Darwinii nana*, a very dwarf form of this well-known shrub, *B. Knightii*, *B. trifoliata*, with pretty leaves; *B. Fremontii*, *B. congesta*, *B. Fortunei*, *B. nervosa*, with very decorative foliage; and *B. tolimensis*, also with handsome leafage. A pretty plant was *Polygonum cilinode*, clambering up an old Fir. Growths 20 feet in length are made in a year, and the slender, twining, red stems and clusters of tiny, white flowers had a very pleasing effect. Large plants of *Spirea Aitchisonii* had bloomed, though they refuse to flower in some gardens; but the species was considered inferior to the old and well-known *S. Lindleyana*, its flower-racemes, though of a purer white, being far smaller and less freely produced. A fine, young plant of the new *Davidia involuerata* was 8 feet in height, and specimens of *Plagianthus Lyallii*, *Exochorda pinnatifolia* and *E. Albertii macrantha* were present. *Boconia macrocarpa* was a handsome and very stately species, 13 feet in height, with enormous leaves 2 feet across, and *B. cordata Thunbergii* was a variety of the ordinary type. *Cotoneaster Lindleyana* was a nicely-grown small tree, and others



FIG. 145.—JAPANESE BRIDGE IN THE GARDENS AT OAKLANDS.

of the same genus were *C. Fontanesii*, *C. panosa*, and *C. angustifolia*, the last-named species having flowered freely. On the lawn was a fine specimen of *Stephanandra Tanaka*, and also a good example of *Dimorphanthus manschuricus variegatus*. *Plagianthus betuloides*, 12 feet in height, was very attractive, with its elegant growth and small, graceful foliage, and *Fagus antarctica*, from Terra del Fuego, was interesting. The soil being of limestone, it is not suited for *Rhododendrons*, and has to be removed to a considerable depth and replaced by peat where these are grown. In the positions so prepared, however, these shrubs are doing well, and Pink Pearl, *R. campanulatum*, *R. linearifolium*—most un-*Rhododendron*-like—and others, were in good health. The Venetian Sumach (*Rhus cotinus*) made a fine show with its purple, feathered plumes, and the American *R. cotinoides* was

commencing to assume its brilliant autumnal colouring, while *R. typhina laciniata* bid fair to make a tree. *Citrus trifoliata* was fruiting, *Grevillea sulphurea* was in excellent health, as was the commoner *G. rosmarinifolia*. Over a channel separating two little pools, in which Water Lilies were grown, was a Japanese stone bridge, and near by *Gunnera manicata* was looking well, though, naturally, its leaves had not attained to the dimensions the species reaches in Cornwall. The Globe Thistles were represented by the rare *Echinops Tournefortiana* and the variety of *Romneya Coulteri* known as *trichocalyx*, which is said to be far superior to the type. There was a fine bush of *Hydrangea quercifolia*, and the biennial, *Papaver caucasicum*, with flowers much like those of *P. pilosum* in colour but smaller. Masses of the pale yellow, annual *Calceolaria mexicana*, which springs up yearly from self-sown seed, were very attractive, while the autumn-flowering *Perowskia atriplicifolia*, with its long, slender shoots studded with lavender blossoms, was especially charming. On the walls, *Indigofera Gerardiana* was 15 feet high, and *Solanum crispum* had reached the same height. Other wall plants included *Mandevilla suaveolens*, *Trachelospermum jasminoides*, *Pentstemon cordifolius*, *Actinidia chinensis*, and *Vitis Coignetiae*, which had clambered up into the branches of an overhanging Elm that it will, apparently, soon appropriate. There was a healthy specimen of *Veronica Hulkeana*. *Callistemon salignus* (evidently appreciating its environment) and *Polygonum sachalinense*, 14 feet in height, was in full flower. *Calceolaria Burbidgei* was also in bloom, but is very tender, and has to be treated as an annual, as it is killed by a few degrees of frost. *Colutea breviflata* was an attractive shrub with yellow blossoms, and there were good examples of *Magnolia Lennei* and *M. Kobus*. *Boehmeria nivea* was a curious shrub-like perennial, *Atragene alpina* had ascended among the branches of *Azara microphylla*, *Correa alba* was in flower, and there were good plants of *Kniphofia Northii*, while the curious *Rubus australis*, whose leaves are reduced to sharply-thorned midribs, was growing well. In a damp spot *Rodgersia podophylla* and *R. pinnata* were luxuriating, and *Podophyllum Emodic* was bearing its large, crimson fruits. *Salvia candelabrum*, from Mexico, which has a very aromatic odour, was a handsome object



FIG. 144.—VIEW IN THE GARDENS AT OAKLANDS, THE RESIDENCE OF MR. HIATT BAKER.

about 4 feet in height, and was still bearing some of its purple and white blossoms, while the new *Pæonia lutea* was developing into a fine bush. Small rock-gardens were composed of porous Bath stone, and contained many interesting occupants, among which were the dwarf *Abies Sieboldii*, *Pentstemon Meuziesii*, *Lithospermum graminifolium*, *L. Gastonii*, *Anacyclus formosus*, *Erinacea pungens*, the rare *Erodium supracanum*, *Yucca Parryi*, *Veronica canescens*, and *Thalictrum dipterocarpum* with pretty lavender flowers. *Daphne blagayana*, with its shoots pressed down by stones, was extending its growth; *Omphalodes Luciliae*, generally a very difficult plant to deal with in the south, was apparently happy, and a colony of *Gentiana Karroo*, one of the rarest and most interesting plants in the garden, was exhibiting the most vigorous health and bearing numbers of deep blue flowers. *Wyndham Fitz-herbert*.

PLANT NOTES

SCHAUERIA CALYCOTRICHA.

THIS Brazilian Acanthaceous species, like several of its allies, flowers during the autumn and winter months, and requires stove treatment. It forms a plant of a half-shrubby character, clothed with broadly-ovate leaves, which are quite glabrous. The inflorescence, which is disposed in a terminal cluster, consists of a number of tubular flowers, each of which is a little more than an inch long. The sharply-cut calyx segments are just about the same length, and thus the whole inflorescence forms a fluffy, yellow-coloured head. Beside the generic name of *Schaueria*, it is also known under that of *Justicia*, the specific title remaining the same. In common with most Acanthaceous plants, it is readily propagated by means of cuttings inserted early in the year. The plants should be grown during the summer in a compost of loam, leaf-mould, and sand, and, if potted into 5-inch pots, they will form neat, flowering examples by the autumn. These may be grown on another season, if this is thought desirable; but young examples are, as a rule, the more satisfactory. W.

MONTANOA MOLLISSIMA.

THOUGH introduced from Mexico over 60 years ago, this *Montanoa* is very little known, notwithstanding its value for the embellishment of the greenhouse or conservatory. It is a member of the Composite, and forms a free-growing, rather upright-habited specimen, 8 feet or more in height. The leaves are ovate-lanceolate in shape, and rough in texture, being whitish underneath. The flowers, borne freely and over a lengthened period, are each a couple of inches or more in diameter. The disc is yellow, and the ray florets white. This species requires the protection of a greenhouse during winter, but in summer may be given much the same treatment as a *Chrysanthemum*. It was the subject of a Supplementary Illustration in the *Gardeners' Chronicle* for January 18, 1908. A second species, *Montanoa bipinnatifida*, was given an Award of Merit by the Royal Horticultural Society in December, 1907. *M. bipinnatifida* is also a native of Mexico, and a bolder-growing plant than *M. mollissima*. Apart from its flowers, which are somewhat like those of the first-named species, *M. bipinnatifida* is a handsome foliage subject, and is often seen in collections of sub-tropical subjects under the name of *Polymnia grandis*. W.

GREASE-BANDING OF FRUIT TREES.

THE simple method of attaching grease bands devised by Mr. J. Boulding, and described in the *Agricultural Gazette* of New South Wales, will recommend itself to those of our readers who practise grease-banding for the winter-moth. As indicated in fig. 146, the pin is made on the same principle as the fastener used by grocers to attach their aprons, and the diagram will explain more readily than words how it should be used. With a pair of pliers and a file the bands may be made quite easily, and would find employment for members of the garden staff when the weather conditions were unfavourable for working in the open.

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Early pot vines.—Vines which are expected to yield ripe Grapes at about the end of April or early in May must be placed in the forcing house at once. The proper house for this early forcing is one having a lean-to or hip-span roof and a southern aspect. The heating apparatus should be ample, so that sufficient warmth may be attained at any time without having to overheat the water pipes. Artificial heat will not be required during the first two or three weeks, unless the weather happens to be very cold, and even in that case it must only be used with great care; the atmospheric temperature must not be made to exceed 50° by artificial means until the buds are showing signs of breaking into growth, but after that stage the temperature may be raised to 55° or 60°, according to the condition of the weather. The pots may be plunged in a very mild hot-bed, consisting of leaves and short litter. The materials should have been previously prepared for use by thorough mixing and turning at intervals of two or three days. The vine rods should be tied in horizontal positions along the front of the house till the buds are bursting, as this bending will assist them to break evenly. Much care must be exercised in

needed for early forcing may now be placed in their winter quarters. The continued rains and absence of sunshine have been unfavourable for the proper maturing of the wood and fruit-spurs. Therefore it will be advisable to place the trees in a position where they will be somewhat sheltered from heavy rains, and at the same time be exposed to light and air. Such a position is found, for instance, at the base of a south wall or a wall facing to the west. The trees may be placed quite closely together and the pots plunged in bracken or leaves. Any trees affected with American blight should be placed on their sides and given a thorough dressing with some approved specific before being plunged.

Fig trees at present out-of-doors must be brought into a cool house, where they will be protected from frosts.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Pruning and training.—These important operations should be proceeded with in favourable weather. Although the ground is in a sodden condition, it is possible, in the case of wall trees, to place planks where the operators are to stand, and thus the condition of the soil will not be much affected, whilst some degree of comfort will be secured to those engaged in the work. It is the more necessary to push these operations forward, because so long as the ground is in its present condition, it is impossible to plant, or even to root-prune. If the ground becomes drier the pruning may be left for a time, and all available strength put to the planting.

Morello Cherries.—Where summer pinching and pruning are systematically practised there is not much winter pruning necessary, but in many cases it is impossible to get this work done in the summer; therefore, advantage should be taken of the present time to thoroughly overhaul the trees. Pruning should be commenced in the first place by sawing out any of the main branches which have become useless, afterwards going carefully over the whole of the tree, cutting out all rough and useless wood, and any specially weak shoots, but leaving enough fruiting wood to cover the space when trained at about 4 inches apart. The pruning should be done as far as possible before the tree is altogether loosened from the wall, as in that case the workman can see the better what to take out, and what amount of wood is required to fill the space. When Morello Cherries have been neglected for some years, but are fairly good, healthy trees, much may be done to bring them into a creditable condition in a shorter period than is possible with most other wall-trained fruit trees. In such a case care must be exercised to retain every piece of young, healthy wood to take the place of the worst branches, which should be cut out, avoiding the extreme of removing too many in one season. After the pruning is completed, the trees should be unfastened and given a thorough cleansing with Gishurst Compound, or some other reliable insecticide, used strictly according to the directions published by the manufacturers. If nails and shreds have been used as the means of training, the wall will probably require stopping with cement, as these holes are most convenient breeding places for insect pests. While the trees are free from the walls it is a good time to provide the latter with wires, as was recommended in a recent Calendar.

Sweet Cherries.—These require a totally different method of pruning to that practised with the Morello. Sweet Cherries produce their fruit on spurs formed on the older wood, and in the case of wall trees that have been properly tended during the past summer, very little pruning will now be necessary. If the tree has not already filled its allotted space, about 12 inches of young wood may be trained in, following out the main branches, according to the system of training. The trees should be unfastened and cleaned, as advised for Morellos, taking care not to damage the fruit-spurs during the process of cleaning. If large branches are cut out, or the knife used unnecessarily, the disease known as gumming will most likely cause considerable damage. If the trees have been neglected in the past in the matter of pruning, proceed very cautiously, extending the cutting out over a period of at least a season or two.

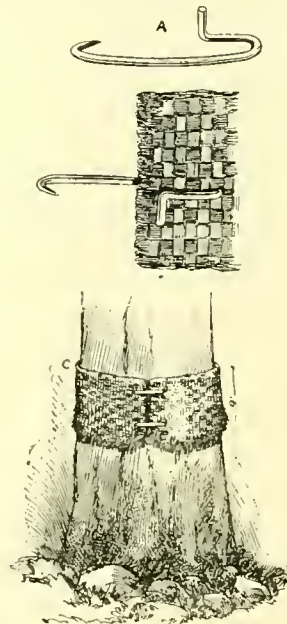


FIG. 146.—A SIMPLE CLIP FOR ATTACHING GREASE-BANDS.

A, the wire clip; B, the clip in position; C, showing how the band is attached by means of the clips.

applying water to the roots, remembering that the vines will require very little until they have made some growth. Syringe the roots with lukewarm water once or twice each day when the weather is fine, and damp the walls and floors in the house as often as is necessary. The best varieties for the early forcing in pots are Black Hamburgh and Foster's Seedling.

Early vines and borders.—These will need similar temperatures to those recommended for pot vines, and the date for starting them into growth will depend on what date in the coming season the cultivator wishes to obtain ripe fruits. Judgment must be exercised, however, to see that the wood is perfectly matured before forcing is commenced, or the results will be disappointing. It is not necessary to tie the rods of old vines along the front of the house, as these usually break into growth in an even manner. At the same time, they should not be tied to the trellis until the rods have been given another good washing. This washing should be done immediately before the buds burst into growth, and more than ordinary care will be necessary to prevent the buds from suffering injury in the process.

Fruit trees in buds.—Those trees which are not

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Climbing plants on tree stems.—Since the soil about the stems of large trees is usually so much drier than land exposed to the weather, planting of climbers in these situations may be done at the present time. In most cases the soil will need to be trenched and manured. The planting should be done at a distance of about 3 feet away from the stem, and the roots placed with their growing points from the tree, the object being, whilst training the growths of the plant up the trunk of the tree, to attract the roots away from the trunk by placing manure and suitable soil where it is wished that the roots will extend. A great deal can be done in this direction by perseverance, and the effect obtained is charming. Many varieties of Roses are amongst the plants best adapted for this system of gardening. I well remember the first Crimson Rambler I planted at the base of a tree. In this case it was against a standard plant of *Kölreuteria*; the second season the effect was excellent, and it increased in subsequent years as the Rose grew higher and higher. Dorothy Perkins, Rosa Sinica, *Anemoneflora*, *Euphrosyne*, *Débutante*, *Hélène*, *Hiawatha*, *Lady Gay*, *macrantha*, *Una*, *Thalia*, *Paul's Carmine Pillar*, *Queen Alexandra*, *Mme. A. Carrière*, *Reine Olga de Wurtemberg*, and *White Pet* are suitable Roses for this purpose. The chief points to observe in cultivating Roses in these positions is to keep them perfectly clean and well supplied with water in dry weather. In addition to Roses, there may be planted *Rubus bambusarum* and *R. flagelliformis*. Some species of *Vitis* provide brilliant colour, which is effective even at a distance. Such species include *V. Henryana*, *V. Coignetiae*, *V. heterophylla*, and *V. Labrusca*. Then there are *Clematis montana*, *Polygonum Baldschuanicum* and *P. multiflorum*, *Hydrangea scandens*, *Actinidia chinensis*, *A. Kolomikta*, *A. polygama*, *Wistarias*, and *Tropæolum speciosum*.

General work.—Clear away all the dead and decaying material from the herbaceous plants, especially such annuals as have flowered, and any weeds there may be in the borders; the few flowers that still remain will then be more effective. Any vacant spaces should be filled in with spring-blooming plants, such as *Iris*, *Ranunculus*, late-flowering *Tulips*, *Wallflowers*, and *Myosotis*: these should be planted carefully when the weather is dry. *Chrysanthemums* that have already flowered may be cut down to the ground level, and any plants lifted for stock that will be required for that purpose. Those remaining may be thrown away. In the cleaning operations be very careful that no labels are taken away, or even disarranged. Sweep and roll the Grass verges and paths, and make everything appear as tidy as possible. If earthworms are very troublesome on the lawn, prepare a mixture of lime and leaf-mould, and sprinkle this finely over the Grass. The top-dressing will benefit the Grass, and cause the worms to come to the surface, when they can be collected. Prune any deciduous trees that require this treatment. On wet days take the opportunity to clean the tools and machines, examine bulbs and roots in store, such as *Begonias* and *Dahlias*, and see that they are placed in a suitable position for the winter.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Preparations for winter.—Any pot plants which are intended to remain in the frame ground in the open should be plunged to their rims in ashes, so that there will be no danger of the frost breaking the pots. Mats and other covering materials should be at hand ready to place on the unheated frames when frost seems imminent, and it is as well to place similar coverings on cold nights on the glass of heated frames. This is a better plan than increasing the amount of fire-heat. Water should be sparingly given to plants in cold frames, and the mornings of fine days are the best time for its application. It is better to keep the plants somewhat on the dry side, for when their tissues are charged with moisture plants are more readily affected by low temperatures. The amount of sunlight will be very small during the dull months that are approaching, therefore every effort should be made to let the plants have the

benefit of what little there may be. Although this is not the proper time to undertake the annual cleansing of glasshouses, it will be as well to wash the glass of the roofs and fronts of the plant-houses. When doing this, give special attention to see that the accumulations of dirt are removed between the glass that overlaps, as it is these which often cause drip in plant-houses. In the neighbourhood of large towns, it is a good plan to wash the outsides of the glass by means of a hose, for if this is not done the deposits of soot and matter from fogs soon shut out most of the light.

Francoa ramosa.—This plant always flowers best when it has been wintered under cool conditions. In many gardens in warm situations in the southern counties specimens in the open with-stand all but very severe frosts, therefore pot plants may be wintered with safety in a cool greenhouse in a brick pit, which should be covered with mats on cold nights. For the next four months the roots should be kept relatively dry. A few well-grown specimens in pots of *Francoa appendiculata* are useful in summer-time for the decoration of the cool conservatory.

Dielytra spectabilis.—Although known in gardens under this name, the plant should be more properly called *Dicentra spectabilis*. It forms one of the most beautiful plants for forcing into flower in the early spring. To obtain the best specimens for this purpose it is necessary to pot fresh crowns each autumn. Place these in well-drained pots in sandy loam, and house them in a cold frame until they are required for forcing. When brought into the warm house they should be placed as near to the glass as possible, and, at first, subjected to a slight amount of extra warmth, which can be increased later.

Polygonatum multiflorum.—The common Solomon's Seal is useful for forcing purposes. Good clumps should now be potted in ordinary soil and placed in a frame until the new year.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Broccoli.—This important vegetable has made abundant growth, but it is of a gross nature, being sappy and immature. In the event of severe weather, the plants in cold and low-lying districts will be likely to suffer considerable damage. There is no better method in protecting them than that known as layering, which, if done properly, will, at least, save most of the plants, notwithstanding severe frost. Take out a good trench at one end, and heel over the plants, placing their heads towards the north; arrange the soil evenly and firmly over the whole of the stem. The slight check caused to growth will be beneficial rather than otherwise. Let the work be completed, if possible, before the end of November. Should unusually severe weather occur, it may be necessary to supplement the layering by strewing over the plants some light material, such as *Bracken* or *straw*; a very little covering of these substances will suffice, and it should be removed directly the weather becomes warmer.

Peas.—In gardens where there are conveniences for cultivating early crops of Peas under glass, seeds should be sown at the present time in well-drained pots, 8 or 10 inches in diameter. The compost should be of three parts fibrous loam and one part leaf-mould or manure from a spent Mushroom bed, which has been passed through a sieve. To every bushel of this compost add one 5-inch potful of bonemeal. The pots should be about half filled with soil, and twice as many seeds should be put in them as it is intended to cultivate plants. They should be thinned out to their proper number after the plants have germinated. The seedlings should be earthed up as soon as they appear above the edge of the pots. It is best to raise the plants in a cool house or unheated frame, for the slower the growth, especially in the early stages, the better will be the results. There are many varieties of Peas of dwarf and medium heights suitable for this method of culture. The best are those that produce large pods, and have haulms which attain the height of 4 feet, such, for instance, as *Early Giant*, *Edwin Beckett*, and *Early Morn*.

Broad Beans.—If the earliest Beans are treated in the same way as recommended for Peas, not forced in any stages of their growth, but allowed

plenty of fresh air when the plants are in flower, they will give satisfactory returns. *Leviathan* is a first-rate variety for cultivating in this manner.

Parsnips.—These are much superior in flavour if lifted direct from the open ground when needed for consumption. Nevertheless, it is desirable, in case of severe frost, to lift a stock of roots and store them in moderately moist sand or ashes. If this is not done, it will be necessary to cover a portion of the bed with leaves or long litter, to prevent the frost penetrating into the ground.

Salsify and Scorzonera.—These roots may now be lifted and stored in sand or ashes under a north wall.

Mustard and Cress.—Seeds should now be sown in boxes under glass.

THE ORCHID HOUSES.

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

Cœlogyne cristata.—This species and its varieties are fast finishing their growths, and the earliest are showing their flower-spikes. During the growing season *Cœlogyne*s need considerable quantities of water at the root, but at the present time the plants should be kept rather drier. From now until the flowering stage the plants should be given periodical, light waterings with weak, liquid cow-manure. Where a number of specimens are grown, a long succession of flowers will be afforded, particularly if some are placed in a slightly higher temperature than others. *C. elata*, *C. ocellata*, *C. barbata*, *C. ovalis*, and *C. elegans* should now be developing their flower-spikes; they will need copious waterings until the flowering period is past.

Lycaste Skinneri.—Varieties of this species will now be finishing their growth and beginning to show the flower-spikes; the plants should be kept a trifle drier at the roots than during the growing season, but on no account must the new pseudo-bulbs be allowed to shrivel. The little check they will receive from having less water will cause them to produce their flowers more at one time instead of altogether. *Lycaste Skinneri* is best potted in the spring, when growth commences. The cool house is a suitable place for the plants during winter, so long as the temperature does not fall below 50°. Keep the leaves well sponged with tepid, soft water, so as to prevent an attack of red spider.

Cypripedium.—Plants of the *Selenipedium* section of *Cypripedium*, as *C. macrochilum*, *C. grande*, *C. calurum*, *C. Sedenii*, *C. cardinale* and *C. leucorrhodum*, which may have become pot-bound, should be afforded larger pots, and any overgrown specimens may now be divided and repotted singly. Put plenty of material in the pots, and use a mixture of fibrous loam, *Osmunda* fibre, and *Sphagnum*-moss in equal proportions. Cut the *Osmunda* fibre and *Sphagnum*-moss sufficiently small that it will readily incorporate with the loam. To keep the compost porous mix plenty of small crocks with it. Keep the surface of the soil just below the rim of the pot, so as to allow plenty of room for affording water, and do not press the potting materials too firmly. Careful watering is necessary till each plant is established, after which the roots should be kept moist at all times.

Habenaria.—Among Orchids which bloom at this season is *Habenaria pusilla*, better known as *H. militaris*, its brilliant scarlet flowers being widely appreciated. While the plants are in bloom, keep them well supplied with water at the root, but when the leaves begin to show discoloration gradually reduce the quantity, so as to induce the drying down of the stems and foliage and the ripening of the newly-formed tubers. When the growths have decayed, the pots should be placed on a dry shelf, and be exposed to the light, a position near the deciduous *Calanthes*, while these plants are at rest, is the best place for them. Although in a dormant condition, *H. pusilla* must have water occasionally, or their tubers will shrivel. Examine them once a week, and afford a good sprinkling of water from a fine-rose watering-can to those which are dust-dry. The rare *H. ugandæ* and *H. zambosina*, being now in full growth, require the lightest position available in the warm house, and plenty of water should be given till the flowers are fully open; afterwards, and during the resting season, treat them as advised for *H. pusilla*.

EDITORIAL NOTICE.

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

Local News.—Correspondents will greatly oblige by sending to the Editors 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.

Letters for Publication, as well as specimens or plants for naming, should be addressed to the EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 15—

Nat. Chrys. Soc. Executive and Floral Coms. meet at Essex Hall, Strand.

WEDNESDAY, NOVEMBER 17—

York Chrys. Sh. (3 days). Chester Paxton Soc. Chrys. and Fruit Sh. (2 days). Roy. Meteorological Soc. meet.

THURSDAY, NOVEMBER 18—

Scottish Hort. Soc. Chrys. Ex. in Waverley Market, Edinburgh (3 days). Barosley Chrys. Sh. (2 days). Linnean Soc. meet. Manchester Chrys. Sh. (3 days).

FRIDAY, NOVEMBER 19—

Bolton Chrys. Sh. (2 days). Leeds Paxton Soc. Chrys. Exh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—42.6°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 10 (6 P.M.): Max. 48°;

Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street Covent Garden, London.—Thursday, November 11 (10 A.M.): Bar. 30.2; Temp. 43°; Weather—Sunshine.

PROVINCES.—Wednesday, November 10: Max. 47° Ireland S.W.; Min. 39° Yorkshire.

SALES FOR THE ENSUING WEEK.

TUESDAY—

Nursery Stock at Bury Road Nurseries, Gosport, by order of Executor of Mr. W. Legg, by Protheroe & Morris, at 12.

WEDNESDAY—

Clearance Sale of Nursery Stock at Bullhouse Farm Nurseries, Bisley, by order of Mr. H. Street, by Protheroe & Morris, at 12.

THURSDAY—

Herbaceous and Border Plants, at 12. Roses, Palms, and Plants, at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

Sale of Nursery Stock at Thimbleby Nursery, Horn-castle, Lincs., by order of Messrs. W. Crowder & Sons, by Protheroe and Morris, at 12.

FRIDAY—

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

The Direct Absorption of Ammonium Salts by Plants.

A question of considerable scientific and also practical importance is discussed by Messrs. Hutchinson and Miller, of the Rothamsted Experiment Station, in a paper which appears in the current number of the *Journal of Agricultural Science*. The question to which Messrs. Hutchinson and Miller contribute a decisive answer, and which has been debated inconclusively during the last 20 years, is—are green plants able to take up nitrogen from the soil in the form of ammonium salts?

It is unquestioned that ammonium salts—sulphate of ammonia, for example—serve to supply plants with nitrogen. But, since nitrifying bacteria are present and active in most soils, and since these organisms change ammonium salts into nitrates, only direct experiment can determine whether the ammonium salts supplied to the soil are first

changed by the agency of these organisms to nitrates or whether salts of ammonium may be absorbed as such by the roots of plants.

General considerations, as well as previous experiments, are in favour of the view that ammonium salts may be absorbed directly. Thus it is well known that the soil under forests is deficient in nitrates, and hence it is assumed that the trees derive their supplies of nitrogen from ammonium compounds formed during the decay of humus.

The experimental grass plots of Rothamsted, manured for many years with ammonium salts, point to a similar conclusion; for the soil of these plots has become distinctly acid, and the nitrifying organisms in consequence much reduced in numbers. Hence it would appear that the nitrogen which the grass is obtaining is that of the ammonium salts of the manure. Inasmuch, however, as the experimental evidence supplied by previous workers is not conclusive, Messrs. Hutchinson and Miller have carried out a series of experiments, admirably planned and conducted, to settle the matter once for all.

The experiments, to be conclusive, must be carried out in soil or sand in which nitrification is precluded, and it is not the least interesting part of their work that the authors named have succeeded in growing various plants, such as Wheat and Peas, in media from which bacteria of all kinds were excluded. The seeds were first sterilised by means of mercuric chloride, they were germinated on sterilised agar, and, when sufficiently advanced, the seedlings were transferred to sterilised culture vessels containing soil, sand, or water, to which either ammonium sulphate or nitrate of soda, or both, was added.

The results prove that in the cases of Wheat and Peas, plants grow just as well when supplied with ammonium salts, under conditions which preclude all possibility of the nitrification of these salts to nitrates, as they do when provided with nitrogen in the form of nitrates.

Incidentally, Messrs. Hutchinson and Miller make an ingenious suggestion to account for the striking fact that leguminous crops are so much richer than others in organic nitrogen. They observe that plants supplied with nitrogen in the form of ammonium salts tend to be richer in nitrogen than those which receive nitrates. They suggest, very plausibly, that this is due to the ammonium salts being converted readily into organic compounds, such as asparagine, which substances will not interfere with further absorption of ammonium salts from the soil. When, on the other hand, nitrates are supplied, they tend to accumulate as such in the tissues of the plant, and a condition of equilibrium between soil and plant-tissues with respect to nitrates being established, further absorption of nitrates is hindered.

Applying these considerations to leguminous plants, they point out that the nitrogen supplied to the plant by the activity of the nodule-organism is probably in the form of an ammonium compound; that, as a matter of fact, asparagine occurs in considerable quantity in the tissues of the root neighbouring on the nodules; and, therefore, there is nothing to hinder the absorption by the plant of as much combined nitrogen as the nodule organism is able to provide.

Lastly, turning to the practical side of the

question, it appears to be fairly well established that not all crops are alike in their preference for a particular form of nitrogen. Potatoes thrive somewhat better when supplied with ammonium salts. Maize and Paddy Rice prefer ammonium salts during their early stage of growth, but later do better with nitrates. Mangolds and Buckwheat give a better yield when supplied with nitrates than when provided with sulphate of ammonia. Mustard, Oats, and Barley are indifferent, growing equally well with nitrates or ammonium salt.

Speaking generally, the best results are obtained when nitrogen is supplied in both forms. This last point deserves to be emphasised, for, as has been shown by Mr. Hall, the continued and exclusive use of one or other of the two chief nitrogen-containing artificial manures, nitrate of soda and sulphate of ammonia, sets up unsatisfactory soil conditions.

We welcome the work of Messrs. Hutchinson and Miller, both because of its intrinsic value and because it is a manifestation of the energetic manner in which soil, and other researches are being conducted at Rothamsted under the able direction of Mr. Hall. We should like to see the investigation extended to embrace the chief garden and field crops, and would suggest that some of the horticultural colleges should carry out the work on the lines so excellently laid down in the paper which we have been considering.

It should be the function of a station such as Rothamsted to deal, as it does, with the broad principles of the sciences of agriculture and horticulture. It should be the function of the smaller institutions to develop in detailed manner the discoveries made at the national station, so that they may yield the maximum of service to those engaged in the practice of agriculture and of horticulture.

OUR SUPPLEMENTARY ILLUSTRATION.—

We have pleasure in illustrating a magnificent plant of *Calanthe Dominyi*, from a photograph recently taken in the collection at the Royal Gardens, Kew. *Calanthe Dominyi* was the first hybrid Orchid raised in Europe. It was first recorded by Dr. LINDLEY in the *Gardeners' Chronicle*, 1858, p. 4, in an article which commenced as follows:—"On October 28, 1856, Mr. JAMES VEITCH, Jun., of the Exotic Nursery, Chelsea, brought to the writer of this memorandum a flower of a *Calanthe* which combined the peculiar hairy forked spur and deeply-lobed lip of the white *Calanthe furcata*, with the violet colour and broad middle lobe of the lip of *C. Masuca*. One might have said that the flowers were just intermediate between the two in all respects. A botanist could not have referred the plant either to the one or the other of those two species. Neither on the other hand could he have regarded it as a new species. . . . It appears that it had been raised in the Exeter Nursery by Mr. DOMINY, Messrs. VEITCH's indefatigable and very intelligent foreman, between *C. Masuca* and *C. furcata*. The seed obtained in 1854 by crossing those two species was immediately sown, and in two years the seedlings were in flower." *C. furcata* is a white-flowered species allied to *C. veratrifolia*, and *C. Masuca* has mauve-tinted flowers. The flowers of *C. Dominyi* are of a light mauve-purple on a white ground, the flowers varying in tint with age. The plant requires to be grown in a warm rather shady situation, and to be kept moist at the roots throughout the year.

LINNEAN SOCIETY.—The next meeting will be held on Thursday, November 18. Papers will be read by Mr. W. WESCHE on "A New Tipulid Sub family," and Mr. J. W. BROWN on "Fresh-water Rhizopods from the English Lake District."

NATIONAL VEGETABLE SOCIETY.—The committee of this Society, on learning recently of the intention of the Royal Horticultural Society to hold a Vegetable Exhibition next October, entered into correspondence with the Council with a view to holding a joint exhibition. The Council, however, have decided that there are material difficulties in the way of this, seeing that such a show on one of the usual Tuesdays would occupy the entire hall. In declining the proposal, the Council suggested that the National Vegetable Society should hold its exhibition on the date fixed upon, namely, Wednesday, September 23, 1910. The course will now be taken, and there is evidence that the exhibition will be one of importance.

during that long period he has been held in high esteem by gardeners and nurserymen. Many of his pupils are scattered over the British Isles and in the Colonies. A committee has been appointed, with Mr. JAS. WHYTOCK as chairman, and Mr. A. CHALMERS, 6, Melbourne Place, Edinburgh, hon. secretary. It is proposed that the subscription list should close on Tuesday, November 30.

PRESENTATION TO MR. BLACKWELL.—Mr. G. BLACKWELL, who has acted as honorary secretary of the Pitsford and District Horticultural Society since its commencement three years ago, and who is leaving Pitsford, has been presented by the members and friends with a purse of money in recognition of the valuable service he has rendered to the society.

FUMIGATION WITH CYANIDE.—In the course of a comprehensive account of experiments carried out in the Orange plantations of California on fumigation by means of hydrocyanic acid gas,

David Lyall, Jessie de Horne Vaizey, Ramsay Brereton, Helen H. Watson, and others. (The Religious Tract Society.) Price 4d.—**Preparations for Winter Fumigation for the Citrus White Fly**, by A. W. Morrill and W. W. Yothers. Published by the United States Department of Agriculture, Bureau of Entomology.—**The Gardeners' Companion**, by Selina Randolph. (Mills & Boon, Ltd., 49, Whitcomb Street, London, W.C.) Price 2s.—**The Groves of New York**, by U. P. Hedrick, assisted by contributors. Pp. 564, being vol. iii., Part II., of the fifteenth annual report of the State of New York Department of Agriculture. (New York Agricultural Experiment Station.)—**Reports on the Botanic Station, Experiment Plots, and Agricultural Education, Antigua, 1908-9.** (Imperial Commissioner of Agriculture for the West Indies.) Price 6d.—**Reports on the Botanic Station, Agricultural Instruction and Experiment Plots, Grenada, 1908-9.** (Imperial Commissioner of Agriculture for the West Indies.) Price 6d.—**Reports on the Botanic Station, Economic Experiments, and Agricultural Education; also on Agricultural Instruction, St. Kitts-Nevis, 1908-9.** (Imperial Commissioner of Agriculture for the West Indies.) Price 6d.

MR. F. W. MOORE.

THE Royal University of Ireland has conferred upon Mr. F. W. Moore, Keeper of the Royal Botanic Gardens, Glasnevin, the degree of M.A. *Honoris Causa*. "in consideration of his high scientific position and of the valuable assistance he has given the University for many years in connection with the practical examinations of the University." To those who are acquainted with Mr. Moore's work in the various fields of horticultural science in Ireland this recognition of long and brilliant services will afford great satisfaction. Mr. Moore holds, and has long held, the first position among Irish horticulturists. He has made Glasnevin famous for the richness of its plant collections and the excellence of their culture, Glasnevin now occupying in Ireland the same position as a teaching school of horticulture that Kew fills in England. As Keeper of the Gardens Mr. Moore's claims to respect and admiration are undisputed, and Irish botanists and gardeners are proud of him. It is, however, outside what may be termed the duties of his office that Mr. Moore has won special distinction. For years he has been actively engaged under the Irish Board of Agriculture in the promotion of high-class fruit and vegetable-culture among the farmers of Ireland, and the energy and enthusiasm with which he has pursued this work are familiar to those who have met him at fruit exhibitions and conferences in this country or on tours of inspection of our best fruit farms and nurseries. Ireland has many attractions for horticulturists interested in hardy plants of all kinds, and we are quite within the mark in describing Mr. Moore as an encyclopædia of Irish gardens and their contents. It has become the rule for visitors to Ireland who are interested in plants to proceed first to Glasnevin in the certain belief that the courteous, genial Keeper will set them on their way rejoicing. If the occasion justifies it, Mr. Moore does not hesitate to personally conduct to the principal places of interest, such visitors as are not merely on pleasure bent, and fortunate is the person or party that he accompanies, for he knows every plant and all that is worth knowing about it. In his love of plants Mr. Moore is more artist and gardener than botanist. A well-grown specimen is his delight, the herbarium specimen having less charm for him. It is owing to this love of healthy-living plants that one finds in the Glasnevin Keeper a hearty champion of the practical gardener. He has no patience with what is known as class-room gardening. Anyone who has heard Mr. Moore lecture or take part in a



MR. FRED. W. MOORE, M.A., V.M.H.

THE IMPORTATION OF POTATOS FROM BRITTANY.—In a note on the shipments of Potatos from St. Malo during the present year, *Le Moniteur du Jardinier* (October 20, 1909) gives the following figures:—During the season 44,000 cartloads of Potatos, representing 50,000 tons (French), were brought into St. Malo. When it is recollected that from practically every one of the innumerable little ports on the coasts of Normandy and Brittany small tramp steamers, or still smaller sailing boats, go out once or twice a week to the English ports, and that during the latter part of the summer their main cargo is Potatos, some idea may be formed of the enormous quantity of Potatos which come to this country from France.

TESTIMONIAL TO MR. JAMES GRIEVE.—It was resolved at a meeting held in Edinburgh on the 2nd inst. that suitable recognition should be made of the Jubilee of Mr. JAMES GRIEVE, Redbraes Nursery, who completes 50 years' connection with the Edinburgh nursery trade this month. Mr. GRIEVE entered the employment of Messrs. DICKSONS & Co. in the year 1859, and

Mr. R. S. WOCBURN describes an improved and simple "fumigation generator," the use of which he strongly recommends. The improvement consists of a hinged cover of stamped copper, which is so corrugated that, when it is in position over the top of the fumigating vessel, the fumes produced by the action of the acid or the cyanide escape, not in an upward direction, but more or less downward. It is claimed that, in consequence, the fumigation is far more complete than when the gas is generated in the ordinary, open vessel. The full report of these experiments, one item only of which we refer to here, should be studied by all interested in fruit culture. (See "Fumigation Investigations in California," U.S. Department of Agriculture *Bulletin* No. 79.)

PUBLICATIONS RECEIVED.—*Journal of the Board of Agriculture* (October). (R. Clay & Sons, Ltd., 7 & 8, Bread Street Hill, Queen Victoria Street, E.C.)—*Cape Colony To-Day*. Issued by the Cape Government Railway Department. (Second series.) Illustrated.—*Everybody's Story Magazine*. No. 1. A monthly magazine containing complete stories by Joseph Hocking,

discussion on any horticultural question could not fail to be impressed by his great knowledge and thoroughness. There is another feature of Mr. Moore's personality which deserves to be mentioned, namely, his geniality. We expect to find this "sunshine of life" in all Irishmen, and in Mr. Moore it is ever present. No one can be dull in his company. A day among the plants with Moore is sure to be both profitable and enjoyable, and an hour or two with him after the day's work is done not only brightens the mind, but it also gives a relish to work and life. Such men are worth a place among those on whom distinctions are conferred, whether it be in the form of an academic degree or in the admiration and affection of their associates and friends. In this respect Moore of Glasnevin occupies a conspicuous position among British and Irish horticulturists.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

APPLE HAMBLEDON DEUX-ANS.—A. D. (see p. 294) classes this variety as one of the old sorts "still widely grown." I have lived within six miles of Hambledon, where this variety originated, and have never once seen a young tree; but I have known many to be chopped down as worthless. In my opinion, the only value this Apple possesses is its long-keeping quality. But what of that? For, when kept, the Apple is comparable to dry wood, either raw or cooked. It is a useless variety, and one that, I think, it would be a mistake to perpetuate. *E. Molyneux.*

ONIONS.—In the *Gardeners' Chronicle* for April 3 last, p. 217, a method of growing Onions for market was described. Being interested in the yield, I have, for comparison, weighed my crop from seed sown in the open on April 2. From 4 rods 9 square yards I have 920 lbs. of good bulbs. The bulbs of A1 and Reading Improved average in circumference 10 inches to 12 inches each, which is a useful size. The above weight will compare well with the transplanted bulbs, giving a yield of 200 lbs. per rod, and they are produced with far less expense, as the only labour entailed since sowing has been in weeding and hoeing. *G. H. H. W., Hants.*

ROSE MRS. FLIGHT.—I can endorse all that is said about this Rose in your last two issues. Mrs. Flight was the only Rambler that did any good with me this season. I have about half-a-dozen pillars of it, and it bloomed and grew splendidly; indeed, all the Ramblers have grown well this cold and wet season, but the others shed their buds early in the summer, mostly from chill and mildew, and scarcely had a bloom of any sort upon them. Mrs. F. W. Flight seemed entirely uninfluenced by a season that was too much for the others. It is a wonderfully hardy sort, and is not nearly sufficiently well-known. This place is high and bracing, with an admirable Rose soil, and the failure of the Ramblers, with this notable exception, was a surprise to me; all Roses here failed to open their buds, they were either sealed by the wet or rotted by the rain and cold, yet all have grown wonderfully. Good as I knew Mrs. F. W. Flight to be, it is even better that I thought it. *Robt. Peel Sheldon, Flimwell Grange, Hawkhurst, Kent.*

NATIONAL AURICULA AND PRIMULA SOCIETY.—This Society was established in 1875, and has held an annual exhibition in London every year since that date. The Society consists of 100 members. The Auricula has existed in Great Britain and Ireland for upwards of 300 years. Under proper treatment the plants can be grown easily. It is hoped that many who read this notice may become members of the Auricula Society. The annual subscription is 5s., and entitles members to a ticket for the Auricula Show and for the exhibition of spring flowers held by the Royal Horticultural Society. Further information and schedules of the exhibition may be obtained from Mr. T. E. Henwood, 16, Hamilton Road, Reading. *Florist.*

THE ROYAL BOTANIC SOCIETY'S GARDENS.—It has become a matter of general knowledge that, owing to a variety of circumstances, the position of the Royal Botanic Society has become so precarious as gravely to threaten its continued existence. As a Fellow of the Royal Botanic and Royal Horticultural Societies of many years' standing, and writing with the knowledge and consent of the President and Council of the Royal Horticultural Society (of which Council I have the honour to be a member), I have been surprised to learn that a letter sent by this latter Society to H.S.H. the Duke of Teck, President of the Royal Botanic Society (of which I give a copy below), has not been communicated to the Council and Fellows of the Botanic, though I believe H.S.H. the Duke intended it should be. The President and Council of the Royal Horticultural Society feel that, should the Regent's Park gardens come to an end, it would be little short of a calamity both to the great gardening interests of the kingdom and to the pleasure and enjoyment of the inhabitants of the metropolis and its visitors.

I am authorised to say that the President and Council of the Royal Horticultural Society are most anxious, if possible, to come to such an arrangement with the Royal Botanic as may ensure the continuance of the Regent's Park gardens for the future.

I am, Sir, faithfully yours,
HARRY J. VEITCH.

Royal Horticultural Society,
Vincent Square, Westminster, S.W.,
November 9.

Royal Horticultural Society,
Vincent Square, Westminster, S.W.,
October 15, 1909.

To his Serene Highness the Duke of Teck, G.C.V.O.—Sir.—The President and Council of this Society desire me to address your Serene Highness, as President of the Royal Botanic Society, in regard to the present position of that Society. They have been given to understand by reports and other statements appearing in the public Press, as well as by letters and other private communications, that there is serious danger of the gardens in Regent's Park reverting to the Department of Woods and Forests owing to financial difficulties. Should this be so, and should the Royal Botanic cease to occupy these gardens, the President and Council of this Society consider that it would be a real misfortune not only to the Fellows, but especially to the very important interests of British horticulture, and to the people in London.

Under these seemingly urgent circumstances, the Council of the Royal Horticultural Society desire me to say that, should the Royal Botanic Society wish it, they are prepared to appoint a committee of their body to meet a committee of the Council of the Royal Botanic Society to consider and discuss any proposals which may be made, with an earnest desire to help in securing, if possible, the preservation of the Regent's Park gardens for horticultural uses.

I have the honour to be your Serene Highness's obedient servant,

W. WILKS,
Secretary Royal Horticultural Society.

THE HARDINESS OF NICOTIANA (see p. 298).—On the 30th ult. we experienced 10° of frost at the Roath Park, Cardiff, and plants of *Nicotiana glauca* planted on a south-west border have escaped undamaged. We have just destroyed plants that have been in the open ground since the summer of 1908. The stems were destroyed by the frosts of last winter, but the plants grew again on the return of summer. The roots did not receive any extra protection, neither did they occupy the best of positions in respect to drainage and lightness of soil. *W. R.*

RICINUS COMMUNIS.—During the summer of 1908 we planted in an outdoor situation established plants of *Ricinus* which had been raised in a warm greenhouse. The plants flowered and produced seed; the seed was not gathered, but it dropped on the ground beneath the parent plants. This year several seedlings appeared, the seeds having withstood the low temperatures of last winter. This proves that these plants will grow in a much lower temperature than is usually afforded them. *P., Roath Park, Cardiff.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 9.—The weather on Tuesday last was beautifully fine, and there was a good display of flowers, fruits, and vegetables at the meeting held in the Society's Hall. A big group of Messrs. Veitch's hybrid Begonias, shown by Baron SCHRÖDER, provided a brilliant display of colour just inside the entrance; whilst on the other side of the doorway was a showy group of *Codiaeums*. At the platform end of the Hall a magnificent group of Ferns was shown by Messrs. J. HILL & SON, and another remarkable exhibit of these plants was seen in a collection of *Nephrolepis* from Messrs. H. B. MAY & SONS' nursery. Many pretty exhibits of Carnations and *Chrysanthemums* were staged. The FLORAL COMMITTEE conferred three Awards to new plants, including one First-class Certificate and two Awards of Merit.

Exhibits of Orchids were not so numerous as usual, although there were several good groups. The ORCHID COMMITTEE granted two Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE had several important groups of fruits and vegetables to consider, and there was some excellent produce in the competitive classes for Potatoes and Onions.

At the 3 o'clock meeting in the Lecture Room a discourse on "Some Beautiful Shrubs" was delivered by Mr. Edwin Beckett, V.M.H.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair), and Messrs. Chas. T. Drury, Henry B. May, John Green, G. Reuthe, Jas. Douglas, W. J. Bean, Wm. Howe, E. A. Bowles, Chas. Dixon, H. J. Jones, F. Page Roberts (Rev.), Chas. E. Shea, Chas. E. Pearson, Herbert J. Cutbush, Ed. Mawley, W. P. Thomson, E. H. Jenkins, W. J. James, E. T. Cook, Arthur Turner, James Walker, J. F. McLeod, J. Jennings, R. C. Notcutt, C. R. Fielder, and Chas. Blich.

A large floor group of flowering and foliage plants, similar to groups often seen at flower shows, was exhibited by E. H. BROWN, Esq., Roehampton, Surrey (gr. Mr. R. Bradford). The exhibit was arranged as an oblong. A tall and choice specimen of *Kentia Belmoreana* dominated the back, and this was grouped about with Japanese *Chrysanthemums*, with two similar but smaller groups, one on either side. In the general body of the group were well-colored *Cordylines*, *Codiaeums*, *Abutilons*, *Begonias*, single-flowering *Chrysanthemums*, *Cyclamens*, *Primulas*, *Richardias*, and other flowering plants. (Silver-gilt Banksian Medal.)

Baron SCHRÖDER, Englefield Green, Egham (gr. Mr. Ballantyne), showed a large number of well-grown plants of winter-flowering *Begonias*. At the back were finely-flowered specimens of the variety Mrs. Heal, and others shown were *Success*, *Ensign*, *Elatior*, and *Winter Perfection*. The front row was composed of large, well-flowered plants of *Begonia Gloire de Lorraine*, and at either end could be seen the white-flowered variety Turnford Hall. (Silver-gilt Banksian Medal.)

Lord HILLINGDON, Uxbridge (gr. Mr. A. R. Allan), showed a batch of Carnations of the Princess of Wales variety, interspersed with *Cocos Palms* and *Grevillea robusta*, with an edging of *Asplenium bulbiferum*. In the back of the group was a fine plant of *Lilium nepalense* carrying several of the yellow and chocolate-colored flowers. The group was attractively staged, and the plants were well cultivated. (Silver Banksian Medal.)

A batch of plants of seedling *Gesneras* was shown by ADELINE DUCHESSE DE BEDFORD, Rickmansworth (gr. Mr. J. Dickson). The plants bore fine inflorescences, but the colour was restricted to orange shades. (Bronze Flora Medal.)

An imposing exhibit of Ferns was displayed by Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton. The group extended the whole width of the building at the end opposite the clock. It was remarkable for the great number of large specimen plants, and embraced 200 varieties and species. Some of the more remarkable plants were *Acrostichum viscosum*, *Davallia polyantha*, a large, fine specimen; *D. fijiensis elegans*, *Platycerium grande*, *Asplenium caudatum*, *Adiantum Hendersonii*, a rare

species; *Brainea insignis*, with coloured fronds; *Lomaria L'Hermieri*, some of the fronds being tinted red; *Nephrolepis exaltata superba*, a large plant with much crested fronds; *Polypodium iriodes*, *P. giganteum*, and of tree Ferns, *Azophila armata*, *Dicksonia* (syn. *Cibotium*) *Schiedei*, *D. squarrosa*, and *Cyathea insignis*, a very elegant species. Of *Selaginellas*, the new *S. emiliana aurea* and *S. caulescens* were handsome. (Gold Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed a handsome exhibit of *Nephrolepis* in about 48 species and varieties. The elegant varieties of *Nephrolepis exaltata* were represented by such fine sorts as *N. e. Amerpohlii*, *N. e. Whitmanii*, *N. e. superbissima*, with much crested fronds, the pinnae being very broad; *N. e. elegantissima*, and *N. e. Pierstonii*. Others noted were *N. rufescens* var. *Mayi*, with upright-growing fronds; *N. Duffii*, *N. pectinata concinna*, *N. ensifolia*, with long plume-like fronds, but not crested; and *N. acuta*. At one end of the exhibit was a batch of plants of the new *N. e. Marshallii*, which received a First-class Certificate. (Silver-gilt Flora Medal.)

Mr. W. H. PAGE, Nurseryman, Hampton, made a very fine exhibit of Carnations, the display being one of the brightest in the hall. Mr. PAGE cultivates these popular flowers with great skill, and the blooms on this occasion were of his usual high quality. There were many plants and vases of blooms of a new variety named *May Day* (see fig. 142, p. 323), with pale pink flowers of regular shape. Others shown well were *Beacon*, Mrs. T. W. Lawson, Mrs. Chas. Knoph, a shade deeper in colour than Mrs. Lawson; *Pink Delight*, *Beacon*, *White Enchantress*, and *Governor Roosevelt*. (Silver Flora Medal.)

Messrs. H. CUTBUSH & SONS, Highgate, London, N., showed an attractive exhibit of Carnations. All the popular kinds were presented in large bunches, including fine blooms of Mrs. T. W. Lawson, *Winsor*, *White Enchantress*, *Robert Craig*, *The President*, *Enchantress*, *Mikado*, *Victory*, and *Rose Dore*. Besides Carnations, this firm exhibited hardy flowering plants and berried shrubs. We noticed pans of *Iris alata* with light-blue flowers and *I. Vartanii* with pale opal-blue blooms. *Aconitum septentrionale* is a late-flowering species with bluish-tinged flowers. (Silver Banksian Medal.)

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, displayed a number of vases of Carnations of the perpetual-blooming type. Especially good were those labelled *Royal Purple*, *Winnona*, Mrs. Crook (a seedling), *Rose Pink Enchantress*, *Rival* and *Britannia*. The group contained many seedling varieties raised at Bush Hill Park.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed small, pot plants of single and decorative *Chrysanthemums* as a table exhibit, and an imposing batch of *Codiaeums* (*Crotons*) as a floor group. The *Chrysanthemums* were splendid examples of good culture, each small pot containing a dwarf plant with numerous well-developed blooms. There were 26 varieties of the single type and six of the decorative kinds. The most attractive were (single) *Alice Crate* (rosy-pink), *Atair* (white, starry florets), *Bronze Edith Pagram*, *Esmouth* (yellow), *Lillie Godfrey* (blush), *Miss Olive Prater* (white), *Snowstorm* (white), and (decorative) *Caprice du Printemps*, *Kathleen Thompson*, and *White Cap*. The *Codiaeums* were splendidly grown, each specimen being furnished with well-coloured foliage to the base of the stem. The collection embraced no fewer than 40 varieties, with broad, narrow or spirally-twisted foliage. Especially fine were the varieties *elegantissima*, *B. Comte*, *Emperor Alexander III.*, *Warrenii*, *Hawkeri*, *Perfection*, and *Queen Victoria*. (Silver-gilt Flora Medal.)

Messrs. JOHN PEED & SONS, nurserymen, Norwood, displayed several new varieties of single-flowered *Chrysanthemums* and a few blooms of large Japanese kinds. *Carrie Fownes* is a pretty white single variety; *Alfred Aylett* is a dark-red flower of this type. Amongst the Japanese blooms we noticed *White Queen*, *Hon. Mrs. Lopes* (a remarkably fine yellow flower), *Purity* (white), and *Francis Jolliffe* (yellow).

Messrs. H. CANNELL & SONS, Swanley, Kent, showed decorative and single *Chrysanthemums*. The blooms were displayed rather formally in triangular bunches on wire stands. Very pretty were those labelled *Honeysuckle* (an appropriate name for the variety), *Gaiety* (pale terra-cotta), *Gertrude* (white), *Red Start*, Mrs. C. Bates,

Mignonette (a curious head of thread-like, yellow florets), and *Foxhunter*. A vase of the tiny-flowered *Pompon* named *Baby* was interesting, the flowers being very miniature. (Bronze Flora Medal.)

A large exhibit of single-flowered *Chrysanthemums* was shown by Sir D. GOOCH, Bart., Chelmsford (gr. Mr. D. Wilkinson). The varieties embraced most of those in cultivation, the most attractive being *Altrincham Yellow*, *Lady Inchiquin* (reddish), *Rouppell Beauty*, *Mary Richardson*, *Edith Pagram*, *White Pagram*, *Miss M. Bird* (yellow), *J. Stephenson* (pink), and *Hilda Lawrence* (Bronze Flora Medal.)

Messrs. W. WELLS & CO., LTD., Merstham, Surrey, staged a group of decorative and single *Chrysanthemums*. A new variety named *Hilda Kathleen*, of the decorative type, has Indian red florets with silver on the reverse side. The new bronze-coloured *Phosphorescens* was noticed, and other desirable varieties seen were Mrs. *Buckbee* (white), *Miss Alice Finch* (vinous red), *Innocence* (white, single), and *Dora Hercombe* (pink, single).

R. BARCLAY, Esq., Bury Hill, Dorking (gr. Mr. W. Graysmark), showed numerous seedling *Chrysanthemums* of the single-flowered type. Collectively they formed a very pretty exhibit. Some of the finer were *Iris* (white), *Miss Iris Kingsley* (rose-pink), and Mrs. J. Turner (rose-pink).

Messrs. BARR & SONS, King Street, Covent Garden, showed a small group of bulbous plants, principally species of *Crocus*. There were also plants of *Nerine corusca major*, *N. Fothergillii major*, and *N. hexuosa alba*, well in flower.

Mr. L. R. RUSSELL, Richmond, Surrey, showed a group of berried plants, with variegated-leaved *Iries*, *Eurya latifolia*, and *Eleagnus aurea marginata* interspersed. Tiny plants of *Aucuba* and *Skinmnia* were abundantly berried.

AWARDS.

FIRST-CLASS CERTIFICATE.

Nephrolepis exaltata var. *Marshallii*.—A stoloniferous sport from *N. e. Amerpohlii*, with much finer divided, more densely plumed, and broader fronds than any of the plumose varieties of *N. exaltata*. Some of the fronds were 14 inches across, and one of the largest specimens shown had a spread of leaves about 3 feet. Each frond was like a dense cushion of soft moss. Shown by Messrs. H. B. MAY & SONS.

AWARDS OF MERIT.

Begonia The Gem.—The latest and best of the hybrids raised by Messrs. JAS. VEITCH & SONS, who were the exhibitors. The parents were *B. socotrana* and a semi-double-flowered, deep-rose-coloured, tuberous-rooted variety. The blooms are semi-double and of deep carmine-rose shade, about the size of those of *Winter Cheer*. The plant carried a branched inflorescence, some of the blossoms having been open for three weeks.

Chrysanthemum Lingwood's Pride.—A large, pale-pink, single-flowered variety, with a bright-yellow eye. Raised in the gardens of G. RIDGEN, Esq., Inglefield Green, and shown in Messrs. J. PEED & SONS' group.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Sir Jeremiah Colman, Bart., de B. Crawshaw, H. Little, W. Boxall, J. F. Alcock, R. G. Thwaites, F. J. Hanbury, A. A. McBean, W. Cobb, W. H. Hatcher, J. Cypher, A. Dye, C. H. Curtis, H. G. Alexander, H. A. Tracy, Gurney Wilson, Wilson Potter, and R. Brooman-White.

His Grace the Duke of MANTONOUGH, Blenheim, Woodstock (gr. Mr. Hunter), was awarded a Silver Flora Medal for a fine group of upwards of 50 excellently-grown plants of *Vanda corulea*, well furnished with stout spikes of blue flowers. Arranged with them were a good lot of orange-scarlet *Epidendrum vitellinum*, the brown and yellow *Oncidium prae-textum* and *O. Forbesii*, the whole tastefully arranged with graceful Ferns, &c. *Cypripedium Troilus* var. *Lord Nelson*, a very fine flower, was also in the group.

E. ROGERTSON, Esq., Oakdene, West Didsbury, Manchester (gr. Mr. W. C. Price), was awarded a Silver Banksian Medal for a good and varied group of *Cypripediums* containing many choice varieties. The novelties in the group were *C. Hitchinsae* Oakdene variety, a large form with fine, white, dorsal sepal with spotted lines of deep

rose, and certainly one of the best of its class; *C. Arthurianum pulchellum* Oakdene variety, the colouring of which resembles that of a good *C. Thalia*; and *C. E. C. Rogerson*, a very distinct flower, with the upper part of the dorsal sepal white, the middle area, magenta rose, and the base, of a peculiar shade of green. The petals and lip are yellowish, tinged with purple.

Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed a selection of fine hybrid Orchids, including *Cypripedium Niobe-Leeanum*, with white dorsal sepal, having feathered lines of rose-purple, the petals and lips yellow, tinged with mahogany brown; *C. Dante magnificum* (*Euryades* × *Charlesworthii*), with white dorsal sepal coloured claret-purple at the base and with similarly-coloured blotches above; *C. Rossettii magnificum*, a good yellow flower with emerald-green lines on the dorsal sepal; *C. Darius* (*Charlesworthii* × Mrs. Mostyn), having all the fine colouring of *C. Mrs. Mostyn*, but in a larger and better flower; and *Laelio-Cattleya Corunna Westonbirt* variety (see Awards).

Sir JEREMIAH COLMAN, Bart., Gattopark, Surrey (gr. Mr. Collier), staged a small group containing several of his new *Cattleya* *Portia corulea* (*Bowringiana lilacina* × *labiata corulea*) of a delicate lavender tint with slate-blue front to the lip; the pretty purple-spotted *Brasso-Cattleya Mary*, *Cirrhopetalum cornutum*, and *Dendrobium ericiflorum*.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed *Brasso-Laelio-Cattleya* *Tring Park* hybrid (*B. Digbyana* × *L. C. callistoglossa*), a pretty white flower tinted with rosy lilac, first shown by the Hon. Walter Rothschild in 1904; also *Sophro-Cattleya Doris*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cypripedium* *The Emperor* (*Beckmannii* × *Sallieri*), a large yellow flower with much of the spotting of *C. Sallieri*; *C. Fulshawense giganteum*, and *C. elatior pulchellum*, a pretty flower of fine shape, and differing from the others previously shown.

Messrs. CHARLESWORTH & CO., Haywards Heath, staged a fine group, in which both the hybrids and species were equally well represented and for which a Silver Flora Medal was awarded. The centre was of *Laelio-Cattleya luminosa*, and other *Laelio-Cattleyas*, in front of which were *Epidendrum vitellinum* and various *Odontoglossums*, including a finely-spotted *O. nebulosum* and some very promising blotched *O. crispum* raised from seed. On one side a number of *Cattleya Phrygia* (*Enid* × *Portia*) were very effective; *Sophro-Laelio-Cattleya Marathon*, a rich piece of orange-red colour; *Sophro-Cattleya Eros*, of a deep claret red; and *Odontoglossum ardentissimum xanthodes*, one of the best white *Odontoglossums*. Others noted were *Cirrhopetalum Mastersianum*, several *Bulbophyllums*, *Ceologyne Veitchiana* (with an elegant spray of white flowers), *Stenoglossis longifolia*, and a good selection of *Cypripediums*.

Messrs. STUART LOW & CO., Bush Hill Park Nurseries, Enfield, were awarded a Silver Banksian Medal for an excellent group, in the centre of which were two good, white *Cattleya labiata*, the variety *Louise* having a violet blotch on the lip like *C. l. Cooksoniae*, the other having the lip of a lighter tint. Behind them were a fine specimen of *C. Bowringiana*, good *C. Hardyana*, and on each side *Cypripediums* and various interesting and pretty species, including *Pleurothallis cbovata*, *Ionopsis paniculata*, *Physisiphon Loddigesii*, *Lanum Berkleyi*, and various *Masdevallias*, *Dendrobiums*, &c.

Messrs. J. CYPHER & SONS, Cheltenham, were awarded a Silver Banksian Medal for a group of *Cypripediums*, which included a selection of the yellow and other forms of *C. insigne*; *C. Minos Young's* variety, *C. Minos Veitchii*, varieties of *C. Acteus*, *C. Titus superba*, and *C. triumphans*, both of very dark colour; *C. Maudiae*, a selection of distinct forms of *C. Fairricanum*, one very dark variety being specially fine; and among the forms of *C. aureum* the variety *giganteum* was a noble flower.

Mr. E. V. LOW, Orchid Nursery, Vale Bridge, Haywards Heath, was awarded a Silver Banksian Medal for a group, in which were several white forms of *Cattleya labiata*, the *C. labiata alba Laura* being of pure white, with only a shade of sulphur yellow in the tube of the lip. *C. l. Reedlyensis*, *C. l. Anesiana*, *C. l. Ulysses*, and *C. l. Kromeria*, the last-named having a lavender-blue tint, were also included; and

Dendrobium Phalænopsis alba, D. P. Phyllis Moore, *Odontoglossum Uro-Skinneri album*, *Oncidium incurvum album*, and several good *Cypripediums*, &c., were also noted.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent a fine plant of the original *Cypripedium* *Trilobus* (*insigne* *Sanderæ* × *nitens* *Hyeannum*) with three large blooms.

Monsieur MERTENS, Ghent, showed a small selection of hybrid *Odontoglossums*.

R. BROOMAN-WHITE, Esq., Arddarroch, Garelochhead, N.B., showed a number of fine spikes of *Odontoglossum crispum*, all of the very best type, and varying from pure white to rose and lilac-tinted, some being blotched varieties.

G. P. WALKER, Esq., Heatherfield, Putney (gr. Mr. McGregor), sent *Odontoglossum Jasper* (*amabile* × *crispum* *rosenm*), a prettily-spotted flower tinged with rose on the outer parts of the segments.

AWARDS.

AWARDS OF MERIT.

Lælio-Cattleya Corona Westonbirt variety, from Lient-Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander).—A very fine hybrid of dwarf habit, known to have been obtained from L.-C. Ingrami as the seed parent, though the male parent is unknown, the record having been lost. It may have been *Cattleya Hardyana*. The flowers are of good size and shape, the sepals and petals of a bright magenta rose, the lip glowing ruby-crimson with golden lines from the base.

Lælio-Cattleya Baroness Schröder var. Mme. Henriette, from Monsieur le Comte JOSEPH DE HEMPTINNE, St. Denis Westrem, Ghent, Belgium.—It was raised between a fine *Lælio Jongheana* and *Cattleya Trianae*, probably of the *Backhousiana* section. The sepals and petals are bright rose, veined with purple, and the petals bear a distinct purple feather up the middle. The lip is orange-yellow with a ruby-purple blotch on the front lobe. In colour it is the best of the cross which has appeared.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair); and Messrs. J. Cheal, C. G. A. Nix, P. D. Cuckett, E. Beckett, H. Parr, W. Bates, A. Dean, J. Gibson, W. J. Jeffries, W. Pope, A. R. Allan, G. Hobday, J. Davis, G. Reynolds, W. H. Divers, G. Wythes, C. Foster, W. Poupard, J. Vert, H. Hooper and H. Markham.

Messrs. SUTTON & SONS, Reading, sent cooked tubers of their yellow-fleshed Potatos Golden Ball, Golden Nuggett, Golden Perfection, and Golden Star. All the varieties seemed to need longer keeping to mature: the best were Golden Nuggett and Golden Perfection.

A Cultural Commendation was given to Mr. Hatch (gr. to A. B. H. GOLDSCHMIDT, Esq., Cavenham Park, Suffolk) for a choice dish of Veitch's Climbing French Bean.

Messrs. J. VEITCH & SONS, Chelsea, sent fruiting branches of their autumn Raspberry Queen Alexandra, to show its late cropping qualities. Messrs. J. VEITCH & SONS also staged a collection of 25 dishes of Pears grown at Tours, in France, the exhibit including several varieties not generally known in this country. Four of these were tasted by the committee: the varieties *Beurré Six* having soft, delicious flesh, and *Beurré Cadélien* having also delicious juicy flesh and rich flavour, were the best. Besides those named, there were fine examples of *Triomphe de Jodoigne*, *Triomphe de Touraine*, *Souvenir de Jules Guindon*, *Charles Ernest*, *President Dronard*, *Tardive de Solesme*, *Beurré Bachelier*, *Le Lectier*, and others. (Silver Hogg Medal.)

W. YOSS, Esq., Eastwood Park, Essex, showed a collection of Apples and Pears. The best Apples were *Lord Derby*, *Lemon Russet*, *Mère de Ménage*, *Warner's King*, *Scarlet Pearmain*, *The Queen*, *Duke of Devonshire*, and *Court pendu-plat*. The best of the Pears were *Beurré Hardy*, *Beurré Bachelier*, *Doyenné Boussoch*, *Louise Bonne de Jersey*, and *Pitmaston Duchess*. (Silver Banksian Medal.)

The Duke of RUTLAND, Belvoir Castle, Grant-ham (gr. Mr. W. H. Divers), showed a collection of 42 dishes of Pears, a very meritorious exhibit, having regard to the district and the season. *Easter Beurré*, *Duchess d'Angoulême*, *Beurré Fouqueray*, *Charles Ernest*, *Beurré de Jonghe*, *Emile d'Heyst*, *Beurré Superfin*,

Doyenné du Comice, *Durondeau*, *St. Luke*, *Beurré Clairgeau*, *Le Lectier*, *Mme. Treyve*, and *Beurré d'Anjou*, were shown in creditable specimens. (Silver-gilt Knightian Medals.)

Messrs. FELTON & SONS, Hanover Square, London, sent two very fine Orange trees, one a dense, heavily-fruited, pyramid-trained specimen, the other a standard. Both were in 10-inch pots, and from 6 feet to 7 feet in height. They were 12 years old, and had been grown from pips sown in a pot. The pyramid plant was laden with fine fruits, and was a magnificent healthy specimen. (Cultural Commendation.)

Vegetables.—Messrs. JAS. VEITCH & SONS staged a representative collection of vegetables, in all some 50 dishes. The exhibit included good Onions of Ailsa Craig, Main Crop, Selected Globe and Blood Red varieties. Cauliflower Autumn Giant; Lyon Leeks; Potatos Bury Hill Seedling, Crimson Beauty, Ruby Queen, and Snowdrift; Turnips Red Globe and Snowball; capital Mushrooms; Carrots Model and Early Nantes; Beets Blood Red, Dewars and Middleton Park; also Parsnips, Brussels Sprouts, Endive, Celery, Chicory, Shallots, and various other kinds. (Silver Knightian Medal.)

Messrs. SUTTON & SONS, Reading, staged a superb collection of Onions, including 31 varieties. It was one of the finest collections of this vegetable staged at any exhibition. The varieties embraced Ailsa Craig, Cocoon Selected, Perfection, with fine smooth "necks"; Bedfordshire Champion, Exhibition, A1, Giant Rocca, The Sutton Globe, Nuneham Park, Trebour, Danvers Yellow, Long Keper, Magnum Bonum, Improved Reading and White Silver Globe. Also of coloured varieties Crimson Globe, Red Rocca, and Globe Tripoli. With the exception of one dish of Ailsa Craig variety, all were pulled from the open ground, being raised from seeds sown in the middle of March. (Silver-gilt Knightian Medal.)

COMPETITIVE CLASSES.

Potatos.—In the class for 12 dishes of Potatos, distinct, there were three exhibits. A superb collection, staged by the Duke of PORTLAND, Welbeck Abbey (gr. Mr. J. Gibson), was of the highest quality; they were all of best size and shape, being clean and bright. The varieties were *White City*, *Superlative*, *Supreme*, *Windsor Castle*, *Ideal*, *Abundance*, *Gladiator*, *Ninetyfold*, *Epicure*, *Reliance*, *King Edward VII.*, and *Mr. Bresse*.

COUNTESS COWPER, Panshanger, Herts. (gr. Mr. A. Staward), was placed 2nd, having choice samples of *Gold Mine*, *Triumph*, and *Dalmeny Hero*, *Crimson Beauty* and *Yeoman*.

In the class for six dishes of Potatos there was only one entry, the exhibitor being Mrs. DAVISON, Berkhamsted (gr. Mr. A. J. Castle). His white varieties were *Royalty*, *Long Keeper*, *Snowball* and *Goldfinder*; and coloured, *King Edward VII.* and *Queen of the Veldt*. The 1st prize was awarded.

There was also one exhibit in the class open to trade growers for 18 dishes. It was shown by Messrs. JAS. CARTER & Co., Holborn, and included excellent tubers of *Royalty*, *Long Keeper*, *Goldfinder*, *Monarch*, *Early Favourite*, *Factor* and *Snowball*, *King Edward VII.*, *Mr. Bresse*, *Red Emperor*, and *Invicta*, the last four being coloured varieties. The 1st prize, a Silver-gilt Knightian Medal, was awarded.

Onions.—The class for six varieties brought four collections. The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), was well first, having fine, well-finished, clean samples, including *Sutton's Selected Long*, *Ailsa Craig*, *Magnum Bonum*, *Sutton's Globe*, and *Improved Reading*. Mr. C. HATCH was placed 2nd, having large, heavy bulbs, but they were somewhat spotted. These comprised *Main Crop*, *Exhibition*, *The Globe*, *Red Rocca*, *Ailsa Craig*, and *Cranston's Excelsior*.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

OCTOBER 30.—The annual meeting was held in the Music Hall Buildings, Aberdeen, on the above date. There was a good attendance, and Mr. J. G. Burnett, of Powis, chairman of directors, occupied the chair.

The chairman submitted the annual report and financial statement of accounts, which showed that the income for the year amounted to £390

5s. 11d., and the expenditure to £456 4s. 9d., showing a deficit of £65 18s. 10d., the debit balance to be carried forward to next year being £34 2s. 9d. The annual exhibition of the society held in August last was, from a horticultural point of view, an exceedingly good one, and the financial result was due to bad weather on the last day of the show. The membership of the society unfortunately continued to show a slight decrease. The report was adopted.

A communication was read from Mr. George Hendry, secretary of the Aberdeen and North of Scotland College of Agriculture, intimating that a course of lectures on the elementary chemistry of the garden was to be given by Mr. James Hendrick, B.Sc., F.I.C., lecturer on agricultural chemistry in the college, commencing on Thursday, November 25, and that a course of lectures was also to be given by Mr. William Dawson, B.Sc., lecturer on forestry, commencing on Wednesday, November 10. After a discussion concerning the date of next season's show, the meeting proceeded to the election of officers.

ASCOT HORTICULTURAL.

NOVEMBER 2, 3.—The 24th exhibition of Chrysanthemums and other flowers, fruits and vegetables was held in the Grand Stand, Ascot. The President, Sir Edwin Durning-Lawrence, Bart., was the chief prize-winner.

In the class for a group of Chrysanthemums, arranged with suitable foliage, the 1st prize was won by Sir EDWIN DURNING-LAWRENCE, Bart. (gr. Mr. W. Lane); 2nd, Sir ARTHUR C. LUCAS, Heatherwood, Ascot (gr. Mr. W. Sargent).

Sir E. DURNING-LAWRENCE won the 1st prize for a group of Chrysanthemums with a well-arranged exhibit; 2nd, E. IVESON, Esq., The Charters, Sunningdale (gr. Mr. F. Capp).

For a group of non-disbudded plants of Chrysanthemums, Mr. IVESON was awarded the 1st prize; 2nd, Sir A. C. LUCAS.

The best exhibit of miscellaneous plants was shown by Sir E. DURNING-LAWRENCE, who staged a very pretty group, which included Orchids, Begonias and Crotons; Sir A. C. LUCAS followed closely.

The best collection of six table plants were shown by Sir E. DURNING-LAWRENCE; 2nd, Mrs. CHRISTIE BELSTON, Windlesham, Surrey; and the best six Zonal Pelargoniums by Sir A. C. LUCAS, in a strong competition.

CUT BLOOMS.

The class for 18 Japanese blooms, distinct, was open to all. The 1st prize was made in favour of C. A. PEARSON, Esq., Frensham Place, Farnham (gr. Mr. C. Moore), who had fresh, large flowers, of Mrs. C. Penford, W. F. Lever, Mr. F. Prior, Mrs. W. Knox, Marquise V. Venosta, Reg. Vallis (grand), J. H. Silsbury, V. W. Watson, Miss D. Oliver, Miss L. Thorne, The Lyon, Mrs. A. T. Miller, G. Mileham (1908)—the premier bloom in the show, Mrs. N. Davis, C. H. Broomhead, W. Beadle and White Venosta; 2nd, Mrs. LANGWORTHY, Holy Port, Maidenhead (gr. Mr. T. W. Broome).

The best exhibit of 18 Incurved blooms, distinct, was shown by Mrs. CHRISTIE, who was also awarded the 1st prize in the class for 18 Incurved and 18 Japanese blooms, distinct, being the only exhibitor.

C. H. AUSTIN, Esq., Englefield Green (gr. Mr. H. G. Worsfield), excelled in the class for 12 Japanese blooms, distinct, and Mrs. LANGWORTHY won the 1st prize for six blooms of one variety with perfect specimens of Romance.

Sir E. DURNING-LAWRENCE showed the best two bunches of Muscat of Alexandria Grapes, whilst the best two bunches of Black Grapes were shown by Mr. C. COOPER, Sunninghill.

E. IVESON, Esq., had the best Pears, Mr. IVESON the best four dishes of cooking Apples, and Hon. Mrs. HILL the best dessert Apples.

Exhibits of vegetables were numerous and good, Mr. W. LANE, the president's gardener, showing excellent produce.

CHELTENHAM ROOT, FRUIT AND CHRYSANTHEMUM.

NOVEMBER 3.—The annual show of this society was held at Cheltenham on this date. As a whole the show was not quite up to the average of these exhibitions. Chrysanthemums generally were not sufficiently developed to be

shown in perfect condition, and while some exhibitors were able to stage a number of beautiful cut blooms, the majority would have done better if the show had been held a fortnight later. Among the plants for table decorations were several fine specimens of Nerine from the gardens of Mr. H. J. ELWES, Colesborne, Cheltenham.

The 1st prize-winners in the Chrysanthemum classes included Messrs. H. G. BENNETT, H. ANDREWS, E. ADLAND, G. W. RESTALL, H. J. TILLEY, WINSTONE & Co., MRS. RATCLIFF, MISS ADA DAVIS, and Miss G. HOLDER.

Carnations were best shown by Messrs. H. ANDREWS and E. T. LEIGHTON, and plants by Mr. H. ANDREWS, MRS. RATCLIFF, and Messrs. H. O. LORD and F. TAYLOR.

A silver cup, offered by the Mayor and Corporation of Cheltenham for six varieties of Japanese Chrysanthemums in the open classes, was won by Mr. H. G. BENNETT, Royd House, the previous holder being Mr. Mayo. A cup, given by Mr. J. Simmons for the best dish of dessert Apples, was awarded to Major SELWYN PAYNE, Badgeworth; and a special money prize for the best Chrysanthemum plant in the show, given by Alderman Skillicorne, to Mr. G. J. MAYO. The certificate of the National Chrysanthemum Society was awarded to Mr. FAIRFAX RHODES for a vase of white Japanese Chrysanthemums. He showed the variety Mrs. Miller. A certificate went to Mr. HUGH ANDREWS, Cheltenham, for a collection of cut blooms.

WARGRAVE & DISTRICT GARDENERS'.

NOVEMBER 3.—For the eighth time, the annual flower, fruit and vegetable show organised by the Wargrave and District Gardeners' Association was held in the Woodclyffe Hall, on the above date, in aid of the gardening charities. This year the proceeds are to be given to the Royal Gardeners' Orphan Fund. The exhibition was non-competitive. There were not so many Chrysanthemums as usual, and the attendance was not so large as could have been wished, owing to counter attractions in the neighbourhood. Exhibits were staged by those following:—A. E. HUGGINS, Esq., Wargrave Hill (gr. Mr. D. Turner); C. J. D. EVELEIGH, Esq., Wilminster Park (gr. Mr. J. T. Blencowe); S. C. DAVIS, Esq., Ramenham Hill (gr. Mr. T. Tunbridge); A. B. GILL, Esq., The Willows (gr. Mr. W. Pope); Mrs. NOBLE, Park Place (gr. Mr. T. Powell); G. STANTON, Esq., Upper Culham; J. W. RHODES, Esq., Hennerton (gr. Mr. T. Haskett); Mrs. TUCKETT, Yeldhall Manor (gr. Mr. Wm. George); C. S. HENRY, Esq., M.P., Parkwood (gr. Mr. C. Anderson); Capt. COLERIDGE, Twyford (gr. Mr. W. H. Scott); the Rev. H. M. WELLS, Scarletts Park (gr. Mr. J. Botley); F. W. NICHOLSON, Esq., The Old Vicarage, Shiplake (gr. Mr. J. Shipley); and Mr. WM. BAZELEY, The Twyford Nurseries.

DONCASTER CHRYSANTHEMUM.

NOVEMBER 3.—The 17th annual exhibition held on this date was equal to those that have preceded it. The entries were about an average number, and the attendance was satisfactory.

The stages were well filled with excellent produce, but the centre of the spacious hall would certainly allow of larger and better grouping effects.

The exhibits in the class for a group of Chrysanthemums, interspersed with foliage plants, showed a remarkable lack of artistic arrangement, for instead of a free and easy natural display, a stiff and perfect face of colour seemed to have been the aim of the exhibitors. The 1st prize exhibit, from J. M. PETCH, Nurseryman, Bridlington, departed a little from the stereotyped method, but even it could not be described as graceful.

Much the best group of miscellaneous plants arranged for effect was shown by F. J. MONTAGUE, Esq., Melton Park, the predominant features being well-grown plants of Begonia Gloire de Lorraine, and a groundwork of Adiantums.

Greatest interest centred on the cut bloom classes. The 1st prize for 18 Japanese varieties was won by Captain LAYCOCK, Wiseton Hall (gr. Mr. G. W. Monk).

The blooms were the best shown, but could

scarcely be termed first-class although specimens of Mrs. W. Knox variety were of exceptional merit.

The best exhibit of 12 Incurved blooms was shown by J. HARRISON, Esq., Walkley, Sheffield, who had compact blooms; "Buttercup" being especially well represented.

Exhibits of table plants lent brightness and beauty to the general effect, the 1st prize being awarded to R. J. STREATFIELD, Esq., Romington Hall (gr. Mr. T. Burroughs).

For the collection of dessert fruit the 1st prize was obtained by G. H. SHAW, Esq., Howden, Yorks. (gr. Mr. A. Blakey), whose Gros Colmar Grapes and Pitmaston Duchess Pears were excellent.

Good bunches of Mrs. Pearson Grape obtained the premier prize for two bunches of white Grapes; they were shown by F. J. MONTAGUE, Esq., Melton Park (gr. Mr. G. E. Mason).

Black Grapes were best shown by Alderman CHADWICK (gr. Mr. J. Richardson), in good examples of Mrs. Pince.

Messrs. PENNELL & Co., Lincoln, staged an interesting group of flowers, fruits and vegetables.

LIVERPOOL HORTICULTURAL.

NOVEMBER 3, 4.—The 30th autumn show was held in St. George's Hall on these dates. The weather was unfavourable, the opening day being wet and misty.

The entries were considerably below the average in number, but the quality of the exhibits was good, and in some sections highly satisfactory.

This Liverpool show is famed for its trained plants of Chrysanthemums, but this year, owing to the unfavourable season, many were wanting in perfection of bloom.

A. EARLE, Esq. (gr. Mr. T. Hitchman), showed the best, four, trained plants, and the best, single specimen flowering plant. L. NOLETT, Esq. (gr. Mr. R. T. Bushell), led for three, trained, single Chrysanthemums, and he also had the best specimen Pompon. JOHN FINDLAY, Esq. (gr. Mr. E. Wharton), had the best, six Chrysanthemum plants trained to stakes, whilst G. NICHOLSON, Esq. (gr. Mr. P. Cauce), excelled in the class for three, and Mr. T. HITCHMAN for one plant trained similarly.

J. W. WRIGHT, Esq. (gr. Mr. T. Atkin), was placed 1st for the most tastefully-arranged group.

Exhibits of cut blooms were fully up to the average at these shows. In the "Challenge Vase" class the competitors numbered six. Sir W. H. TATE, Bart. (gr. Mr. Haigh), champion in this class for three successive years, won a similar vase outright last year, and again on this occasion he beat all other competitors. The blooms shown by this exhibitor were very fine, the Japanese varieties being especially good. The best were (Incurved): Buttercup, Lady Isabel, Miss F. Ashworth, Boccace and Romance; (Japanese): Mrs. A. J. Miller, Chry. Montigny (very fine), J. Locke, Algernon Davis, Sir Frank Crisp and Lady Talbot; 2nd, Sir GILBERT GREENALL, Bart. (gr. Mr. G. Goves); 3rd, PANTIA RALLI, Esq. (gr. Mr. G. Hunt).

The last-named exhibitor had the leading 18 Incurved blooms in not fewer than 12 varieties, and THOMAS CLARKE, Esq. (gr. Mr. J. Clarke), the best 12 blooms of this type.

MISCELLANEOUS PLANTS.

The large exhibits of Palms and Ferns usually seen were absent, therefore the show was somewhat lacking in this section. Mr. T. HITCHMAN won the 1st prize in a strong contest for six plants of Begonia Gloire de Lorraine. T. DIXON-NUTTALL, Esq. (gr. Mr. H. Roberts), staged the best four Ferns. R. L. OVERTON, Esq. (gr. Mr. R. J. Taylor), won the 1st prize for three Orchids, having a beautiful specimen of Cattleya Gigas Saudera, and he showed the best single specimen with a noble plant of Cattleya Martinii, about 4 feet in diameter and carrying 27 spikes, bearing 124 flowers. In addition to the 1st prize, a Certificate of Merit was given to this fine plant.

FRUIT.

The Earl of DERRY (gr. Mr. E. F. Hazelton) staged the premier collection of fruit, which included white and black Grapes, a Melon, and Apples and Pears of good colour and finish. The other prize-winners in this class were A. H.

BRIGHT, Esq. (gr. Mr. J. Skitt), and W. L. GLADSTONE, Esq. (gr. Mr. T. Elsworthy).

In the Grape classes, Mr. W. WILSON won with highly-coloured bunches of Black Alicante; Mrs. KENDALL (gr. Mr. R. Anderson) showed the best bunches of any other black, having Barbarossa; Mr. J. HONEY excelled in the class for Muscat of Alexandria, and Mr. WILSON for any other white Grape. Mr. HAZELTON had the best four bunches of Grapes, staging Muscat of Alexandria and Black Alicante.

NON-COMPETITIVE EXHIBITS.

Some fine exhibits were contributed in this section, for which the following awards were made:—

Gold Medals to Messrs. MANSELL & HATCHER for a fine collection of Orchids, and Mr. J. LEE for a collection of Apples and Pears.

Silver Medals to Messrs. DICKSONS, Chester, for Apples and Carnations; THE LIVERPOOL ORCHID Co. for Orchids; Messrs. R. P. KER & Co. for Cyclamen, Palms, Ferns, &c.; Mr. W. ROWLANDS for Carnations, Cyclamen, &c.; Mr. H. MIDDLEHURST for retarded Liliums and Spiraeas; Messrs. CLIBRANS, Altrincham, for Pelargoniums and Chrysanthemums, and Messrs. THOS. DAVIES & Co. for Spiraeas and Ferns.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 3, 4.—This society's annual show was held in the Drill Hall, Bristol, on these dates. Although excellent from many points of view, the exhibition did not compare favourably with those held on some previous occasions. The chief falling off was in the classes for Chrysanthemums. Orchids, stove and greenhouse plants, and Ferns were all well shown, while fruits, and especially Apples, Pears and Grapes, were of much merit. Non-competitive exhibits were numerous, and contributed towards making the show a success.

CHRYSANTHEMUMS.

In the class for 24 blooms of Japanese varieties in not fewer than 12 varieties, three growers competed. C. BAILEY, Esq. (gr. Mr. J. C. Pope), secured the 1st prize with, amongst others, good blooms of President Loubet, Norman Davis, Splendour, Mrs. W. Beadle, R. Vallis, Mrs. A. T. Miller, Leslie Morrison, Mme. P. Radaelli, and Miss A. Lunt; 2nd, W. A. TODD, Esq. (gr. Mr. G. Sutton), who staged Mrs. R. Hooper Pearson, Bessie Godfrey, Dorothy Goldsmith, Leigh Park Wonder, and R. Vallis in good form, 3rd, D. E. TAYLOR, Esq. (gr. Mr. T. J. Coote).

In the class for 12 blooms, Dr. J. CROPPER (gr. Mr. Baker) was awarded the 1st prize for well-coloured flowers of Edith Smith, R. Vallis, Norman Davis, Mrs. A. H. Lee, Bessie Godfrey, Mrs. A. T. Miller, Mrs. F. G. Coster, Mrs. W. Beadle, Mrs. Norman Davis, and Joseph Stoning. E. WATTS, Esq. (gr. Mr. Woodward), was placed 1st and Mr. G. SUTTON 2nd.

In a class for 12 Incurved blooms, Mr. BAKER was the only exhibitor. He staged well-developed blooms of Buttercup, W. Pascoe, W. Biddle, Mrs. J. P. Bryce, Mrs. B. Hankey, Emblème Poiteviné, Godfrey's Eclipse, May Phillips, and C. J. Ellis.

VASE CLASSES.

For six blooms, any one variety, of a Japanese Chrysanthemum shown in vases there were two competitors, viz., Sir W. H. DAVIES (gr. Mr. J. T. Curtis) and Mr. WOODWARD, who were awarded the 1st and 2nd prizes respectively, each staging good blooms of the variety Mrs. A. T. Miller. For six blooms of any white variety, the 1st prize went to FRANCIS TAGART, Esq. (gr. Mr. E. H. Benfield); 2nd, Mr. WOODWARD. In a class for one bloom of any variety, there were eight competitors. Mr. BAKER taking the 1st prize with a specimen of Mrs. A. T. Miller, and Mr. S. HEMMINGS the 2nd prize, with the same variety. Four exhibits were staged in a class for six vases of distinct varieties, three blooms of each. Mr. POPE again secured the lead, having good flowers of Miss A. Hamilton, Mrs. A. T. Miller, Libian Coppard, President Viger, R. Vallis and Miss A. Lunt. For six vases of single Chrysanthemums, each containing five sprays, five exhibits were staged, the best blooms were from the gardens of Lord Justice FARWELL (gr. Mr. F. Little); 2nd, Mr. BENFIELD.

There were three groups of Chrysanthemums, each group occupying an area of 50 square feet. The 1st prize was awarded to Mrs. STUCKEY WOOD (gr. Mr. F. A. Burt), who showed dwarf plants with large blooms and good foliage, arranged with the colours well blended, the group being edged with Adiantum Fern; 2nd, J. BUCKLAND, Esq. (gr. Mr. Hunter); 3rd, J. M. DUNLOP, Esq. (gr. Mr. S. Price).

Mrs. ST. VINCENT AMES (gr. Mr. Bannister) was the only exhibitor of a group of Chrysanthemums and ornamental-foliaged plants arranged in a space of 50 square feet. It consisted of a fine collection of Chrysanthemum relieved with Crotons, Palms, Eulalia and Grevillias, edged with Adiantum Fern.

Mr. E. H. BENFIELD showed the best Chrysanthemum bloom (Mrs. A. T. Miller) in the show, and thus gained the National Chrysanthemum Society's Silver Medal.

Mr. BENFIELD was 1st for six ornamental-foliaged plants, having large, well-grown specimens of *Areca lutescens*, *Kentia Forsteriana*, *K. Belmoreana*, *Croton Williamsii*, and *Anthurium crystallinum*; Mr. BANNISTER was a good 2nd. Mr. CURTIS was placed 1st for eight plants suitable for drawing-room decoration, and Mr. C. J. ELLIS 2nd, whilst for six specimen Ferns, Mr. BENFIELD was placed 1st and Mr. BANNISTER 2nd.

For a group of Orchids arranged in a space of 6 feet by 4 feet, two collections were staged. The 1st prize was awarded to A. G. GROVES, Esq. (gr. Mr. Gostling), whose plants consisted chiefly of varieties of *Cattleya*, *Lælia*, and *Cypripedium*, and *Odontoglossum grande*. Col. H. CARY BATEN (gr. Mr. Spowage) was the other exhibitor. For three plants Mr. CURTIS was placed 1st with a fine variety of *Cattleya labiata*, a good variety of *Cypripedium insigne*, and *Oncidium varicosum Rogersii*. Mr. WOODWARD was placed 2nd amongst five exhibitors. For two plants Mr. A. E. MITCHELL was 1st and Mr. WOODWARD 2nd, and for one plant Mr. CURTIS was 1st and Mrs. Viner 2nd. For three plants of *Cypripedium insigne*, Mr. SPOWAGE led, followed by Mr. GOSTLING, and for a single plant of the type variety of *Cypripedium insigne*, Mr. CURTIS was 1st.

In the decorative classes a number of baskets of autumn foliage, berries and grasses made a pleasing feature. Bouquet, wreaths and sprays were likewise largely shown.

FRUIT.

Six classes were provided for Grapes, which were well represented, although in but few cases was there any variety staged in first-rate condition. G. A. GIBBS, Esq., Tyntesfield (gr. Mr. Wilkinson), was a leading exhibitor.

In the class for a collection of fruits of six dishes, in not fewer than four kinds, there were four exhibits. The best was shown by Mr. WILKINSON, who had Muscat of Alexandria and Lady Downes' Grapes, Doyenné du Comice and Marie Louise Pears, Fearn's Pippin Apple, and Jubilee Melon; 2nd, Mr. BAKER.

Mr. BANNISTER took the lead amongst five competitors for six dishes of Pears with large, clean fruits of Princess, Doyenné du Comice, Charles Ernest, Fondante de Thirriott, Beurré Anjou, and Beurré Diel; 2nd, Mr. F. LITTLE, with Beurre Hardy, Emile d'Heyst, and Doyenné du Comice as his best dishes. For four dishes, Mr. LITTLE won the 1st prize, followed by Rev. Preb. LANCE (gr. Mr. H. Sambourne). In the class for one dish of Pears, Mr. BAKER was placed 1st for the variety Doyenné du Comice; Mr. P. THODAY 2nd, with same variety, and Mr. WILKINSON 3rd, with Marie Louise.

Mr. POW excelled in the class for six dishes of dessert Apples. For four dishes of dessert varieties, Mr. A. CERRY was 1st with highly-coloured fruits, amongst 12 exhibitors. Eighteen dishes were staged in the single-dish class for Apples. Mr. BAKER and Mr. C. W. OVER, being 1st and 2nd respectively, both staging Cox's Orange Pippin.

Mr. G. POW took the 1st prize for six dishes of culinary Apples, amongst 10 competitors; 2nd, Mr. H. POW; 3rd, Mr. CURRY. For one dish of culinary Apples, Mr. WILKINSON, Mr. W. P. LANG and Mr. BAKER took the four prizes in the order named, each with grand dishes of Peasgood's Nonesuch.

VEGETABLES.

Messrs. Sutton & Sons and Messrs. Webb & Son each offered prizes for a collection, the 1st prize-winners being Messrs. C. BAILEY, BANNISTER, BAKER, and SHEPHERD.

The prize offered for the most meritorious exhibit of fruit was awarded to Mr. WILKINSON for his 1st prize collection.

NON-COMPETITIVE EXHIBITS.

The following medals were awarded to non-competitive exhibitors:—Gold—to Messrs. Jas. Cypher & Sons, Cheltenham; Silver-gilt—to Messrs. Garaway & Co. and Messrs. Parker & Sons; Silver—to Messrs. Young & Co. (Cheltenham), Messrs. Wells & Co., Ltd., Messrs. Brooks & Kitley (Bristol), the British Columbia Government, and to Mr. C. J. Ellis, Weston-super-Mare.

BATH CHRYSANTHEMUM.

NOVEMBER 3, 4.—The weather was unfavourable on the opening day of this Society's fifth annual exhibition, held on the above dates. The exhibition as a whole was a success, and reflected credit on everyone concerned. The Assembly Rooms in which the show was held are spacious, and convenient for the purpose.

Groups of Chrysanthemums are always good at Bath, and these were excellent on this occasion, that which won the 1st prize award for T. R. MURRAY, Esq. (gr. Mr. Robb), being especially commendable. The quality of the blooms was superb, and the style of arrangement faultless; 2nd, Mrs. BROWN; 3rd, Dr. PATON.

Major DOHERTY, who is usually invincible in the group contests at these shows, found a rival in W. WAILES, Esq. (gr. Mr. Pierce). The latter, by a bolder style of treatment, gained the highest award.

A special feature of these shows is afforded in the staging of all cut blooms in vases, mostly furnished by the Society and of uniform height. Col. ROLLESTON (gr. Mr. Trimby) staged the best exhibit of 24 blooms, all of which were fresh and good. His best examples were F. S. Vallis, J. H. Doyle, Mme. P. Radelli, Mme. G. Rivol, Miss M. Ware, and Rose Pockett. 2nd, W. H. TUGWELL, Esq., Crowe Hall (gr. Mr. Parrott), who had slightly smaller flowers, Mrs. Knox, O. H. Bromhead, Mrs. Greenfield and Mary Mason being his best blooms. 3rd, R. E. DICKINSON, Esq. (gr. Mr. Beazer).

Undoubtedly the finest specimen blooms were the 12 shown by Mr. ROEB, those of Mrs. N. Davis, Bessie Godfrey, Lady Talbot, and Mrs. Knox being very fine. The 2nd prize in this class went to G. A. R. FITZGERALD, Esq. (gr. E. Pople), who staged fine flowers of Lady Hope-toun, Magnificent, and Mrs. A. T. Miller. 3rd, Mr. PARROTT, who also staged well.

For six white blooms of Japanese varieties, Messrs. POPE and PARROTT won the 1st and 2nd prizes respectively, but their names were reversed in the class for six yellow blooms.

The classes open only to members were well filled, especially that for 18 blooms, in which Mr. ROPER excelled, and again in the 12's, where Mr. TRIMBY secured the 1st prize.

Single varieties found many admirers. R. DUCKWORTH, Esq. (gr. Mr. Sparey), contributed such good sorts for 1st prize as Miss L. Bird, Mrs. B. Fleteher, Miss E. Roberts, Mary Richardson, and Exmouth Yellow.

Bouquets, epergnes, table decorations, Carnations, and vases and baskets of autumn foliage and berries were well staged.

Exhibits of fruit made a good show. Grapes especially being above the average in quality. Mr. W. MARSH showed the best Muscat of Alexandria Grapes, winning easily from Messrs. COOTE and ASHMAN.

Mr. SPAREY'S handsome clusters of Black Alicante were preferred to really good Gros Maroc from Mr. MARSH, Mr. COOTE following with the same variety.

Major EDGELL won the 1st prize for six dishes of Pears, and T. CARR, Esq., with even finer specimens, scored in the single-dish class.

Apples in six varieties brought a good entry. Messrs. EVRY, FISHLOCK, W. A. HICK-DICKENSON, and Major EDGELL sharing the prizes.

No fewer than 20 collections of vegetables were staged in the several classes provided, and keen competition resulted. The most successful exhibitors were Messrs. HORSELL,

SPAREY, ANDREWS, EVRY, HOWSE, FITZGERALD, and Capt. GILLING.

Trade exhibits added much to the interest and general effect of the show. Messrs. BLACKMORE & LANGDON showed Begonias and Carnations; Messrs. WALTERS & SON, Apples in variety; Mr. ROWLAND ADAMS, Roses as fresh as in summer; Mr. MILBURN, Weston Nurseries, and Messrs. COOLING & SONS each staged flowering plants in variety; and Apples from British Columbia showed a wealth of colour with great size.

PORTSMOUTH CHRYSANTHEMUM.

NOVEMBER 3, 4, 5.—An average display for these shows was seen in the Town Hall on these dates. The entries were fewer than in some previous years; but, for the season, the blooms were of good quality.

Six open classes were provided for cut blooms, many open to local growers only. The chief interest centred in the class for 36 Japanese Chrysanthemums, in not fewer than 18 varieties. A cup valued at £20, a Gold Medal, and £5 in money constituted the premier prize. Lord ASHBURTON, The Grange, Alresford gr. Mr. E. Garratt, won this prize with heavy, if somewhat uneven, blooms, that were well staged. Noteworthy specimens were Hon. Mrs. Lopes, Marquis of Northampton, Bessie Godfrey, G. Mileham 1908, Splendour, Henry Perkins, W. Beadle, R. Vallis, Lady Talbot, Rose Pockett, and F. S. Vallis. Mr. W. G. ADAMS, The Strand, Southsea, was placed 2nd. He showed admirable blooms of J. W. Molyneux, Hon. Mrs. Lopes, Mrs. A. T. Miller, and Lady Talbot.

There were three entrants in the class for 24 Japanese blooms in not fewer than 18 varieties, the best being staged by Mr. W. E. GILL, St. Mark's, Florence Road, Southsea, who had large, well-coloured examples of Bessie Godfrey, Lady Talbot, Splendour, Reginald Vallis, Marquise V. Venosta, and Algernon Davis. 2nd, L. J. ROEB, Esq., Holly Bank, Emsworth (gr. Mr. P. J. Palmer).

Incurved varieties were poor. Single-flowered Chrysanthemums are usually a feature at this show. For 12 varieties, Mr. C. JOHNSTON, 38, Walmer Road, Portsmouth, won the premier prize with well-developed blooms of Roupell Beauty, Edith, White and Bronze Pagram, and Jessie Curtis.

Mr. J. NANCE, 93, Hampshire Street, Portsmouth, won the 1st prize for Pompon varieties, with desirable blooms of such sterling varieties as Black Douglas, W. Sabery, Maid of Kent, Perle des Beantes, Harry Hicks, and W. Westlake.

In the local classes there was spirited competition. For 12 incurveds and a like number of Japanese blooms, Mr. J. LOVE, 2, Bertie Cottages, Park Road, Cowes, was well ahead of his competitors with desirable blooms of popular varieties. Mr. GILL was placed 1st for 12 Japanese blooms, distinct. Mr. J. LOVE occupied a like place for 12 incurved varieties.

The best group of Chrysanthemums was shown by Mr. GILL, who made an effective display.

Several decorative classes, restricted to ladies, created much interest, and showed good results. For the best dinner-table decorated with Chrysanthemums and foliage, Mrs. STURT, Stanstead Gardens, Emsworth, was awarded the 1st prize.

Miss C. D. BURDEN, 17, Margate Road, Southsea, was 1st for a basket of Chrysanthemums with an admirable exhibit.

W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood), secured the leading prizes in the vegetable classes with excellent produce.

BIRMINGHAM CHRYSANTHEMUM, FRUIT AND FLORICULTURAL.

NOVEMBER 9, 10, 11.—The 49th annual exhibition, held in the Bingley Hall, was a good one, when allowances are made for the unfavourable season. Specimen plants of Chrysanthemums were rather better than those exhibited on some previous occasions; but, unfortunately, competition in these classes remains in the hands of only two or three exhibitors. The plant groups showed excellent culture of the specimens, and skill in arranging them. Competition was keen in some of the classes for cut flowers, especially in the large

open Japanese classes, in which Lt.-Col. BEECH, of Coventry (gr. Mr. E. J. Brookes), showed uncommonly large, shapely, well-coloured flowers. The Rt. Hon. JOSEPH CHAMBERLAIN, M.P., Highbury (gr. Mr. J. Deacon), was successful in the local classes. New classes were provided for tree Carnations and Begonias, and these added much to the effectiveness of the show. Competition in the Grape classes was strong, and the quality of the fruits very good. Pears were extensively and well shown; but Apples were fewer than usual and lacking in colour. Vegetables have seldom been seen in better condition at Birmingham. Non-competitive exhibits were numerous.

SPECIMEN PLANTS.

Six classes were provided for these, and, as on previous occasions, the principal honours were divided between E. MARTINEAU, Esq., West Hill, Edgbaston (gr. Mr. O. Brasier), and J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer). The first-named exhibitor was awarded 1st prizes for (1) six large-flowering Chrysanthemums (Japanese excluded), (2) three Japanese, (3) one large-flowering variety (Japanese excluded), (4) one Japanese, and (5) three single-flowered varieties. J. A. KENRICK, Esq. (gr. Mr. A. Cryer), was 2nd in each of the above classes, and 1st in another class for six Japanese varieties. E. MARTINEAU, Esq. (gr. Mr. O. Brasier), was 2nd.

GROUPS OF CHRYSANTHEMUMS.

There were three classes for these, the leading one being for a group of plants occupying a space of 20 feet by 12 feet. Foliage plants were admissible. The 1st prize of £10 is given with the William Butler Memorial Silver Cup, the latter to be held by the exhibitor during the ensuing year, and when he is successful in winning it a third time it becomes his property. Last year's winner, J. A. KENRICK, Esq., has won the cup for a second year in succession. The exhibit was of superior merit from both a cultural and artistic point of view, but it is to be regretted that Mr. Kenrick's able gardener, Mr. Cryer, was allowed a "walk over" for the second time.

The next class was for a similar group, but occupying less space. Of the four contestants, T. W. PIGGOTT, Esq., Moseley (gr. Mr. R. Bullock), was placed 1st for a well-balanced group of blooms of good quality. 2nd, HUME C. PINSENT, Esq., Harborne (gr. Mr. G. Corbett). This exhibit contained some very good blooms. 3rd, H. GREEN, Esq., Gravelly Hill, Birmingham (gr. Mr. L. Fewkes).

The next group was reserved for decorative varieties, to be shown as grown, on a space of 15 feet by 10 feet. Thinning was permitted, but not disbudding to single flowers. Mr. C. H. HERBERT, Acocks Green, Birmingham, was the only exhibitor in this class, but his group was rather overcrowded.

BLOOMS SHOWN IN VASES.

The principal class required 18 varieties to be shown in six vases. 1st, Lieut.-Col. BEECH, Coventry (gr. Mr. E. J. Brookes), with magnificent flowers of Bessie Godfrey, Splendour, John Peed, Rev. R. D. Eves, Lady Talbot, Mme. G. Rivol, O. H. Broomhead, President Viger, Mrs. Norman Davis, Mme. P. Radaelli, Marquise V. Venosta, C. H. Totty, Algernon Davis, Reginald Vallis, Henry Stowe, F. S. Vallis, Valerie Greenham, and Mrs. C. Penford. 2nd, Mr. W. IGGULDEN, Frome, who had meritorious flowers of F. S. Vallis, "Magnificent," and Bessie Godfrey. 3rd, HUGH ANDREWS, Esq., Winchcombe (gr. Mr. John R. Tooley). There were seven exhibits.

For four Japanese varieties, three blooms of each, Lieut.-Col. BEECH (gr. Mr. E. J. Brookes) again led, with massive blooms of President Viger, F. S. Vallis, Lady Talbot, and John Peed. 2nd, HUGH ANDREWS, Esq. (gr. Mr. J. R. Tooley).

First prizes for (1) a vase of any pink-coloured Japanese variety and (2) a vase of any yellow-flowered Japanese variety were also awarded to Lieut.-Col. BEECH, who showed exquisite flowers of the varieties Reginald Vallis and F. S. Vallis respectively.

The winning vase of any white variety came from F. E. MUNTZ, Esq., Umberslade, Birmingham (gr. Mr. H. S. Foster). The variety was Mrs. A. T. Miller.

In a class for four varieties of single-flowered Chrysanthemums, there were six entries. 1st,

Mr. A. H. HICKMAN, Kidderminster, with large, bright coloured flowers; 2nd, Major EVERITT, Knowle (gr. Mr. W. Newton).

The best exhibit of half-a-dozen varieties of decorative Chrysanthemums, six sprays of each, was sent by Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry); 2nd, Major EVERITT, Knowle (gr. Mr. W. Newton).

The Rt. Hon. JOSEPH CHAMBERLAIN, M.P., Highbury (gr. Mr. J. Deacon), was awarded 1st prize in a class for 12 incurved varieties, three blooms of each. He showed excellent flowers of Buttercup, Clara Wells, and Mrs. G. Denyer.

The same exhibitor also won the 1st prize for 12 distinct Japanese varieties arranged with any foliage on a table 6 feet by 3 feet, as well as premier awards in the following local classes:—(1) Four vases of 12 varieties of Incurved Chrysanthemums; (2) two vases of Incurveds, three blooms of each; (3) 12 Japanese varieties; and (4) two Japanese varieties, three blooms of each.

In a class for single Chrysanthemums to occupy a table space of 8 feet by 4 feet, there were three good exhibits. 1st, Mr. A. H. HICKMAN, Kidderminster, with a bright assortment, in which Beauty of Airedale, Grace, and Irene Carr were of outstanding merit; 2nd, F. W. GRESWOLDE WILLIAMS, Esq., Bromyard.

Of the 12 tables decorated with Chrysanthemums, the one that pleased the judges most came from F. E. MUNTZ, Esq., Umberslade Hall, Birmingham (gr. Mr. H. S. Foster), and consisted principally of single, yellow flowers, sprays of Selaginellas and crimson Japanese Acer leaves.

MISCELLANEOUS PLANTS AND CUT FLOWERS.

A feature introduced this year is a class for tree Carnations arranged on a table 20 feet long by 8 feet wide. Cut foliage and foliage plants were admissible, as well as any kind of vase or stand. The 1st prize of 12 guineas carried with it a valuable silver challenge shield, the latter to be held by the winner during the ensuing year. It was won by Mr. C. F. WATERS, Balcombe, Sussex, with an arrangement of choice, well-grown flowers, displayed in vases, each vase containing one colour only. Mr. S. MORTIMER, Farnham, Surrey, who was placed 2nd, had an elegantly-arranged group, but it contained fewer flowers than the exhibit that gained the 1st prize.

In a class for 12 plants of Begonia Gloire de Lorraine, grown in pots not exceeding 6 inches inside measurement, there were four splendid exhibits. The 1st prize was awarded to A. HUGHES, Esq., Knowle (gr. Mr. W. V. Wall), for bushy plants smothered with large flowers; 2nd, J. A. KENRICK, Esq. (gr. Mr. A. Cryer).

In a smaller class for six Begonias, reserved for gentlemen's gardeners and amateurs, F. E. MUNTZ, Esq. (gr. Mr. H. S. Foster), beat seven contestants with well-grown, nicely-trained and flowered specimens; 2nd, J. A. KENRICK, Esq. (gr. Mr. A. Cryer), who was awarded 1st prize for (1) six Palms, (2) three Palms, (3) one tree Fern and (4) six single-flowered Primulas.

The Rev. H. BUCKSTON, Sutton Hall, Derby (gr. Mr. A. Sharnbrook), won 1st prizes for (1) 12 Cyclamen and (2) six Cyclamen. In each class the plants were profusely flowered.

FRUIT.

In a class for a collection of British-grown fruits arranged on a space of 40 square feet there were two exhibits, the same number as last year. The 1st prize was awarded to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), who showed handsome Muscat of Alexandria and Gros Colman Grapes; Ribston Pippin, Cox's Orange Pippin, Peasgood's Nonesuch, and Gascoyne's Scarlet Seedling Apples; Pitmaston Duchess Pears; also Melons, Quinces, &c. 2nd, Lord BIDDULPH, Ledbury (gr. Mr. H. Cotton).

An important class was one for a collection of British-grown hardy fruits displayed on tables 12 feet by 8 feet. There were three entries. The 1st prize of £5 and a silver challenge cup, the latter given by Councillor Bevins, of Hall Green, was won by Mr. C. W. POWELL, Warham, Hereford, who now wins the cup outright, as he has won it three times in succession. His best dishes consisted of well-coloured Apples and Pears. 2nd, Mr. E. W. CADDICK, Ross.

GRAPES.

For six bunches of Grapes in three or more varieties £9 were offered in three prizes. 1st, Mrs. F. NEELD, Great Malvern (gr. Mr. F.

Jones), with shapely bunches of Muscat of Alexandria, Appley Towers and Black Alicante; 2nd, Lord BIDDULPH, Ledbury (gr. Mr. H. Cotton).

The best three bunches of black Grapes came from HUGH ANDREWS, Esq., Winchcombe (gr. Mr. J. R. Tooley), who showed Black Alicante in wonderfully good condition; 2nd, the Earl of HARRINGTON (gr. Mr. J. H. Goodacre).

The Marquis of HERTFORD, Ragley Hall (gr. Mr. C. Harding), led for three bunches of white Muscats; 2nd, the Earl of HARRINGTON (gr. Mr. J. H. Goodacre), who was placed 1st in a class for white Grapes (Muscats excluded).

Mr. C. WINN scored in the local class for black Grapes, and the Rt. Hon. JOSEPH CHAMBERLAIN, M.P. (gr. Mr. J. Deacon), led in the local class for white Grapes.

Apples were not largely shown, the leading prizes in classes for (1) six dishes of culinary Apples, (2) six dishes of dessert Apples, and (3) four dishes of Pears were won by Lord BIDDULPH (gr. Mr. H. Cotton), who showed nice, even-sized, well-coloured fruits.

Mrs. AMER, Westbury-on-Trym (gr. Mr. W. H. Bannister), took the lead in a class for eight dishes of Pears.

VEGETABLES.

In Messrs. Sutton & Sons' class for nine distinct kinds, the 1st prize was awarded to the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), who showed excellent examples of Ailsa Craig Onions, Tender and True Parsnips, Solid White Celery, Perfection Tomato, Antum Mammoth Cauliflower, and Prizetaker Leek; 2nd, Mr. THOS. JONES, Ruabon.

Messrs. Webb & Sons' prizes were offered for eight distinct kinds. Mr. JOHN HUDSON, Leicester, and Earl SPENCER, Northampton (gr. Mr. Silas Cole), won the 1st and 2nd prizes with excellent collections.

Prizes were offered by Robert Sydenham, Ltd., for nine distinct kinds. 1st, Mr. T. JONES, Ruabon, with a meritorious display; 2nd, Mr. W. FOLKES, Amptill, Beds.

In Messrs. Sydenham's local classes, 1st and 2nd prizes were taken by Mr. E. DEAKIN, HENRY MILLS, and J. A. KENRICK, Esq. (gr. Mr. A. Cryer) respectively. Prizes were also offered by Messrs. Dickson & Robinson in five classes for single dishes.

AWARDS.

Certificates of Merit were awarded to each of the under-mentioned subjects:—White Incurved Chrysanthemum H. W. Thorpe, exhibited by Mr. W. J. GODFREY, Exmouth; large golden-yellow single Chrysanthemum Reginald Godfrey, exhibited by Mr. W. J. GODFREY; and Begonia Clibran's Pink, exhibited by Messrs. CLIBRAN & SONS, Altrincham.

NON-COMPETITIVE EXHIBITS.

Large Gold Medals to Messrs. WEBB & SONS, Stourbridge, for fruit and vegetables; Messrs. CLIBRAN'S, Altrincham, for vegetables; KING'S ACRE NURSERIES, Hereford, for fruit; Messrs. GUNN & SONS, Olton, for Japanese garden; Messrs. GUNN & SONS, Olton, for floral designs; Messrs. JOHN WATERER & SONS, Bagshot, for hardy shrubs; Mr. W. J. GODFREY, Exmouth, for Chrysanthemums; Messrs. YATES & SON, Birmingham, for vegetables; and Messrs. WELLS & CO., Mertham, for Chrysanthemums.

Small Gold Medals to Messrs. LAXTON BROS., Bedford, for fruit; Messrs. GEORGE MASSEY & SON, Spalding, for Potatoes and Onions; Messrs. BAKERS, Wolverhampton, for hardy shrubs; Messrs. RICHARD SMITH & CO., Worcester, for hardy shrubs; Messrs. HEWITT & CO., Solihull, for hardy shrubs; and Mr. H. WOOLMAN, Shirley, for Chrysanthemums.

Silver-gilt Medals to Messrs. W. H. SIMPSON & SONS, Birmingham, for vegetables; and Messrs. CLIBRAN & SON, Altrincham, for Begonias.

Silver Medals to Messrs. THOMSON & SONS, Birmingham, for vegetables; Mr. H. N. ELLISON, West Bromwich, for Ferns; Mr. A. GODFREY, Stourbridge, for hardy shrubs; Messrs. JAMES SIMPSON & SONS, Harborne, for hardy shrubs; Messrs. RICHARD SMITH & CO., Worcester, for Begonias; Messrs. JAMES RANDALL & SONS, Shirley, for Zonal Pelargoniums; and Miss THOMPSON, Handsworth, for Cactaceous plants.

Bronze Medals to Councillor E. A. WILSON, Edgbaston (gr. Mr. A. D. Christie), for Cactaceous plants; Messrs. BICK BROS., Olton, for Chrysanthemums; and Messrs. T. B. GROVE & SON, Sutton Coldfield, for Primula obconica.

LAW NOTES.

PORT OF LONDON RATES.

THE new Port of London Authority has now issued particulars of the maximum rates which it seeks to be empowered to charge in respect of goods coming into the Port of London, and a few particulars of the rates affecting horticultural produce may prove of interest.

Plants, trees, bulbs, roots, &c., are liable to a rate of 2s. 6d. per ton, and fresh flowers to a rate of 3s. per ton. Artificial or dried flowers are chargeable at 1d. per £1 value. The charge for loam is 4d. per ton.

As regards seeds, the proposed rates vary according to their nature. They are divided into four classes with the following results:—

The rate for seeds placed in class I is 1s. per ton.
'' '' '' '' 2, 1s. 6d. ''
'' '' '' '' 3, 2s. ''
'' '' '' '' 4, 2s. 6d. ''

The following table will show in alphabetical order into which classes the various seeds fall.

Table with 2 columns: Class and Seed Name. Lists various agricultural and medicinal seeds like Jaffa, Jamba, Jawarce, Linsed, Lucerne, Lupin, Madder, Maw, Medicinal, Minette, Mowra, Mustard, Niger, Oil Seed (East India), Poppy, Psyllium, Quince, Rape, Ravison, Rib Grass, Rubsen, Rye Grass, Safflower, Sesame, Soyas Beans, Stavesacre, Sunflower, Sursee, Tea, Teazle, Icel, Timothy, Trefoil, Turnip.

It should be explained that the above rates represent the maximum amounts which the Port of London seeks for power to impose, but it does not necessarily follow that at first, at all events, the maximum sums will be charged. These rates are in addition to the ordinary dock dues, and it is understood that fractions of a ton will be charged as a whole ton. Any objections to the proposed rates should be lodged without delay. H. M. V.

WORKMAN'S COMPENSATION CASE.

An action was recently brought by Emma Bass in the Waltham Abbey County Court for the death of her husband under extraordinary circumstances. It appeared that Thomas Bass had been employed as an under gardener by respondent, Mr. E. J. Wythes, J.P., of Copped Hall, Epping. Part of Bass's duty was to look after 1,000 fowls belonging to respondent. Early in October last year, while following his occupation, Bass was bitten in the arm by a cockerel. Blood poisoning set in, and the man was incapacitated from work. On October 31 the same year Bass committed suicide by drowning himself during a fit of temporary insanity, which was alleged to be the direct result of blood poisoning occasioned by the cockerel bite. In these circumstances, the widow claimed £156 compensation. Judge Tindal Atkinson gave judgment for the amount claimed, with costs.

SCHEDULES RECEIVED.

Winchester Horticultural Society's twenty-seventh exhibition of Chrysanthemums, fruit and flowers, to be held in the Guildhall, Winchester, on Tuesday and Wednesday, November 16, 17. Hon. secretary, Mr. Chaloner Shenton, 60, Western Road, Winchester.

Obituary.

NATHAN COLE.—The death of this well-known gardener, in his 81st year, occurred at Exeter on Tuesday, November 2. Mr. Cole was for many years engaged in Kensington Gardens, and his work on The Royal Parks and Gardens of London, first published in 1877, is still widely read. Mr. Cole was one of the oldest members of the United Horticultural Benefit and Provident Society, being one of the founders of the society.

ANSWERS TO CORRESPONDENTS.

ARAUCARIA: J. W. This is not caused by fungal disease or insect, but is due to some unfavourable detail in the treatment afforded the plant.

BEGONIA: G. J. Eelworms are present in the roots and leaves. Injecting carbon bisulphide into the soil is the only means of getting rid of the pest.

CUCUMBERS: Rev. E. There is no disease present in the Cucumbers. The cracking has been caused by excess of moisture at the roots; the white patches are due to bleaching of the ruptured skin after the splitting.

MUSHROOM BED: Weekly Subscriber. The Toadstool is Clitocybe dealbata, a kind that often overruns Mushroom beds. The spawn of the Toadstool was probably present in the manure.

NAMES OF FRUITS: W. L. 1, Court of Wick; 2, Scarlet Golden Pippin; 3, Sturmer Pippin; 4, Pine Golden Pippin; 6, Tower of Glamis.—W. & S. 1, Court-pendù-plat.—L. L. 1, Lane's Prince Albert; 2, Harvey's Wiltshire Defiance; 3, not recognised.—Leigh. 1, specimen decayed; 2 and 4, Beurré Diel; 3, specimen decayed; 5 and 6, decayed.—Austin & McA. Prince Bismarck.—P. W. G. 1, Calville Rouge; 2, known in Kent as Bastard Blenheim and Beauty of Hants; 3, Danelow's Seedling (Wellington); 4, Lord Lennox; 5, French Crab; 6, Queen Caroline.—W. J. B. 1, Ribston Pippin; 2, Stirling Castle; 3, specimen decayed; 4, Northern Greening; 5, Small's Admirable; 6, Green Woodcock; 7, Sturmer Pippin.

NAMES OF PLANTS: John Mavers. 1, Quercus Cerris var. longifolia; 2, Quercus Cerris; 3, probably a Viburnum, send when in flower.—W. Silcock. 1, Crataegus Crus-galli var. ovalifolia; 2, C. coccinea; 3, C. orientalis.—M. K. Somerset. Cologyne Massangeana.—R. O. 1, Aganisia lepida; 2, Promenæa stapelioides; 3, Epidendrum erectum; 4, Dendrobium ciliatum; 5, Cologyne Parishii.—Enquirer. 1, Cobæa scandens (plant annually, the winter will kill it); 2, flowers decayed, send fresh specimen; 3, Weigela hortensis; 4, Choisya ternata; 5, Sedum spectabile; 6, Euphorbia Cyparissias; 7, Spiræa japonica (syn. Bumalda) var. Anthony Waterer; 8, cannot name from leaves; 9, Olearia Haastii; 10, Berberis stenophylla.—J. G. I, Tamarix gallica; 2, Retinosora, pisifera aurea; 3, Sciadopitys verticillata; 4, Crataegus coccinea.—Taff. 1, Ceterach officinarum; 2, probably Lastrea Filix-mas, only portion of frond sent; 3, Osmunda regalis; 4, Asplenium trichomanes; 5, Asplenium Rotundifolium; 6, Athyrium Filix-femina; 7, Polystichum angulare; 8, Athyrium Filix-femina corymbifera; 9, Asplenium adiantum-nigrum; 10, Scolopendrium vulgare; 11, Lastrea spinulosa; 12, Polypodium vulgare.—Y. R. R. 1, Scolopendrium vulgare crispum; 2, Nephrolepis Mayi; 3, Gymnogramme ochracea; 4, Gymnogramme calomelanos; 5, Dennstaedtia davallioides; 6, Pteris tremula; 7, Polystichum aculeatum; 8, Nephrodium molle; 9, Pteris Mayi; 10, Pteris umbrosa; 11, Pteris serrulata; 12, Maranta Massangeana.—J. M. G. 1, Epiphyllum truncatum; 2, Sansevieria Zeylanica (Bow-string Hemp); 3, Echeveria retusa; 4, Acalypha marginata; 5, Kalanchoe flammula; 6, Abutilon Savitzii; 7, Cupressus funebris; 8, Liriope (Ophiopogon) striatum.—S. A. 1, Pellionia pulchra; 2, Pellionia Daveauana; 3, specimen insufficient; 4, Lotus peltiorynchus; 5, Sempervivum tortuosum variegatum.

RIGHT TO REMOVE PLANTS: B. W. In the absence of an agreement, we are afraid you have

not the right to remove the plants introduced by yourself gratuitously to the collections of your employer. It is only fair to remember that, whilst the original plants were your property, you introduced them on your own initiative, and the cultivation since afforded them has been given at your employer's expense. It ought, however, to be possible for gardener and employer to come to a friendly arrangement, whereby the enterprise shown by the gardener should receive recognition.

SECOND GARDENER: Raven. We do not know that there is an exact difference between the meaning of this term and that of "Foreman," which is generally accepted. For our own part, we can conceive of cases in which a second gardener is not a "foreman" in the sense of being entrusted with the superintendence of other men; and others where a foreman, being one of several foremen, is not exactly a "second gardener."

SOLANUM: Cyclamen. The rust or sap-warting is caused by the presence of too much moisture in the atmosphere.

TO DESTROY MEALY BUG: J. M. D. The most effective means of destroying this pest is by fumigations of hydrocyanic acid gas. Other remedies that can be used with success include syringing with kerosene emulsion (if used in conjunction with a sponge), applications of methylated spirit by means of a soft brush, and fumigations with nicotine compounds.

TREATMENT OF CLAY SOIL FOR PLANTS: Arkward Predicament. A clayey soil can be improved by incorporating with it almost fresh, strawy, stable dung, sand, coal-ashes in a fine state, old mortar, rough peat, partially-decayed tree leaves, or any other material that will make it of a more open character. When digging such land, an inch or so of the soil below the first spit may be brought to the top in October and December, and left in the rough state as dug, so as to be exposed to frost and air during the winter. When dry enough for working in early spring, the soil should be dug over to the depth of 6 inches, thoroughly incorporating the upper layer with the lower to this depth. In each following year a little more of the lower stratum may be brought to the top to be weathered, and any of the above-mentioned lightening substances added to the whole. If a portion of the soil can be burnt, and then broken up and mixed with the upper layer it will have a very good effect in making the soil porous. The best method to carry out the burning or charring of such soil is to make first a good mass of small coal and wood and, setting this alight, to gradually add to the conical mass alternate layers of clay and coal to a height of 5 to 6 feet. The burning will occupy from four to six weeks. Near the bottom of the heaps a few holes should be left to admit air to the burning mass as is done in making charcoal. If the clay land is undrained, pipe drains should be laid 4 feet in depth and 25 feet apart, and following the slope of the land, if any; or if it be level, a fall should be given to the drains, and a good outfall drain provided, by which means the land will be made warmer, drier, and more readily workable. As the red clays contain but 0.12 per cent. of lime, freshly-burnt lime forms a good dressing for such soils. The use of ballast as a substratum in cutting pots or pans in the propagation of plants, will be found of value in the striking of the following, which are chiefly soft-wooded or succulent, viz., Pelargoniums, Cactaceous plants, Ageratum, Begonia, Bromelia, Coleus, Cotyledon, Echeveria, Euphorbia, Poinsettia, Ficus, Nerium, Petunia, Pereskia, Sedum, and Conifers. The material should be broken fine enough to be passed through a 1/2-inch meshed sieve, and be surfaced with silver sand to the required depth, that is, 1/2 to 1 1/2 inch.

TULIPS UNHEALTHY: J. L. The Eucharis or bulb mite is causing the injury.

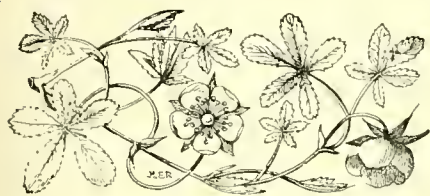
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Photograph by C. P. Raffill.

THE FIRST HOME-RAISED HYBRID ORCHID.

CALANTHE X DOMINYI, AS GROWN AT KEW.



THE

Gardeners' Chronicle

No. 1,195.—SATURDAY, November 20, 1909.

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TILLED AND UNTILLED SOIL.

THE operation of tillage has, for its primary object, the stirring and loosening of the soil. When soil-particles are massed loosely, as in a tilled field or garden, spaces exist between them, and these spaces permit of free movement of air. If the particles are packed together tightly, as in pasture land where the soil cannot be loosened, there is comparatively little space between the particles, and consequently the amount of air in the soil is but small. All grass land, as compared with that under tillage, is insufficiently aerated, and in most cases the older the sod the less well ventilated it is; for, as time passes, the soil-particles become more closely packed. The ideal soil may be compared to a sponge, not only because of its capacity for holding nutritive solutions, but because of its permeability to air. There can be no question that the high productivity of well-cultivated soils is due largely to the greater amount of air available for the roots.

The presence of air ensures both oxygen and carbonic acid in the soil. Oxygen is essential to the growth and well-being of the roots of

plants, no less than to the aerial parts. Carbonic acid plays an important, though indirect, part in ensuring soil fertility by bringing inorganic materials into solution and thus augmenting the supply of mineral food-substances.

Beneficial micro-organisms are found in greater numbers and are better distributed in a cultivated soil than in compact and uncultivated soils. These lower forms of life, like the higher forms, are profoundly affected, both as to their individual well-being and as to their multiplication, by such conditions as food, air, moisture, and temperature, all of which factors are better regulated by cultivation.

One of the objects of tillage is to convert the soil into a suitable living place for micro-organisms through the increased humus, good drainage, ventilation, and higher temperature. It is not unreasonable, therefore, to assume that the greater number and better condition of the micro-organisms in a tilled orchard contributes to the well-being of the fruit trees.

There is evidence to show that all plants, to a greater or less degree, so change the soil in which they grow as to make it wholly or partially unfit for a succeeding crop of the same kind. Different crops growing in the same soil may injure each other, or the one the other. Two theories are advanced to explain these antagonisms of plants. One is that plants excrete toxins; the other is that the injurious effect is the result of bacterial activity.

Mr. Spencer Pickering, of the Woburn Experimental Fruit Farm, in accounting for the injurious effect of grass upon young Apple trees, attributes the harm done neither to competition between grass and tree for moisture and food, nor to a difference in temperature. He holds that it is due, not to a lack of air and oxygen, nor to excessive amounts of carbonic acid, but to some "actively malignant" effect on the trees, some action on them akin to direct poisoning. More recently, Mr. Pickering leaves the question open as to whether the harmful action is the effect of a poison (toxin) excreted by the roots of the grass, or whether it is the result of some change in the activity or composition of the micro-flora brought about by the grass sod. Beside these specific experiments with Apple trees and grass there have been recently several investigations with other plants to show that vegetable organisms have interdependences other than those with their physical environment. For example, investigations with Peach trees grown in pots with several other plants show that the Peach does not thrive if its roots are in close proximity to those of certain other plants.

The well-being of nearly all plants which minister to the needs of man is improved by tillage. Fruit trees not only respond to high cultivation in the nursery row, but they need good treatment after transplantation to the orchard.

In experiments to determine what are the comparative effects of tillage and grass sod on the Apple tree, it is found that tillage is generally better than sod, but it should not be expected, however, that sod will be deleterious in the same degree under all conditions.

It is reasonable to suppose, for instance,

that in a deep soil, where the Apple tree roots can escape from the grass roots, or in one containing a great amount of soil moisture, the harmful effects of the grass will not be so marked as in cases of an opposite nature. Investigations do not show that the Apples cannot be grown in sod. There are many orchards which prove the contrary. It is suggested, however, that Apples thrive in sod, not because of the sod, but in spite of it. The proof that there are many thrifty orchards in grass sod is not proof that these orchards would not do better under tillage.

The statement is often made that trees will become adapted to grass. There is nothing in the experiments conducted in this country or in the Colonies to indicate that such is the case. Trees planted in sod begin to show ill-effects even in the first year in which orchards are laid down to grass, and each succeeding year but adds to the injury. Trees can hardly be expected to become adapted to thirst, starvation, asphyxiation and poisonous excretions. *J. J. Willis, Harpenden.*

ROUND MISURINA.

In a high amphitheatre of desolation lies the little Pfalzgau Lake, surrounded on all sides but one by the northern precipices of Sorapis and the long, steep slopes of ruin that fall yearly from the roseate pinnacles of Dolomite all round. It stands no higher, indeed, than Misurina, and at only three miles distance or so, to a flying crow. Alas, though, for those who are not flying crows, but must needs achieve the Pfalzgau on foot, by road and track! for these go winding level; along the hillsides, in and out of such deep bays and gullies that the true distance is quadrupled.

At first one drops over smooth meadow, all silvered in spring with the snow Crocus; then along through Pine woods to Tre Croci, which is the summit of the pass that leads down to Cortina and the Ampezzo Valley. Nor, though that valley, and the slopes below Tre Croci, abound, they tell me, with *Cypripedium*, is there one single plant or relic to be seen on this side. *Lilium Martagon* is rare in the woodland, and that is all, until at Tre Croci one diverges to the left from the road and enters on a level track that meanders round towards the Pfalzgau, in and out of the gullies in the northerly slopes and satellites of Sorapis. Here is a sparse forest, its surface dappled with light and flowers—*Anemone trifolia*, and *Ranunculus acitonifolius* among the Ferns. On one huge fallen boulder like a church are *Rhodothamnus* and *Saxifraga squarrosa*; further on, by the path, an unexplained cushion of the *Rhodothamnus* all in flower.

Then the track goes skirting the cliffs, leaving the woodland behind. The grey, limestone-looking precipices are smooth and stark, facing north, and unvisited by the sun—so cold, indeed, that deep snowdrifts are still lying in their conloirs and *Rhodothamnus*, thus low, still blossoming rosily from every chink. And in the narrow crevices I had expected abundance of *Phyteuma comosum*, remembering in what insolent profusion this plant haunts the cliffs behind the Faloria Hotel at Cortina. For this *Phyteuma*, of all plants that live, is the collector's despair. It selects for its seed a crack of rock so microscopic as to be negligible, and this it gradually fills up with its yearly fattening root-stock, until the crevice vanishes and a nubby deposit of yellow wax seems to splay over the solid stone. And this is the body of *Phyteuma*, from which spring up defiantly its tufts of dark green, glossy leaves, and its head of monstros, hyacinthine flower. Nor has the plant any amenities: other saxatile species, *Potentilla*

nitida, or Rhodothamnus, are often found between slabs of rotten, removable rock. In all my experience I have never found the Phyteuma, except in cliffs hard and impregnable. The places that it selects are positively ghastly. I now understand why it was that certain Italian collectors, whom at the time I comminated, were only able to send me mangled, mutilated trunks of this treasure. And so I was even relieved to find it quite a rarity on these northern cliffs of Sorapiss—leering at me here and there from precipices so blank and unbroken, that the Last Day, it seems, must leave the plant in situ.

So far, then, bad! I have seen nothing new except what was ungetable. Nor did a stone slope with seedling tufts of Saxifraga squarrosa do much to cheer me. But these huge Alps are incalculable in their surprises: with luck, one may hap on some undistinguished rock or bank abundant in a rarity not to be found again in all the range. So that on no expedition need one positively despair until one has got back, empty-handed, to the hotel itself. And now, as this Pfalzgau track winds up over deepening precipices round the high shoulder of the mountain, there in the sunless crannies hang long streaks and hands of Primula tyrolensis, rock-hugging, little tiny thing, twin brother in everything but ill-temper, to P. Allionii of the Mediterranean Alps. I have heard of Allionii impregnable as Phyteuma; and at first tyrolensis seems to threaten the same obstinacy. However, as we mount steadily upwards, there comes a corner where the Primula abounds on certain ledges whence it may be dislodged with only a moderate danger of death.

And soon we find ourselves in the little valley under Sorapiss. Great white ribs of bare rock stripe the ground, but are disguised by sparse woodland, whose existence at this height surprises, until we remember that, after all this trudging and tramping, we are really no higher now than Misurina, if, indeed, as high. Perched among huge boulders is the Refuge Hut, attended by a hearty old Italian Hebe almost as large as the hut itself. She is a jolly soul, with a twinkling eye and ready laugh that echoes far up and round in the grim wastes under Sorapiss. And while she flapped us up what she called an omelette, but proved to be a mere fluff of golden batter, I ferreted round and scanned the prospect. The hut stands on the last verge of kindly life. Beyond and all about there is nothing but a desolation of boulders, of skeleton torrent-beds, of shingly ridges and vast stone slopes ascending stiffly to roseate pinnacles and bastions of Dolomite. Naked, huge, and awful, Sorapiss impends immediately over a tiny emerald lake: across the unfathomed depth of the valley round which we came there stands the ridge of Misurina, and to its right the whole citadel of the Cadinespitze, a huddled crowd of spear points, threatening Heaven, and flowing away downwards in long skirts of scree and rubble. And here among the peaks the silence is terrible, broken only by rare little avalanches high above that fall in a dropping fire of gun-shots, ending in a soft, cascading rustle.

But this desolate land, where might be expected a hundred rarities, a select gathering of the austere little people of the hills, turned out to be surprisingly barren of interest. Rhodothamnus lavishly glowed indeed; the white stars of Anemone haldensis were silvery among the rocks; and in the highest shingles of all there were wide, fragrant cushions of Iberidella. But of nothing else a trace—that is, of nothing interesting, such as one had a right to expect. Here and there a Poppy; here and there an Edelweiss or a Clusian Gentian; but even Potentilla nitida occurred very rarely; there were no Androsaces; there were not even any new Saxifrages, except crustata; and at last, down by a torrent-bed, two or three miserable bits of oppositifolia. Now, is not this a marvel? Oppositifolia, an abundant limestone plant,

almost a typical limestone plant, and Aizoon, so common in all the Alps as to be even a monotonous weed—and here not to find a sign of one and only a sparse colony of the other! True it is that Aizoon riots on the granite, but who that has seen it equally rioting in every sort of garden, in every sort of soil or situation, could entertain a doubt of its flourishing everywhere in all the Alps? And yet here these promising slopes are wasted on crustata, with here and there a patch of cæsia or squarrosa *Reginald Farrer.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS AT BATTERSEA PARK.

A good exhibition of Chrysanthemums of the Japanese, Pompon, and single-flowered sections is to be found at Battersea Park; indeed, the plants are in finer bloom than in any previous year. Of newer varieties the following were remarked on a recent occasion: Master James, Japanese, florets bright crimson, with the reverse of the florets the tint of old gold; Mrs. C. H. Totty, Mrs. W. Knox, Hon. Mrs. Acland, a rich yellow, fine for cutting; Bronze Pagram, scarlet, semi-double; Lady Henderson, a massive flower with curling petals, apricot-yellow, flushed with red; Eureka, Mrs. Norman Davis, Mme. A. Brun, an anemone-flowered variety of a creamy-white colour; Mme. Powell Cotton, with florets crimson coloured on the upper side, and dull yellow on the reverse; Mrs. H. Eland, Lady Letchworth, a yellow-flowered Japanese variety, with curling florets; Mrs. White Popham, a bluish tinted flower with a white centre; Daphne, a fine yellow Japanese variety; The Lion, a flower of yellow and scarlet, with incurving florets, and Viscount Cranbourn, a showy crimson Japanese; and less modern varieties in large numbers. The shady side of the roof was bedecked with large, semi-double, single, and Pompon varieties than has been observed heretofore, with the effect of adding greatly to the attractiveness of the display.

GERMAN AS COMPARED WITH ENGLISH- RAISED DAHLIAS.

It is obvious in reading the German gardening journals that the objects of German Dahlia raisers differ in many respects from those of breeders of the flower in this country; and expression is given to the belief that we, in this country, are reactionary in preferring and improving the colouring and form of the Show, Fancy and Cactus type solely. In our modern varieties the usefulness of the flower as a decorative subject falls more and more into the background owing to the frailty of the blooms, and very often it has become of exhibition value only.

According to a report in a German contemporary of the recent Leipzig Dahlia Exhibition, the chief value of the Dahlia consists in its properties as material for bouquets and other floral devices, its decorative use as a garden flower being held to be of secondary importance. Therefore the value of the plant in Germany is estimated mainly by the colour and enduring properties of the flowers, the plant's floriferousness, and only lastly by the shape of the flower.

What is most needed amongst Dahlias for cutting purposes is not an increase of varieties, but a reduction of them, and a sorting-out of the less valuable from the mass, a work which a Dahlia society should take in hand, and carry out thoroughly. Of novelties, those of English origin are passed over in the report, for the reason that we take small or no notice of those raised in Germany.

Of collarette varieties at Leipzig, the following are mentioned, viz., Peary, a flower having a clear, violet suffusion at the margin and a violet collar; Dr. Cook, with velvety, dark

purple outer florets, and collar florets with golden points or tips; Bajädere, brownish-purple with carmine tips, and brown collar; Bürgermeister Seifert, dark purple florets with a canary-coloured frill; Princess Charlotte, with blooms of the largest size, coloured deep scarlet with a yellow collar; Prinz Karneval, with white inner and outer florets, the collar florets being of port wine colour in stripes. All the varieties mentioned above form durable vase flowers, and the plants are floriferous. They were shown by Mr. Paul Süptitz, Saalfeld.

Mr. W. Knopp, Rossdorf, showed a novelty in Poesie, with long-stalked flowers. Its value would be greater if the yellow, chamoise-bordered flower was of a fresher colour. Another variety shown by Mr. Knopp, Blaustrumpf, has that colour which is rare in flowers, namely, a deep violet. In the trial ground this variety proved very decorative, every flower standing up well above the foliage.

Mr. Otto Margot, Angustusburg, showed several flowers of a new, hybrid form, which the society passed over. But, as the forerunner of a new race, between the Gloria and Collarette classes, this hybrid, provisionally named Gardenia, is worthy of attention. The outer florets are of moderate size, milk-white, and form a kind of holder, from out of which rises a diadem or crown-like filling.

Messrs. Pape and Bergmann, Quedlinburg, showed new Dahlias, including Isabella, a small, ray-like, short-floreted flower borne on a long, thick stalk; the exterior is bronze, and interior yellow. Bergmann's Silber has an ivory tinge and is worthy of attention, the shape of the flower being very fine; a complementary variety is Bergmann's Gold. Modelle, whose ground colour is waxy-yellow and, exteriorly, rose coloured, is of the most perfect form. Other desirable varieties shown by this house were Phaenomen, one of the most floriferous, that excelled all its competitors in the trial ground at Frankfurt-on-Main in this respect, and, as a decorative plant, was acclaimed the best of the year; and Kohinor, a medium-sized flower with short florets of a scarlet colour, and possessing a good stalk.

Mr. Severin, Kremen, the raiser of Königin Louise, showed Curt Engelhardt, named in honour of the business manager of the Dahlia Society. It is a fine, well-formed bloom with ray florets, not too pointed, and of a colour reminiscent of Charles Woodbridge, ruby-red in the front, with the violet colour of the reverse side showing through. Like all blue ground coloured flowers, the effect is good in the sunlight. Selma Langer is a variety bearing a resemblance to Königin Louise, only somewhat smaller, tenderer and more flesh coloured.

Giant Dutch Dahlias were shown by Mr. C. Ansorges, Klein Flöttbek, the best being Sonnenblume, golden-yellow; Erfolg, white spotted with red; Marie Müller, dark, velvety-purple; and Schwan, pure white.

Mr. Otto Mann, Leipzig, showed decorative varieties, including Vulcan, a rich red-orange, moderate in size, but a prodigious flowerer, notwithstanding that the plant is only 60 cm. in height. It might succeed as a pot plant. Desdemona is a flower of sulphur-yellow, with light yellow points to the florets. Telling is an autumn tint and in florists' work of some value is Harmonie, light rosy-salmon, with a centre of bronze. Othello is a flower of chestnut-brown and has short florets of good substance; Weisse Dame is amongst the best of the pure white varieties, the effect being heightened by the greenish centre.

As a matter of fact the Cactus Dahlias have the greatest value for the florist. Of similar tints are Götterfunke and Carfunkelstein (carhuncle). The first has the larger blooms and the second the smaller and finer rays, and it is also the dwarfer plant. Elfe, sulphur-yellow with white, belongs to the lovely Serpentine class, which, for changeableness of colour, as also for their pleasing form, are to be treasured. *F. Moore.*

COTONEASTER RUGOSA HENRYI.

At a recent meeting of the Royal Horticultural Society, Messrs. James Veitch & Sons staged an interesting collection of new and rare trees and shrubs. Amongst these a fruiting specimen of *Cotoneaster rugosa* Henryi was prominent. It is a Chinese shrub, one of Mr. E. H. Wilson's introductions for the Chelsea firm. The plant is evergreen, with slender, arching shoots and bright green, lance-shaped leaves, deeply veined and feathered on each side of the mid-rib. The creamy-white blossoms are borne profusely in clusters in early summer on the

in the autumn, cut sprays keeping in a fresh condition for several days. Indeed, a spray which had been left out of water for over 12 hours looked almost perfectly fresh at the end of that time. *J. Weathers.*

NOTES ON IRISES.

IRIS ALBO-PURPUREA.

It does not seem to be generally known that the wild type of this species is one of the finest Irises of a real blue colour. The plant, origin-

leaves, which have not the distinct midrib of *I. laevigata*, and which do not clasp the base of the stem, the plants agree closely with Mr. Baker's description, and this was also the case with some double monstrosities either of a grey-blue or of a deep indigo-blue colour. This last is the *albo-purpurea cœrulea* of the Japanese nursery firms. The method by which these double forms are obtained still remains a mystery, and at the same time it is almost incredible that the artistic sense of the Japanese can tolerate these shapeless varieties, when the wild type has beauty of form as well as richness of colour.

It is unfortunate that Mr. Baker gave a colour-

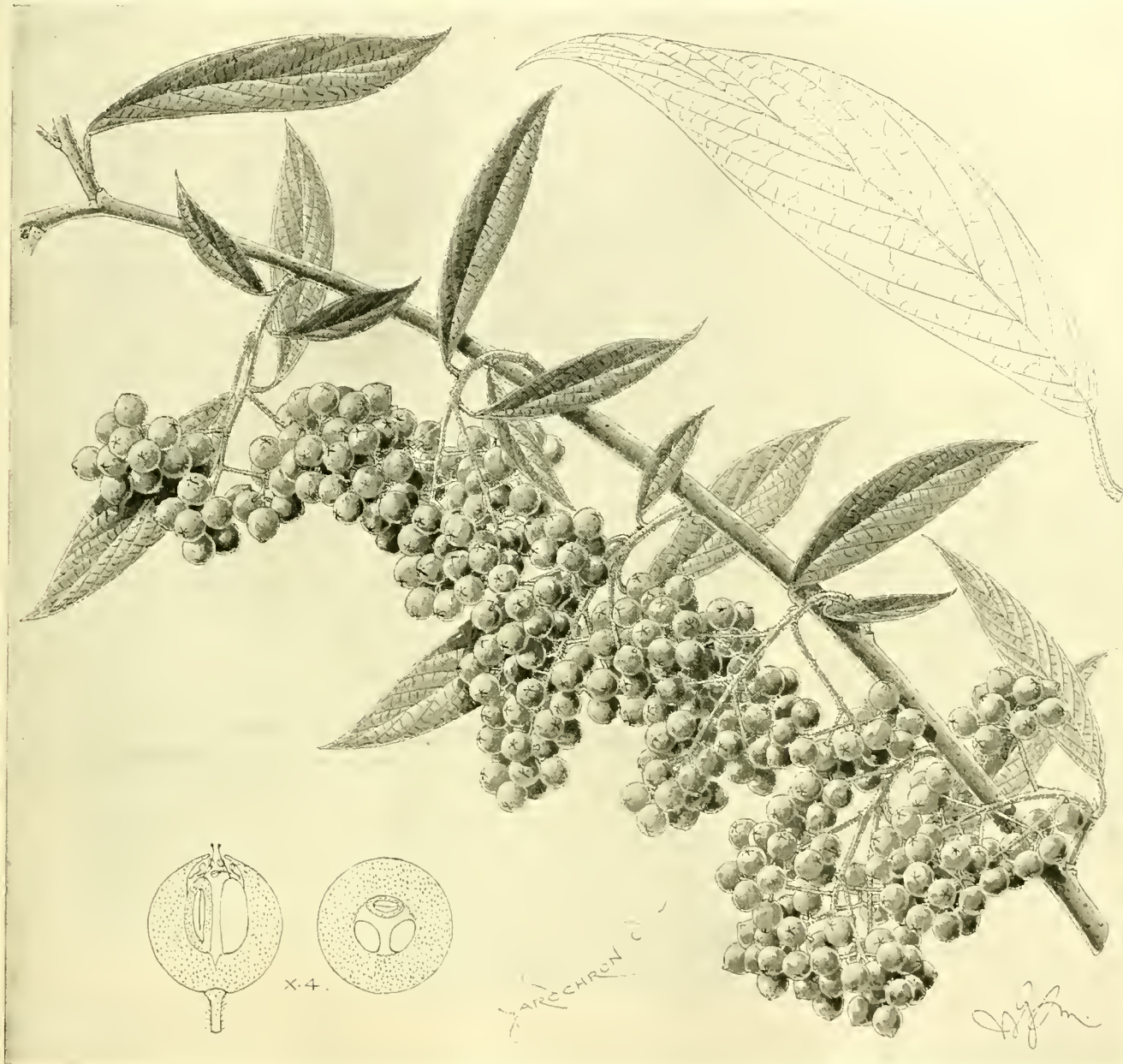


FIG. 148.—COTONEASTER RUGOSA HENRYI: FRUITS CRIMSON.

shoots of the preceding year. In due course they are succeeded by clusters of brilliant crimson fruits, as shown in the illustration at fig. 148. The individual fruits are roundish, as many as 40 to 50 are borne in each cluster, and each fruit contains two or three flattened seeds.

Grown against a wall, or worked on a tall stock to give a weeping effect, this *Cotoneaster* produces a very ornamental effect. It should prove hardy in most parts of the kingdom. A noteworthy feature is that it is excellent for decorative purposes, in vases, jars, &c.,

ally described by Mr. Baker and figured in the *Botanical Magazine* (t. 7511) as having white flowers delicately mottled or dotted with blue, always looked to me like a hybrid when I saw it growing in the tank that used to stand at the end of the herbaceous ground at Kew. After several attempts, I have at last succeeded in obtaining plants from Japan, which blossomed this summer, and produced splendid flowers of a deep blue colour, with a small, yellow signal patch at the bend of the falls. In the structure of the flower-spike and in the yellowish green

name to this species, but it is undesirable to multiply synonyms, and it seems best, therefore, to follow the Japanese authorities in keeping *I. albo-purpurea* as the name of the species, and in making the Kew plant *I. albo-purpurea* var. *Bakeri*. As to the further point of the identity of *albo-purpurea* with the *laevigata* of Fischer and Meyer, I shall hope to have more to say next year, if some plants of the latter which have just reached me from Russia are kind enough to flower. *W. R. Dykes, Charterhouse, Godalming.*

FURCRÆA BEDINGHAUSII.

THE *Furcræas*, which were formerly known as *Fomercayas*—that title having been given them in honour of a celebrated French chemist, M. Fourcroy—are noble plants when in flower. Natives of Mexico and tropical America, they cannot be grown out-of-doors, except in the warmest spots, in these islands. They resemble *Agaves* in dying after they flower. *F. Bedinghausii* was introduced by Roezl, in 1860, and was originally named after him. It first flowered, however, in the garden of M. Bedinghaus, at Mous, and was thereupon renamed *F. Bedinghausii*. The plant represented in the accompanying illustration is the produce of a bulbil brought from Mr. Howard Fox's garden at Rosehill, Falmouth, eight years ago. The length of the stem is 16 feet 6 inches, and it has 72 branches, the longest of which is 4 feet 3 inches in length. The flowers, which are greenish-white in colour and pleasantly perfumed, are an inch and a half in diameter. The blossoms are followed by bulb-like growths, by which the plant is readily propagated. This species is often confounded with *F. longæva*, but the two are perfectly distinct. In *F. Bedinghausii* the stem rarely, if ever, exceeds 20 feet in height, but in *F. longæva* it often attains to 50 feet and the drooping branches are from 12 feet to 15 feet in length. The specimen illustrated was grown in a pot for three years and was then planted out on a steeply-sloping, grassy bank, just over the salt water at the mouth of the river Dart. *Furcræas* succeed splendidly in the Isles of Scilly, and are often to be seen in flower in Mr. Dorrien-Smith's garden at Tresco Abbey. Where the weather is too cold for their culture in the open, they form stately objects in large conservatories. There are fine examples at Kew, where they are grown with the *Agaves* in the temperate house. There are in all about 20 species of *Furcræa*, the best known of which are *F. longæva*, *F. gigantea*, which latter is cultivated largely for the sake of its fibre in India, Ceylon, and Mauritius, and has a flower-scape about 50 feet in height, and *F. cubensis*, which is also widely cultivated as a fibre plant and which has a variegated variety known as *F. Lindenii*. *Wyndham Fitzherbert*.

RENOVATION OF WALL FRUIT TREES.

It happens frequently in gardens when fruit trees are cultivated against walls, that the adjoining border is cropped with vegetables, and hence, in course of time, the cropping of the ground impoverishes the roots of the fruit trees. In such cases steps must be taken to remedy the matter. The following remarks are intended chiefly to apply to Peach, Nectarine, Pear, Plum and Cherry trees. It is well known that Apricots are not so particular as to soil; indeed, a rich soil may be detrimental to their cropping, for it frequently occurs that a Peach or Pear tree shows signs of exhaustion, whilst an Apricot tree continues vigorous and in good health in similar conditions. As regards other kinds of trees, it is a good plan to trench the border every other year and work in plenty of good manure from the farmyard. An alley of 3 or 4 feet should be allowed from the wall, and as the trenching proceeds, any large roots from the trees should be carefully cut through and the severed pieces removed from the border. This operation will not only benefit the trees and tend to make them more fruitful by inducing fibrous roots to grow, but also tend to improve the crops which may be grown in the border which, if on a south aspect, will usually be cropped with Peas, Potatoes, Spinach, &c., required early in the summer. If the trees have got into a very bad state, however, something more will be required than this. Where this is possible, they will have to be lifted and replanted. In the first place a trench must be taken out round the base of the tree, at, say, 3 or 4 feet from the stem, according to the size of the tree, and the branches should

be tied together to prevent them from breaking. The operator should then carefully fork away the soil from under the roots and, when all is clear, lift the tree out of the hole on to the border, and make it secure. Take out of the hole as much of the old soil as may be thought desirable, and work in some good lumpy turf, with a little rotten manure. In the case of stone fruits, such as Peaches, Plums and Cherries, use a good quantity of old mortar or lime rubble and a sprinkling of half-inch bones. Thoroughly mix all these materials together, and put some in the bottom for the tree to rest on, making the same very firm. The stem should be inserted a little lower than it was previously, and when the tree is placed in position, work care-



FIG. 149.—FURCRÆA BEDINGHAUSII, FLOWERING IN DEVON HIRE.

fully some of the soil between the roots and ram firmly, taking care not to injure the roots. Continue until the roots are all covered in, spreading them out as the filling proceeds. When the operation is finished, the soil should be left slightly above the rest of the border to allow for sinking. The tree should be looped up to the wall with strong twine until the soil has settled down, and it may then be nailed or tied as the case may be.

The above remarks do not apply to very large or old, horizontally-trained Pear or Plum trees, which possibly would hardly stand shifting, but more to trees trained fan-shaped, or as cordons. A light mulch of half-decayed manure should be placed round the trees when the operation is

finished, and should the weather prove dry during the ensuing season, frequent waterings will be necessary.

The best time for replanting is just as the foliage is dropping and while the ground has a certain amount of warmth in it. The branches will also require attention, and these should be cut well back, leaving as much young wood near the base of the tree as possible, and shortening each piece back to a good wood-bud. Should the trees be infested with scale or aphids, they should be well washed with some approved insecticide at least twice, and the wall should be scrubbed down. This may appear to necessitate a lot of trouble, but a tree cannot be healthy unless it is thoroughly clean. A frequent cause of red spider is poorness of the rooting medium, whereby the tree becomes starved and an easy prey to this pest.

It is desirable to syringe the trees daily when starting into growth, and also again when the fruit has been gathered. The growths should also then be untied and allowed to hang loosely so that, being exposed to the sun and air, the shoots may have a chance to ripen, for, failing this, a full crop of fruit cannot be expected the following season. *R. Thatcher, Wistow Hall Gardens, Leicester.*

FORESTRY.

THE REPORT ON THE FORESTS OF BRITISH EAST AFRICA.

It is to be hoped that the British Government will see its way to adopt forthwith the various proposals for the preservation of, and improvement in the forests of British East Africa which are set out in the able Report of Mr. S. E. Hutchins, which was summarised in these pages on November 6. That the forests are vital to the well-being of the colony is admitted on all sides, and delay in instituting proper control over the forest areas means more destruction, which at the present moment is going on at an alarming rate.

There exist in the British East African Protectorate about 2,000,000 acres of good forest, most of which is situated in what is known as the highland, which are between 5,000 and 6,000 feet above sea-level. Judging from the value of similar forests in South Africa, the forests of the Protectorate should be worth about £20,000,000. The various causes that are at work destroying the existing forests are the grass fires that sweep the plains and the wasteful cultivation by the natives. In one forest only the natives have destroyed, in recent years, 350 square miles of forest by fires and wasteful cultivation. Wandering into the forest, they cut down or burn the trees; they cultivate the cleared patch for a few years, until the rains wash away the fertile soil, and then, moving on, make a new clearing. The coarse grass then spreads over this deserted land, and renders it useless for forest purposes in future, either by reconversion into forest by natural regeneration or even with the help of man. Mr Hutchins recommends remedies for this which are shortly set out below, and also advises no further alienation of forest land, which usually means destruction of the forest, and better management of what is known as the "railway forest zone."

This is the forest on each side of the Uganda Railway, which is kept for the supply of fuel and for other railway purposes, and he points out how important it is that this should be maintained for the use of the railway only, as no coal has as yet been found in the colony, and wood fuel is far cheaper than imported coal. On this point the writer of the Report makes the suggestion that the wood might be conveniently carbonised and made into briquettes, thus diminishing the number of fuel trains employed and increasing the calorific properties of the fuel,

making it weight for weight and bulk for bulk superior even to coal. There would also be certain valuable by-products produced by the conversion, viz., wood vinegar, creosote and tar. He also suggests that the forest should supply, besides the entire hauling power of the railway, as it does now, its sleepers and building material, which up to the present, at great cost, have been made of imported material, chiefly metal and corrugated iron.

At the present moment the revenue of the forests amounts only to £14,000 per annum, but Mr. Hutchins estimates a large increase when more of the forest comes into use, and he suggests that the Government should spend at least £16,000 a year, which is only £2,000 in excess of the present revenue, and, considering the great interests at stake, would be money well invested.

To prevent the continuation of the two main

strongly the present method so prevalent of putting up corrugated iron houses, which in that climate he describes as "an obvious public evil," being expensive to keep up, damp, and unhealthy to live in. As to the development of the export trade, he tells us that it is to South Africa, where one and a half million pounds worth of timber is imported annually, that British East Africa must look for its chief market. Here, though we are met by two big difficulties, first the railway rate to the coast, and, secondly, the import duty in South Africa, which amounts to about 12 per cent. He suggests remedies for these in the establishment of a low railway rate for colonial and Government timber of $\frac{1}{4}$ d. and $\frac{1}{4}$ d. per ton per mile respectively on the Uganda Railway, and the admittance of the B.E.A.P. to the South African Customs Convention, so as to remove the existing import duty.

COPROSMA ACEROSA.

This genus has its headquarters in New Zealand, where it forms a large proportion of the shrubby vegetation and often makes dense, impassable thickets. The members are very variable in habit and stature, but most agree in having a disagreeable smell when bruised, which earns for them the generic name, which signifies a smell of dung. In *C. fetida* the odour is especially pronounced. With few exceptions *Coprosma* is not a genus of horticultural interest, for the flowers are inconspicuous, and many of the species are not at all hardy. *Coprosma acerosa* is one of the exceptions and for three consecutive months, September, October, and November, it is one of the prettiest plants on the Glasnevin rockery. Planted in a pocket, it forms a low, prostrate shrub hanging over the stones for about 2 feet. A perfect maze is formed by its thin, flexuous, wiry branches, which interlace one with another; but the beauty of the plant lies in the pale blue, translucent berries, which are freely produced on the wiry, brown shoots. The berries or drupes assume a violet tint before dropping. They are oval in shape, a quarter of an inch in length, and contain two seeds which lie with their flat surfaces together. The leaves are small and narrow, about a quarter of an inch long, so that the fruit is not hidden as in many berrying plants. There is, apparently, another form of this plant, which seems more abundant throughout Ireland than the one described. The berries are produced very sparsely, and therefore the main charm of the plant is lost. It has the same trailing habit, but the growths are stronger and the wood is yellow.

Another small *Coprosma*, named *C. Petriei*, recently introduced from New Zealand, is growing well in Ireland, and gives fair promise as a rock plant. It makes a dense cushion of greenery as neat as a Thyme, and should be a good plant if it will produce its purplish fruits in this country. *Coprosma Cunninghamii* and *C. lucida* are grown outside at Glasnevin against walls, and reach about 12 feet in height. The latter, with its glossy, green leaves, is an ornamental evergreen to be grown by those blessed with a milder climate than that of Glasnevin. *C. P. Ball, Glasnevin, Dublin.*

STREET TREES.

THE Lime, the Plane, and the Chestnut are three beautiful trees for avenues, but are they the most useful for the purpose of forming avenues in town streets? One has only to visit a large town during August to see how great a failure the Lime and Chestnut are when planted in the streets—many of the leaves have fallen, and the streets, so far as the trees are concerned, have almost a winter aspect. I have seen the trees in London leafless while the people under them sweltered in the early September sun. Only those who have to plant street trees know how this senseless mistake comes to be so often repeated. The subject of planting a new street comes before the town council. Mr. A. proposes Limes. Mr. D. shows a preference for Chestnuts; Mr. C. points out how well Planes grow in London. The merits of the three trees are debated and the result is usually a compromise—a few of each. These trees will suit the street, but it is never considered as to whether the street will suit the trees. Unfortunately, this seems to be the fate of every town in England—they must either have Limes, Planes and Chestnuts, or remain treeless. Some enterprising council must some day or other demonstrate to the world that there are other trees for avenue planting than the Lime, Chestnut and Plane, not better, perhaps, for forming avenues, but better suited for avenues along paved and dirty roads.

With a soot-laden atmosphere such as obtains in London, the "town forester" has very little chance: he must have trees capable of



FIG. 150.—COPROSMA ACEROSA, FRUITING ON THE ROCKERY AT GLASNEVIN.

causes at work on the destruction of the forest, namely, fire and wasteful cultivation, he suggests, first, the formation of a white settlers' zone round the best forest areas. He describes this area round the Kenia and Aberdare forests as "the pearl of the Protectorate from an agricultural point of view," and says that white men should be induced to take farms all round the forest, which would serve the double purpose of policing the forests from the natives, and showing them the advantage of permanent cultivation; and, secondly, he recommends proper demarcation of the forests with clear, well-defined boundaries to prevent further alienation.

As to the development of the forest industry in the colony, he would encourage this by putting an increased Customs duty on all imported timber and corrugated iron, for he deprecates most

He finally maps out a scheme for the reorganization of the Forest Department, which it is impossible to enter into here in detail, but the essentials of which are the formation of a forestry department, with a body of well-trained, practical foresters. In order to effect economy in the forestry management, Mr. Hutchins recommends that the buffalo and elephant should be used for the haulage of timber. The author recommends that the Forest Department should import and breed tame buffaloes and use them for forest work, as is done in Southern India, also that the African elephant should be tamed and used, as is done in Burmah.

The Report is full of the most instructive and interesting information, and, if adopted, should be of inestimable benefit to the present and future well-being of the colony.

withstanding the ungenial conditions. London must plant the Plane (why does she plant so many Limes and Chestnuts?), but it does not follow that the rural towns should confine themselves to a servile imitation of London.

There has always been a steady demand for the three orthodox trees, and naturally this demand has created the supply, with the result that when one wishes to break away and plant other trees he is confronted with the almost insurmountable difficulty of obtaining suitable trees—not of a suitable species, but trees grown in such a way as to fit them for their special positions. The street tree must have a straight clean stem of not less than 8 feet, and must therefore be specially prepared in the nursery.

Until the demand makes the supply, there will always be this difficulty. Paris, the City of Boulevards, was for years hampered by the same difficulty; she led the way out of it by growing her own trees, and is no longer governed by a nurseryman's stock. Immense municipal nurseries have been established, where the trees are grown and prepared for their special positions. She looks into the future, sees where trees will be required, takes account of the soil, aspect, &c., and sets to work to grow suitable trees for her requirements.

The stock is pruned and trained with a view to suiting its permanent quarters, and when the time arrives for transferring it to the streets, each tree is lifted carefully on a specially-constructed, transplanting wagon and taken to its final quarters. Trees thus treated may be planted of a much larger size than when they have to come from a distant nursery, the roots do not suffer from long exposure to the air, there is no damage from long and rough railway journeys, and the trees, being large and planted with a good ball, form in the first season a beautiful avenue, luxuriant and symmetrical.

The ground of these nurseries was at one time poor, infertile soil, but to-day it is one of the most fertile tracts in Europe, owing to the system of using the best of the road sweepings for top-dressing. Year after year layers of dung-laden sweepings are deposited between the trees, and become gradually part of the general compost. *Pem.*

(To be continued.)

The Week's Work.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslæe, Sussex.

Magnolia.—The different species of *Magnolia* may be planted at the present time and, in order to ensure as long a display of bloom as possible, it will be as well to plant the trees in various positions and aspects, selecting the more protected situations for the early-blooming and more tender varieties. In most cases, but especially on heavy land, it is necessary to apply manure and lime rubble. The earliest to bloom is *M. Campbellii*, a species which has only flowered in a few gardens, but which may ultimately be more satisfactory, since it is evident it does not bloom until it has attained a considerable size. *M. Campbellii* should be planted in a sheltered border, or, if this is not available, in a position where the plant will be sheltered from cold winds. The flowers are 7 to 9 inches in diameter, and of a very pretty shade of rose-pink. *M. conspicua* and *M. stellata* flower with the greatest freedom, and are perhaps two of the most popular species. Others include *M. Kobus*, *M. Lenne*, *M. Lenne superba*, *M. tripetala*, *M. cordata*, *M. Thomsoniana*, and *M. grandiflora*, with the giant variety of the last-named species, *M. g. Goliath*, introduced by Messrs. Smith & Son, of Guernsey. *Magnolias* require to be staked very securely, in order that they may not be swayed in the least by winds, to which, owing to their large leaves, they are more than usually subject. *Magnolia glauca* is valuable for the marsh, and it flowers there very well in late summer. Pruning should be done directly after the flower season.

Tree Peonies.—*Peonia arborea* and its varieties furnish some of the most glorious flowering shrubs; they may be planted now as opportunities occur. If beds are to be planted, the soil should be enriched with some good fibrous loam, leaf-mould, and manure. The plants should be put in the soil rather deeply, that is, below the

point where the graft was inserted. Any suckers that may subsequently appear must be pulled off. If, after wet weather in spring, frosts seem likely, it will be desirable to cover the tree *Peonies* with some light material such as litter during the growing season the plants require a generous supply of water.

Herbaceous Peonies.—These may be planted in the herbaceous border or in beds, and they may be mixed with other suitable plants that will flower at a later period.

Herbaceous borders.—Frost having put an end to all the flowering plants of a soft nature, let them be cleared away, but be careful to tread upon the borders only during dry weather. If the borders contain many spring bulbs, it is necessary to clean the soil about them and apply a thin mulch of manure, taking occasion to fill any vacant spaces with fresh bulb or new plants. If any new borders are in process of making, let the planting be done in dry weather; do not allow the men to tread upon the soil without using planks. *Montbretias* may be taken up, divided, and planted in rich soil, moving the smaller bulbs to the nursery for growing on into a flowering size. If repeatedly treated in this manner, they will grow as strongly as *Gladiolus*.

Protection.—Prepare in readiness such materials as Heather, dry Bracken and Peat for covering tender plants on the approach of frost. Everything appears to be ill-matured this season, therefore it is more likely to suffer from frost. A good mulch placed over the roots is an excellent preventive of harm.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Early Peaches and Nectarines.—Assuming that the wood on the earliest permanent trees is thoroughly ripened, they may now be started gently into growth. For the first week or two do not use fire-heat unless such heat is necessary to maintain the temperature from falling below 45°. I have mentioned before the advantages of growing the earliest Peaches and Nectarines in pots; especially is this so in a season like the present, when the wood of most trees is not so well matured as usual. The wood and buds on the pot trees are perfectly matured, and they can be placed in the forcing house without delay. This admits of postponing the forcing of permanent trees to a later date, when the risks of failure are not so great. It also lengthens the season of supply, which is a matter of much importance in districts where Peaches cannot be successfully grown out-of-doors, and in gardens where glass accommodation is very limited. When well grown, the fruit from pot trees is very little inferior to that obtainable from permanent trees. For very early forcing, trees must be used that have already been forced more or less for several years. Varieties that are known to be good forcers should be selected for this purpose. See that the trees are quite clean before placing them indoors, and any pruning that is necessary should be carried out. This latter operation will consist chiefly in shortening any extra strong shoots to a wood bud, cutting out weak, useless branches, and regulating the fruiting wood so that light and air can penetrate through the trees. The proper symmetry of the trees must also be considered during this operation. A light house, facing south, will be most suitable for their culture; but if such a house is not available at the moment, ainery which has just been closed will afford suitable conditions until the trees come into flower.

Late Peaches.—The pruning and training of these must be persevered with whenever opportunity offers. The appearance of old-established trees may be very much improved by the judicious thinning of the old branches, and the consequent training-in of more fruiting wood. After thoroughly washing the house, loosen the branches from the trellis, and cleanse them with a solution of soft soap and sulphur. Should the trees be affected with scale, add a little slaked lime. In tying-in the trees, guard against overcrowding of the wood. When all the cleaning and tying is finished, and the walls limewashed, the borders may be carefully forked over, and about 2 or 3 inches of the old soil removed, applying afterwards a good top-dressing of loam, with a liberal addition of old lime rubble and wood-ashes mixed with it. In the case of old

trees, some crushed bones or artificial manure may also be added. The trees must be given a period of rest before starting them into growth, therefore the houses must be thrown wide open, so that they may, as far as possible, be exposed to outside conditions. The roots must not be allowed to suffer for want of moisture, and established trees will be benefited with one or two applications of drainings from the farmyard.

THE ORCHID HOUSES.

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

Masdevallia.—Many of these plants that were repotted during September will now be rooting freely and making fresh leaf growth; but they must be watered still very sparingly, as any excess of moisture will result in the loss of many leaves and roots. Black markings and spots are often seen on *Masdevallias*, the principal cause of these being over-saturation at the roots, or an excess of atmospheric moisture during cold, dull weather. Now that it is necessary to use a little fire-heat, care must be taken to prevent aridity in the atmosphere, but much depends upon the situation and construction of the house. Should it be in a dry, exposed position, a moderate syringing between the pots both at morning and afternoon will be necessary; but if it has a north or north-easterly aspect, only one damping in the morning should be given. *M. tovarensis* is now developing its flower-spikes of white flowers, these being arranged on the top of a stem varying in length from 4 inches to 8 inches, therefore they are held well above the green leaves. Being a compact-growing plant, and very free-flowering, *Masdevallia tovarensis* is a valuable, decorative subject. If the plants are placed in a cool, shady position in almost any house having an intermediate temperature, the flowers will remain in good condition for five or six weeks. The grower should remember to remove the plants from the house when using the X.L.-All vaporising compound, or the fill-form tops of the blooms will quickly change to pink. If the fresh spikes are not cut below the scape from which the flowers are produced, they will again send out flowers next year; but to let them remain for two seasons tends to weaken the plant, therefore, it is better to remove them as soon as the flowers fade.

Cattleya.—Among the few species of *Cattleya* which bloom at this season, *C. labiata* is undoubtedly one of the best, and now that some of the plants are passing out of flower, the amount of water at the root should be considerably reduced. After flowering, stand the plants in the cooler and best-ventilated part of the *Cattleya* house, where they may remain during their long period of rest. As regards repotting, those plants which require a larger pot should be attended to when new roots are seen pushing from the base of the last-made pseudo-bulbs; but if they are past that stage, repotting had better be postponed. The same remarks apply to *C. Gaskelliana*, a species that is now resting. Plants of *Lælia perrina*, *L. cinnabarina*, *Cattleya Bowringiana*, *C. Dowiana*, and its variety *aurea*, may also be repotted as they pass from the flowering stage. *C. Lawrenceana*, now in full growth, should be arranged well up to the roof-glass, exposed to full sunlight; small plants thrive best when suspended a few inches from the roof-glass. *C. Percivalliana* having completed its new pseudo-bulbs, should be kept moderately moist at the root.

Phalænopsis.—Some of the *Phalænopsis*, more especially *P. Aphrodite*, *P. amabilis* (*grandiflora*), and *P. Schilleriana* are developing their flower-spikes. These plants must now be watered with great care, large supplies being no longer needed. It is not good practice to dip the plants or otherwise saturate the compost, but rather to lightly spray the Sphagnum-moss and the sides of the basket. Specimens with long flower-spikes should not be kept too near to the roof-glass, or the ends of the spikes may decay. Our plan is to arch them over towards the light, and tie a small lead weight to each spike, so as to keep them in the required position. All the tender, green-leaved species, as *P. Luddemanniana*, *P. tetraspis*, *P. Marie*, *P. sumatrana*, *P. speciosa*, *P. rosea*, *P. Cornu-cervi*, and *P. violacea*, also require careful watering for several months to come; they should be protected from direct sunlight even in winter.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Greenhouse Rhododendrons.—No winter-flowering, indoor shrubs are more attractive when in flower than the Javanico-jasminiflorum hybrid Rhododendrons, which are now on the point of swelling their flower-buds. To insure that the flower-trusses open freely, as well as to bring out the best colours in the flowers, the plants should be placed in a fairly warm house, and exposed to all the light available. Great care must be exercised in applying water to the roots.

Bouvardia.—The earliest batch of plants intended to flower should be allowed a temperature of 55°, and afforded fresh air as often as the weather will permit, the ventilators being opened without danger. Those plants that are on the point of flowering should be given liquid manure occasionally, and this feeding should be alternated with a little artificial manure dusted on the surface of the pots.

Salvia.—As the plants of *Salvia Pitcheri* pass out of flower their shoots should be trimmed in preparation for storing them in a frost-proof pit or greenhouse. Very little moisture will be required by this species for the present. *Salvia Heeri* and *S. gesneriflora*, neither of which will flower for some time to come, should be grown under cool conditions. Considerable warmth, however, is necessary at this season for *S. splendens* and its varieties, especially during cold and wet weather. The flowers are very liable to damp off when the plants are in a cool house. This species and also *S. rutilans* are benefited by frequent doses of liquid manure. If the old flower-spikes of *S. rutilans* are removed and the plants kept free from red spider, which often infests these *Salvias* in warm houses, a second crop of flowers will be produced in the early spring. *S. Bethellii* will continue to furnish a display of flowers for a considerable time to come if the plants are assisted with some manurial stimulant. It is best to group plants of this variety by themselves, because the colour of the flowers, although very beautiful, do not harmonise well with that of other species of *Salvia*.

Soil for potting purposes.—Arrangements should be made for securing a supply of loam for next year's use. The loam should be obtained from old pasture land, and it should be stored in stacks, placing the grass sides downwards. If it is of poor quality, a layer of decayed cow manure placed between each row of turves will be of benefit, otherwise it is better to stack the turves without any manure. A supply of leaf-mould should also be obtained. The best leaves for the purpose are those of Beech and Oak. Any twigs or branches should be thrown aside, as these are liable to introduce injurious fungal growths. It is best to place the leaves in rather thin heaps, so that there will be no heating from fermentation. The heaps should be turned periodically, in order that all the leaves may in turn be exposed to the air and rain, and thus assist decay. Unless this is done, many of the leaves in the centre of the heap will remain dry and hard, and useless for potting purposes.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GRIBBS, Aldenham House, Elstree, Hertfordshire.

Leaves.—All fallen leaves should be collected and stored for future use. Leaves, when placed together in good beds, provide a warmth which is well suited for the bringing forward of the most early vegetables in portable frames. They do not generate an excessive heat, but are capable of retaining it for weeks or months. For preparing leaf-mould, the leaves may be turned over into a good heap, at the same time scattering a layer of freshly-slaked lime between them as the work proceeds. This will have a tendency to sweeten them and kill any insect pests. On heavy land, leaf-mould forms a valuable lightening ingredient, well suited to most kitchen-garden crops.

Potatoes.—For supplying early crops, a portion of the selected tubers should be laid out thinly, on suitable trays, on a little leaf-mould or manure from a spent Mushroom bed. These should be stood in a warm house, in a light position, and syringed daily to start them into growth. When the shoots are about an inch or 1½ inch in

length, all the weaker ones should be rubbed out, leaving only the one which is strongest. The most convenient method for the earliest supplies is to grow them in 8-inch or 10-inch pots, placing three tubers in each pot. Each pot should be made only half full, leaving the remainder portion for earthing-up later on. At this season the mixture used should be of a very light, porous character. Sharpe's Victor and May Queen are each excellent varieties for treating in this manner. Tubers for successional plantings should be selected and laid out thinly on shelves in a frost-proof room.

Carrots.—The latest sowings made under glass should now be ready for pulling. These should be stored in sand; they are generally better appreciated for cooking purposes than the larger roots.

Seakale for forcing.—This crop should be lifted, trimmed, and stored in sand or ashes ready for introducing to heat as required, taking care to preserve plenty of rootlets for cuttings for next year's supply. Lily White is generally much preferred to any other. A fairly strong heat will still be required to start the crowns into growth. They should be kept in absolute darkness, and syringed twice daily.

Asparagus.—This is much more easily forced than most vegetables; fresh supplies should be introduced about every fortnight or three weeks. A mild bottom heat should be afforded.

Mushrooms.—Continue to make up beds at intervals to ensure a continuous supply. Freshly-made beds do much to stimulate those already bearing, and the warmth from the former in ordinary weather is quite sufficient to enable the growth to be made satisfactory. Only in excessively cold weather should the hot-water pipes be brought into use. There being plenty of material, the present is a capital time for making up beds in the open, but these will require to be covered with a good thickness of long litter.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Renovating an old orchard.—In the case of an orchard which has suffered neglect for some years, the question arises as to whether the trees should be grubbed and destroyed, or an attempt made to bring them into a profitable condition. The answer must depend on the present health of the trees. Supposing them to be still strong and vigorous in growth, and of serviceable varieties, they will be likely to respond satisfactorily to judicious thinning of the wood and manurial assistance at the roots. One often sees orchards in which all the work the cultivator considers necessary is that of picking the fruit, which deteriorates from year to year until it will scarcely pay for the labour of gathering. Apart from the direct loss in value of a neglected orchard, its presence is injurious to neighbouring trees, serving, indeed, for the nursing and distribution of insect and fungus pests. The present is a capital time to take such an orchard in hand, getting the work forward before the worst of the winter weather is upon us. The first step in pruning is to clear the centre of the tree of dead and useless small wood. All pieces which cross each other should next be taken out, and the tree should be left thin enough for the sun and air to penetrate to every part. The habit of the individual tree will be the best guide as to the proper amount of wood to be removed. If the tree is an upright and sturdy grower, it is a simple matter to thin out the weakest growths; but when the tree is of pendulous habit, it is often a dense thicket of small, dead wood. Every piece of the latter must be removed, and also the weak, under branches, which should be cut back to the trunk, the workman depending on the younger wood to furnish the space thus provided. Inferior varieties will have been noted during the fruiting season. If these are fairly vigorous, they may be headed down at the present time for grafting next year, it being undesirable to cultivate any but varieties of real merit. If a tree is aged or crippled, it should be grubbed out. Where old trees have been removed, it is not advisable to plant again in exactly the same places occupied by the former specimens; but if there is not choice in the matter, the old soil must be excavated, and young

trees planted in some fresh compost. When the pruning is completed, all the prunings should be burnt at once in order to destroy the insects and their eggs lurking in the bark and crevices of the wood. The ashes should be returned to the soil as a top-dressing when finishing off the work. The trees should be thoroughly cleaned of moss and lichens. The old method of applying slacked lime on a damp day has given place to the spraying machine, of which there are several good makes on the market. By means of these machines the concentrated alkali wash should be sprayed on to every portion of the tree, repeating the operation about the end of February, to make certain of destroying all the pests. The turf under the trees should be dug in from the trunk to a yard or two beyond the spread of branches. Apply a good top-dressing of lime, following this up with a heavy mulch of farm-yard manure. If the work is done thoroughly, good results may be confidently looked for in a year or two, and will amply repay the expenditure on labour and material.

PUBLIC PARKS AND GARDENS.

By W. W. PERRIGREW, Superintendent of City Parks, Cardiff.

The public rock-garden.—In many parks where collections of different classes of plants are represented, an attempt is made to reproduce the ecological conditions best suited to the successful culture of rock-loving plants. The outcome of these attempts vary in appearance from the haphazard heaping together of rough stones, clinkers or brickbats, in the form of the crude, old-fashioned rockery, to the more elaborate and realistic imitation in miniature of a ravine or a part of a mountain pass, where outcropping rocks arranged in regular strata are more or less truthfully represented. While it must be admitted that Alpines are more often than not cultivated on the former kind of stonework, it is satisfactory to note that in the majority of the botanical gardens in this country the rock-garden is constructed on fairly natural lines.

A suitable site.—In parks where a necessary site is to be obtained—preferably where a water supply can be easily brought into use—there can be no two opinions as to the great advantages of laying out a rock-garden of fair size. It is invariably found that such places when well designed and judiciously planted are not merely of interest to the enthusiastic plant lover, but are, especially in the spring months of the year, a source of great attraction and delight to the ordinary visitor who cannot even appreciate the difference between choice Alpines and ordinary border plants.

Construction.—The success of a rock-garden (whether regarded as a plant habitat or merely as a geological representation) depends upon the observance of certain well-known principles. In the construction of a rockery in a public park other factors which do not obtain in the ordinary private garden have to be taken into consideration if it is to give the greatest satisfaction. In the first place it is very essential that all the walks in the former case should be of ample width, well made and well defined. It is very much better to have one good main walk than a number of narrow winding paths leading needlessly from point to point, for these only afford visitors an excuse for wandering into places where they are not wanted. The pleasures of a rock-garden in a private establishment are greatly enhanced by the provision of rustic seats, retreats, nooks and corners, and secluded grottos, but such adjuncts in the public grounds have to be rigidly tabooed.

Management.—Again in the park rockery (when not attached to a botanical garden) the great aim is to produce a number of more or less spectacular effects in succession throughout the early part of the year, hence great quantities of the same species of plant have to be grown together, and the same kind of plant is used over and over again in different parts of the ground. As numerous visitors are naturally anxious to find out the names of the plants which arrest their attention, it is almost necessary, as far as possible, to have every different species labelled. Although labels are usually regarded as an offence to good taste, they must not only be tolerated but even encouraged in public parks.

EDITORIAL NOTICE.

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

Local News.—Correspondents will greatly oblige by sending to the Editors 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.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, NOVEMBER 23—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. J. A. Alexander, on "Spices").

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—41.9°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 17 (6 P.M.): Max. 49°; Min. 36°.

Gardeners' Chronicle Office, 41, Wellington Street Covent Garden London—Thursday, November 18 (10 A.M.): Bar. 30.1; Temp. 45°; Weather—Sunshine.

PROVINCES.—Wednesday, November 17: Max. 44° Cambridge, Min 38° Scotland N.W.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—
Herbaceous Plants, &c., at 12; Roses at 1.30; Palms and Plants at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Choice Established Orchids in large variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Horticulturists have been accustomed to confine the term "Chinese Primulas" to the well-nigh endless varieties of *Primula sinensis*; but, since the recent introduction of so many new species of *Primula* from Western China, and because of the expectations that many more have yet to be introduced, the term "Chinese Primulas" must be extended to embrace all these attractive novelties. Our readers are already familiar with a number of Chinese and Tibetan *Primulas* introduced to Britain by Mr. E. H. Wilson, whilst travelling for Messrs. Jas. Veitch & Sons, and by Mr. George Forrest, the representative of Messrs. Bees Ltd. Two of the most striking of Mr. Forrest's introductions are depicted in our Supplementary Illustration, and others we propose to reproduce on subsequent occasions. Thus it will be possible for cultivators to form an adequate idea of the beauty of these plants in their native habitats. The following information referring particularly to their appearance and characteristics in China is based upon notes taken on the spot by Mr. Forrest.

PRIMULA LISTERI, KING.—This species was first found on the slopes of the Sikkim Himalaya, and is the *obconica* type of that region. Many years later it was rediscovered by Père Delavay on the range of mountains forming the western boundary of the Tali Valley, in the basin of the Mekong, lat. 25, 40° N. It appeared so closely allied to *Primula obconica*, hence, that M. Franchet, in his determination, placed it as a variety of that species, with the varietal name of "glabrescens." Later, the plant proving to be identical with *P. listeri*, the variety was sunk.

It is a smaller and much more graceful

plant than *P. obconica*, and, being almost completely glabrous, might be grown to advantage where *P. obconica* is discarded owing to the irritation it causes to many who handle the plants. The foliage is never more than 4 inches in height, the scapes number eight to fourteen in well-grown plants, rising as much again above the leaves. The flowers, numbering four to eight to a scape, are of large size and faintly fragrant; the whole plant has a decidedly bitterly aromatic odour, somewhat resembling that of *Geranium Robertianum*.

There is great variation in the colour, all shades of rose-lilac and lavender down to the purest white being represented. This variation appears to be caused by different degrees of nourishment. Those plants bearing white flowers had much paler foliage, and were only seen in comparatively barren situations on dry limestone pasture, whilst those with flowers of the deepest shades of colour flourished on rocks where there was an abundant and constant supply of water. The figure reproduced in the Supplementary Illustration is from a photograph of one of a large mass of plants growing in such a situation on the face of a cliff, deeply embedded in moss.

The species is fairly plentiful on both the eastern and western slopes of the Tali Mountains, at altitudes varying from 7,000 to 10,000 feet. Apart from its natural beauty, the fact of its blooming so early as March or April should make it valuable to horticulturists.

PRIMULA VINCEFLORA, FR.—Amongst the *Primula* which have been introduced in recent years from Western China, those contained in the remarkable section "Omphalogramma" stand alone, distinguished alike by their beauty and unique form. The name given to the section is derived from the oval and flattened form of the seed, which has much the appearance of belonging to the *Trideæ*; certainly no one with a knowledge of the form of seed usually found in *Primulas* would suppose at first sight that the seed belonged to that genus.

Three of the known species of the section have their homes on those wonderfully prolific foothills of the Himalayan system which descend into N.W. Yunnan, and form the continuations of the huge water systems of the Salwin, Mekong and Yangtze rivers. Their names are *Primula Franchetii*, Pax, *Primula Delavayi*, Fr., and *Primula vinceflora*, Fr.

The two species last mentioned were discovered by the late Père Delavay. *P. Franchetii* was found by another member of the same mission, Père Soulie, also a keen botanist and collector. Monsr. Franchet, who described most of the collections made by Père Delavay in the regions from which the above species came, was so impressed by their singular appearance and the form of the seed, that he formed of them a sub-genus, which Messrs. Pax and Knuth, in their recent monograph of the *Primulaceæ*, retain as a section.

Each of the species mentioned has a distinct beauty of its own. That with the largest flowers is *P. Franchetii*. Its blooms—solitary, as in all known species of the section—are fully 2 inches in length, the expanded limb being almost 2 inches in breadth, of a deep, rich, violet colour, shading into the yellowish corolla base. The first habitat known was on

the mountains around Ta-t sien-lu, but the species has since been rediscovered on the ranges forming the watershed between the Yangtze and Mekong valleys in lat. 28° N. *Primula Delavayi*, Fr., resembles *P. Franchetii* in all sectional peculiarities, but is not nearly so imposing a plant, being smaller in every way, the deep fringing of the ruddy-purple corolla constituting its most conspicuous feature. Though local in its distribution, it is fairly common on many of the ranges in the basin of the Mekong.

Both these species are generally found growing as solitary specimens in scattered groups. *Primula vinceflora*, Fr., appears in its native habitat by far the finest of the three. It is a taller plant than the others, some specimens attaining a height of 14 inches. Also, it grows in masses of 20 to 30 plants together. The flowers are of a beautiful, deep indigo-purple shade, the tube narrowly cylindrical, yellowish at base, the limb very widely spread with the three upper lobes reflexed on the tube. This last peculiar character is not noticeable in dried specimens, and, probably for this reason, M. Franchet has not remarked on it in his description. Nevertheless it is quite constant, and is shown most perfectly in the accompanying figure of the species in situ. None of the many *Primulas* can compare in beauty with this interesting plant growing in its natural habitat, which is sheltered, grassy openings in Pine forests at an altitude of 10 to 11,000 feet.

The other two species are found at greater altitudes, generally from 12 to 13,000 feet, in moist and rocky, but not boggy, meadows, all three being commonly on limestone soil.

It is interesting to note the only other known species in the section is *P. Elwesiana*, King, from the Sikkim Himalaya. The flora of the extension of the Himalayan Mountains, from that point up to their entrance into Yunnan has, so far, been unexplored, but, almost certainly, once the country becomes opened up, we shall have other, and possibly more beautiful, species added to those mentioned.

It would naturally be concluded from the altitudes at which the above species grow that they would prove perfectly hardy in this country. Unfortunately experience proves the reverse. Though a large quantity of thoroughly ripened seed of the two last-named species was recently secured, only a very small percentage germinated, and very few of the seedlings have reached maturity.

It is most difficult to account for this, more so as the seed was in the hands of skilful propagators, and was treated in various ways; certainly our knowledge of the conditions under which those plants flourish leaves much to be desired. One thing it is impossible to give them, namely, the long rest they have during the winter on their native mountains, when, from November until May, they are buried deeply in snow.

PRIMULA POISSONII, FR.—Since its introduction to this country much has been written of this species, but to appreciate its full beauty, it must be seen in its native wilds.

It is abundant in certain localities on the mountains of N.W. Yunnan (where the photograph was taken), growing in dense masses and easily recognised, even at a distance, by its bright and rich colouring. It is essentially a moisture-loving plant, the situations generally

favoured by it being open pasture on the margins of forests and dense scrub, not boggy in the true sense of the word, but where a constant and copious supply of water is percolating through the soil, the latter consisting of gravel with a good admixture of fibre.

The description given in the *Botanical Magazine* states that the native plant is small, with small leaves, solitary scape, and few flowers. This does not fit the species as seen in Western Yunnan, where it attains an average height of 2½ feet. Solitary scapes are the exception rather than the rule, two, three, and occasionally as many as four, being borne by a single plant, each carrying from five to seven whorls of numerous flowers.

Though covering a wide range of altitude—from 5,000 to 11,000 feet—the species is not so hardy as might be supposed. The finer groups of plants are invariably found at the lower altitudes, and the higher stations are in sheltered situations having a southern exposure.

ROYAL HORTICULTURAL SOCIETY.—The next exhibition will be held in the Society's Hall, Vincent Square, Westminster, on Tuesday, November 23. At the 3 o'clock meeting in the Lecture Room an address on "Spices" will be delivered by Mr. J. A. ALEXANDER.

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, November 23, at 6 p.m., at the Hotel Windsor. Mr. JOSEPH CHEAL will give a lecture on "Canada of To-day, Horticulturally and Generally: From the Atlantic to the Pacific." The lecture will be illustrated by original lantern slides.

PERPETUAL-FLOWERING CARNATION SOCIETY.—The winter show will be held on December 8, and the annual dinner will be held on the evening of the same day in the Hotel Windsor, Westminster. Six classes are specially provided for amateurs—those who either cultivate Carnations themselves, or are occasionally assisted by a gardener. Further particulars can be obtained from the hon. secretary, Mr. HAYWARD MATHIAS, "Lucerne," Stubbington, Fareham, Hants.

THE ROYAL BOTANIC SOCIETY.—At a meeting of the Fellows of this Society, held at the Botanic Gardens on the 12th inst., the chairman, Mr. P. S. STEPHENS, K.C., stated that the letter addressed by the Rev. W. WILKS to the Duke of Teck (published on p. 350 of last issue) suggesting the possibility of an amalgamation with the Royal Horticultural Society had not then officially reached the Royal Botanic Society, and the latter was unable, therefore, to take any definite steps in the matter. Later in the proceedings, when Mr. RUBINSTEIN had spoken in favour of amalgamation, Mr. CECIL RALEIGH said he had been averse from any amalgamation or union with any other body, but there was no reason why they should not extend the facilities of their gardens to other bodies requiring them. They were prepared to appoint a committee to open up negotiations with the Horticultural Society to hear the latter's proposals, but, in his view, there was such a thing as federation as well as amalgamation. He proposed that 100 of the Fellows present should meet the present emergency by subscribing at once £5 each to meet the £500 required by the bank. In a few minutes it was announced that £379 had been raised. Since this meeting it has been announced that the Royal Botanic Society had addressed a letter to the Council of the Royal Horticultural Society thanking them for the

kindly sentiments expressed in their communication to the Duke of Teck, and suggesting that each society should appoint a committee of six persons to confer on the subject of the original letter.

SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture hall of the institution on the 22nd inst., at 8 p.m., when a paper will be read by Mr. W. R. DAVIDGE, entitled "Town Planning Systems."

NEILL MEDALLIST.—At the November meeting of the Council of the Royal Caledonian Horticultural Society a Gold Neill Medal was awarded to the Rev. J. AIKMAN PATON, Souleat, Castle Kennedy, in recognition of the valuable work he is doing in connection with hybridising Solanums. Mr. PATON has since 1903 been hybridising the Potato with the aim of getting a strain which would be immune to the disease (*Phytophthora infestans*). In 1907 Mr. PATON obtained tubers of *Solanum tuberosum*, a presumed wild sort which had been under more or less careful observation for about 50 years, but which had not shown disease in all that time. Mr. ARTHUR W. STUTTON, F.L.S., drew attention to this character of the plant in his well-known article on the Potato in R.H.S. *Journal*, vol. xix., pt. III., and also in his paper read before the Linnean Society (*Journal Linn. Soc.*, vol. xxxviii., February, 1909). Mr. PATON sought by crossing this type with certain commercial varieties to combine its character of immunity with desirable qualities of the other parent. He has succeeded in doing this, and in showing that the immune character is communicated to a certain percentage of the offspring. These plants have retained their foliage when all commercial varieties growing beside them have been destroyed by disease. Among other hybrids obtained are:—*S. maglia* (Chile) × *S. tuberosum* (Chile); *S. Magia* × several commercial varieties; *S. Commersonii*, white flower (Uruguay) × *S. tuberosum* (Mexico); *S. verrucosum* (Mexico) × *S. tuberosum* (Chile); *S. tuberosum* (Chile) × *S. tuberosum* (Mexico); *S. verrucosum* × *S. tuberosum*.

HORTICULTURE IN BELGIUM.—In response to the active representations of Belgian horticulturists and to the persistent efforts of the *Tribune Horticole*, the Belgian Minister of Agriculture announced about a year ago that the Government proposed to form a special Department of Horticulture. The decision, which was recorded and commented on in these pages in the issues of March 28 and April 4, 1908, has now been carried out. By an enactment, signed by the KING OF THE BELGIANS on the 9th inst., the department has been formed and a horticultural counsel appointed. The councillors, in whose hands the work of organising Belgian horticulture has been placed, are MESSRS. E. DE MEYER, E. HENRIOLLE, and L. JOSENS. There can be no doubt that in securing this recognition of independence, Belgian horticulturists have done a notable service to their country. The development of the new department will be watched with great interest, not only in Belgium but also in this country. It is fitting that the country which has been the pioneer in so many branches of horticulture should be the first to organise a definite department devoted exclusively to the interests of horticulture.

PRESENTATION TO MR. A. E. GOODEN.—After service for a period of 12 years as gardener to D. B. HALL, Esq., Burton Park, Petworth, Mr. A. E. GOODEN, on his resignation to take up fresh duties at Naseby Hall, Rugby, was presented with a testimonial and a present, subscribed by upwards of 40 of employees and friends at Burton Park.

RETIREMENT OF MR. W. P. ROBERTS.—After a period of 30 years as gardener at Cuerden Hall, Preston, Mr. W. P. ROBERTS is retiring on pension granted by his employer, R. A. TATTEN, Esq., who has only had possession of Cuerden Hall for three years. Since Mr. TATTEN came into possession of the estate, the gardens have been greatly altered and most of the glass-houses renewed. Mr. ROBERTS will reside at Cwmystwyth, near Aberystwyth.

THE CARDIFF SHOW.—Our Cardiff correspondent points out that in his report of the recent Chrysanthemum show held in that city, he inadvertently omitted to mention a very fine exhibit of hardy fruit contributed by Mr. BASHAM, Bassaleg Nurseries, near Newport, and for which Mr. BASHAM was awarded a Gold Medal.

EXHIBITION OF COLONIAL FRUITS AND VEGETABLES.—The Royal Horticultural Society's exhibition of Colonial-grown fruits and vegetables on December 1 will be opened by H.R.H. the Princess LOUISE, Duchess of ARGYLL. Her Royal Highness will be accompanied by His Grace the Duke of ARGYLL, K.T. Free cinematograph displays at frequent intervals will be given, with lectures. At 3 p.m., Mr. ROBERT NEWSTEAD, A.L.S., F.E.S., of the Liverpool School of Tropical Medicine, will deliver a lecture on "West Indian Insect Pests."

LECTURES ON FORESTRY.—The first of a series of lectures on "Forestry" was delivered in the Aberdeen University Buildings, on Wednesday, 10th inst., by Mr. WILLIAM DAWSON, M.A., B.Sc. (Agr.), lecturer on forestry in the college. Mr. DAWSON stated that the forester's demands, so far as quality of land was concerned, were easily satisfied. In fact, it may be said that no soil was too poor for some kind of trees. Forestry began where agriculture stopped. Land on or under the margin of cultivation was the field of operation of the forester. Agricultural land was not wanted for forestry; indeed, it was, in some cases, unsuitable. Hence no scheme of afforestation need be looked upon with suspicion as likely to curtail in any way the area of agricultural land. On the contrary, it would lead to a considerable increase of it, and to increased productiveness of much of our existing agricultural land. In many parts of the Highlands of Scotland there were tracts of good land along the glens quite suitable for agriculture. These, however, were so isolated at present, and access to them was so difficult, that they never could be made to pay; but if the surrounding country were covered with wood, roads must be made to the districts opened up, there must be a population on the ground, new industries must arise, and the good land would naturally become agricultural land. All over Europe small holdings and forestry went hand in hand. With regard to soil, forestry was the complement of agriculture, and the poor land was what fell to the forester's lot. The question as to the influence of the forest on climate was a much-discussed one. The actual effect was small. So it was with the influence on temperature. The action of forest was, however, certainly beneficial in minimising the effects of winds. The direction of the wind was altered, and its intensity diminished. In this respect, forests were of the greatest benefit to a country, and particularly to its agriculture. Another real benefit which an extensive forest brought with it was that it minimised the danger of flooding. In districts where the upper reaches of rivers had been cleared of wood, floods were much more common, and, in this respect, the lecturer gave examples in Aberdeenshire, where, since the clearing of the woods, flooding had been much more frequent.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ROSES IN SOUTH-WESTERN SCOTLAND.—I am greatly obliged to Sir Herbert Maxwell for supplementing my observations on this subject by emphasising, on p. 315, the value of Mme. Abel Chatenay as one of the finest of the Hybrid Teas. I have grown it frequently in my garden, and admired it greatly for its highly-distinctive colour, its fragrance and floriferousness. I may add that, among Hybrid Teas of more recent introduction, two of the most charming are Elizabeth Barnes and the famous Lyon Rose. I can also highly recommend Prince de Bulgarie and Antoine Rivoire. *David R. Williamson.*

APPLE HAMBLETON DEUX-ANS.—I can corroborate Mr. E. Molyneux's statement (p. 330) as to the worthlessness of this Apple. I planted a pyramid-trained tree of the variety in 1886, and have never had a crop of Apples from the tree during twenty years. Needless to say, it has been removed, and something more profitable planted. Other varieties of Apples planted the same year on the Paradise stock, and which have been very disappointing, are Betty Geeson, Small's Admirable, and Lady Henniker. Probably if these were worked on the Crab stock, and the growth left unrestricted, they would be more satisfactory. *D. Roberts, Prestwood Gardens, Loughboro'.*

—This variety is still largely grown in an old orchard at Hackwood Park, where there are some large trees. It is less a question of quality than of constitution, and this Apple, apart from many others, shows that there are varieties which can endure for generations. At Hackwood Park this old variety is far from being despised, because it often produces heavy crops when other varieties fail. That it may not be grown about Hambleton now is no indication of its value in other localities. That it had the prefix Hambleton attached to it was a mere accident, and Rogers, writing of it in 1834, refers to it simply as the French Deux-ans. It is doubtful if to-day we should find very many of even the famous Blenheim Pippin about Woodstock. Even good old Apples come in with the prophets in getting stoned. How many of the Apples introduced during the past 40 years will be in existence 50 years hence, or to the age of the old Deux-ans? *A. D.*

NICOTIANA SANDERÆ TO FLOWER IN APRIL

—Seeds should be sown in a pan in the last week in July, and the pans placed in a cool house or frame. When the seedlings are large enough to handle, they should be pricked off into small pots, and later be potted on as they require more root room, never allowing them to become root-bound until they are put in their final pots, which should be 6 inches in diameter, in the first week in October. After the final potting stand them in a cold frame, admitting plenty of air whenever necessary, and all sunlight. Protect them from severe frosts during winter and at the beginning of March take them into the greenhouse. Treated in this manner they should flower in the second week of April. My plants have varied in height from 3 to 5 feet. *A. Johnson.*

LIME-LOVING PLANTS.—My article (see p. 246) was limited in scope, and intended, as Mr. Jenkins suggests (see p. 290), more as a list for working purposes than a statement of definite rules applicable to every condition. It was founded on a long series of planting experiments, and upon observation of the plants under various conditions. Mr. Jenkins refers to the Alpine Pinks and the hardy Cyclamen, which will, undoubtedly, do well in many places without lime, but which I have never seen so floriferous as when provided with lime. They will flourish in many places without this, while in others they require it if they are to give the greatest satisfaction. The value of some plants lies in their floriferousness, rather than in freedom of growth, which may sometimes be secured without a corresponding increase in the quantity of bloom. In many cases we find that plants are vigorous without lime, but produce few flowers, and that the addition of lime causes them to flower with greater freedom, while making less foliage. This is rather a drawback in the case

of the rarer Sempervivums, which frequently flower too freely on limestone, and when only one or two rosettes are procured the plants are often lost the first year through excessive floriferousness. The instances of *Coronilla iberica* are valuable, but without knowing the precise conditions of exposure and climate it cannot be affirmed that it is lime or its absence which is responsible for the difference between the plants referred to by Mr. Jenkins. *Lithospermum prostratum* is often a puzzle. In many places, however, it is quite a success in limestone. I entirely agree with your correspondent that lime must not be regarded as essential for any particular class of plants. Some individual species will not thrive without it, and some are accommodating enough to thrive upon unaccustomed fare, but, as a rule, those which like it in their native homes will be found to prefer it with us. *S. Arnott.*

—Agreeing as I do with Mr. Jenkins that there are many plants indigenous to limestone regions and not found wild elsewhere, which flourish vigorously in cultivation without lime, I yet think that there are some, such as the encrusted section of *Saxifragas*, which will not develop their full beauty of foliage unless they have access to lime. Others, again, like some of the Bellflower Order and *Gentiana acaulis*, when grown in rich loam and peat, make vigorous leaf-growth at the expense of the floriferous qualities, which are their chief charm. The flora of chalk and limestone formations appears to consist largely of plants which are able to accommodate themselves to soil-constituents discouraging or prohibitive of plants requiring richer nutriment. Many chalk and lime-loving plants would doubtless grow wild on other soils if they got a fair chance, but they are choked by ranker vegetation. Others, again, like the *Saxifragas* aforesaid, have assimilated themselves so closely to their environment that lime has become an indispensable part of their diet, or, at least, if deprived of it, they will tend to revert to a primitive type and lose some of the characteristics which most commend them to us. I may add that in my experience *Lithospermum prostratum* hates lime, which causes its foliage to turn yellow and the plant to shrivel away. The other European *Gromwells* thrive luxuriously with or without lime, but I have not yet succeeded with the American species. *Herbert Maxwell.*

SOCIETIES.

SOUTHEND-ON-SEA AND DISTRICT HORTICULTURAL.

NOVEMBER 2, 3.—The annual exhibition of Chrysanthemums, fruit, vegetables, &c., was held in the spacious banqueting rooms and winter garden of the Palace Hotel, on the above dates, and, all things considered, the event was a success.

In the Chrysanthemum group classes, Mr. POLLARD was awarded the 1st prize, which included a silver cup, for a group that would have been better had dwarfier plants been employed in the outside circular row.

The Rev. R. STUART KING, Leigh-on-Sea, had the best group of miscellaneous plants; 2nd, Mrs. MILLER, Leigh House, Leigh-on-Sea (gr. Mr. A. Epps); 3rd, Mr. R. PEELE.

In the cut bloom classes, one of the hitherto largest and most successful exhibitors at the Southend show was absent. On this occasion he was showing at the Crystal Palace. However, a good lot of blooms were staged in the several classes set apart for them, the most successful exhibitor being Mr. A. EPPS, who staged the best 24 blooms of Japanese varieties, and the best 12 blooms of Incurved Chrysanthemums. This exhibitor was also to the front in the classes for six blooms of Japanese and six blooms of Incurved varieties, as well as winning the 1st prize for three vases of Japanese blooms, showing good-sized, fresh, even blooms in each class. Mr. H. E. CAMPKIN had the best six vases of Japanese blooms, Mr. EPPS being a good 2nd. Mr. A. POLLARD was also a 1st prize-winner in these classes.

In the classes for amateurs, open to all comers, there was good competition. Mr. P. E. WISEMAN was placed 1st for 12 Japanese blooms, his stand including good blooms of F. Greenfield,

Bessie Godfrey, Mrs. R. Hooper Pearson, Mrs. J. Davis, and F. S. Vallis. Mr. WISEMAN was likewise 1st for 12 Incurved blooms, showing good specimens of Mrs. J. P. Bryce, Miss Southam, Lady Isabel, and F. Trestian. Mr. WISEMAN was also 1st in four other cut bloom classes.

In the cut bloom classes confined to growers living within a radius of 10 miles of Southend Post Office, Mr. H. E. CAMPKIN secured four 1st prizes. Mr. G. W. HEATON, Armstrong, and Mr. S. S. TOMLIN, Leigh-on-Sea, were also winners of 1st prizes in these classes.

FRUIT CLASSES.

Grapes were not largely shown. Mr. EPPS had the best two bunches of white Grapes, and Alderman J. C. INGRAM staged the best two bunches of black Grapes.

Apples and Pears were well represented. The most prominent examples of the former were the six dishes of culinary varieties. The 1st prize collection, staged by Mr. F. LONGMAN, consisted of extra large, well-selected fruits (five to a dish) of Lane's Prince Albert, Warner's King, Peasgood's Nonesuch, New Hawthornden, Stirling Castle, and Bismarck—a grand exhibit. Mrs. G. MURREL, Barling, near Southend, was a good 2nd; and Mr. H. B. HERBERT, Eastwood, near Rochford, was a close 3rd.

Mr. H. B. HERBERT was placed 1st for six dishes of dessert Apples, and Mr. W. A. VOSS was 1st for three dishes.

Mr. EPPS was awarded the 1st prize for six dishes of Pears; 2nd, Mr. HERBERT; and Mr. S. TAYLOR, Rayleigh (who staged six dishes of perfectly clean, high-quality fruits, and undoubtedly the best exhibit in the class), was accorded a 3rd place.

ISLE OF THANET CHRYSANTHEMUM.

NOVEMBER 3, 4.—The 23rd show of this society was held, for the first time, at Ramsgate, on these dates, in the Royal Victoria Pavilion. Mrs. Powell-Cotton, of Quex Park, Birchington, presented the prizes, which the judges, in some cases, found a difficulty in awarding, so close was the competition. Such was the excellence in a class for a collection of vegetables, of nine kinds, one being Potatoes, that they suggested that four extra prizes should be awarded.

Before the distribution of prizes, Mr. Reeve, whose father has been the hon. treasurer of the society since its formation, stated that the number of entries was 386, an increase of 53 over last year, and that, since the formation of the society, it had distributed £1,400 in prizes.

GUERNSEY CHRYSANTHEMUM.

NOVEMBER 3, 4.—This society's exhibition was held in the four Market Halls, which were well filled with exhibits. The two special features were the exceedingly large number of *Nerines* exhibited and the exhibits of single Chrysanthemums. The trade exhibit of Mr. F. LILLEY contained a collection of seedlings of single Chrysanthemums including Beaming (pink), Cinnamon, Rosette (deep pink), White Doré (the finest single white), Brillancy (bright yellow), Befitting (crimson and terra cotta), Elusive (amaranth), Charming (bright red), and Beatific. Mr. J. M. BICHARD had a fine display in his prize class of single Chrysanthemums, Ladysmith being prominent.

The champion cup for Japanese Chrysanthemums was won by MAITLAND HERIOT, Esq. (gr. Mr. Hayson), in which Magnificent, Norman Davis, Mrs. R. H. Pearson, and Reg. Vallis were very fine. Mr. J. PEAK was 2nd. The silver cup for the best group of Chrysanthemum plants was taken by Messrs. PEEL & Co. (gr. Mr. F. West); 2nd, Mr. J. M. BICHARD.

The special prize offered for 18 Japanese blooms went to Mr. O. MARQUAND. For six vases of single varieties the special and 1st prize were won by J. M. BICHARD, Esq. (gr. Mr. W. Balshaw). Other important classes with the principal prize-winners were as follow:—Best group of Chrysanthemums arranged for effect: 1st, Mr. F. WATSON; 2nd, General Le Coq. Sixteen blooms of Japanese Chrysanthemums in six vases: 1st, Mr. J. SANGON; 2nd, Mr. J. BOURGAIZE. Vase for table decoration: 1st, Mrs. W. J. PRIAULX; 2nd, Mrs. R. ALLEN.

In the fruit classes prominent exhibitors were Mr. E. BACHMANN, Mr. W. WHITFORD, Mr. RICHARDS, Mr. W. FORTE, Col. LE MOTTEE, Mr. J. MANGER, Mr. J. BISSON, Mr. H. BRITTEN, and Mr. COYDE.

The 1st prize for a collection of six vegetables was won by Mr. WHITFORD; 2nd, Mr. ROUSSELL. Mr. W. P. VANDEN, Roseville, had a fine trade exhibit of Tomatos, of Century Japanese Beans a yard long, and seeds of Vandin's Improved Lawrenson and Vandin's Secret Tomatos.

Messrs. MANGER & SON showed trained fruit trees.

**FOREST GATE AND STRATFORD.
CHEYSANTHEMUM.**

NOVEMBER 4, 5, 6.—The 18th annual exhibition was held on this date in the Town Hall, Stratford. The exhibition resulted in a good average display. Some fine groups of Chrysanthemums were staged in competition for the Duchess of Marlborough's Cup, which was won by Mr. THOMAS SMITH, Mr. C. ENNIS being 2nd, and Mr. A. TUTTLEBY 3rd.

A cup was offered by Messrs. Barry & Brown for an exhibit of six Japanese and six Incurved blooms. This trophy was secured by Mr. A. WILLETT, the secretary, Mr. A. J. PALMER following.

Mr. J. A. WARD showed the best group of Chrysanthemums in a class open to those members who cultivate fewer than 150 plants; and there were similar classes for growers of 100 plants, of 75 plants, and of 50 plants respectively. There were classes for Japanese and Incurved blooms in each of these sections; the flowers generally were of good quality.

**MANCHESTER AND NORTH OF
ENGLAND ORCHID.**

NOVEMBER 4.—Present: Messrs. E. Ashworth, R. Ashworth, Arthur Ashtou, Cowan, Holmes, Keeling, Leemann, Parker, Shill, Sander, Thorp, Ward, Warburton, and Weathers, hon. sec.

Mrs. S. WOOD, Moorfield, Glossop (gr. Mr. Gould), staged a fine group of plants, for which a Silver-gilt Medal was awarded. *Cattleya* × *Alicia* (C. × *labiata* × C. *Iris*), C. × Col. *Sidebottom* (C. × *Hardyana* × C. *Gaskelliana*) and C. × *Annie Kershaw Wood* (C. × *Adula* × *Dowiana aurea*) all received Awards of Merit.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish) was awarded a Gold Medal for a charming group of Orchids, which contained many choice *Cattleyas*, including good forms of *Cattleya labiata* var. *alba*. C. × *Fabia* *alba* Warburton's variety received an Award of Merit.

N. GALLOWAY, Esq., Great Horton, Bradford, was awarded a Bronze Medal for a group composed principally of well-known *Cypripediums*.

J. McCARTNEY, Esq., Bolton (gr. Mr. Holmes), staged a showy exhibit of *Cattleyas* and *Lælio-Cattleyas*. *Cattleya* × *Armstrongiae* var. "J. McCartney," C. × "Alice" (C. *Gaskelliana* var. *alba* × C. *Parthenia* var. *Prince of Wales*), *Lælio-Cattleya* × *rubens* var. *Donald* (L. *præstans* × C. *Hardyana*), and *Cattleya labiata* var. "Miss J. McCartney" received Awards of Merit. (Silver Medal.)

J. T. CLIFTON, Esq., Lytham Hall, Lytham (gr. Mr. Float), had a large number of interesting botanical specimens. In addition to these, the exhibit included a splendid collection of showy plants. (Silver-gilt Medal.)

R. LE DOUX, Esq., West Derby (gr. Mr. Fletcher), was given Awards of Merit for *Cypripedium* × Mrs. S. Hignett, and *Odontoglossum* × *amabile* *Marfield* var.

Mr. J. ROBSON, Altrincham, received First-class Certificates for *Cattleya labiata* var. *Daphne* and C. l. var. *Schofieldiana*, two very beautiful albino forms.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gil-den), exhibited *Cypripedium* × *Amesii* var. "Black Watch," to which was given an Award of Merit.

W. R. LEE, Esq., Heywood, received Awards of Merit for *Cypripedium* × *Aurora*, C. × *nitens* *magnificum* *Balls* var. × C. × *Actæus* var. *langleyense*.

E. ROGERSON, Esq., Didsbury (gr. Mr. Price), exhibited *Cypripedium* × *Chestersianum* (C. × *Thalia* × C. *insigne* var. *Sunderø*).

J. H. CRAVEN, Esq., Keighley (gr. M. Corney),

was awarded a First-class Certificate for *Cattleya labiata* *Harefield* Hall var., a white form of first-rate quality.

CLIVE COOKSON, Esq., Wylam-on-Tyne (gr. Mr. Chapman), exhibited a small collection of Orchids. *Cypripedium* × "Faire Maude," C. × *Sanacdera* var. *Cooksonii*, *Odontioda* × *Bradshawia* var. *Cooksonii*, *Calanthe* × *Cooksonia* × *Angela*, were awarded First-class Certificates, and *Calanthe* × *Bryan*, *Cattleya* × *anabilis* *Oakwood* var., and *Cattleya* × *Fabia* var. *Cooksonia* Awards of Merit.

Messrs. KEELING & SONS, Bradford, exhibited a small group of miscellaneous plants. (Bronze Medal.)

Mr. F. HERRIOT, Cawley Priory Lodge; 3rd, T. WELLER POLEY, Esq.

Begonias were best staged by T. WELLER POLEY, Esq., who was awarded the 1st prize; G. BUCHANAN, Esq., Lavington Park (gr. Mr. S. Ely), following very closely.

In the class for black Grapes some fine bunches of Black Alicante, shown by Mrs. DOUGLAS HENLY (gr. Mr. W. Matthews), were placed 1st.

Among the chief features in the open classes were the exhibits of vegetables, there being a superb lot staged in each class. In that for nine varieties for prizes offered by A. Ryerley & Co., Chichester, there were six competitors, the 1st prize being awarded to W. B. M. BIRD, Esq.



FIG. 151.—CHRYSANTHEMUM MARY FARNSWORTH: COLOUR, A SHADE OF BUFF. Granted the R.H.S. Award of Merit when shown recently by Messrs. James Stredwick & Son.

**CHICHESTER AND WEST SUSSEX
CHRYSANTHEMUM.**

NOVEMBER 4.—The 2nd annual show of this society was held in the Corn Exchange, Chichester. The quality of the exhibits was excellent, and the entries greatly in excess of those of the previous year. Competition was keen in nearly every class. The society was formed mainly to encourage horticulture amongst cottagers, and the flowers, fruit, and vegetables shown in this division were of first-rate quality.

In the open classes Col. HENLY, Avisford House, Arundel (gr. Mr. G. Harris), was awarded the 1st prize and a challenge cup for 24 Japanese blooms, the 2nd prize going to W. B. M. BIRD, Esq., Earham House (gr. Mr. A. Gooding). For a semi-circular group of Chrysanthemums arranged for effect, W. B. M. BIRD, Esq., was awarded the 1st prize for a fine, bold group; 2nd,

In the class for six varieties the prizes offered by Messrs. Sutton & Sons, Reading, W. B. M. BIRD, Esq., was again awarded the 1st prize. Prizes for a collection of six varieties were offered by Mr. J. D. Webster, nurseryman, Chichester, and the 1st prize in this class was won by W. B. M. BIRD, Esq.

The nurserymen of the district put up some meritorious exhibits. Mr. J. D. WEBSTER staged a group of Palms and *Begonias*, with a floral design at each end. Messrs. R. HOOPER & SON also had a fine group of Palms, interspersed with autumn-tinted foliage and cut flowers. Mr. C. W. SHIPHAM, specialist in Ferns, staged a splendid collection of these plants. Mr. MOORE staged a group of plants, cut flowers, and floral designs. THE BARNHAM NURSERIES CO., Barnham, had a choice collection of Apples; and Messrs. A. RYERLEY & Co. exhibited a good collection of fruits and vegetables.

PUTNEY AND WANDSWORTH CHRYSANTHEMUM.

NOVEMBER 4, 5.—The 32nd annual exhibition of the Putney and Wandsworth District Chrysanthemum Society was held at Cromwell Hall, Putney, on the above dates. Considering the very bad season, the show was a good one, but there was a slight falling off in the number of entries.

The principal feature was a class for groups of Chrysanthemums and foliage arranged in spaces of 12 feet by 6 feet. This was won by GEO. FORES, Esq., Blenheim, Raynes Park (gr. Mr. C. Pullen), with a very neatly arranged group. He was closely followed by A. J. PICKETT, Esq., Keswick Lodge, Putney (gr. Mr. W. Limmer), whose plants bore very heavy blooms, but were not so well arranged.

The 1st prize for a group of miscellaneous plants was taken by J. D. CHARRINGTON, Esq., Gifford House, Roehampton (gr. Mr. J. Prentice), with a very pretty group, the 2nd prize going to F. S. JAY, Esq., Putney Hill (gr. Mr. Carter.)

The best exhibit of eight vases, each containing three blooms of one variety, was won by MME. STUART, The Convent (gr. Mr. A. Smith), with very large blooms of Leigh Park Wonder, Miss Miriam Hankey, F. S. Vallis, Mary Inglis, Mrs. Norman Davis, Reginald Vallis, Mr. Eric Crossley, and Mrs. A. T. Miller. This exhibit contained the premier bloom in the show.

The same exhibitor was also 1st in the board classes for 24 Japanese blooms, distinct, 12 blooms distinct, six yellow blooms and six white blooms. He had also the best Salvias, Pears and Apples.

One of the leading features of the show were the fine displays of winter-flowering Begonias. The 1st prize for six plants was won by M. S. NAPIER, Esq., Bath House, Putney Heath (gr. Mr. S. Mynett).

The competition for six varieties of vegetables was keen, and the 1st prize was won by J. A. YOUNG, Esq., Stone House, West Hill, Putney (gr. Mr. G. Street), who was also successful in several other classes.

Primula sinensis and Primula obconica were well shown in large numbers, as were also black and white Grapes, Apples and Pears. Two very heavy bunches of Black Alicante Grapes were shown by Sir W. J. LANCASTER (gr. Mr. F. H. Goddard). The same gentleman was also successful with table plants.

The non-competitive exhibits were very fine, especially a group of foliage and flowering plants from MESSRS. JAS. VEITCH & SONS. Other exhibitors were Mr. L. RUSSELL, Richmond (group of foliage and berried plants, also table plants), Mr. R. NEAL, Wandsworth (group of foliage plants and baskets), and Messrs. WALBORN, MAHOOD, and MANN, all of Putney (floral designs). A small group of Orchids was shown by A. HUTT, Esq., Oakley House, West Hill, Putney (gr. Mr. Fisher).

SALTAIRE, SHIPLEY, AND DISTRICT ROSE.

THIS society has enjoyed a successful year. The provincial show of the National Sweet Pea Society was held in conjunction with the Rose show in July last, and the exhibition proved a record for the society, the gate money and the profits resulting from the show being larger than in any previous year. The gross income for the year was £498 18s. 11d., and expenditure £409 16s. 10d. The society's assets are estimated at £361 18s. During the year there has been 17 committee meetings, with an average attendance of 18 members.

COVENTRY AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 4, 5, 6.—The Lord Lieutenant of Warwickshire, the Marquis of Hertford, opened the 15th annual exhibition of the society in the presence of a large assembly including the Mayor of the city, Alderman Lee. A marked feature of the show was the display of fruit and vegetables. In each department increased competition was seen. In the open classes the successful exhibitors included:—F. FOSTER, Esq. (gr. Mr. J. Miller), H. STURMEY, Esq. (gr. Mr. H. Hollick), C. VERNON PUGH, Esq. (gr. Mr. Kemp), HUGH ROTHERHAM, Esq. (gr. Mr. G. Griffiths),

T. SMITH, Esq., W. FINCH, Esq., and F. TWIST, Esq. (gr. Mr. W. Hicks). Several of these gentlemen were also prize-winners in the classes for cut blooms, others being Colonel BEECH (gr. Mr. E. J. Brooks), Mrs. MELLODEW (gr. Mr. Teal), and J. POWERS, Esq. In the division open to gentlemen not employing more than two gardeners regularly, Messrs. F. E. FOSTER, H. MITCHELL, E. MORRIS, H. STURMEY, and T. SMITH won 1st prizes.

NEWPORT (MON.) CHRYSANTHEMUM.

NOVEMBER 5.—The coming-of-age show of the Newport Chrysanthemum Society was held on the above date in the Gymnasium of the Newport Athletic Club.

Although entries were numerous, there were very few outstanding exhibits, and there was an absence of good trade displays.

In the non-competitive displays Certificates of Merit were awarded to C. D. PHILLIPS, Esq., and Dr. BROOKE GRATTE for small but good collections of Orchids.

The National Chrysanthemum Society's Certificate, offered for the best bloom in the show, was awarded to H.I.H. Prince HATZFELDT, Draycot Park, Chippenham, and a similar certificate, awarded for the best plant, which was shown by J. A. BROOME, Esq.; whilst the N.C.S. Silver Medal, offered for amateurs employing no gardener, was won by Mr. W. H. HOLLINGDALE.

The finest feature in the show was the miscellaneous group staged by H. OAKLEY, Esq., Dewston, Caldicott, Mon. This was composed of Oncidiums, Cattleyas, Begonia Gloire de Lorraine, single Chrysanthemums and other flowers interposed with Crotons and other ornamental foliage plants.

In the class for a group of Chrysanthemum and foliage plants, occupying a space of 50 square feet, H. OAKLEY, Esq., again won the 1st prize, staging well-grown single and Japanese Chrysanthemums intermixed with Cocos Weddelliana, Crotons, and other foliage plants.

For eight vases of Japanese blooms, Mr. G. DRAKE, Cathays Terrace, Cardiff, won the 1st prize in good style, staging some excellent blooms; H.I.H. Prince HATZFELDT followed closely; 3rd, Mrs. F. S. WILLIAMS, Newport.

Mrs. F. S. WILLIAMS was placed 1st in the class for 24 blooms of Japanese varieties.

In the fruit classes H.I.H. Prince HATZFELDT won the 1st prizes in the classes for Apples and Grapes.

NOTTINGHAM CHRYSANTHEMUM.

NOVEMBER 5, 6.—This annual autumn show was held in the Mechanics' Hall, Nottingham, and the building, though large, was not nearly accommodating enough to do justice to the many excellent exhibits.

There were a few open classes, but the bulk of the exhibits were from local growers.

The show is admirably managed, the secretaries being Messrs. Skelborn and Atkin.

CUT BLOOMS.—OPEN CLASSES.

The leading class was one for 24 Japanese blooms in not fewer than 18 varieties. Five entrants competed. A. JAMES, Esq., Coton House, Rugby (gr. Mr. A. Chandler), was placed 1st with large, heavy, well-coloured blooms, of which the following were the principal varieties: Reginald Vallis, Marquise V. Venosta, C. H. Totty, Bessie Godfrey, Mrs. W. Knox, J. Lock, Mrs. A. T. Miller, G. Mileham (1908), Lady Talbot, Mrs. G. Mileham, Miss Hilda Rowley, F. S. Vallis, President Viger, Algernon Davis and Valerie Greenham. Mr. W. G. DRAKE, Cathays Terrace, Cardiff, was a good 2nd with slightly smaller blooms. 3rd, Sir W. BASS (gr. Mr. Nisbett).

Mr. DRAKE won the 1st prize for 12 Incurved blooms with fairly good examples of popular varieties; 2nd, Mr. CHANDLER.

AMATEUR AND ARTISAN CLASSES.

Captain Morrison offered a challenge cup for six Incurved and six Japanese blooms, distinct. In a strong competition the cup was won by Mr. W. D. PARKIN, 65, Truman Street, Nottingham, with superior blooms of Clara Wells, Mrs. G. Denyer, B. Hankey, Pantia Ralli, Buttercup, and Romance in the Incurved section, and

Splendour, Lady Talbot, and F. S. Vallis among Japanese varieties.

Class 25 was confined to artisan exhibitors, and Mr. J. C. Smalls offered a challenge cup for six Incurveds and the same number of Japanese blooms in not fewer than eight varieties. Mr. W. COX, 11, Cromer Road, Nottingham, was placed 1st with excellent examples of Clara Wells, Mrs. J. Wynne, and W. D. Parkins. F. S. Vallis, Lady Talbot, Reginald Vallis and President Viger were also good.

A class was restricted to artisans growing not more than 200 plants. Here the leading prize was Mr. J. SHIPTON'S cup, valued at five guineas. Mr. G. WRIGHT secured the trophy with exceedingly fine blooms of Mrs. G. Denyer, Triomphe de Montbrun, Buttercup and John Wainwright and others.

For 12 Incurved blooms in not fewer than eight varieties, Mr. G. WRIGHT had the best of four exhibits with blooms of such popular varieties as Buttercup, Clara Wells, Mrs. G. Denyer, W. Pascoe, Triomphe de Montbrun, and John Wainwright fully 5 inches in diameter, and of proportionate depth.

DERBYSHIRE GARDENERS'.

NOVEMBER 5, 6.—An excellent exhibition in connection with this association was held in the Albert Hall, Derby. So numerous were the exhibits that the hall space was utilised to its fullest extent.

The group classes occupied one side of the hall, and one put up by Mr. SHAMBROOK, Sutton Hall, was composed almost entirely of the old white favourite, "Mutual Friend." The plants were grown in 6-inch pots, but the flowers were of fine size. Sir EDWIN ANN (gr. Mr. Daines) was placed 2nd, and Councillor A. R. FLINT 3rd.

Cut blooms were well shown. In the class for 24 Japanese blooms the three exhibits staged were almost equal in merit. Mr. J. EVANS, Chad-den Hall, was placed 1st; 2nd, Mr. J. WOOD, Alveston; 3rd, Mr. W. TOPPLIS, Newhall.

For 24 Incurved blooms Mr. J. HARRISON, Walkley, Sheffield, was easily 1st; Mr. J. WOOD was awarded the 2nd prize, and Mr. W. TOPPLIS the 3rd prize.

In the class for 12 Japanese blooms Mr. G. WADESON, Doveridge Hall, supplied a stand of very large flowers; one of Lady Talbot, of extraordinary size, was adjudged the premier bloom of the show. 2nd, Mr. F. MEAKIN.

For six vases of Japanese varieties Mr. G. WADESON led with particularly fine examples of Mrs. Norman Davis; 2nd, Mr. F. MEAKIN.

There were not quite so many dishes of fruit as usual, but the two bunches of black Grapes exhibited by Mr. WADESON were very meritorious.

Messrs. Sutton & Sons' special prize for a collection of vegetables was won by Mr. H. C. SMITH, and Messrs. Webb & Sons' prize by Mr. J. WOODWARD, Alveston.

Amongst trade exhibits Mr. SHAMBROOK had a splendid collection of Carnations.

Mr. SYDENHAM, of Melbourne, staged a fine collection of single Chrysanthemum blooms grown as annuals.

MARLOW CHRYSANTHEMUM.

NOVEMBER 8.—This society holds its first show in the Public Hall on the above date. The exhibition proved a great success. The schedule contained sixteen classes, Mr. R. Evans (gr. to H. F. SLATTERY, Esq., The Orchard, Marlow), was the chief winner, securing five 1sts and one 2nd prize out of six entries. He won the silver challenge cup presented by Sir Alfred Cripps, for the best table of Chrysanthemums and foliage. Mr. T. WALLER, who met with such success at the National Society's Show, contributed some grand blooms in the class for 48 and 24 Japanese blooms. A cup was also won by Mrs. MILLER in the amateur classes. This lady was one of the chief organisers of the show.

GLOUCESTER ROOT, FRUIT AND CHRYSANTHEMUM.

NOVEMBER 9.—The 46th annual exhibition of the Gloucestershire Root, Fruit and Chrysanthemum Society was held in the Shire Hall, Gloucester, on the above date. The exhibits of fruit were very numerous, and were of excellent size

and quality. Chrysanthemums, although not so fine as upon some previous occasions, included some magnificent specimens.

For ornamental baskets of plants the principal prize-winners were Sir HUBERT PARRY, Highnam; Mr. W. GORDON CANNING, Hartpury; and Mr. J. A. FLUCK, Gloucester.

In the Chrysanthemum classes Sir HUBERT PARRY was awarded premier honours for a group, Mr. W. GORDON CANNING being 2nd; and for cut blooms Sir HUBERT PARRY secured two 1st prizes, Mr. W. GORDON CANNING and Mr. W. NEATH-BAKER, Harfield Court, being awarded equal 2nd prizes.

In the Apple classes Messrs. W. READ (Newham), W. GORDON CANNING, M. K. M. POWER (Ross), HAROLD J. PHELPS (Tibberton), J. BOTT (Hereford), S. R. COX (Ashe Leigh), ARTHUR HARRIS (Quedgeley), Sir WILLIAM WEDDERBURN (Merredith), Col. HENRY (Ledbury), ANDREW KNOWLES (Newent), and CONWAY JONES (Hucclecote) won 1st prizes; and the following secured premier awards for Pears:—Messrs. W. GORDON CANNING, CONWAY JONES, A. J. COOKE (Norton), Sir WILLIAM WEDDERBURN, and J. R. BENNETT (Claxhill).

NATIONAL VEGETABLE.

THE President, His Grace the Duke of Portland, has expressed his intention to offer a prize of 10 guineas in a President's class for vegetables at the proposed exhibition next autumn, the arrangement of the class to be determined by the committee. Valuable offers of prizes from seed firms are still coming in. A very interesting offer of a class yet to be accepted is one of £5 in five prizes for a collection of six kinds of vegetables grown by members of cottage garden societies in the county of Surrey, each society sending one collection only. These societies must be affiliated to the Surrey Education Committee.

CLEVEDON (SOM.) CHRYSANTHEMUM SHOW.

NOVEMBER 9, 10.—The annual show was held on these dates in the Town Hall, Clevedon, the exhibition resulting in a small but interesting display. The chief interest was centred in the trade exhibits, for which the society offered Gold, Silver and Bronze Medals. There were four entries, and the chief prize was awarded to Mr. T. HOLE, Clevedon, for a stand of fruit, vegetables and flowers; 2nd, Mr. S. MURRIN, Whiteladies Road, Bristol.

A Certificate of Merit was awarded to W. H. HALE, Esq., for a group of single Chrysanthemums, Begonia Gloire de Lorraine interspersed with Crotons and other foliage plants.

In the Chrysanthemum classes open to exhibitors residing in the district, Miss J. L. WOODWARD, Clevedon, won practically all the principal prizes. This lady also won a silver cup and a Gold Medal for obtaining most points.

In the amateur classes, Mr. S. TYLER was very successful, taking four 1st prizes.

The fruit classes were well contested, and formed one of the best features of the show. Some wonderfully fine samples of King of the Pippins, Cox's Orange Pippin, and Chas. Ross Apples were to be seen; whilst Pears were also excellent.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 9, 10.—This annual exhibition was held in the Artillery Drill Hall, and was a distinct success. In the Chrysanthemum classes cut blooms were fresh and of good quality, but not exceptionally large; they formed the most important feature of the show. Exhibits of Grapes, Apples and vegetables were extremely fine.

The leading class amongst Chrysanthemums was for 12 Japanese varieties, three blooms of each, distinct, arranged in vases. Three growers competed, the best exhibit being shown by Prince HATZFELDT, Draycot Park, Chippenham (gr. Mr. F. Bible), who had high-quality specimens richly coloured and well staged. The varieties were Hon. Mrs. Lopes (very choice), J. H. Doyle, Lady Talbot, Parity, Mme. P. Radaelli, F. S. Vallis, Bessie Godfrey, Splendour, Mme. G. Rivol, J. H. Silsbury, W. Jinks and Superb; 2nd, A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease), with smaller yet good specimens,

blooms of Leslie Morrison, Miss L. Thorn, Mrs. W. KUOX, and J. Peed being noteworthy; 3rd, Mr. F. CHANDLER, 75, Shirley Road, Southampton.

In the class for two white-flowered varieties, three blooms of each, E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. Stevenson), was placed 1st with remarkably good blooms of F. W. Lever and Mrs. Norman Davis; 2nd, Prince HATZFELDT.

In a class for two varieties, other than white, three blooms of each, six growers entered. Mr. MOCATTA won the 1st prize easily with Master James (very fine) and F. S. Vallis; 2nd, Prince HATZFELDT.

In a local class for four Japanese blooms, three of each, Mrs. TRAGETT, Awbridge Danes, Romsey (gr. Mr. H. Pearce), was well to the fore with heavy blooms of popular sorts; 2nd, W. GARTON, Esq., Sarisbury Court (gr. Mr. D. Edwards).

Single-flowered varieties formed an interesting class, the blooms being individually fine. For six vases, distinct, eight exhibitors staged. Mr. C. DYMOTT, Freemantle Nurseries, Southampton, was a strong leader, having large, deeply-coloured blossoms of Ruppell Beauty, Crown Jewel, Mary Richardson, Mary Anderson, and Bronze Pagam; 2nd, Prince HATZFELDT.

Decorative varieties, other than singles, arranged in vases, were of high quality. Mr. DYMOTT had the best of four exhibits: Market Red, Illuminator, Hortus Totosanus, and Mary Godfrey being especially good; 2nd, Mr. F. CHANDLER.

The class for 24 Japanese blooms in not fewer than 16 varieties, to be arranged on boards, saw four entrants. Mr. MOCATTA won the 1st prize easily with heavy, richly-coloured specimens of Leslie Morrison, F. S. Vallis, Mrs. Norman Davis, Duchess of Sutherland, J. Lock, Lady Crisp, Master James, Frank Payne, Hon. Mrs. Lopes, Lady Talbot, and C. H. Totty; 2nd, Mr. TATE, with smaller blossoms.

Six growers entered in the class for one dozen Japanese blooms, distinct. Mr. W. GARTON winning quite easily with large blooms of popular sorts; 2nd, Mrs. TRAGETT.

Incurved varieties were well shown. There were four exhibits of 18 blooms in not fewer than 12 distinct varieties. Mr. A. TATE won the premier position quite easily with medium-sized, well-shaped blossoms of Daisy Southam, Mrs. J. Wynne, Buttercup, Pantia Ralli, Romance, Mrs. G. Denyer, and Calypso; 2nd, Mr. CHANDLER.

Mr. GARTON won the 1st prize for 12 incurved blooms.

The example of Clara Wells in Mr. A. TATE's collection was adjudged the premier incurved bloom in the show, a similar honour falling to Prince HATZFELDT in the Japanese section for his flower of Hon. Mrs. Lopes.

Amateur growers made a good display. Mr. F. CHANDLER won the first prize for 12 Japanese blooms in not fewer than eight varieties, and also the subscription challenge cup, valued at £10.

Prince HATZFELDT won the Victorian Challenge Trophy, valued at £40, which is calculated by points from the open classes; the trophy carries with it a Gold Medal.

Exhibits of plants were not numerous or specially good. Mr. DYMOTT won the 1st prize in two important classes, and W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Wm. Ellwood), had the best table plants.

Displays of fruit were numerous and good. For three bunches of Grapes, distinct, J. WILLIS FLEMING, Esq. (gr. Mr. H. C. Dredge), was well 1st with beautifully-finished examples of Mrs. Pince, Muscat of Alexandria and Gros Maroc; 2nd, Mr. W. SANDERS, Vine Cottage Nurseries, Andover. Mr. WILLIS FLEMING also won in the class for two bunches of any black Grape.

In a class for two bunches of any white Grape, L. G. PIKE, Esq., King Baron, Wareham (gr. Mr. D. Pope), was 1st with Muscat of Alexandria.

Dessert Apples in four dishes were staged by 12 exhibitors, the best display being shown by Sir RANDOLPH BAKER, Ranston, Blandford (gr. Mr. Usher).

In a similar class for kitchen varieties, 11 competitors took part. EARL NELSON, Trafalgar, Salisbury (gr. Mr. Beesley), winning the 1st prize.

Vegetables were numerous and good. Mr. MYERS won the premier place for six dishes in both Messrs. Toogood's and Messrs. Sutton's classes; in both cases having superior Leeks, Onions, Tomatos, Potatos and Cauliflowers.

Non-competitive exhibits were interesting. A display of Apples was shown from British Columbia. Cox's Orange Pippin and Northern Spy were especially fine. Messrs. OAKLEY & WATLING, Florists, Southampton, showed floral devices and baskets of Roses and Carnations.

Messrs. LADHAM & SON, Shirley, Southampton, exhibited Alpine and herbaceous flowers. Messrs. ROGERS & SON, Southampton, showed shrubs, &c.

WOOLTON CHRYSANTHEMUM.

NOVEMBER 10.—The 11th show of this society gave evidence of a backward season. Trained plants, which are usually a fine feature of this show, were fewer in numbers than usual. In the class for three trained Japanese Chrysanthemums, ARTHUR EARLE, Esq. (gr. Mr. T. Hitchman), was awarded the 1st prize. In the classes for single specimens, W. CUNNINGHAM, Esq. (gr. Mr. W. Wilson), had the best plants of incurved, reflexed and single varieties; P. W. BARR, Esq. (gr. Mr. T. Keightley), showing the winning plants of both Pompon and Anemone varieties.

W. TOP, Esq. (gr. Mr. G. Eaton), secured the chief award for 24 Japanese blooms in not fewer than 18 varieties, with a strong exhibit, his bloom of Lady Talbot gaining the N.C.S. Certificate as being the finest bloom of a Japanese Chrysanthemum in the show. Eighteen Japanese blooms, distinct, were best shown by Sir W. H. TATE, Bart. (gr. Mr. G. Haigh); whilst the premier exhibit for 12 blooms was shown by Mr. T. KEIGHTLEY. Mr. HAIGH also excelled in the class for 18 Incurved; but for 12 Incurved, T. CLARKE, Esq. (gr. Mr. J. Clarke), led, his Souvenir de William Cliban being adjudged the premier incurved. Mr. HAIGH showed the most tastefully arranged collection of cut blooms, and he also won the 1st prize for a decorated table. Mr. T. KEIGHTLEY showed best in the class for nine vases of single varieties, nine blooms in each vase.

Mr. W. WILSON took the lead in the classes for black and white Grapes; and Mr. J. CLARKE excelled for a collection of dessert Apples. Mr. J. McCOLL led in the single-dish class for Apples, and he had the premier dessert Pears.

Exhibits of vegetables were excellent. Mr. J. GORE secured the Farmers' Cup for a collection, and Mr. J. CLARKE was 1st in the gardeners' section.

WOKINGHAM CHRYSANTHEMUM.

NOVEMBER 10.—The annual exhibition in the Drill Hall on the above date was an excellent type of the many similar shows held at this time of year. There were only two of the ordinary Chrysanthemum plant groups, and these were of the usual heavy-looking nature. The 1st prize was awarded to L. N. ERSKINE, Esq. (gr. Mr. Earl), and the 2nd prize to Sir E. D. LAWRENCE (gr. Mr. Lane). A class for groups of plants of any varieties not disbudded was very bright and attractive. Mrs. DENNISON was the only exhibitor of a group composed only of single varieties. Mrs. CHRISTIE (gr. Mr. Wilson) won the 1st prize for 12 Japanese cut blooms, also for six blooms, distinct, and six blooms of one variety, showing, in this latter class, Bessie Cooper. In a class for a group of miscellaneous plants, Mr. LANE showed a very pretty exhibit, which included some good *Oncidium*s and *Cattleya*s; Mrs. DENNISON was placed 2nd. The best six table plants were also exhibited by Mr. LANE. Mrs. DENNISON took the 1st prize for Begonias, Mr. BARNES, of Bearwood, coming 2nd. In the class for specimen foliage plants, Mrs. DENNISON was well 1st with a fine Palm of *Areca lutescens*; Mr. COLE was awarded the 2nd prize for a plant of *Aspidistra lurida variegata*, 4 feet through. A pretty class was the one for cut blooms of Chrysanthemums, arranged with any foliage plants, in which Mr. BARNES was well 1st. Miss JOHNSON excelled in the class for a decorated table with a pleasing arrangement of Pink Begonias and white Chrysanthemums.

In the fruit classes Mr. BARNES was invincible, having the best four dessert Apples in Haddon, Cox's Orange Pippin, Ribston Pippin, and Allington Pippin; the 1st prize culinary Apples in Emperor Alexander, Queen, Royal Jubilee, and Peasgood's Nonesuch, and the best four dishes of Pears. Mr. H. KIPP, Aldermaster, secured the 1st prize in Messrs. Sutton & Sons' class for six kinds of vegetables.

REIGATE CHRYSANTHEMUM.

NOVEMBER 10.—The 21st annual exhibition was held in the Public Hall, Reigate, the day being fine except for some rain which fell about mid-day, and there was a good attendance of visitors. The entries were far more numerous than at any previous exhibition. The blooms of both Japanese and Incurved Chrysanthemums were very fine. Grapes also were a notable feature.

In the class for 18 blooms of Japanese Chrysanthemums in six varieties shown in vases, a challenge cup was offered as the 1st prize. This was won by Mrs. HAYWOOD (gr. Mr. H. G. Bassett), the 2nd prize being won by J. AUERBACH, Esq. (gr. Mr. W. M. Blackwood).

A cup was also offered for the best group of Chrysanthemums, and this was awarded to J. AUERBACH, Esq., who, having won it three times in succession, becomes its absolute owner; 2nd, M. MARQUIS, Esq. (gr. Mr. J. B. Mead).

Col. INGLIS (gr. Mr. F. Phillips) excelled in the class for a group of single Chrysanthemums; 2nd, Dr. PRINCE (gr. Mr. J. Stedman).

For a table of cut blooms of Chrysanthemums arranged with foliage plants, Mr. AUERBACH was placed 1st, and Col. INGLIS 2nd.

In the cut bloom classes the best exhibit of 25 blooms of Japanese Chrysanthemums in 18 or more varieties shown in vases was staged by Rev. W. EARLE (gr. Mr. C. Sewrey); 2nd, Mrs. HAYWOOD. Mrs. HAYWOOD, however, was 1st for 24 blooms, including 12 each of Japanese and Incurved varieties; 2nd, C. J. WITTINGTON, Esq. Other classes for cut blooms, with the principal winners, were as follow:—Twelve Japanese blooms, distinct, 1st, G. JACKSON, Esq. (gr. Mr. W. Hunt); 2nd, Mrs. HAYWOOD. Six Japanese blooms, distinct, 1st, G. JACKSON, Esq.; 2nd, Mrs. HAYWOOD. Twelve Incurveds, distinct, 1st, Mrs. HAYWOOD; 2nd, C. J. WITTINGTON, Esq. Six Incurveds, distinct, 1st, Mrs. HAYWOOD; 2nd, G. JACKSON, Esq. Six Incurveds, one variety, 1st, C. J. WITTINGTON, Esq.; 2nd, G. JACKSON, Esq. Six vases of singles, distinct, 1st, G. JACKSON, Esq.; 2nd, A. J. NORRIS, Esq. One vase of five white Japanese blooms, 1st, C. J. WITTINGTON, Esq.; 2nd, Rev. W. EARLE. One vase of five yellow Japanese blooms, 1st, J. T. MITCHELL, Esq.; 2nd, C. J. WITTINGTON, Esq. One vase of any other colour, 1st, F. E. BARNES, Esq.; and one vase of six Incurveds in not fewer than four varieties, 1st, C. J. WITTINGTON; 2nd, Mrs. HAYWOOD.

Amongst the plant classes the following were 1st prize winners:—(Primulas), J. AUERBACH, Esq.; (Cyclamen), H. L. SHELTON, Esq.; (Begonias), Col. INGLIS; (table plants), M. MARQUIS, Esq., and (Pelargoniums), J. AUERBACH, Esq.

BROMLEY AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 10, 11.—The 28th annual exhibition of this society, held in the Grand Hall, Bromley, Kent, proved one of the finest exhibitions of the series.

The challenge cup offered for 48 blooms of equal numbers of Japanese and Incurved varieties always creates a keen competition. This year the successful exhibitor was W. W. MANN, Esq., Ravenswood, Bexley (gr. Mr. Simon), and he was closely followed by H. F. TIARKS, Esq., Foxbury, Chislehurst (gr. Mr. Lyne), last year's winner.

R. A. C. COOPER-MARSDEN, Esq., Wickham Road, Beckenham (gr. Mr. Rigby), carried off the Griffith Challenge Cup in the class for six vases of Japanese blooms, having especially fine flowers of Mrs. G. Mileham and Reginald Vallis, one of the latter blooms being awarded the National Chrysanthemum Society's Certificate offered for the best Japanese bloom in the show. J. I. SMAL, Esq., Warren Wood, Hayes (gr. Mr. Govier), who was the 1st prize-winner last year, was placed 2nd.

In the classes for Japanese blooms restricted to "single-handed" gardeners, Mr. RIGBY took the lead throughout.

Incurved Chrysanthemums were better represented than for several years past; all the classes were well filled, and there was a refinement in the blooms. The National Chrysanthemum Society's Certificate for the finest Incurved bloom in the show was awarded to Hanwell Glory, exhibited by Mrs. CHALMERS, Farrants, Bickley (gr. Mr. Hudd.)

The two classes for single varieties were well contested. There were no fewer than 120 vases, and these occupied a terraced stage the whole width of the hall.

Fruit and vegetables, although well represented, were not so numerous or so fine in quality as last year.

STIRLING CHRYSANTHEMUM.

NOVEMBER 10, 11.—The annual show was held on these dates in the Albert Halls, Stirling. Compared with last year there was an increase of entries, resulting in the best show held under the auspices of the society. Nevertheless, it failed financially.

The principal class for cut blooms was one for six vases of as many varieties, each vase containing three blooms. Mr. MORTON, Cullen House, Banffshire, secured the premier award, which consisted of the President's Cup, with clean, well-finished blooms of good size, those of Algonon Davis, Lady Talbot, Mrs. A. T. Miller, and Mme. G. Rivol being prominent. The judges had no light task in awarding the prizes, so close was the competition. Mr. McLEAN, Alloa, was placed 2nd, and Mr. CARMICHAEL, Stirling, 3rd. Both the classes for twelve and for six blooms respectively brought good competition, Mr. HENDERSON, Larbert House, showing grandly in both classes. He showed Mrs. A. T. Miller especially good.

The Corporation Cup, offered for the best four disbudded Japanese Chrysanthemum plants, distinct, was somewhat easily won by Mr. JAS. WOOD, Dunmore, his plants being typical examples, carrying highly-coloured blooms. Chrysanthemums grown in 6-inch pots were again a feature of the show, Mr. H. GRAY leading for both budded and naturally-grown specimens.

A capital entry was seen in the miscellaneous plant section, Mr. JAS. K. MESTON, Stirling, being the most successful exhibitor in this section.

Exhibits of fruit were numerous. Grapes were well shown by Mr. MITCHELL, Airthrey Castle, Mr. MESTON, and Mr. PALMER, Alloa. Mr. MITCHELL led in the class for dessert Apples and for Pears. Mr. McISAAC, Stirling, secured somewhat easily the 1st prize for culinary Apples, showing Warner's King, Peasgood's Nonesuch, Bismarck, and Newton Wonder.

Vegetables were a meritorious display both in numbers and quality. Mr. SHAW, Boquhan, Kippen, had the best collection of ten kinds. Mr. JOHN OGILVIE, Larbert, was placed 2nd, and Mr. MESTON 3rd. Mr. GEO. WATSON, Kippen, was awarded the 1st prize for a collection shown by an amateur.

Honorary exhibits were shown by Messrs. DRUMMOND & SONS, Stirling, who displayed 50 varieties of Apples grown out-of-doors; Mr. CRAIG, Stirling, in a table of flowering and foliage plants and floral design, and Messrs. GEO. BUNYARD & Co., Maidstone, who showed a collection of highly-coloured Apples.

NORTHAMPTONSHIRE CHRYSANTHEMUM, FRUIT AND VEGETABLE.

NOVEMBER 10, 11.—This society held its 38th annual show, on these dates, in the Corn Exchange, Northampton. The entries were above the average in number, and some excellent exhibits were staged. The feature of the show was a new class introduced by the president, C. W. PHIPPS, Esq. This was for a circular group of single-flowered Chrysanthemums and Ferns; five splendid exhibits were staged in the centre of the hall and were much admired.

In the class for a circular group of miscellaneous plants with cut blooms of Chrysanthemums, J. MANFIELD, Esq., Weston Pavell (gr. Mr. F. G. Bull), won the 1st prize easily with a pleasing arrangement of well-grown plants of winter-flowering Begonias, Carnations, Bouvardias, Cyclamens, Salvias, &c., interspersed with foliage plants and Ferns, with a few dot plants of Oncidiums and Cattleyas; 2nd, Sir T. HESKETT, Bart., Easton Neston (gr. Mr. G. F. Hallett).

In the class for a circular group of single Chrysanthemums and Ferns, the 1st prize was won by Mr. F. G. BULL; 2nd, T. CHURCH, Esq., Cliftonville (gr. Mr. G. Garton).

Winter-flowering Begonias were best shown by Mr. F. G. BULL; 2nd, Mrs. H. A. ATTENBOROUGH, Catesby (gr. Mr. A. Child).

The best stand of 18 Japanese blooms displayed on boards were shown by Earl SPENCER, K.G., Althorp (gr. Mr. Silas Cole); 2nd, Marquis of NORTHAMPTON, K.G., Castle Ashby (gr. Mr. A. R. Searle). In the class for 12 Japanese blooms, the same two exhibitors were again placed in this order.

In the class for 12 Incurved blooms, distinct, the 1st prize was won by Mr. A. R. SEARLE; 2nd, Mr. A. CHILD.

The best arranged basket of single-flowered Chrysanthemums (for ladies only) was shown by Mrs. C. W. PHIPPS, Cliftonville, and the best arranged bowl of these flowers by Mr. A. R. SEARLE. In both these classes the competition was very keen, some 12 exhibits being staged.

In the class for two bunches of black Grapes, the 1st prize was won by Mr. A. R. SEARLE, who showed splendid bunches of Black Alicante; 2nd, Mr. A. CHILD, who was 1st for two bunches of white Grapes, having choice bunches of Muscat of Alexandria; 2nd, Lady KNIGHTLEY, Fawsley (gr. Mr. E. Cox).

The 1st prize for a collection of culinary Apples was won by Mr. A. R. SEARLE; 2nd, Mr. G. F. HALLET. Mr. SEARLE also excelled in the class for dessert varieties, being followed by Mr. F. T. BEETON, Ramsey, Hunts.

In the class for a collection of vegetables of eight distinct kinds, Mr. SEARLE won with a superb collection, closely followed by Mr. S. COLE, Althorp. Mr. SEARLE also won the special prize for a collection of vegetables offered by Messrs. Webb & Sons, Stourbridge; 2nd, Mr. G. F. HALLET.

The special prize for 12 Onions, offered by Messrs. Sutton & Sons, Reading, was won by Mr. F. G. BULL; 2nd, Mr. G. F. HALLET.

DEVON & EXETER HORTICULTURAL.

NOVEMBER 11, 12.—The 208th exhibition of this society, held in the Market Halls, Exeter, was one of the best of these autumn shows for many years. The entries greatly exceeded in number those of former years, but the attendance was not commensurate with the attractions of the show.

The leading features were the Chrysanthemums in vases and stands (cut blooms) placed in competition for Messrs. Sanders and Biss's Challenge Cup—which was won for the second time by Rev. T. SHEEPHANKS, Chudleigh, with an exceptionally fine lot of blooms. Another feature of the show was the large number of decorated dinner tables.

The challenge cup for a collection of fruit was won by Captain MORRISON BELL, M.P., Lady DUCKWORTH KING being a remarkably close 2nd.

Exhibits of Begonias, Bouvardias, Cyclamens, Poinsettias and Solanums were good, but not extraordinary. Miscellaneous table plants were not largely shown.

CHRYSANTHEMUMS—CUT BLOOMS.

As stated, the silver challenge cup (value £30) presented by Messrs. Saunders and Biss, Horticultural Builders, Exeter, to be won three times before becoming the property of any competitor, was carried off by last year's winner, Rev. T. SHEEPHANKS, Chudleigh (gr. Mr. Dunkley). The schedule required 12 vases of Japanese blooms, four vases of Incurveds and eight vases of single Chrysanthemums, distinct. Amongst Mr. SHEEPHANKS' best Japanese blooms were Lady Talbot, Mme. G. Rivol, Miss Elsie Filton, Mrs. A. T. Miller, F. S. Vallis, Florence Penford and Lee Park Wonder. Of Incurveds, he showed fine specimens of Mrs. J. Hygate and Clara Wells, the latter being awarded the Silver Medal for the best Incurved bloom in the show. This exhibit also won the National Chrysanthemum Society's Medal offered for the best exhibit; 2nd, Mr. W. ORROCK, Parkerswell (gr. Mr. W. Rowland).

In the class for 24 Japanese blooms in 18 varieties, E. C. NORRISH, Esq., Barnstable (gr. Mr. H. Reynolds), won the 1st and the Rev. T. SHEEPHANKS the 2nd prize. Mr. NORRISH's best blooms were F. S. Vallis, Mary English, John Peed, and Mrs. A. T. Miller.

For a collection illustrating the different sections of Chrysanthemums arranged on a table 8 feet by 4 feet, Mr. E. C. COLLINGWOOD, Exeter, won the 1st prize easily. Mr. COLLINGWOOD also took the N.C.S. Certificate and large Silver Medal for the best amateur exhibit in the show.

Rev. T. SHEEPHANKS was 1st for six white blooms of a Japanese variety, showing Mrs. A. T. Miller and Mrs. C. Beckett in good form.

Mrs. GIDLEY, Exeter (gr. Mr. W. R. Baker), was 1st for six yellow blooms, his best being Geo. Mileham (1908) and Lady Talbot, the latter gaining the Silver Medal offered for the best Japanese bloom in the show.

Rev. T. SHEEPHANKS was 1st for six blooms of any other colour for six Incurveds, and for 12 vases of single Chrysanthemums.

FRUIT AND VEGETABLES.

Grapes.—The best three bunches of Black Alicante were shown by Sir Wm. FERGUSON DAVIE, Creedy Park (gr. Mr. W. Seward); the best White Muscats by Captain MORRISON BELL, M.P., Chudleigh (gr. Mr. A. Worth), and the best three bunches of any other kind by Lady DUCKWORTH KING, Countess Wear (gr. Mr. Sidney Baker).

The challenge cup for a collection of fruit was won by Captain MORRISON BELL, Lady DUCKWORTH KING just missing winning it, for the third time and securing it outright.

The 1st prize for 24 sorts of Apples—12 dessert and 12 culinary kinds—was won by Miss CLEAVE, Crediton (gr. G. Lock), Sir Wm. FERGUSON DAVIE was an exceedingly close 2nd.

Miss CLEAVE was also 1st in the classes for six dessert varieties, and for six culinary varieties.

The best dessert Apple shown was Rival, and the best culinary variety Byford Wonder.

Miss CLEAVE showed the best exhibit of nine varieties of Pears, distinct, six dessert and three culinary.

The vegetable classes were keenly contested, some fine exhibits being staged.

Premier honours went to Mrs. GIDLEY, Exeter (gr. Mr. W. R. Baker), both in the open class and for Messrs. Robert Veitch & Sons' special prize, the kinds staged being Autumn Giant Cauliflower, Renton's Monarch Leek, Cranston's Excelsior Onion, Veitch's Red Garden Globe Turnip, Factor Potato, Veitch's Exhibition Sprouts, Perfection Tomato and Lulham Prize Pink Celery. Lady DUCKWORTH KING was an easy 1st prize-winner in the class for six Onions.

Special prizes were given by Messrs. Robert Veitch & Son, Sutton & Sons, James Carter & Co., and Jarman & Co., which brought good competition.

There were several trade collections of much merit, notably those of Messrs. ROBERT VEITCH & SON, Exeter, and Messrs. JARMAN & CO., Chard. The BEEKEEPERS' ASSOCIATION and Messrs. SAUNDERS & BISS, Horticultural Builders, also showed exhibits.

Mr. A. Harold Ward, the honorary secretary, is to be congratulated on this, his first effort at organising a flower show.

WESTON - SUPER - MARE CHRYSANTHEMUM.

NOVEMBER 12.—A highly-successful show was held in the Knightstone Pavilion, Weston-super-Mare, on the above date. This show has been held annually for 23 years, and never before has such a fine exhibition been seen, the number of entries and the quality of the exhibits all round beating all records.

At the foot of the concert platform some very fine groups of miscellaneous plants were arranged, whilst around the sides were accommodated groups of Chrysanthemums, pot plants, and trade exhibits. Amongst these latter, Mr. Wm. Brooks, Whitecross Nursery, Weston, and Mr. C. J. ELLIS, Knightstone Road, Weston, exhibited floral designs.

A choice stand of single Zonal Pelargoniums was arranged by Mr. VINCENT SLADE, Taunton, Somersetshire, and Mr. G. ROBERTS, Manor Nursery, Weston, displayed winter-blooming Carnations.

In the competitive classes the principal prize-winners were as follow:—Group of Chrysanthemums arranged for effect—1st, H. CORNELIUS, Esq., Weston; 2nd, Mr. W. BROOKS, nurseryman, Weston.

Group of miscellaneous plants.—1st, Mr. C. J. ELLIS, Weston; 2nd, H. CORNELIUS, Esq.

Foliage plants.—1st, Sir W. HOWELL DAVIS, M.P., Stoke Bishop, Bristol; 2nd, C. J. ELLIS.

Three Orchids in bloom.—1st, W. M. APPLETON, Esq., Weston; 2nd, Sir W. H. DAVIS, M.P.

Twelve Incurved Chrysanthemum blooms.—1st,

H. E. MURRAY ANDERTON, Esq., Taunton; 2nd, Right Hon. WALTER LONG, M.P., Rood Ashton.

Twenty-four Japanese blooms.—1st, H. E. M. ANDERTON, Esq.; 2nd, Mr. W. IGGULDEN, Lockhill Nursery, Frome.

In the open fruit classes some very fine samples were staged. Black Alicante Grapes were best shown by Sir W. H. DAVIS, M.P., and G. A. GIBBS, Esq., M.P., showed the best white Grapes.

CORN EXCHANGE CHRYSANTHEMUM.

NOVEMBER 12.—The annual show of Chrysanthemums and fruit in the Pillar Hall, Mark Lane, was held on this date. These exhibitions are held in aid of the funds of the Corn Exchange Benevolent Society. A considerable number of exhibits was staged, the flowers and fruits being sold by auction at the close of the show for the benefit of the charity.

The principal class was for 12 blooms of Japanese Chrysanthemums, distinct. It was open to all. Three prizes were offered in addition to two silver challenge cups, one given by the members of the Corn Exchange, and the other by friends. The 1st prize and silver cup was awarded to E. MOCATTA, Esq., Adlestone (gr. Mr. T. Stevenson), for an excellent exhibit, including splendid flowers of F. S. Vallis, Walter Jinks, Leslie Morrison, Reginald Vallis, Mrs. N. Davis, Algernon Davis, Master James, Splendour, and O. H. Broomhead. The 2nd prize was awarded to C. B. GABRIEL, Esq., Cardale, Horsell, Surrey (gr. Mr. J. Hillier). W. R. CLARK, Esq., Debdon Hall, Loughton (gr. Mr. F. King), won the 3rd prize and the silver cup offered to members of the Corn Exchange.



THE LATE G. W. TIFFEN.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 12.—The 23rd annual exhibition was held on this date in St. George's Hall, Bradford. The show was not quite so large as on some previous occasions, but a fine exhibition resulted, and competition in the classes was good. In the class for 24 Japanese blooms in not fewer than 18 varieties the 1st prize was won by Mr. C. JONES, Bromborough, Cheshire, with the following varieties:—Lady Talbot, G. J. Bruzard, Frank Payne, Reginald Vallis, Paul Randet, Bessie Godfrey, W. J. Davis, Mrs. W. Knox, Valerie Greenham, W. A. Etherington, G. Rivel, Mrs. Charles Penford, W. R. Church, North Pole, Yellow Etherington, Walter Jinks, White Barkley, and Mrs. Barkley; 2nd, Mr. A. CHANDLER, Rugby.

In the class for Incurveds, Mr. DRAKE, Cardiff, easily carried off chief honours with 24 blooms that were models of compact and symmetrical form. Mr. CHANDLER's group, which took 2nd prize, was much inferior. He was very successful, however, on the whole, carrying off one 1st and four 2nd prizes.

In the local class for 18 blooms, including no fewer than 12 varieties, for which the Lord Mayor's Cup is given, Mr. JOHN THORNTON, of Drighlington, who has won on at least two previous occasions, was this year beaten by Messrs. H. CLARK & SON, Rodley, who staged a fine group, all the blooms being well grown. The most striking specimens in the collection were Bessie Godfrey, Mrs. A. T. Miller, and Mrs. G. Mileham. Messrs. CLARK & SON were worthy winners of a cup given by Mr. James Hill.

In other classes they were beaten by Mr. THORNTON, Mr. P. GUDGEON, and Mr. THOMAS BIRD, Windhill. Amongst other successful exhibitors were Mr. M. BROOKE and Mr. JOHN BROOKE (the former of whom took five 1sts for bouquets, the latter being 2nd in most instances), Mr. R. EICHEL, Bingley, and Mr. F. HOWLAND. There was an excellent show of single Chrysanthemums.

The National Society's Certificate for the premier Japanese bloom was awarded to Mr. CHARLES JONES for Lady Talbot; and for the premier Incurved variety Mr. G. W. DRAKE was successful with Mrs. F. Judson; while a certificate for a single variety was given to Mr. WILLIAM MOORBY, Shipley.

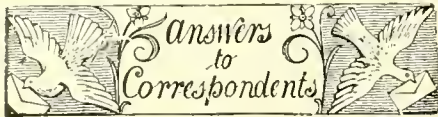
Obituary.

GEORGE W. TIFFEN.—We regret to record the death of Mr. George William Tiffen, which occurred at his residence, Willow Grange, Keston, Kent, on the 11th inst., after a long and painful illness extending over three years. Mr. Tiffen, who was born at Burnham-on-Crouch in 1851, was engaged in the fruit trade the whole of his life, succeeding his brother Thomas Tiffen, who had several fruit businesses in the City of London. Mr. Tiffen was highly respected in the wholesale and retail fruit trades, and his genial presence will be much missed in Covent Garden and the City. He conducted a high-class trade, supplying fruit to the principal City companies and merchants. The funeral at Streatham on the 15th inst. was attended by a representative gathering of the trade. Deceased leaves a widow and three young children. Mr. Tiffen was generous in his gifts to philanthropic societies, and was a life subscriber to the Royal Gardeners' Orphan Fund.

W. W. POLDEN.—We regret to announce the death of Mr. W. W. Polden, who was, for nearly 40 years, a representative of Messrs. Hurst & Son, Seedsmen, Houndsditch. Mr. Polden had been in failing health for some considerable time, and he was compelled to relinquish his duties with Messrs. Hurst about four years ago. His death took place on the 16th inst., at the age of 70 years. Mr. Polden was well known to gardeners in the Southern and Midland counties, and in Wales.

JOHN ERNEST HARTNUP.—The death of Mr. John Hartnup, gardener at Pixham Firs, Dorking, occurred on the 4th inst. from accidental gas-poisoning under peculiar circumstances. The gas pendant in a room beneath deceased's bedroom cracked, and the fumes passed through the ceiling into his bed-chamber.

JOHN C. TALLACK.—The news of the death of Mr. John C. Tallack, gardener at Shipley Hall, Derbyshire, will come as a painful surprise to his many friends. It appears that for some time past Mr. Tallack has suffered from an internal complaint, which threatened to have a fatal termination. He died from self-administered poison on the 12th inst. Deceased was a first-rate gardener, and a frequent contributor to the horticultural Press, his writings being at once practical and clearly expressed. Some years ago he wrote a weekly calendar for this journal, and from time to time he has contributed notes and photographs from the Shipley gardens. He was the author of *The Book of the Greenhouse*, published in Mr. John Lane's series of "Handbooks of Practical Gardening." Mr. Tallack was born in Cornwall, and became apprenticed to gardening in the gardens of Canon Philpotts in that county. After serving in various establishments, he was appointed head gardener at Prideaux Place, in Devonshire. Leaving this place, he served Messrs. James Veitch & Sons for two years, in their landscape department, and afterwards was appointed head gardener at Livermore Park, Suffolk, where he remained for 12 years; during part of this time, Mr. Tallack lectured on horticulture for the Suffolk County Council. About 10 years ago deceased removed to Derbyshire, to succeed the late Mr. Elphinstone as gardener to E. Miller Mundy, Esq. Mr. Tallack was a prominent supporter of the Royal Gardeners' Orphan Fund, and a member of the United Horticultural Benefit and Provident Society.



AMATEUR OR PROFESSIONAL: *A. S. T.* The question the committee has to determine is whether the exhibitor cultivates his produce for sale, or, on the contrary, merely disposes of all surplus products. This much you know, having the code of rules published by the Royal Horticultural Society at your hand. Judging from your letter it would certainly appear that the exhibitor in question would more fittingly be described as a professional or market grower. At the same time an inquiry of this kind has to be made in the locality, and the society, through its committee, ought to find little difficulty in settling the question to the satisfaction of all parties.

AMPELOPSIS VEITCHII, &c.: *H. K.* The tendrils of this plant cannot support the growths owing to the whitewash with which the rough-east wall is coated falling away from the surface. Let the wash be removed by scrubbing with plain water, and the tendrils will cling to the rough-casting securely. Lime that has been exposed to the air for a few months has not any injurious action on this plant, or on Ivy.

APPLE CHARLES ROSS: *H. K.* We believe the Royal Horticultural Society's awards (A.M. and F.C.C.) were given this variety for its merit as a dessert fruit.

ASPARAGUS PLUMOSUS: *W. B.* The exhibit in which this plant was shown as a Fern was properly disqualified. The Asparagus is a flowering plant and not a Fern.

CELERY DISEASE: *Constant Reader.* A damp season favours the spread of most fungus diseases. No doubt your soil is infected, and you should not plant Celery on the same site again until at least a year has elapsed. Be careful to burn all the stems, root, and leaves from the affected plants. With respect to freeing the soil from the spores of parasitic fungi, the safest specific to use is potassium permanganate. Carbolic acid is efficacious, cheap, and easily employed. The preparation known as Lysol, used at the rate of one ounce to six gallons of water, may also be used for this purpose; it is a proprietary article obtainable from the sundriesmen.

EXPENSES FOR REMOVAL: *C. H.* Unless you have an agreement in regard to this matter, you cannot claim any expenses incurred by dismissal. All you can insist upon is proper notice.

"FRENCH" GARDENING: *K. H. B.* Whether, at the end of 12 months' tuition you are sufficiently instructed to start a "French" garden with a capital of £100, depends largely on your own abilities. Some men can learn as much in 12 months as others can in 12 years, and make better use of their knowledge. Assuming that you are conversant with the details of the "French" system, and can produce good saleable crops early in the respective seasons, you might very well start on a capital of £100. This could be spent as follows: 200 cloches, £10; 20 frames with 60 lights, about £30; 100 mats, about £7; 80 tons of manure at 5s. per ton, £20; tools and seeds, say £5—making a total of £72, thus leaving £28 for rent, water, shed, &c. As the frames and cloches together would only cover about 4 square poles of ground, it would be possible to start in a small way with, say, half-an-acre of land, thus having something like 70 square poles for open-air crops on the natural soil, or on the old hot-bed refuse spread over a portion. The returns from the lights and cloches would probably come to about £70, while the produce from 70 poles in the open ought to realise about £40, always assuming the market to be in a fairly normal condition for the sale of good material at the right time. The expenses, apart from labour, the first year would be about £100; but in the second and succeeding years they would probably not amount to more than £25 to £30 for the same piece of land. Assuming the returns to average about £110 per annum for the first five years, and the total expenses, apart from labour, to be about £200 for the same period, a balance of

£350 would be left, or an average of £75 a year. One man should be able to attend to all the details of 200 cloches and 60 lights, and the remaining portion of the land, so that all profits should go into his own pockets. The profits, or the reverse, depends entirely upon the cultural skill and business abilities of the grower himself. You would find *French Market Gardening*, by J. Weathers, or *French Gardening*, by T. Smith, useful. The volumes may be obtained from our publishing department.

NAMES OF FRUITS: *A. G. I.* Gooseberry Apple; 2, French Crab; 3, Court pendu-plat; 4, Beurre Diel; 5, Calebasse, not Grosse Calebasse.—*Edmondson.* Some authorities consider the spots to be caused by the fungus of canker.—*P. E. I.* Manks Codlin; 2, Dumelow's Seedling; 3, Waltham Abbey Seedling; 4, this is probably a local variety; 5, Orange Goff; 6, specimen decayed.—*W. G. B. I.* Brabant Bellefeur; 2, Hanwell Souring; 3, Cockle Pippin; 4, Scarlet Golden Pippin; 5, Reinette de Granville; 6, Flower of Herts.; 7, too small to name; 8, Annie Elizabeth.—*T. W. Pit-maston* Duchess.

NAMES OF PLANTS: *W. Morgon.* Clitoria tematea.—*A. B. C. I.* Picea excelsa var. pygmaea; 2, Thuja (Biota) orientalis.—*W. T. N. I.* Cattleya maxima; 2 and 5, Cattleya labiata; 3, Cypripedium Charlesworthii; 4, C. Spicerianum.—*J. F. M. I.* Osmunda gracilis; 2, specimen insufficient, probably Osmunda regalis; 3, Pellaea falcata; 4, Polypodium aureum; 5, Selaginella viticulosa; 6, Selaginella casia; 7, Pteris hastata.—*F. H. I.* Brassica brachiata; 2, Odontoglossum crocidipterum; 3, Oncidium pubes; 4, Oncidium flexuosum.—*W. S. I.* Davallia platyphylla; 2, Polypodium aureum.—*Bryn. I.* Pandanus Veitchii; 2, Draecena marginata; 3, Acalypha musaica; 4, Carludovica atro-virens; 5, Panicum variegatum; 6, Cissus discolor.—*J. M. G., Sussex. I.* Abutilon megapotamicum variegatum; 2, Fittonia Verschaffeltii Pearcei; 3, F. V. argyrea; 4, Aloë Socotrana; 5, Maranta illustris; 6, Polystichum angulare; 7, Cypripedium Charlesworthii; 8, Phyllocactus speciosus; 9, Aloë verrucosa.—*A. H. Ruscus Androgynus.*

RAISING OAK, BEECH, ETC., FROM SEED: *J. T. S.* As soon as the Acorns are ripe they should be either sown immediately or stored carefully for sowing in the following spring. If kept through the winter they must be stored in a dry and cool place out of the way of squirrels or other creatures that would eat them. The best plan, however, is to sow them, as soon as they are gathered, in ground which has previously been well dug and prepared, placing them about 2 inches below the ground, allowing a distance of about 15 inches between each row, and 5 inches apart in the row. The Beech nuts should be gathered about October or November, and they can be sown immediately, but this is not the best practice. It is preferable to mix the seeds with a quantity of dry sand and allow them to remain until the following March, when they may be sown in a light soil, covering them scarcely more than $\frac{1}{2}$ inch deep. Sow them in rows made 18 inches apart, and place the seeds 4 inches apart in the rows. Ash seeds germinate best after they have been kept for a year. They should be mixed with a quantity of dry sand or light, dry earth, so that the outer coat will decay. It is necessary to turn the heap once every three months. Sow them evenly in rows the second March after they are gathered. Sycamore seeds should be sown immediately after they are gathered in September or October, but they can also be kept in dry sand and sown in the following spring, if this is desired.

ROSES FROM CUTTINGS: *A. F.* Most Roses will bloom the second or third year from cuttings. Are you quite sure the cuttings you inserted were really Rose cuttings, and not growths from the stock on which a Rose had been budded?

SHOT-HOLE DISEASE: *R. R.* It is too late in the season to do much to combat this disease, but be careful to gather and burn all the affected leaves. Next spring spray the plants with the following specific:—Put 8 lbs. of good quicklime into a barrel, add one gallon of water, and

when the lime begins to slake add 8 lbs. of powdered sulphur. Stir well until the lime is thoroughly slaked, then add water to make 50 gallons of the mixture. This should be kept stirred during its application to the trees. The specific is most efficacious just when the leaves have first expanded, but its use should be continued at intervals.

SOIL FOR A VINE BORDER: *Mac.* The best soil for a vine border is one composed of turfy loam cut from old pasture land. Some old mortar rubble, wood-ashes, and bones or bonemeal should be incorporated with it. The turves should not be cut into small pieces, as the fibre lasts longer and the soil remains sweet and wholesome over a longer period if it is not broken up too finely. Proper drainage should be provided before attempting to form the border. See also notes on making borders in *Gardeners' Chronicle*, September 18, p. 193.

TREES AND SHRUBS FOR AUTUMN EFFECT: *Mac.* Of those trees and shrubs which produce good colour effects in autumn those enumerated below are likely to succeed in your soil and district. *Trees:* Crataegus Crus-galli, C. C. g. prunifolia, C. coccinea; Acer circinatum, A. tataricum, A. platanoides Schwedleri, A. rubrum, A. japonicum aureum; Quercus coccinea (Scarlet Oak), Q. palustris (Marsh Oak), Amelanchier canadensis (Snowy Mespilus); Liriodendron tulipifera (Tulip Tree) and Liquidambar styraciflua (Sweet Gum tree). *Shrubs:* Eonymus europaeus, E. e. atropurpureus, Rhus Cotinus (Venetian Sumach), R. cotinoides, R. typhina (Stag's Horn Sumach), Cornus alba (Dogwood), C. a. Spathii, Berberis Thunbergii, B. virescens, B. Aquifolium; Viburnum Opulus (Guelder Rose); Cotoneaster horizontalis, Spiraea prunifolia fl. pl., and Acer palmatum atrosanguineum.

VINES AND MEALY BUG (COCCUS ADONIDUM): *L. W.* This insect, being an introduction from warmer countries than these islands, is unable to withstand a severe degree of cold. If you could turn out-of-doors the entire growth of the vines at this season, letting them remain till it is time to give them their final pruning, the bug would probably be destroyed; the rougher portions of the bark being first removed with the hand and a wooden scraper. The spurs should be shortened to 8 or 10 inches, and the trimmings burned and the rods fastened to stout stakes, to which they may remain till the final pruning in January, or later in the year. The vines may be dressed after peeling off the rough bark with Gishurst compound soap—3 ounces to the gallon of warm water; with Fir tree oil, or paraffin. The paraffin must not be used stronger than one wineglassful to three gallons of water, and the mixture must be kept stirred during its application. A second dressing may be applied just previously to taking the vines indoors. The surface soil of theinery should be carefully removed out of the house, and the hot-water pipes washed with soap and water. Be careful to cleanse the lower parts of the rods to an inch or two below the ground level. Limewash the walls; fill up crevices in the woodwork and glasses. Even with the utmost care taken in cleansing ainery some few insects may escape, and a sharp look-out for them should be maintained the following season.

VIOLETS: *G. H. H. W.* We can only suppose that putrefying bacteria had entered the flower-stems at the cut ends. This might account for the disagreeable smell after long confinement in a box, although the leaves or flowers themselves appeared still perfectly fresh.

WEEDS ON LAWNS: *E. W.* It would not be safe to sprinkle the turf with kerosene, for, although it would kill the weeds, it would also destroy the grass, and probably the latter first. If you employ a lad to pierce the crown of each Plain-tain, or Dock, with an iron skewer dipped in the kerosene, or, better still, in some strong acid, this would rid your lawn of them. Endeavour to promote a luxuriant growth in the grass by applications of nitrogenous manures. The grass may then crowd out the weeds.

COMMUNICATIONS RECEIVED.—*A. R.*—*C. B.*—*R. G. W.*—*W. M. B.*—*D. J. L.*—*G. P.*—*E. M.*—*W. W. P.*—*Amateur*—*A. C. B.*—*A. & B., Ltd.*—*Arthur B.*—*W. W.*—*Bath Boy*—*A. G. S.*—*F. M.*—*W. V. & Co., Ltd.*—*Rev. W. F. S. C.*—*G. F.*—*R. S.*—*R. H. C.*—*W. A. C.*—*O. H.*—*K. F. F.*—*H. H. W. P.*—*A. Grove*—*E. H. J.*—*R. G.*—*British Columbia*—*W. D.*—*Rev. D. R. W.*—*E. C. P.*—*R. F.*—*J. W.*—*R. L. C.*



GARDNER

W. S. WELCH

PRIMULAS GROWING WILD IN CHINA.

FROM LEFT TO RIGHT:—P. LISTERI; P. VINCEFLORA; P. POISSONII.

Photographs by G. Forrest.

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THE

Gardeners' Chronicle

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“THE CURIOUS GARDENER.”

THE title of this old work is too lengthy to quote in full. “*The Curious and Profitable Gardener*. By John Cowell, of Hoxton. Adorn'd with Curious Figures. London, MDCCXXX,” may perhaps suffice. The book is in two parts, the pages of each part numbered separately, and in my copy Part I. occupies the place the second ought to occupy, while the latter follows the contents. The curious reader will not be disappointed by a perusal of the work. The author, a simple-minded man with no great education, provides a sufficiently quaint book, which seems to have been primarily produced to chronicle the accomplishments of an American Aloë, which flowered in his nursery in 1729. We can hardly comprehend the excitement caused by this event, his nursery being visited by thousands, who paid 6d. each to see the wonderful plant which its owner had been careful to protect by a case with an inside stair, from which the visitor could comfortably inspect the whole 20 feet of spike, with its many branches and its circumference of 7 inches “at the bottom.” Only a few specimens had flowered in England previously, and though Houghton credits one at least with having done so satisfactorily, Cowell declared every

one to have been in a lesser or greater degree a failure. He traces the history of his plant to the time of Sir W. Raleigh, who seems to have imported its grandparent from America, and though he had been in possession of the plant only 12 years it had been an inmate of the nursery for quite 72 years. But not only did he write up the Aloë, for someone having surreptitiously published a print of it in mezzotint in September, 1729, he went to the expense of publishing “it with other curious plants that were in his garden in their proper colours that the curious may no longer be impos'd upon.” He entertains the reader with an account “of a detestable piece of Malice and Abuse that was offered me when this Aloë was flowering in my garden and gave me the fairest prospect of possessing an easy Fortune for my Life, from the vast Concourse of people that daily resorted to my house to see it.” “Three men habited like Gentlemen” tried to destroy the spike, and on rushing to the assistance of a servant he was “kick'd” on the head, “pull'd” by the legs and wounded with a sword, with the result that he was “devoid of attending the curious persons who came to his garden.” “However,” concludes the recital, “they have paid pretty well for that,” which was gratifying to one who had just lost an “easy fortune.”

The “Torch Thistle” (*Cereus hexagonus*) flowered at the same time as the Aloë, and Cowell seems to have considered his plant to have flowered next after that of Bishop Compton, but if so he was mistaken. This flower he also had painted, and exhibited the picture along with the Aloë. Then he had a specimen of the Glastonbury Thorn, which flowered at Christmas and again in May. He fills many pages with matter connected with this, at one time, marvellous plant. He made a trade of supplying “Sprigs of it in Blossom at Christmas time,” and to account for this precarious blossoming he seems to agree with one of his correspondents that Joseph of Arimathea would naturally carry his staff from Judea with him, and that, true to its upbringing, when the staff was thrust into the ground it would bud and flower at the same time as the other Thorns in its native land.

In Part (I.) there is not so much curious information. Mention must be made of the Banana, of which he gives a “draught,” but Cowell had only heard of the plant, though a year later Miller fruited it in in the Chelsea Botanic Gardens. Concerning Pineapples, Cowell advised the construction of larger stores than were usual, and of which many had been built subsequent to the success achieved by Sir Matthew Decker's gardener. He advocated free ventilation, a cultural expedient that seems to have been neglected then and for long afterwards. It is obvious he had a leaning towards the cultivation of tender, exotic plants, but the number of species he was acquainted with was painfully few. Of these mention may be made of the wild Pine, or “Penguin” (*Bromelia Pinguin*), but as he had only seeds when his book was written it is not surprising that he should confound it with another plant, and, since it bore fruit the size of a Melon, which hung down from the branches, he may have confused it with the Papaw-tree (*Carica Papaya*), an account of which fol-

lows. He had raised several Papaws from seeds, and had sold the plants “to good Advantage.” Of the Guava tree (*Psidium pomiferum*) it is reputed that the first fruit was produced at Badminton on a tree 16 feet high, but generally the species had failed to fruit in other gardens. “The Mangos, or Mango, or Indian Honey Plum,” the *Mangifera indica* mentioned by Parkinson, but perhaps not cultivated till the Hampton Court plant about 1690, is also briefly mentioned. It had passed out of cultivation in 1730, though two specimens had been imported two years previously. Cowell relates a “notable” story of how the Indians raise a Mango from seed, the seedling in the course of half an hour becoming a full-grown tree. This not improbably refers to the trick Indian jugglers still perpetrate, and, as then, it may still be said that it “has hitherto been a Surprise, and not known.” Talking about surprises, he mentions that it was customary to cultivate Pomegranates for table decoration. “Surely nothing can be more dazzling,” he remarks, “than to see a little tree of this sort not above a foot high, covered with its fine Crimson Blossoms; or can be more pleasant than to have such a Dwarf brought to Table with half a Dozen ripe Fruit upon it.” Equally surprising is it to know that the Pomegranate was cultivated “against walls,” and actually ripened fruits “as at Sir Gregory Page's at Greenwich, and at Kue-Green.”

His “Curious Remarks relating to Flowers” are introduced by a letter sent him on the naming of flowers in the way customary on the Continent, where the “Flowerists” by the initial letters indicated the colours of the particular flower; thus, if it were crimson and purple it might be, according to the proclivities of the florist remembered, in “Charming Phyllis or the Curious Ptolemy.” In the same way “Victorious Orlando or the Virtuous Oredo” would bring before the mind violet and orange, while in the Beautiful Rodolinda or the British Rover we have examples of blue and red. It will be patent to the interested “Flowerist” of to-day that this is a method not for an age but for all time, though perhaps like Cowell he will betray little enthusiasm for this old but novel mode of nomenclature. His dissertations on florist's flowers are commonplace, and we there meet him disrobed of the wonder and admiration which accompanied his remarks on “Curious” plants. Tulips, Ranunculi, and Anemones were the objects of his greatest regard, but many more plants were briefly noted, a double, white Hepatica amongst them. The double, yellow Rose is mentioned with the despair usual to all the old writers. Cowell's cultural receipt was to cut down the plant “after its blowing season” and to shelter it from wet when it approaches the time of Roses. A Mr. Heather, of Twickenham, “an excellent Florist and polite Gentleman famous for Gardening,” is mentioned as a successful Yellow Rose-man. “It may be remarked that it flowers profusely every year in a garden near to Mr. Heather's, yielding lovely blooms of a yellow shade peculiar to itself.” The remainder of this part is taken up with “Extraordinary Observations concerning the Management and Pruning of Fruit-trees.” Cowell recommended root pruning in May to induce fertility, and other

means to the same end included tying wire round the stem and notching the bark. It was customary "to plant a great part of our gardens with Espalier or Hedges of Fruit," and these were as much for ornament as utility. Here, as in all the books written by practical men or persons of observation, no matter at what period they wrote, the directions are very much the same; they may to a certain extent be influenced by the practices of the time, but the rule is that suitable methods are recommended. Cowell was a very likable man, and the reader gets quite interested in him before closing his book. His publications as a whole were: *Account of the Aloë in Blossom, Torch Thistle, and Glastonbury Thorn: 1729 and 1730*, bound, as above stated, with the *Curious and Profitable Gardener*. In 1732 it was republished under the title of *The Curious Fruit and Flower Gardener*. Cowell appears to have retired in 1730, for in that year Switzer refers to him as "late of Hoxton." R. P. Brotherton.

NOTES FROM A "FRENCH" GARDEN.

THE recent cold, bright weather has favoured the growth of the young Lettuces under the cloches. The variety "Little Black Gott" is growing fast, and, whenever the weather allows, the cloches are opened day and night. Those of the "Passion" variety are also doing well, and the crop promises to be well forward by Christmas. The Cos Lettuces, Flat Green and Grey of Paris, have been transplanted a second time. We shall keep them in a close atmosphere for a few days till they are thoroughly re-established. Plants of the Cos Lettuce, known as Paris White, are not so much advanced; they will remain under glass till the middle of March, and then be planted out.

The frost at night-time and the bright sunshine during the past few days have kept the plants healthy, and have minimised the danger from mildew which generally appears at this time of the year.

In gardens where all the cloches will not be utilised for forcing Cos Lettuces in the spring, a sowing of Lettuce "Georges" should be made on a mild hot-bed. This variety forms a good intermediate crop between those of the "Little Black Gott" and the "Passion." The seedlings are pricked out on another hot-bed late in December, where they remain till March, to be afterwards planted three under each cloche on a well-sheltered border.

The Parisian growers raise at this season on a hot-bed a batch of Lettuce "Passion" or "Palatine," and also a batch of Cos Lettuce "Paris White." These are grown as explained above, and planted outside in March.

We have planted the Ox-Heart Cabbages 18 inches apart each way, in drills made 2 inches deep. The plants were set deeply in the ground. Soot was sprinkled plentifully around the plants, as slugs have been troublesome.

We are completing the digging operations as fast as possible, as we intend to start making the hot-beds late in December. It is not advantageous to form the hot-beds too early, as the extra profit thus obtained does not compensate for the extra labour and increased quantity of manure required. Though the middle of January is generally the best time to begin this work, the grower must be guided largely by the strength of the Lettuce plants, the condition of the old, decayed manure which is to form the soil for filling the frames, and the situation of the garden.

When starting the hot-beds before Christmas, it is customary to place as many as 50 Lettuces in each light, as they do not grow very large. Radishes are not sown with this crop, as their leaves hinder the growth of the Lettuces. P. Aquatics.

NEW OR NOTEWORTHY PLANTS.

CALLISTA ANABILIS LOUR.

COINCIDENCES of discoveries in art and science are not uncommon, and are often very curious. I have now to relate two recent discoveries of plants, half forgotten for many years, but possessing great scientific interest. The first exists in one living, the other in one herbarium specimen. As may be seen from a recent issue of the *Kew Bulletin*, the Asclepiad *Fockea capensis*, till now the pride of the Imperial Garden at Schönbrunn, near Vienna, has been rediscovered in the neighbourhood of Prince Albert, in South Africa. To-day we have to welcome one of the most critical Orchids, *Callista anabilis* Lour, known only from the type specimen of the author Loureiro himself, a well-hidden treasure in the South Kensington collection. I received the upper part of a stem bearing one flower and a photograph showing that the plant bears two or three flower-spikes. The possessor of the plant is Dr. H. Goldschmidt-Essen, a.d., Ruhr (Germany). The plant, on the whole, has exactly the size and habit of a true *Dendrobium*, and bears the flower on the leafless stem of last year. The flowers, however, show a very curious feature, they have no mentum (or prolongation of the side sepals) as in *Dendrobium*; the lip is deeply saccate at the base, entire, i.e., without any trace of side lobes, but divided into a hollow hypochil and a triangular epichil; the column is not elongated into what botanists call "pes gynostemii." The colour is pure white in fresh flowers, changing into the lightest lilac on fading. The anther shows a deep mauve colour, the diameter of the flower when fully open is about an inch. On the reverse of the white sepals, which are united at their base, there is one, vivid, pea-green spot. The plant is certainly very pretty, and in older times, when a *Cypripedium* of more than modest description was honoured by the specific name "Venustum," a happy discoverer may name this perfectly lovely species "Amabilis." A venial sin after all.

But the plant has still another special interest for botanists. It was described by Dom João de Loureiro, in the *Flora of Cochin China* (Lisbon, 1790); the description is good and accurate for a time when there were no recognised technical terms for Orchids flowers and even the name *Dendrobium* was still unknown. About 10 years later Olaf Swartz, of Upsala, published some papers about Orchids, and established the genus *Dendrobium*, but with such a vague diagnosis, that *Maxillarias*, *Lycastes* and even *Pleurothallids* were brought under this name, together with three genuine *Dendrobiums*. The new genus he illustrated by a very bad figure of a *Lycaste*, probably *L. tetragona*. By far the worst circumstance was that Swartz passed over in absolute silence *Callista*, whilst he discussed another plant of Loureiro (quoted on the same page of the book) *Ceraia*. Afterwards the name *Callista* was omitted in botanical works or quoted as a synonym. I do not know why Loureiro's type specimen became inaccessible to Lindley, to Bentham and Hooker: the only thing I can state is that even in the *Genera Plantarum*, iii., 498 (1883), we read: "*Ceraia* Lour, *Callista* Lour, ex Reichb., caractere intrinseque generis imperfecto." The only botanist who knew of the existence of this plant in London, and who had examined it, was Reichenbach; on the sheet to which it is affixed we find, in his handwriting, the remark "Est *Dendrobium*," but he never published a word about it. So it happened that this specimen had a forgotten nebulous existence for more than a century. The specimen itself, gathered in the last quarter of the 18th century, is in rather good condition. Several years ago I wrote a diagnosis exhausting all particulars. On my request, the authorities of the South Kensington Herbarium had the kindness to allow Miss Smith, of the Kew Herbarium, to make a

drawing of the plant; both description and drawing were required for a monograph of the *Dendrobium* in Prof. Engler's *Pflanzenreich*. This work is now in the press. Meanwhile, the indefatigable Dr. Otto Kunze, raking botanical literature for old names, found the sins of omission of both Swartz and Reichenbach, and he promptly renamed all *Dendrobiums* known to him, calling them *Callista*. Now the question is this, if *Dendrobium* and *Callista* are identical. Dr. Kunze is right in renaming *Dendrobium* in spite of all councils and their decrees, for the plant in question is by no means a doubtful one. Fortunately, in this special case, the names of hundreds of species can be maintained, *Callista* representing (for the moment) a monotypic genus. The generic definition is not so well founded as might be desired, but the dilemma is either to establish a monotypic tribe of *Dendrobium* itself, or to admit a genus next to it. I have preferred to restore the old genus and the old name.

The plant is found in Annam, near Tourane, on the East Coast. Dr. H. Goldschmidt purchased it at Antibes (Southern France) by exchange from a gentleman who had no special interest in it. The specimen was in a very bad and withered condition. It is to be hoped that under the skilful care with which the plant is now cultivated, it will produce next year stems as vigorous as those in Loureiro's specimens. The inflorescence in that specimen is about six-flowered and has bracts which are not present in Dr. Goldschmidt's rather small plant. F. Kränzlin.

NOTICES OF BOOKS.

* STUDIES IN FOSSIL BOTANY.

WHEN Dr. Scott published the first edition of the *Studies in Fossil Botany* in 1900, the book contained a concise account of what was known in regard to fossil plants at that time. The present volume, Part II. of the second edition, published in the spring of this year, has required, owing to the rapid growth of knowledge, such drastic revision, that it is, to quote the author, to a great extent a new book. Not only are many fresh facts recorded, but a knowledge of these has suggested an entirely new point of view with regard to several of the groups of seed-bearing plants with which this volume deals.

Facts suspected in 1900 have now become established truths, and large groups of fossil plants have been shifted to new positions in the vegetable kingdom. Incidentally, the gaps which exist between some of the groups of living plants have been more completely bridged, and indications of links between others are not wanting.

The importance of the conclusions reached justify a short summary of the discoveries of the past few years. As everyone knows, among the most common fossils of coal-seams are impressions, often very beautifully preserved, of large fronds, resembling those of our modern tree Ferns. Among living plants, the Ferns and Fern-allies or Pteridophyta, form a rather detached group of plants, distinguished from the Mosses, on the one hand, by the independence and greater vegetative development of the spore-bearing individual, or Sporophyte, and from the Spermaphytes, or seed-bearing plants on the other, by the absence of any structure at all resembling a seed, if we exclude the suggestions of a seed-bearing habit found in a few living species of *Selaginella*. Among the Ferns proper, no trace of the origin of such a structure as a seed occurs, and the transition among living plants from the modern, seedless Ferns to the lowest group of seed-bearing plants, the Cycads, is quite abrupt.

Towards the bridging of the gulf between Mosses and Ferns, the discoveries of fossil

botany have helped not at all; but the work of the palæo-botanist made evident some years ago the existence of a group of Palæozoic plants, the Cycado-filices, the members of which show points of agreement with both Ferns and Cycads.

There has been for some time good anatomical evidence for referring *Lyginodendron* *Oldhamium*, one of the commonest fossils of the English coal measures, to the Cycado-filices.



FIG. 153.—THE SEED OF THE FOSSIL PLANT *LYGINODENDRON*. A CONNECTING-LINK BETWEEN FERNS AND SEED-BEARING PLANTS.

But up to the year 1902 our knowledge was practically limited to the vegetative organs. Any previous observations bearing on the mode of reproduction were then of uncertain significance. *Lyginodendron* was known to be a plant with slender, probably straggling, stems, on which were borne large, branching fronds, quite like those of a modern Fern. Anatomically, it exhibited curious points of agreement with both Ferns and Cycads. We know now that this Fern-like plant bore seeds—large, well-differentiated seeds, not differing materially from those of recent Cycads, albeit somewhat more complicated in structure.

The male organs, however, were essentially Fern-like, consisting of clusters of elongated sporangia, borne on the underside of the pinnules, and producing microspores or pol-



FIG. 154.—SEED CUPULES OF *LAGENOSTOMA SINCLAIRI*.

len grains, according as we use the language of Ferns or of the higher plants. Curiously enough, both seeds and sporangia had been previously described, although their association with *Lyginodendron* was not realised. Williamson named the seed *Lagenostoma Lomaxi*, but did not publish any account of it, and in 1863 Zeiller described a sporangial fructi-

fication associated with Fern foliage which he named *Crossotheca*, and regarded as the sporangia of a Fern showing affinities with the living family Marattiaceæ.

A restoration of a seed is illustrated in fig. 153, which figure, together with figs. 154 and 155, we are enabled, by the courtesy of Messrs. A. & C. Black, to reproduce from the volume under review. The curious stalked glands borne on the boles of the cupule (fig. 153) occur also on the stems and leaves, and were of service in the identification of the seeds as those of *Lyginodendron* *Oldhamium*.

In 1905 Mr. Kidston found similar sporangia in organic connection with the foliage of *Lyginodendron*, so that we know now that they were not the sporangia of a Fern, but the pollen-bearing organs of a seed-plant. In fig. 154, two

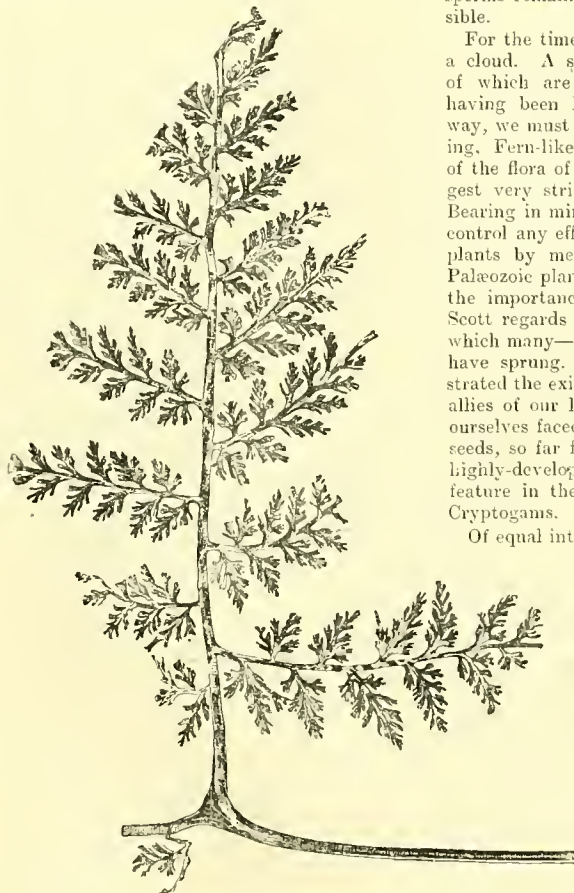


FIG. 155.—*SPHENOPTERIS ELEGANS* (PROBABLY THE FOLIAGE OF A PTERIDOSPERM).

such seeds are shown, still attached to the rachis of the fertile frond, and enclosed in the characteristic cupule or husk.

Other members of the Cycado-filices have since been discovered to bear seeds. A new group of seed-bearing, Fern-like plants, the Pteridosperms, has been created to include these forms, and one by one most of the characteristic Fern fronds of the carboniferous flora have been recognised as the foliage of members of this group. Some of them, like the frond of *Lyginodendron*, have been found with seeds attached; others are constantly associated with seed-like bodies. The frond of *Sphenopteris elegans*, reproduced in fig. 155, shows how strong is the resemblance between the leaves of these fossil Pteridosperms and those of a modern Fern.

The pollen-bearing structures present special difficulties. Many such sporangia had already been described, some of them so like the sporangia of living Ferns, such as *Marattia* and *Angiopteris*, that they were definitely referred to the family Marattiaceæ, which was regarded

on this and other evidence as an extensive one in Palæozoic times.

Some of these sporangia have now been definitely recognised as, and others are suspected to be, the pollen-bearing organs of Pteridosperms.

We may summarise the results of recent work in this branch of Palæozoic botany by saying that an important feature of the coal measure flora must have been the abundance of large, Fern-like plants of varied habit—the wide range of habit and of anatomy indicating how extensive was the group—which reproduced by means of seeds borne singly on the tips of the pinnules, and which bore their pollen in large sporangia usually associated in groups like those of the living Marattiaceous Ferns. Whether true Ferns, in the modern sense, of similar habit, existed side by side with these ancient Pteridosperms remains doubtful, though, of course, possible.

For the time being, Palæozoic Ferns are under a cloud. A small group remains, the members of which are still free from the suspicion of having been Pteridosperms; but, in a general way, we must believe that these large, seed-bearing, Fern-like plants were a dominant feature of the flora of coal measure times, and they suggest very strikingly how the seed habit arose. Bearing in mind the necessary limitations which control any efforts to unravel the past history of plants by means of fossils, our knowledge of Palæozoic plants tends, on the whole, to increase the importance of the Ferns as a group. Dr. Scott regards them as probably the source from which many—if not all—the groups of seed plants have sprung. Recent research has also demonstrated the existence of the seed habit in the giant allies of our living Club Mosses: hence we find ourselves faced by the fact that the production of seeds, so far from being a monopoly of the most highly-developed plants of to-day, was a common feature in these ancient predecessors of modern Cryptogams.

Of equal interest is the detailed knowledge now available of the family of fossil Cycads known as the Bennettitales. These plants, which must have been a characteristic feature of the flora of the northern hemisphere in late Mesozoic times, show points of agreement with the living Cycads, but the structure of their reproductive organs indicates, on the one hand, relationship with Ferns, and, on the other, suggests, in a most striking way, how the Angiosperm habit, the distinguishing feature of the dominant group of living plants, may have arisen.

A unique feature of these ancient floras appears to have been their similarity over wide geographical areas, indicating to the geologist a uniformity of climate and physical conditions generally much greater than is now the case.

In conclusion, we may say that the work is written with the literary skill of which Dr. Scott possesses the secret, and that, as the figures we reproduce indicate, is admirably illustrated.

THE SILPHIUMS.

THE Rosin Weeds are all tall and coarse-growing perennials, which flower in the late summer and autumn. According to Gray's *Flora of North America*, they are all found on the Atlantic side of the United States. There are twelve species, of which at the least nine are in cultivation, although only about three are generally grown. These are *S. laciniatum*, *S. perfoliatum*, and *S. terrobinthinaceum*, all tall and handsome plants of striking appearance. They succeed readily in a deep, rich soil, and, although they do not ripen seed freely, they are

easily increased by division of the roots in autumn or spring. The roots are thick and fleshy, and they penetrate to a considerable depth. They are very effective in large groups at the back of the herbaceous border, with their handsome foliage and large, yellow flowers, while they are equally serviceable in isolated beds, or in the wild garden. The following species are all in cultivation:—

S. albiflorum (see fig. 156).—This species is the only white-flowered member of the genus. It is somewhat tender, and needs a warm, sheltered border against a south wall, hence it is seldom seen in gardens. A native of Western and Northern Texas, it is usually found growing on cretaceous rocks. The plant only reaches a height of between 2 and 3 feet. The white flowers, about 3 inches in diameter, are borne on very rigid and scabrid stems. *Silphium albiflorum* flowered

meter. The leaves are chiefly radical, once or twice pinnate, with strap-shaped divisions, while the stem leaves are few and smaller. The name "Compass plant" is applied to this species, because the radical leaves are said to be so disposed as to place the edges north and south.

S. perfoliatum, "Cup plant" (*Bot. Mag.*, t. 3354).—This is one of the most effective plants in the genus, with stout, square, winged stems, 6 to 8 feet high, and large leaves, opposite on the stem, forming, with their winged petioles, a large, perfoliate cup, which is the origin of the common name. The flowers are produced freely, and are about 3 inches in diameter. The plant grows in rich, alluvial soil, and is somewhat variable in habit, which explains the several names, *S. connatum*, *S. Hornemannii*, and *S. erythrocaulon*, under which it is sometimes seen.

S. pinnatifidum.—This plant is a form of *S.*

NOTES ON IRISES.

IRIS LÆVIGATA.

THE plant described by Regel, *Gartenflora*, 1864, p. 198, t. 442, and figured again in the *Botanical Magazine*, t. 6132, evidently differs from the *lævigata* of Fischer and Meyer, and I incline to think that I have specimens of it now growing here.

In June of this year there flowered here several plants raised from seed received as that of *I. sikkimensis*, an apparently undescribed species, said to come from the Himalayas. Of the truth of this I am not sure, but the fact remains that the flowers are extremely beautiful, of a rich, velvety, dark reddish-violet, set off with a golden signal patch. The falls are comparatively large, and sharply reflexed, while the tips of the standards and of the stigmatic crests rise to about the same level. There was no variation among the plants that flowered, and this points to the fact that we are dealing with a wild species. The capsule and seeds are both characteristic, but accurate information on these points is, unfortunately, lacking in the *Botanical Magazine* (t. 6132), where the figure of *I. lævigata* apparently represents my plants.

One reason that makes me hesitate to decide whether my plants are *I. lævigata* or an undescribed species, is the fact that there exists at Kew an Iris leaf or two, which Dr. Stapf sorted out from among the specimens of *I. Clarkei* collected on Tónglo by Sir Joseph Hooker. These leaves are distinguished by the prominent midrib, which occurs in my plants, and Dr. Stapf tells me that they agree in section also.

There, I think, the question must remain until some authentic, living specimens, or seeds of wild *lævigata*, are obtainable from Japan or eastern Asia. *W. R. Dykes, Charterhouse, Godalming.*

VEGETABLES.

SOURCES OF POTATO SEED-TUBERS

THE result of a trial at Wisley of the sources and soils from which seed tubers of Potatoes were obtained this year, has not yet been published, but it will no doubt appear in the next issue of the Royal Horticultural Society's *Journal*. The trial of the present year has been, I believe, on exactly the same lines as that of last year, when the sole variety was Up-to-Date, and the sources were: 10 tubers from England and Wales, three from Scotland, and three from Ireland. But there were 12 English or Welsh rows, because in two cases tubers grown on light and heavy soils were sent, thus there were 18 rows of 20 tubers each. All were planted on April 9 of last year, and all were lifted on the same day in the autumn. The heaviest yield was from Mallow, Ireland, the row giving 150 lbs., or 7½ lbs. per root. Next came another Irish product from Hillsborough, Co. Down, the weight being 125 lbs., Scotland following closely with 123 lbs., from Clackmannan, the soil being light, sandy loam. Ireland came fourth with 110lb., from a limestone soil in Co. Kildare, and Cumberland next with 106 lbs., then, most remarkable, the Wisley sand follows, but with 86 lbs., whilst 10 others from English seed tubers range from 84 lbs. down to 56 lbs. But two rows from Scotch seeds, light sandy loam and heavy black soil, gave only 63 lbs. and 56 lbs., which seems quite inexplicable, having regard to the fact that in the past Scotch tubers, grown in the south, have invariably yielded heavy crops. The sample from Clackmannan, with 123 lbs., evidently shows the value of Scotch tubers far more accurately. It was a surprise to find that seed tubers obtained from the deep sand at Wisley did so well, but it is partly explained by the fact that, for the past five years at least, because of the much lower summer temperature and moist atmosphere in England, the southern climate has produced seed tubers closely resembling those of Scotland. Seed tubers of the present year in the south have showed that character in an even greater degree. Summed up, the Irish tubers gave an average crop of 125 lbs., the Scotch 82 lbs., and the English and Welsh 72 lbs. *A. D.*



FIG. 156.—SILPHIUM ALBIFLORUM FLOWERING AGAINST A SOUTH WALL AT KEW.

in the late Mr. Thompson's garden at Ipswich in 1887, and the figure in the *Botanical Magazine*, t. 6918, was prepared from that plant. The plant now illustrated is growing against a south wall at Kew, where it flowers in September and October. It was received from Herr Max Leichtlin, of Baden-Baden, about three years ago.

S. Asteriscus grows about 4 feet high, and has ovate, coarsely-toothed, oblong leaves, the upper ones being sessile, whilst the lower have short stalks. The yellow flowers are borne on leafy branches. In its native habitat it grows on dry, sandy soil.

S. integrifolium.—This species is somewhat similar to *S. Asteriscus*, but has narrower, more entire leaves, and corymbs of yellow flowers.

S. laciniatum, "Compass plant" (*Bot. Mag.*, t. 6534).—This plant often reaches a height of 10 feet, bearing on the upper part a succession of bright yellow flowers, 4 to 5 inches in dia-

terebinthinaceum, with pinnatisect leaves, and it is sometimes placed as a variety of that species.

S. scaberrimum.—Grows about 4 feet in height. It has hispid stems and leaves, and the flowers are about 2 inches in diameter.

S. terbinthinaceum, "Prairie Burdock" (*Bot. Mag.*, t. 5525).—This species is found in dry, open woodlands. It produces an abundance of large, handsome leaves, chiefly radical. They are each a foot or more long, and broad in proportion; they are borne on long petioles. The stems grow from 6 to 9 feet high, are much branched, and bear numerous flowers, 2 to 3 inches in diameter. This is an unusually handsome foliage plant for the wild garden or woodland.

S. trifoliatum (*Bot. Mag.*, t. 3355).—This is a more slender-growing species. It has stems 4 to 6 feet high, bearing leaves in whorls of three or four, and panicles of long, peduncled flowers of fair size. *W. I.*

NEW GARDEN WORMS.

It sometimes happens that the collector comes all at once upon a new plant or animal whose numbers are such that he has no difficulty in obtaining abundant material for research and identification. It was so at St. James's Garden, Malvern, when I discovered *Eisenia robusta*. But it is, perhaps, more frequently the case that the addition to science is a solitary example, and the careful biologist hesitates to give his child a name. So he waits, in the hope that new material will be forthcoming. Sometimes he is speedily rewarded in his search, while at others he has to be content to state his facts and leave the matter in uncertainty. I have more than once had to describe a new species from a single example, and, after having waited five years in the hope of obtaining further material, I am at last venturing to repeat my action.

In 1904, among some interesting annelids from the Botanic Gardens, Oxford, I found one specimen which was new to me. I, therefore, provisionally regarded it as belonging to a species concerning which the authorities have been in doubt (*Allolobophora tyrtaea*). Although it differed in various ways from the descriptions which different authors have supplied us, the uncertainty which attached to the species, and the fact that in some important points it revealed a close alliance to that species, kept me from venturing on a detailed description and a new name.

Our knowledge of the minutiae of worm anatomy has of late years been growing. New points which are of value for purposes of classification have been emphasised, and the value of the study of variation has been insisted on. For these reasons I am venturing to regard the Oxford worm as new, and am giving particulars of its external appearance.

The first writer to describe *Allolobophora Tyrtaea* was Savigny, in 1826. He called it *Enterion Tyrtaeus*, and he said that it had a girdle extending from segment 30 to 35, while the tubercula covered the four innermost. This may be represented fractionally thus $\frac{30-35}{31-34}$. Nearly all the

true species of *Lumbricus* have a similar arrangement of these parts, but they fall on different segments in an orderly series. Dugès and others, however, failed to see the species, and it was placed on the list of doubtful forms.

So matters stood till 1896, when Dr. Ribaucourt published his valuable memoir on the *Earthworms of Switzerland*. Here he says (p. 78) that he applies Savigny's name to a specimen which he found under a stone in Valais, at a height of 2,600 metres. The length of the worm was 85 mm. (or 3½ inches), its breadth, which varied little through the whole length, 4 mm., while the tail terminated somewhat abruptly. There were 133 segments, the first 15 being larger than the others, which were almost uniform throughout. It showed an iridescent play of colour, and the girdle, which had the appearance of a saddle, corresponded with that of Savigny's *Tyrtaeus*. The male pores were found on segment 15, with a cushion or swelling which pushed back without effacing the neighbouring segments. The setae were in pairs, and, what is very unusual in an *Allolobophora*, the prostomium cut entirely through the first segment, or formed a complete mortise and tenon, as in all the true species of *Lumbricus*.

Ribaucourt sums up as follows:—"A glance at the different species of *Allolobophora* shows us that there is one species with which *A. Tyrtaeus* offers certain analogies. *A. profuga* possesses a

girdle and tubercula which may be read as $\frac{30-35}{31-34}$

but the differences are numerous. The aspect of the girdle, the length of the body, the shape of the tail, the colour, the size of the body rings, the absence of mammillae on the 22nd segment, the presence of furrows along the caudal ex-

tremitry, and the visibility of the excretory orifices may be mentioned. The arrangement of the setae also is different. Savigny having mentioned a species of worm possessing a girdle extending from the 30th to the 35th segment, with tubercula on the 31st to the 34th, at a time when no distinction was drawn between the two genera, *Lumbricus* and *Allolobophora*, I thought it right to retain the name of the present species."

In 1904, when I found a worm somewhat similar to this at Oxford, I thought it best provisionally to assume their identity, and put down the points of difference to mere variation. Since then my knowledge of the different forms of earthworms has extended, and a careful re-examination of the specimen shows me that it cannot be referred either to Savigny's or to Ribaucourt's *Tyrtaeus*. I have, therefore, decided to name it *Allolobophora intermedia*, assigning my reason hereafter. The worm is about 3 inches in length in alcohol, and a quarter of an inch in diameter. It is dark brown on the back, but grows paler towards the tail, and is slightly wider across the girdle and the tenth segment than elsewhere. The prostomium cuts one-half the



FIG. 157.—ALLOLOBOPHORA INTERMEDIA SP.N.
Pr. Dorsal view of prostomium.
(Slightly enlarged.)

first segment, and has a transverse furrow like that in *A. longa*, Ude. The setae are paired, but the tail has the octagonal appearance of *A. profuga*, and the male pores are on papillae of a similar character to those of that species. A curious point is found in the diminution of the three segments which precede that on which the male pores are situated. The tubercula are situated on segments 31-34, but the girdle begins on the 28th and slightly affects the 27th. In this respect the worm differs from all the other species of this group, which resemble *Lumbricus* in the uniformity of their girdle and tubercula. A few examples may be tabulated to show my meaning. The numbers at the top of the line show the girdle segments, those beneath the tubercula.

<i>Lumbricus rubellus</i> , Hoffm. ...	$\frac{27-32}{28-31}$	=	4
<i>Lumbricus castaneus</i> , Sav. ...	$\frac{28-33}{29-32}$	=	4

<i>Lumbricus herculeus</i> , Sav. ...	$\frac{32-37}{33-36}$	=	6
<i>Allolobophora studiosa</i> , Mich. ...	$\frac{29-34}{30-33}$	=	6
<i>Allolobophora profuga</i> , Rosa ...	$\frac{30-35}{31-34}$	=	6
<i>Allolobophora Tyrtaea</i> , Rib. ...	$\frac{31-34}{30-35}$	=	4

But there is another group of worms which has a different arrangement. Thus we find the following:—

<i>Allolobophora longa</i> , Ude ...	$\frac{28-35}{32-34}$	=	8
<i>Allolobophora caliginosa</i> , Sav. ...	$\frac{28-34}{31(32)33}$	=	7
<i>Allolobophora chlorotica</i> , Sav. ...	$\frac{29-37}{31:33:35}$	=	2-3
			9
			3

It will be seen that *A. intermedia* resembles *longa* and *caliginosa* in its girdle segments more closely than the three in the *Tyrtaea* group, to which it belongs in right of its tubercula. Thus we read—

<i>Allolobophora intermedia</i> , Friend ...	$\frac{28-35}{31-34}$	=	8
			4

I think this justifies the name I have adopted, while it suggests a very important inquiry. Our knowledge of hybridity among worms is very meagre and unsatisfactory. Yet facts are continually coming to light which suggest that from time to time hybrids are produced. Is *intermedia* a hybrid? It has the prostomium, the body colour, the girdle segments, and other characteristics of *longa*, while the shape and size of the body, the tubercula, the male pores, and other features link it to *profuga* or *studiosa*. Both *longa* and *studiosa* (= *cyanea*, Sav.) occur plentifully in the Botanic Gardens at Oxford, whence *intermedia* was obtained, and it is, I think, fair to suggest that we may have, in this curious garden worm, a hybrid between two well-known but not very closely allied forms. That being so, an interesting problem awaits investigation. I shall be glad of assistance in its solution. *Hilderic Friend, St. Asaph, Malvern.*

LEAF AND FRUIT.

A DRY summer compels an early fall, and usually much variety of colour and consequent beauty and profit in the leaves. When the summer is wet and cool, leaves grow almost continuously, and preserve their greenness and freshness until a frost or perishing wind arrives to chill the exterior of the tree, check the ascent of the sap, and cut off further nourishment.

Of all the millions who were expectant of the glories of autumn or dependent on fruit growing as a business, few have any idea of the natural processes which bring about the fall or how it affects the leaf- and flower-arrangement of the coming year. A long, cold winter is predicted, because berries chance to be abundant. Berries are fruit, and occur in proportion to the number and quality of leaves made on a tree or plant in the previous season.

Last year's leaves provided for this year's crops of fruit, and this year's leaves have already decided the amount of flower and possible fruit for next year. This year's abundant crop of berries is the result of the long, dry summer of a year ago. Dangerous as it may be not to prophesy good things, it is practically certain that next year will yield a very light crop of fruit, because this season's leaves will fall before attaining a proper degree of ripeness. Ripeness means chemical completeness, for, with different degrees of growth, chemical changes occur, and sap deposits are made according to the supply of water, heat, air, and light. In a dry, hard year, weak or old trees do not make leaves

sufficiently strong to provide complete flower-buds, whilst in a wet season, such as the past, trees "run so much to wood," as gardeners say; that is, make so many leaves and perfect so few of them that more leaf-buds and fewer fruit-buds are provided for the next year. Hence we shall see that comparatively weak trees will yield most next season, because they have made no overgrowth and have had the best chance to ripen their present crop of leaves. An extra early, and an extra late, fall are equally bad signs. An early fall indicates weakness due to lack of sustenance, and is usually induced by drought or a blasting wind at some time during summer, whereas a late fall shows that the leaf-growth has been almost continuous and the heat insufficient to bring about such chemical changes in the sap as lead to the formation and maturation of flower-buds.

The natural period of fall must be regarded as that when the leaves have done the work of completing some sort of bud at the base of their stalks. We say "some sort of bud" because the same leaf may yield a flower or a leaf-bud according to the amount of material it absorbs from the roots and the atmosphere, and according to the climatic conditions obtaining whilst it arranges the chemical deposit at its base. It will be news to most people that every leaf determines its own bud, and that the leaves in one part of a tree have no material influence in the making of the buds of another part. This means that if a leaf does not come to a proper degree of ripeness, the bud at its base remains imperfect. We may at this season, on looking at a tree, see by the character and colour of its leaves if it is or is not going to bear flower next spring. Of course, we must allow for frosts and such defects as are indicative of weakness or excessive strength; but, at the same time, we may come by such knowledge as will decide the method of pruning and soil-treatment necessary during winter.

The weakest parts of trees are the first to shed their leaves. In tall and exposed trees it is often the top which first shows change of colour and runs bare; but more often it is the lower and inside branches, or such parts as have received a meagre supply of sap and insufficient light. Old trees of irregular shape shed their leaves earlier than such as are young, shapely and full of vigour. No particular month may be named as best for the fall, since it is possible for more advance to take place in four months of one summer than during six of another. Steady growth of the original, spring leaves and no heavy secondary crop, such as may be induced by late summer rains, secure the finest bud-development for the succeeding year. Continuous leaf-growth is good for the young, non-bearing trees, but bad for those expected to bear a full crop of ripe leaves, and thereby leave behind them a plentiful supply of flower-buds.

To the majority who work among trees, leaves are merely leaves, and yet they are the governing factors in the life, profit and beauty of every tree. During the present autumn there has been little colour in the leaves, nor was much to be expected. The summer heat was insufficient to break up and provide the materials out of which autumn tints are formed. In such circumstances leaves are capable of changing to nothing more attractive than a weak and monotonous yellow.

Had the months of August and September proved bright and warm, the heavy, sappy leaves would have worked up a great deal of material destined to yield a plentiful variety of autumnal colour. Fruit-buds would also have been more abundant or stronger, whereas, instead, we see a majority of the more primitive leaf-buds.

Forest trees we allow to follow the course of nature, but garden and orchard trees we profess to have under our control, yet we lose much in failing to make a patient and precise study of leaves.

The life-story of a tree is as plain as day—to those who care to read it—and it is only when a man can discern its past history that he is in

a position to observe its inclination and needs. Without this insight it is impossible to plan for and regularly secure the proper proportion of wood and fruit. What comes by chance is often satisfactory, but what comes by design must be better, since it is double fortune—the result of that knowledge which is power and that gain which is the reward of reason. *C. Boque Luffmann.*

The Week's Work.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Cytisus.—No attempt should be made, for the present, to force these cool greenhouse plants, for, if subjected to heat, they rarely furnish a good supply of flowers. They need very careful watering, and should not be given fresh moisture until the roots really need it, or the foliage will quickly turn yellow. At the same time, drought would be followed by shedding of the leaves. Large plants growing in comparatively small pots may be given weak manure water at about every fourth watering. Besides *Cytisus racemosus* and its brighter-coloured variety, *everestianus*, the elegant, white-flowered *Cytisus filipes* should be grown where spring-flowering shrubs are esteemed. The day-fragrant *Coronilla glauca* requires similar conditions to those recommended for *Cytisus*.

Richardia.—Where a considerable stock of *Richardia africana* is grown, a small batch of the most forward plants may be placed in a structure having an atmospheric temperature at night of 55° or 60° Fahr. In this heat the plants must be kept as near to the glass as possible, or they will make an undue amount of leaf-growth. Unless the spathes are required for some particular date, the remainder of the stock of plants should not be kept in a greater heat than 10° lower than that stated, under which conditions larger flowers will be produced, and the flowering period will be of longer duration. These plants, if their pots are well filled with roots, may be given fairly frequent applications of manure; but the plants in the warmer house will flower quicker if all stimulants are withheld until the tips of the spathes can be seen. Throughout the time that the *Richardias* are under glass, they will need frequent fumigations to preserve them from the attacks of aphid.

Begonia.—The plants of *B. Gloire de Lorraine* and similar varieties now in flower must be kept in a warm house, with a fairly dry atmosphere, or the flowers will lose colour and become thin in texture. Occasional applications of weak manure water and weekly waterings with clarified soot water will prolong the flowering season and maintain the foliage in good condition. *B. socotrana*, and such hybrids as *John Heal*, and others, being somewhat of an herbaceous nature, should be grown in a moderately moist atmosphere.

Camellia.—Close attention must be paid to watering these shrubs, whether they are growing in tubs or pots, or planted out in borders, for if they are allowed to become at all dry, many of the flower-buds will drop. It will be well to raise the tubs and pots by placing three thin blocks under each, so as to ensure perfect drainage. Disbudding should now be commenced, the work being done gradually, so as not to cause a severe check to the plants.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Pleiones.—The weather during the past three months has been unfavourable for most Orchids to mature their pseudo-bulbs; but, notwithstanding the great deficiency of light and sun-heat, the lovely little *Pleiones* have produced a greater number of flowers, larger and more brilliantly-coloured blooms than in some previous years, when the weather has been more favourable to the ripening of growth. Such well-known varieties as *P. legendaria*, *P. Wallichiana*, *P. præcox*, *P. concolor*, *P. maculata*, and its variety *alba*, which, for the last month, have been very pretty with bloom, are now passing out of flower. On careful examination, the grower will find that the green shoots from which the flowers have

sprung are in reality new growths, and, under proper treatment, these will form bulbs. The shoots will already have produced from their base a number of small white roots, and, as these roots lengthen very rapidly and are easily broken when handled, the plant should at once be repotted if it is to be repotted this season. It is not necessary to repot *Pleiones* every year unless the soil becomes sour, or the plants need remaking up, for they may be grown in the same receptacles for two seasons, and produce plenty of blooms. It matters little whether ordinary pots or shallow pans are used, though, if the latter, they should be light, and therefore suitable for suspending, which is a consideration where space is limited. Pans 10 inches in diameter will hold about 20 bulbs, and are a very useful size. Pots or pans must be provided with plenty of clean crocks for drainage, it being important that the excess of water should be able to pass away quickly. Over these crocks place a thin layer of rough Sphagnum-moss. The potting compost may consist of fibrous loam, peat, and Sphagnum-moss, in equal parts, well mixing with it moderate quantities of small crocks and coarse silver sand. Last year, in place of peat, we used *Osmunda* fibre, with excellent results. The *Osmunda* should be cut up rather finely, as it mixes better with the loam than when used in a coarse, uncut state. Before repotting, turn the plants out of their pots or pans, and carefully pick out the greater part of the old soil. Remove decayed bulbs, and fix them in the new pot without dividing the bulbs, unless it be those which may have grown beyond the mass, which may be pulled off and used for increase of stock, or for filling a few bare spaces in the clump of pseudo-bulbs. By leaving the clump of bulbs entire, the check seems to be much less, the roots quickly get into the new soil, and the young growths start away with vigour, whereas very often when the bulbs are separated and made up again, the young shoots, especially those of *P. maculata*, turn black and decay. Pot the plants with moderate firmness, and, wherever it is possible, the space between the pseudo-bulbs should be filled in with the roughest of the compost. When repotting is finished, the plants should be placed with the Cattleyas, or near the roof-glass of any house having an intermediate temperature. For a few weeks give but a small supply of water around the inside of the pot or pan, but as the new roots enter the soil, and a corresponding amount of foliage has been made, the supply must be gradually increased, weak, liquid manure water being supplied once a week after the plants have become perfectly re-established. *P. humilis* and *P. Hookeriana* are now at rest. Keep them suspended in the cool house, and afford them enough water to prevent the pseudo-bulbs from shrivelling. They will flower in February. It may be useful to some cultivators to know that *Pleiones*, or Indian *Crocuses*, as they are sometimes called, are almost invariably found in the Himalayan zone at 3,000 to 7,000 feet elevation, growing on the moss-covered rocks, or on the lower part of the trunks of lofty trees that are grown over with moss and intermixed with decaying vegetable matter.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Late Muscat Grapes.—If a suitable room is available, these will be the better for being cut and bottled, and, furthermore, the vines may then be given attention in regard to watering. The Grapes will keep in good condition for a considerable time, provided that proper conditions are maintained in the room in which they are placed. The atmospheric temperature should be kept at about 45° without the aid of much artificial heat. Fill the bottles with rain-water, and place two or three pieces of charcoal in each bottle to keep the water sweet. Let the bottles be furnished with water before they are taken into the room, as it is important to keep the atmosphere in the room quite dry. When the Grapes have been cut the viney may be thrown wide open. Let the border have a thorough soaking with clear water, which, provided the roots are healthy and the borders well drained, may be followed by a watering with diluted liquid manure. The lateral growths may be shortened to induce the basal buds to develop and mature.

Other late Grapes.—Any Grapes which are not required for very long keeping should be cut and

bottled as advised for Muscats. It is bad practice to keep a house closed for an indefinite period for the sake of a few bunches of fruit which would keep as well in a Grape-room. So long as the bunches are allowed to hang on the vines it is impossible for the vines to get the rest which is absolutely necessary to maintain them in a fruit-bearing condition. The ventilators should be thrown wide open day and night. The utmost care will now be necessary in the management of vineries that will contain ripe Grapes for some time longer. The borders should not need any more water until the Grapes are cut. Ventilators must be very carefully managed, but, unless the outside atmosphere is warm and dry, very little air will be necessary. Cold draughts or sudden falls in the temperature must be avoided, and the house had better be closed during damp or foggy weather. Endeavour to keep an equable temperature of about 50°, except during frosty weather, when 5° lower will be more suitable. Examine the bunches frequently for bad berries, and take care that, in removing these latter, others are not damaged with the point of the scissors.

Mid-season vines.—Persevere with the pruning and cleansing of vines now at rest. In pruning young, vigorous vines, be careful not to leave too much wood. These may be pruned to two good buds. In the case of older vines, and in order to secure an even crop of bunches, it is sometimes prudent not to prune quite so hard. Young vines often bleed badly when started; this may be prevented by painting the surface of the newly-made cut with styptic. Vines that have been affected with thrip, mealy-bug, or red spider, must be cleansed rather more severely than in cases where these pests are not present. It is a good practice to burn sulphur in fruit houses when the trees are dormant, but care must be taken that the fumes do not escape into neighbouring houses containing plants. The work of renovating and extending borders must be pushed on whenever the weather will allow.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LOOER, Bart., Leonardlee, Sussex.

Plants in cool frames.—The bedding plants now in unheated frames must not be allowed to suffer neglect. They require to be kept clean from pests, and have all weeds removed from the pots and from the beds in which such plants as Calceolarias, Pentstemons, Primulas, Genistas, Veronicas and other species are planted. Pots containing very rare plants should be plunged to their rims in fine coal-ashes. They may be plunged quite closely together, and by this means a dozen lights or so will serve to cover thousands of small pots. Remove the lights whenever the weather is dry and there is no frost, and tilt them on wet days, it being undesirable that these plants should be coddled in any way. Keep the glass of the frames clean that it may admit the sunlight. In this dull season of the year excessive damp is often more injurious than cold, therefore take means to prevent any excessive damp arising amongst the young stock. Cuttings of hard-wooded plants in frames need an abundance of air, and in these and all other cases care should be taken that the stocks of a particular kind are not excessive. If any fungal disease appears upon the Carnation layers, let them be sprayed with a fungicide directly the disease is seen.

Protecting plants out-of-doors.—An abundance of protecting material, such as Bracken or litter, should be in readiness for covering half-hardy plants on the approach of severe frosts. Dracenas should have the stems bound up almost directly, and some ashes or peat placed over the roots. Half-hardy climbers on walls should have a protective material spread over the roots, and in the case of more than 10° of frost a blind or some mats should be thrown over the top growth. If these details are left until frost is imminent it will frequently happen that they cannot be carried out in time to prevent injury.

Bulbs.—Gladioli and Dahlias should be stored in some dry material, in boxes, where they may be conveniently inspected from time to time. Tuberous Begonias may now be examined, and all the decayed leaves removed. The bulbs should be cleaned and stored in leaf-mould or cocoanut fibre refuse, and placed in a position where frost is excluded.

Specimen plants.—Hydrangeas and Agapanthus, in tubs, should be placed in a cool house or shed. If there are any of these or similar species planted out, some dry litter must be placed over them, and a mulch of litter for their roots.

Gravel paths.—Roads and paths formed of gravel have become almost grown over with green, owing to the heavy rainfall in October. Such paths should be raked with a fine toothed iron rake in fine weather, and moved daily to dry, when the moss and small weeds may be swept up. If a weed killer were used now, it would do very little good beyond turning the moss brown. When the paths have been properly cleaned and swept, let the gravel be rolled down again until it is perfectly firm.

Fallen leaves.—Collect all fallen leaves and heap them in some place in the shrubbery, where the winds will not be likely to blow them about; they will make excellent leaf-mould for next season. I am speaking now of leaves which have fallen on the lawns and paths; those which fall in the shrubberies should be left, for they are useful for the shrubs themselves. It is a mistake to rake out shrubberies, even though it be done for the sake of neatness. If the raking-out has to be done owing to the nearness of the dwelling-house, then the removal of the leaves must be compensated for by a mulch of decomposed leaf-mould or similar material.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Peaches and Nectarines.—In recent years, and probably owing to the erection of cheap glass structures, the cultivation of Peaches and Nectarines out-of-doors appears to have suffered some neglect. It should be remembered, however, that in well-appointed gardens, in favourable localities, there are usually walls with warm aspects that ought to be utilised for these choice fruits. An out-door crop provides an agreeable succession to the fruits grown under glass. The present time is a favourable one for planting trees. Let the borders be thoroughly prepared and everything put in readiness in order that the work may not be delayed after the trees are received from the nursery. In most gardens the borders under the warmer walls are in great request for the cultivation of early vegetables and salads, and, therefore, in most cases the ground where the trees will need to be planted is already properly drained, and in a good state of cultivation. Indeed, the soil may be so rich as to be unsuitable for the cultivation of the Peach trees, and it is a good plan to remove such soil and substitute a compost specially mixed for the purpose of fruit culture. There is nothing better than good, sweet loam, in which has been mixed a liberal addition of wood-ashes and lime rubble. Such a compost needs no manure added to it. In planting permanent trees, stations should be made at distances of at least 20 to 25 feet apart, but when planting smaller trees, such as will take some years to furnish the space, it is usual to plant at about half that distance in order to furnish the wall quickly and get a better return in the first few years. If this plan is adopted, the trees must be rearranged before they are sufficiently large to crowd each other. The trees that will then have to be removed can be utilised for planting under glass or in place of any Peach trees that are unsatisfactory. It is often difficult to get Peach trees delivered from the nurseries until well into the month of December, but if they are obtainable already, the work should be carried out at once. Examine the roots thoroughly before planting and cut back all those of a straggling, thong-like character, and any that are damaged. This cutting will cause the roots to make a quantity of fibres. Let the ground be made quite firm underneath the stem of the tree, and in finishing the planting the soil should be left slightly higher than the surrounding level, in order to allow for the settling which will subsequently take place. It may be necessary to work in some of the finer soil amongst the roots by means of the hand. Planting is best done when the soil is in a moderately damp condition; if it is too wet or too dry, the firming cannot be carried out without leaving the soil in an undesirable condition. In the pages of this journal for September 11 last, I gave a selection of

varieties of both Peaches and Nectarines suitable for providing a succession of fruit.

General work.—Owing to cold, drying winds having succeeded the wet weather, the ground is now in a suitable condition for working; therefore push on with root pruning, planting, pruning, and training. Early planting is advantageous, for, in this case, root action may be expected to commence at once, and the trees will thus be better able to withstand extremes of weather that may occur next season. On frosty mornings wheel out the manure to the fruit quarters, placing it in small heaps in readiness for spreading when pruning and clearing up is finished. This applies to Raspberries, Currants, and Gooseberries, and to all established trees, which regularly bear fruit. Young trees growing vigorously seldom need manure.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICAR, GIBBS, Aldenham House, Elstree, Hertfordshire.

Cucumbers.—It is not always easy to maintain a constant supply of fresh Cucumbers in winter, even when the necessary means exist for the cultivation of the plants. One of the greatest helps to successful Cucumber culture is sunshine, and it is principally the absence of sunshine in winter, often for several days together, that makes the work so difficult. The plants need a fairly high temperature now, both by day and night; but the atmosphere of the house must, nevertheless, be maintained in a moist condition. Keep the glass of the roof and sides of the house perfectly clean, in order to expose the plants to whatever sunlight there happens to be. Endeavour to induce the plants to make plenty of young fruiting wood by stopping and removing the older and more exhausted portions of the plants. In no case must the roots be allowed to become dry, and, in applying water, it should first be heated to the same temperature as that of the atmosphere in the house. The plants need occasional applications of manure water from the farmyard, and thorough syringings with clear water on sunny mornings. If there are any signs of red spider, thrip, or aphid, &c., the house had better be fumigated with the XL-All vapourising compound. If the least sign of mildew is observed, let it be prevented from spreading by applying some black sulphur. Seedlings raised last month should now be sufficiently advanced for planting out. Prepare a sweet hot-bed, consisting chiefly of Oak or Beech leaves, and in this place a compost of rather light material, containing plenty of leaf-mould. When the bed is ready for the plants, it should be only a short distance from the roof-glass. Another sowing should be made in the first week in December, placing the seeds singly in thumb pots. The seedlings should be raised on a brisk bottom heat. A capital plan is to provide narrow boxes made to fit the hot-water pipes. If these are filled with Cocoanut fibre refuse, and the little pots are plunged in this material, the seeds will very soon germinate.

Tomatos.—Plants which were specially grown for winter fruiting will now be coming into full bearing. Every care should be taken to keep them in a perfectly healthy condition. To this end, it is necessary to avoid extreme temperatures; from 55° to 60° is a safe medium, varying from one to the other according to the conditions of the weather out-of-doors. Contrary to Cucumbers, Tomatos require a dry atmosphere, especially in winter, and the air must be kept buoyant and moved by liberal ventilation whenever the weather will permit. The cultivator must be careful never to over-water the roots. Immediately the fully-developed fruits show signs of colouring, let them be cut and placed in a warm house to ripen. At this season the flowers require to be artificially pollinated, or they may not develop fruit. Successional plants should be potted and kept in about the same temperature. Another sowing of one or two varieties should be raised in a gentle heat.

Jerusalem Artichokes.—Cut down the growths of the Jerusalem Artichokes and lift the tubers, sorting out the largest and best-shaped for consumption; the smaller ones may be reserved for planting next season. These Artichokes keep best when pitted in the same way as Potatos. The improved white form is much superior in appearance and quality to the old purple tuber formerly in general cultivation.

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 EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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

APPOINTMENTS FOR DECEMBER.

WEDNESDAY, DECEMBER 1—
Roy. Hort. Soc. Exh. of Colonial Produce and Preserves (4 days). (Lecture on the opening day at 3 p.m. by Mr. Robt. Newstead, on "West Indian Insect Pests.")

SATURDAY, DECEMBER 4—
Soc. Franç. d'Hort. de Londres meet.

TUESDAY, DECEMBER 7—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. C. Herman, senr., on "The Cooking of Vegetables"). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, DECEMBER 8—
Perpetual Flowering Carnation Soc. Exh. at Hort. Hall, Westminster.

MONDAY, DECEMBER 13—
United Hort. Ben. & Prov. Soc. Com. meet. Nat. Chrys. Soc. Executive and Floral Coms. meet at Essex Hall, Strand.

WEDNESDAY, DECEMBER 15—
Roy. Meteorological Soc. meet.

TUESDAY, DECEMBER 21—
Roy. Hort. Soc. Coms. meet.

SATURDAY, DECEMBER 25—
Christmas Day. Quarter Day.

MONDAY, DECEMBER 27—Bank Holiday.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—41°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 24 (6 P.M.): Max. 40°; Min. 30°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 25 (10 A.M.): Bar. 30.3; Temp. 43°; Weather—Dull.

PROVINCES.—Wednesday, November 24: Max. 46° Cornwall and N.W. Ireland; Min. 37° Sunderland.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—
Miscellaneous Plants and Bulbs, at 12; 3,200 cases Japanese Lilliums, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 2.

WEDNESDAY—
Herbaceous and Border Plants, at 12; Roses, Azaleas, Palms, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.30.
Sale of Fruit Trees and general Nursery Stock, at Platt Nurseries, Borough Green, near Wrotham, Kent, by order of Mr. J. W. Todman, by Protheroe & Morris, at 11.30.
Unreserved sale of Orchids, from the Vine House Collection, at the Coal Exchange, Manchester, by Protheroe & Morris, at 2.

FRIDAY—
Border Plants and Perennials, at 12; Roses at 1.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

A The Council of the John Innes Horticultural Institution has announced the acceptance, by Professor Bateson, F.R.S., Professor of Biology at the University of Cambridge, of the post of Director of the new Institution. It is a most satisfactory appointment. The first director should be a man of established reputation: Professor Bateson's scientific investigations have gained for him world-wide fame. The director should be a man with powers of organisation and administration: Professor Bateson has proved in his college and university work at Cambridge that he has these powers. Above all, the director should have the faculty, essential to a commander, of infecting his colleagues and others with a zealous enthusiasm for the cause he represents: this rare power, the expression of personality, the new director possesses in a remarkable degree. We have complete

confidence that Professor Bateson will interpret the duties of his important post in the widest sense, and that he will make of the Merton establishment, not only a great plant-breeding station, but also a school of research in which all the important branches of horticulture are made the subject of experimental enquiry. He will see to it that the results achieved by workers in the institution will be not only of scientific, but also of direct and definite practical value. With Kew as the leading school of scientific botany, with Rothamsted engaged in the solution of soil and allied problems, and with the Innes Institution undertaking investigations into the causes and modes of prevention of plant diseases, into the laws of inheritance and their applications to plant breeding, and into the many obscure problems of what may be called applied plant physiology, we may well hope to develop in this country the finest

OUR SUPPLEMENTARY ILLUSTRATION.—St. Catherine's Court is believed to have been built by Prior CANTLOW at the end of the 15th century. The gardens attached to the place have always possessed considerable interest, and they remain now much in the same condition as they were half a century ago, an excellent example of English gardening during the period when the formal system largely predominated. The upper terrace is approached by steps leading from the front of the house, shown in fig. 159, and there are records which relate that above the site of the upper terrace, the priors used to cultivate vines for vintage purposes. Some of the more interesting plants in the garden include several very large specimens of Japanese Maples having stems several inches in diameter. There is an excellent specimen of *Araucaria imbricata* about 40 feet high, and some particularly good plants of *Cupressus*, especially *C. macrocarpa*. St. Catherine's is a parish containing a population of about 100 inhabitants. It is four miles from Bath, and about three miles from Bathampton Railway Station.



PROF. W. BATESON, F.R.S.

The first Director of the John Innes Horticultural Institution at Merton.

system of scientific horticulture in the world. Moreover, knowing Professor Bateson's keen sympathy for horticulture, we may also hope that he will, in co-operation with Kew, make the Institution famous as the centre for the training of men in practical gardening. If so, Professor Bateson's own words, uttered in a speech made on the occasion of the last Genetic Conference, will prove prophetic, "the scientific and the practical" will "have gone to form a fertile hybrid." It will require a level head and steady hand, to hold the balance true between the claims of research and those of teaching. The qualities which Professor Bateson possesses will secure this end. We congratulate the Council on the appointment, being convinced that, by it, they have taken the surest step to determine for the Institution the position of a school of horticulture of university rank.

One of the most interesting features of this little parish is the old, and very small, church adjoining the Court gardens. The church was partly built or restored by Prior CANTLOW.

VICTORIA MEDAL OF HONOUR.—As our pages go to press, we are informed that the president and council of the Royal Horticultural Society have appointed Mr. W. BOTTING HEMSLEY, F.R.S., Mr. J. H. GOODACRE, head gardener to the Earl of HARRINGTON, at Elvaston Castle, and Mr. A. MACKELLAR, head gardener to his MAJESTY THE KING, at Windsor, to fill the vacancies existing in the Victoria Medal of Honour in Horticulture.

KEW GARDENERS.—On Wednesday, November 17, the young gardeners held a social gathering in the Boat House, Kew. The arrangements were carried out by the members of the football team, about 130 of the staff and friends being present. In addition to dancing, a whist drive was held, the prizes being presented by Mr. ADAMSON.

"THE BOTANICAL MAGAZINE."—The issue of this journal for November contains figures and descriptions of the following plants:—

MAGNOLIA DELAVAYI, tab. 8282.—This species is from Yunnan in China, where it occurs at altitudes between 5,500 and 7,000 feet. In rocky places it is found as a mere shrub 8 feet high, but in more favourable situations it grows 15 to 30 feet high. It has large, persistent leaves, and extra large, cream-white flowers. The plant is not hardy in the open garden at Kew or at Messrs. Veitch's nursery at Coombe Wood, but it succeeds against a wall in both these places. The species was introduced for Messrs. JAS. VEITCH & SONS by Mr. E. H. WILSON during his first journey in China.

PIERIS FORMOSA, tab. 8283.—This is an old species which has been in cultivation in European gardens for half a century. It formed the sub-

CEPHALOTAXUS DRUPACEA, tab. 8285.—This species was illustrated in *Gardeners' Chronicle*, December 14, 1895, fig. 20, from specimens received from Powerscourt, Co. Wicklow.

KITCHINGIA UNIFLORA, tab. 8286.—This is a Crassulaceous plant suitable for cultivation in a pan or a suspended basket in a moist, tropical house. The solitary flowers are produced at the ends of the shoots in spring, and are reddish-purple. Dr. STAFF believes the species to be a native of Madagascar, but there is no direct testimony as to where the first plants were obtained.

NATIONAL SWEET PEA.—The annual general meeting will be held in the North Room, Hotel Windsor, Victoria Street, Westminster, at 3 p.m., on Friday, December 10. At 7 p.m. a conference will take place, when the following papers will be read:—(1) "The Imperfect Seeding and Waved Sweet Peas," by Mr. WM. CUT-

Guildford, so as to reach him not later than January 15. For the Novelty Trials not fewer than 15 seeds should be sent, and for the Purity Trials, not fewer than two dozen seeds of each variety or stock. At the same time a list of the varieties, together with the amount due for trial charges, should be sent to the Hon. Sec., Mr. C. H. CURTIS, Adelaide Road, Brentford, Middlesex.

A SWEET PEA SOCIETY FOR PERTHSHIRE.—A meeting was held in Perth on November 20, for the purpose of inaugurating a Sweet Pea society for Perthshire. The Rev. JOHN S. CLARK, Dunbarney, presided. On the motion of Mr. PATERSON, Almondbank, it was agreed to form such a society. Some discussion followed as to whether it should be named the Perthshire Society or the Scottish Society, but ultimately it was decided to adopt the former name, but to allow the competitions to be open. The Rev. J. S. CLARK was appointed president, and Mr. R. S. HALLEY, 4, Rockford Terrace, Perth, secretary.

LINNEAN SOCIETY.—The next meeting will be held on Thursday, December 2, at 8 p.m., when the following papers will be read:—(1) Sir CHAS. ELIOT, K.C.M.G., "Nudibranchs from the Indian Ocean"; (2) Dr. GEORG ULMER, "Trichoptera von Hugh Scott, auf den Seychellen gesammelt"; (3) Dr. W. H. DALL, "Report on the Brachiopoda obtained from the Indian Ocean by the 'Sealark' Expedition, 1905"; (4) Professor J. STANLEY GARDINER, F.R.S., and others, "Narrative of the 'Sealark' Expedition," Part III. Exhibitions:—(1) Dr. H. DRINKWATER, water-coloured drawings of Wrexham wild flowers; (2) Mr. CLEMENT REID, F.R.S., plants in Britain introduced by the Romans; (3) Mr. G. CLARIDGE DRUCE, *Zannichellia gibberosa*, Reichb., a new British plant, and a new variety of *Orchis maculata*.

ROYAL METEOROLOGICAL SOCIETY.—At the meeting of the Royal Meteorological Society, held on the 17th inst., the president announced that the Council had awarded the Symons' Gold Medal to Dr. WILLIAM NAPIER SHAW, F.R.S., in recognition of the valuable work which he has done in connection with meteorological science. The medal will be presented at the annual general meeting of the Society on January 20, 1910.

THE SCENERY AT WINDSOR.—In order to preserve the beauty of Windsor Castle, it has been found necessary to purchase some riverside land between Alexandra Gardens and the Curfew Tower at Windsor. A subscription list has been opened for this purpose, headed by the KING with a donation of £500. At a recent meeting of the Windsor Corporation the Mayor, Alderman THOMAS DYSON, was authorised to open a subscription list for Windsor, Eton and district. The sum required for the purchase is £3,000.

MR. MAX KOLB.—The honorary director of the Royal Gardens, Munich, has received the congratulations of his horticultural confrères in all parts of the world on the attainment of his 80th year on October 29. So long ago as 1855 Mr. KOLB undertook the direction of the International Exhibition of Horticulture organised by the National Society of Horticulture of France. He remained in France, taking an active part in horticulture till 1860, and subsequently accepted the position which he now holds at Munich.

THE MUNICH ACADEMY OF SCIENCES has elected as corresponding members Dr. ARTHUR HUNT, of Oxford; Lieut.-Col. PRAIN, Director of the Royal Botanic Gardens, Kew; and Professor BOWER, Regius Professor of Botany, University of Glasgow.



FIG. 159.—ST. CATHERINE'S COURT, SOMERSETSHIRE.
(See also Supplementary Illustration.)

ject of a full page illustration in the *Gardeners' Chronicle*, April 30, 1881, fig. 107.

COTONEASTER MOUPINENSIS, forma **FLORIBUNDA**, tab. 8284.—*C. bullata*, Bois, named from specimens received by M. L. DE VILMORIN, from a place near Tachienlu, are considered by Dr. STAFF to be merely a form of *Cotoneaster moupinensis*, Franch. Franchet's original description was prepared from specimens collected by the Abbé DAVID, in 1870. The specimens raised from M. VILMORIN'S seeds differed in that they contained a greater number of flowers and fruits in each corymb, which Dr. STAFF shows to be an unstable character. The plant now figured in the *Botanical Magazine* succeeds splendidly at Kew, where it is an attractive garden shrub, by reason of its large, bullate leaves and its abundant crop of brilliant berries, which ripen in September.

BERTSON, J.P.; (2) "Sweet Pea Names and Naming," by Mr. W. J. UNWIN. Dinner may be had at the hotel at 5.30 p.m., tickets 5s. each (exclusive of wine). Application for tickets should be made to the Hon. Sec., Adelaide Road, Brentford, Middlesex, not later than December 9.

—The Society will hold its annual series of trials in 1910, at the Times Experimental Station, Ladygrove Farm, near Guildford. No Awards or Certificates will be granted to Sweet Peas unless they are sent for trial. Varieties will be accepted only from the raiser or introducer; a charge of 2s. 6d. for each variety will be made. The Society will also conduct distinct trials solely for the purpose of testing correctness and purity of stocks of Sweet Peas. A charge of 5s. per variety or stock will be made. The seeds should be sent to Mr. C. FOSTER, Ladygrove Farm, near

THE LATE MR. W. W. POLDEN.—Messrs. HURST & SON point out that our brief notice of Mr. POLDEN's death, published last week, appears to state that deceased was formerly in the habit of calling upon private gardeners, whereas the firm's dealings are, of course, with retail seedsmen.

AMERICAN ASSOCIATION OF NURSERYMEN.—We gather from the American papers that Mr. JOHN HALL has been appointed secretary of this association until the next annual election in the place of Mr. GEORGE C. SEAGER, who has resigned. Mr. HALL is also the secretary and treasurer of the Western New York Horticultural Society and has offices at 204, Granite Building, Rochester. He has filled this latter position for 21 years, and the society has a membership of nearly 1,500. Mr. HALL is also a member of the board of Park Commissioners of Rochester.

PUBLICATIONS RECEIVED.—*A History of Botany, 1860-1900*, being a continuation of Sach's *History of Botany, 1530-1860*, by J. Reynolds Green. (Published at the Clarendon Press, London.) Price 9s. 6d.—*The Cambridge History of English Literature*. (Vol. iv.) By A. W. Ward, Litt. D., F.B.A., Master of Peterhouse, and A. R. Waller, M.A., Peterhouse. (Published by the University Press, Cambridge.) Price 9s.—*Bulletin of Miscellaneous Information, Royal Botanic Garden, Kew*. Addition series IX.: The Useful Plants of Nigeria. (Part I.) Price 2s.—*Examinations in Horticulture, 1910*. Royal Horticultural Society, Vincent Square, London, S.W. (Printed by Smith & Ebbs, Ltd., Northumberland Alley, Fenchurch Street, E.C.) Price 2s.—*Papers set at the Examinations in Horticulture, 1893-1909*. Royal Horticultural Society, Vincent Square, London, S.W. (Printed by Spottiswoode & Co., Ltd., New Street Square, London.) Price 2s.—*Contributions from the Laboratory of the Rothamsted Experimental Station*. (Laws Agricultural Trust.) Reprinted from the *Journal of Agricultural Science*, October, 1909. (Cambridge: University Press).—*Principes de Chimie Horticole*, by Dr. Alfred Monnier. (Published by Octave Doin et fils, 8, Place de l'Odeon, Paris.)—*L'Hybridation en Horticulture*, by Georges Bellair. (Published by Octave Doin et fils, 8, Place de l'Odeon, Paris.)—*Exposition Universelle et Internationale de Bruxelles 1910 Horticulture*. Programme officiel des Concours, temporaires et permanents. (Secretary to the Horticultural Committee of the Brussels, Rome and Turin Exhibitions, 8, Whitehall Place, London, S.W.)—*The Beginnings of Life from the View Point of a Bacteriologist*. (Charles E. Marshall.) Reprinted from the Eleventh Report of the Michigan Academy of Science, 1909.—*Report of the Bacteriologist*. (Charles E. Marshall.) Reprinted from the Forty-eighth Annual Report of the Michigan State Board of Agriculture, June 30, 1909.—*Journal of the Board of Agriculture*. (November.) (R. Clay & Sons, 7 & 8, Bread Street Hill, Queen Victoria Street, London).

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CUERDEN HALL GARDENS.—I see by the paragraph on p. 345 that my old master is leaving Cuerden Hall. A short time ago I had the pleasure of visiting the gardens, where I had spent three happy years, and was pleased to see the all-round good condition there. Pineapples looked as well as ever; there were a few fruits of smooth Cayenne in 11-inch pots that would weigh 5 lbs. or 6 lbs. each. Calanthe Veitchii, in 6-inch pots, was showing strong flower-spikes, and the best batch of Dendrobium nobile I ever saw had numbers of growths 2 feet long. There was also a grand lot of Begonia Gloire de Lorraine. When I was at Cuerden we grew plants of Mignonette 2 feet 6 inches high and the same in width; the flower-spikes were 20 inches long. The soil in the kitchen garden there is one of the worst, but, considering the season, the crops were good this year. C. P.

MINA LOBATA FROM HOME-GROWN SEED.—Last summer I had a very fine display of *Mina lobata*, the Mexican Climber, covering the south end of the house. It grew in masses all round my bedroom windows. I noticed, one warm moonlight night, that a great many flowers were open, and was fortunate, with the help of a paint-brush, in setting a considerable amount of seed. I have grown this plant regularly since 1891, and though I have tried every year to set seed in the daytime, have had hardly any success. Plants nearly related to this species are fertilised by night moths; it may be that is what is wanted in this case, too, and that the right moth is missing. The fruits ripened well; each contains when ripe but one seed. They were sown in heat in February. Every seed germinated; the young plants were kept in pots in a cool greenhouse till the beginning of June, when they had climbed to the top of 6-foot sticks. They were then planted out and grew rapidly, one attaining a height of 17 feet. In spite of the bad summer, three of these plants reached the roof of the house and were covered with a dense mass of flowers. Unfortunately, owing to the cold weather, I have been unable to ripen any fruit. The plants were cut down by frost at the end of October. It would be interesting to have the experiences of those who have grown *Mina lobata* from Mexican seed this year. In spite of the weather, I have never had a better show. *Rina Scott, Oakley, Hants.*

CARBOLIC ACID AND BLACK SCAB DISEASE.—The remedy which I have found effectual for some years past for sleepy and the other diseases of Tomato would, I believe, prove also a cure for Potato diseases. I notice that the affected crops referred to on p. 314 were growing in land which had previously been planted with Potatoes. That might account for the loss of the crop, as we found, when planting the variety Sir John Llewellyn twice following in the same ground, that, although the first year there was a large crop, the second year there were scarcely any tubers. I venture to suggest that, if land were treated with carbolic acid in solution before planting, the disease would be prevented. In subsequent attacks the plants should be watered with the solution, but not sprayed, and the roots in the ground will stand more of the specific than the leaves. The land should be dressed with about 3 ounces to each four gallons of water, and after planting, about one teaspoonful to four gallons of water would be strong enough. I should like to see a few tests made, and the results published. As a winter dressing for soil I think carbolic acid will supersede gas-lime and yield far better results. In the case of Tomatoes the crops are more vigorous. The benefit, apart from the value in destroying fungi, would seem to be analogous to the effect of fallow treatment, with the acid reaction resulting in soil from fermentation in the dark and as in the sludge treatment of sewage. It is also somewhat similar to the high fermentation set up in hot-beds used in intensive cultivation. The healthiness and freedom from disease germs of the black soil resulting from intensive culture seems very remarkable. Is there not an acid reaction or residue noticeable in any of these cases? I do not know that there is any such thing, but it seems feasible. I am quite sure of my ground as far as Tomatoes are concerned. *F. Kitley, Oldfield Nurseries, Bath*

DIMORPHOTHECA AURANTIACA.—I quite agree with Mr. Gumbleton (p. 315) that plate 408 of Curtis's *Botanical Magazine*, entitled *Calendula Tragus*, is not a good representation of *Dimorphotheca aurantiaca*, but it is considered, on good authority, to be intended for that plant. Either it must have been a pale variety or was altered by the conditions of cultivation, or the artist was at fault in the matter of colour. Climatic conditions and cultural treatment have a great effect upon other species of *Dimorphotheca* from South Africa. *D. Ecklonis* and *D. aurantiaca* are both catalogued as half-hardy annuals in this country, yet the former, in its native home, is a suffruticose or half-herbaceous plant, and the latter a rigid, upright shrub, like a Lavender bush. The truly annual species are usually gathered with their roots intact, but I have seen no roots of native specimens of *D. aurantiaca*. *Calendula flaccida*, *Vent. Madm.*, t. 20, is a good representation of the plant or a form of it, for the colour there is not so exact as in the *Botanical*

Register, i. 28, where a fine plate from a cultivated plant is given under the name of *Calendula Tragus* β. The chief discrepancies between the descriptions and Messrs. Barr & Sons' plant are the annual character of the root and the smaller flower-heads of the latter, but these differences may be due to climate. Two annual species come from Namaqualand, but they are entirely different in foliage and other respects. *D. aurantiaca* originally came from Little Namaqualand. *Calendula Tragus* was first described by Aiton, *Hortus Kewensis*, iii., 271, and the plate, *Botanical Magazine*, t. 1981, seems a good representation of it. Harvey himself, in *Flora Capensis*, iii., 420, quotes this plate as a synonym of *Dimorphotheca Tragus*, De Candolle. It is a handsome plant, but some other species of Cape Marigolds that seem to have dropped out of cultivation well merit reintroduction. *J. P.*

ONIONS.—No doubt *G. H. H. W.* (see p. 330) considers he has made out a good case against the transplanting of Onions when he asserts that those sown in the open ground are produced with far less expense. Having tried both methods, I find that raising them in a frame and transplanting them is the cheapest and most efficient way to obtain a good crop of Onions. *G. H. H. W.* says the only labour required after sowing in the open is weeding and hoeing. What about thinning? When the planting-out system is adopted and the seed is sown, say, the last week in February, on a gentle hot-bed, it will be found that only about one-quarter the amount of seed will be required that would be necessary for sowing the bed in the open. Transplanting, which takes place about the second or third week in April, does not require so much time as is usually spent in thinning. Sowing indoors and transplanting also secures immunity from the ravages of the Onion fly; this is the greatest advantage claimed for the method, and when it becomes more generally adopted, as I believe it will, we shall hear far less of the ravages of this pest. *W. C. R.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 23.—The usual fortnightly meeting was held on Tuesday last in the Society's Hall, Westminster. The exhibition was a small one, but there was a good attendance of visitors. An outstanding exhibit was a group of Chrysanthemums put up in a most artistic manner. Messrs. VEITCH again made a fine display with Begonias, several firms showed Carnations of the perpetual-blooming type, and other exhibits of special interest included a collection of Selaginellas, small pot plants of Chrysanthemums, and berried shrubs. The FLORAL COMMITTEE conferred six Awards of Merit, four of these being to seedling Chrysanthemums. The ORCHID COMMITTEE had fewer groups than usual to inspect, but they conferred awards, including four First-class Certificates, three Awards of Merit, and one Botanical Certificate.

An exhibit was shown from the WOBURN EXPERIMENTAL FRUIT FARM. Some good fruits were staged in the competitive classes for Apples and Pears. The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty.

At the afternoon meeting, in the lecture-room, an address on "Spices" was delivered by Mr. J. A. Alexander.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. C. T. Drury, H. B. May, W. G. Baker, E. A. Bowles, Jas. Walker, John Green, C. R. Fielder, J. W. Barr, Robt. W. Wallace, W. J. Bean, J. F. McLeod, G. Renthe, H. J. Jones, C. Dixon, Chas. E. Pearson, Chas. E. Shea, J. T. Bennett Poë, W. P. Thomson, E. H. Jenkins, Ed. Mawley, Charles Blick, and R. Hooper Pearson.

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonstone, showed 60 species and varieties of Selaginellas, a very comprehensive collection containing many rare plants. Amongst the most decorative were *S. usta*, with upright stems and broad, Fern-like leaves, the sheets being useful for cutting; *S. erythropus*, with golden tint, this being developed only in autumn; *S. Wallichii*, a rare Asiatic plant, with elegant

foliage, borne erect on stems like a *Gleichenia*; *S. coccinea* arborea, the giant of the family (the scandent stems being 8 or 10 feet in length, with proportionately large, glaucous leaves); *S. Watsonii*, like a dwarf *Cupressus* (in spring-time the plant assumes a whitish appearance); *S. gracilis*, somewhat like a plant of *Grevillea robusta*; and *S. Poulterii*, on a column of *Sphagnum-moss*, its darker shade only distinguishing it from the moss. Amongst the "mossy" section, *S. serpens*, *S. apoda*, *S. patula*, *S. albospica*, *S. elegans*, *S. sarmentosa*, and *S. formosa* are all worthy of mention. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, again displayed a magnificent exhibit of winter-flowering *Begonia*, the large-flowered Mrs. Heal variety being especially fine. Even more remarkable were plants of *Elatior*, in 3½-inch pots, each specimen being like a little bouquet of flowers. *Ensign* and *Julius* were represented in large batches of well-grown plants. On a table opposite to the *Begonia* the same firm showed pot plants of *Chrysanthemums*, having such decorative varieties as *Roupeil Beauty*, *Feltham White*, *Ursa Major*, *Market Red*, *Portia*, and *Nellie Rainford*, in elegant little specimens. (Silver-gilt Flora Medal.)

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, showed well-grown plants of the small pink-flowered *Begonia Patrie*, and perpetual-blooming *Carnations* in most of the popular kinds. (Bronze Flora Medal.)

E. WYTHES, Esq., Copped Hall, Epping (gr. Mr. Bullock), displayed a floor-group of *Begonia Ensign*, with large trusses of semi-double, rose-coloured flowers. *Palms*, *Liriope striata*, and *Ferns* were employed as relief. (Bronze Flora Medal.)

J. A. DUNN, Esq., Coombe Cottage, Kingston Hill (gr. Mr. S. Barrell), showed several plants of *Begonia Ensign*, having large trusses of the pretty rose-pink blossoms. (Bronze Banksian Medal.)

Messrs. JOHN PEED & SON, Nurserymen, West Norwood, showed alpine plants in pots, including about 50 species of *Saxifraga*, also numbers of tiny succulent plants in little pots.

Mr. L. R. RUSSELL, Nurseryman, Richmond, showed a large group of berried plants with ornamental-leaved shrubs interspersed. At the back were large plants of *Holly* in berry, some having yellow fruits. There were also *Aucubas*, *Skimmias*, *Crataegus Lelandii*, *Cotoneasters*, *Eleagnus picta aurea*, *E. Simonii aurea*, *Eurya latifolia variegata*, and *Ivies* in great assortment. Mr. RUSSELL also showed varieties of single *Chrysanthemums*. (Silver Flora Medal.)

Messrs. SUTTON & SONS, Reading, showed varieties of *Primula obconica*. The blooms of the largest-flowered variety were a shade of rose, and not unlike the "pips" of *Primula sinensis*. A variety of crimson shade had smaller flowers, but they were of a very rich tone. Others were labelled *Pure White* and *Giant Pink*.

Messrs. W. CUTBUSH & SON, Nurserymen, Highgate, staged a charming display of *Carnations*, the varieties including, in addition to all the popular varieties, several new kinds, of which *Rosine* (rosy-cerise), *Lady Ridley* (yellow ground, picotee edged), *C. W. Cowan* (crimson), and *Countess of Onslow* (of the same type as *Mikado*, but lighter in colour and with a pink shade at the base of the petals) were the more notable. A vase of *White Perfection* was especially good. (Silver Flora Medal.)

Carnations were also shown by Mr. A. F. DUTTON, Iver, Bucks., several vases of the new *May Day* variety being included in the exhibit.

Messrs. H. J. JONES, LTD., Hither Green, Lewisham, set up an imposing exhibit of *Chrysanthemums*, the group occupying an area of 300 superficial feet. It was made more attractive by a background and carpet of green drapery. At the back were nine tall tripods filled with large Japanese blooms of the varieties *H. J. Jones 1908* (yellow), *Mme. R. Oberthur* (white), *Buttercup* (yellow), *Mme. P. Radalli* (white), *Mrs. Burgess* (red), *Mme. G. Rivol*, and *Mrs. Trevor Williams* (cream, shading to pink). There were also large Japanese vases filled with big blooms, and numerous smaller ones containing single and decorative varieties. Highly-coloured *Crotons* also *Palms*, *Ferns* and other greenery were interspersed amongst the flowers, all of which were of excellent quality. (Silver-gilt Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a very artistically-grouped exhibit of

Chrysanthemums, the use of brown Beech leaves as a ground having a good effect. The variety *Bacchus*, of the "spidery" or thread-petalled section, is curious; the much-cut florets are tinged with red; *Cammell's Crimson* is a fine single-flower of this shade; *Yellow Pagram* is another delightful flower of the single type, its yellow being of the clearest shade; *Mars*, rosy-bronze, very pretty when seen in artificial light; *Kathleen*, tipped with rose; and *Mrs. Chas. Willis*, magenta, are other good "singles." *Cammell's White* may be described as a Japanese single, the blooms being 10 inches across. (Silver Banksian Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed *Chrysanthemums* of all sections. We noticed a new Japanese variety named *Bessie G. Payne*. The colour is bronze, with paler reverse; the plant was certificated at the recent Edinburgh exhibition. *Mrs. W. Hookey*, a deep-red Japanese variety, is also new. The exhibit contained a fine selection of single *Chrysanthemums*. (Bronze Flora Medal.)

H. BARCLAY, Esq., Bury Hill, Dorking (gr. Mr. W. Graysmark), showed a pretty exhibit of single *Chrysanthemums*, but only one or two of the varieties were labelled.

Mr. FRANK BRAZIER, Nurseryman, Caterham, Surrey, showed a large bank of *Chrysanthemums*, arranged with *Michaelmas Daisies*, sprays of coloured foliage, *Ferns*, and *Palms*. In the centre were several fine blooms of the variety *Hon. Mrs. Lopes*, one of the best of the yellow *Chrysanthemums*; we also noticed the reddish *J. H. Silsbury*, *Mme. G. Rivol*, *Mrs. H. Stevens*, *Leslie Morrison*, *Hetty Wells*, *Wm. Howe*, and other large-flowering kinds. A band of a new, single, blush variety named *Mrs. W. Parker* formed a suitable edging. (Silver Banksian Medal.)

Messrs. BUTLER BROS., Bexley Heath, Kent, showed *Chrysanthemums* in 5-inch pots, the plants being about 12 inches or 1½ inches high and furnished with several excellent flowers. There were 19 varieties, representing a good variety of colours. (Silver Banksian Medal.)

Messrs. GEO. WILLIAMS & SONS, Manor House Nurseries, Cardiff, showed *Chrysanthemum* blooms in variety, a centre *epergue* being filled with a large, pink, single variety named *Caledonia*. Other *epergues* contained well-grown blooms of the large, yellow *Helen Williams*, a reflexed Japanese variety. (Bronze Flora Medal.)

Mr. FRANK LILLEY, Guernsey, showed new varieties of single *Chrysanthemums* of his raising, including *Brilliance* (yellow), *Elusive* (amaranth), *Rosette* (rose-pink), *Charming* (brick-red), and *Cinnamon*. (Bronze Flora Medal.)

Mrs. GREGORY, Shoreham Cottage, near Sevenoaks (gr. Mr. L. Lawrence), showed a pretty exhibit of single *Chrysanthemums*, interspersed with *Ferns* and *Palms*.

Messrs. R. & G. CUTHBERT, Southgate, showed pans of *Hyacinths*, *King of the Reds* and *Sir John Foxburgh*, to show these bulbous flowers may be had in flower in November.

AWARDS.

AWARDS OF MERIT.

Nephrolepis splendens.—A sexually-produced sport raised from *N. Bausei* × *N. recurvata*, the first-named parent being a variety of *N. pluma* and the other a chance seedling. A pan was sown with spores of the two parents intermixed, and 70 per cent. of the young plants were of this new variety, which is of a more robust growth than either of its progenitors. The side pinnae are very much enlarged, and they overlap so as to suggest cresting. The fronds are of a deep green colour. A mature plant measures about 2 feet 6 inches in height, and the same in breadth. Shown by the raisers, Messrs. H. B. MAY & SONS.

Chrysanthemum J. B. Lowe.—This is a large single variety of rich crimson colour. Shown by Mr. H. J. JONES.

C. Mensa.—Disbudded blooms of this variety were 3½ inches across. The florets are pure white and remain perfectly flat. A very desirable variety. Shown by Mr. H. J. JONES.

C. Mrs. W. Buckingham.—This is one of the prettiest single-flowered pink *Chrysanthemums* we have seen for a very long time. The flowers are of moderate size, good form, and a charming shade of colour. Shown by Mr. L. R. RUSSELL, Nurseryman, Richmond.

C. Miss Lilian Bullivant.—This variety is a fine addition to the cream-coloured, single-

flowered type. The blooms are of good form, with flat florets in two rows, the diameter being about 2½ to 3 inches. The development of most of the buds into good flowers is a pleasing characteristic. Shown by Miss BULLIVANT, Beckenham (gr. Mr. T. Crosswell.)

Pelargonium "His Majesty".—The individual blooms of this winter-flowering variety of zonal-leaved *Pelargonium* are 2½ inches across. In colour they are brilliant scarlet, with a small white eye. The plants appear to flower very freely at this season. Shown by Mr. W. H. PAGE, Nurseryman, Hampton, Middlesex.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), de B. Crawshaw, J. F. Alcock, W. Boxall, W. Thompson, Stuart Low, C. H. Curtis, A. A. McBean, F. J. Hanbury, W. Cobb, A. Dye, W. P. Bound, W. H. Hatcher, J. Cypher, H. G. Alexander, H. A. Tracy, H. Ballantine, Gunney Wilson, W. H. White, W. Bolton, and Fergus Menteith Ogilvie.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for an excellent group of *Cypripediums*, principally hybrids. The centre of the group was composed of a number of the yellow *Cypripedium insigne* *Sanderæ*, effectively arranged with *C. Fairrieanom*. One end consisted of a good selection of *C. Leeanum* varieties, and the other of varieties of *C. insigne*, including good *C. i. Harefield Hall*. Others noted as exceptionally fine were *C. St. Alban* (a very dark flower), *C. Thalia*, and *C. Milo superbum*, both good forms.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a very select group. Two of the best plants are mentioned under "Awards." Other fine things included were *Cattleya Venus* var. *King Manoel*, a lovely yellow flower, with light ruby-red lip; *C. lucida* (*Bowringiana* × *Schilleriana*), with two spikes of bright rose-purple flowers, one spike bearing 14 blooms.

Messrs. STUART LOW & Co., Bush Hill Park, secured a Silver Banksian Medal for an effective group, in which their fine strain of *Cattleya labiata* formed the chief feature, among them being *C. l. Queen Mand*, a pretty, white variety with a delicate, lavender tint. Among the *Oncidium*s was a plant of *O. varicosum* concolor, probably the first so-called albino of the species, and which had flowers wholly of a bright yellow colour. A good selection of *Cypripediums* was also included.

Messrs. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Banksian Medal for a fine group of *Cypripediums*. In the centre were about a dozen flowers of *C. insigne* *Harefield Hall*, with a good number of *C. i. Sanderæ* and other favourite kinds; also some dark forms of *C. Fairrieanum*, good *C. Leeanum*, including the varieties *areum* and *virginale*; *C. Nogi*, a pretty and little-known variety; and a representative selection of other kinds.

Messrs. J. & A. A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a compact group, in the centre of which were two grand specimens of *Cypripedium insigne* *Sanderæ*, the one with 12 and the other 16 fine yellow flowers, with clear, white tips to the dorsal sepals, representing this favourite *Cypripedium* at its best. Arranged with it were *C. Lord Derby*, *C. Shillanum*, and other *Cypripediums* and *Odontoglossums*.

Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O. (gr. Mr. H. G. Alexander), sent the new *Laelio-Cattleya Pauline* (*L.-C. Ophir* × *C. labiata alba*), a pretty hybrid, with some resemblance to *C. aurea* but with more compact flowers. Sepals and petals canary yellow; lip, rosy mauve, with gold lines from the base; *L.-C. Golden Beauty*, with a grand spike of deep yellow flowers, and two others were also shown. (See Awards.)

FRANCIS WELLESLEY, Esq., Westfield (gr. Mr. Hopkins), showed *Cypripedium Waterloo* (*Mrs. Wm. Mostyn Westfield* var. × *Ranjitsinhji*), a massive flower with a glossy surface. The large, dorsal sepal has a green base, the rest being white, with rose-purple spotting, the main blotches forming lines, the rest of the flower being darkly tinted. *C. Little Gem* *Westfield* variety, a perfect model in shape and of pleasing colour; *Laelio-Cattleya Lady Chance*, with bronzy-red sepals and petals. Base of the lip

white, the front and tips of the side lobes amethyst purple; and L.-C. King Manoel. (See Awards.)

G. P. WALKER, Esq., Putney Heath (gr. Mr. McGregor), showed *Brasso-Lælio-Cattleya Surprise* (C. bicolor × B.-L. Digbyano-purpurata). Sepals and petals greenish; lip white, with some purple marks and a slight fringe. In the plant shown the flower was small.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, staged a small group of choice Orchids, among which were *Cypripedium Thalia*, Mrs. Francis Wellesley (in great beauty), C. Germaine Opoia Westfield variety, a fine dark *Odontoglossum Lambeauianum*, and *Dendrobium Colognyense* Armstrongia, with a large, dark-coloured flower.

Mrs. COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman), sent *Cypripedium Sanaedera Cooksonii*, a fine yellow and white flower, and the white *Calanthe Cooksonia* (vestita luteo-oculata gigantea × Harrisii).

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent a large specimen of *Cypripedium Ville de Paris*.

W. BOLTON, Esq., Wilderspool, Warrington, sent *Cypripedium Hitchinsiae* Bolton's variety, with a fine white dorsal sepal spotted with mauve, and the new white C. Boltonii (see Awards).

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), sent *Cattleya Hardypitt* (Hardyana × Mrs. Pitt), a light rose-coloured flower with some purple on the lip.

Messrs. WILLIAM BULL & SONS, Chelsea, showed *Cypripedium Emerald* (Salleri Hyeanam × *Leeanum giganteum*).

Messrs. STANLEY & Co., Southgate, showed several yellow forms of *Cypripedium* insigne, the variety Stanleyi being wholly greenish-yellow with a white tip to the dorsal sepal and with no sign of spotting.

Mrs. MAURICE MERTENS, Ghent, showed a small group of handsome hybrid *Odontoglossums*.

AWARDS.

FIRST-CLASS CERTIFICATES.

Lælio-Cattleya Barbarossa Westonbirt variety (C. Triane Imperator × L.-C. callistoglossa), from Lieut.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander).—A very showy hybrid, an improvement on L.-C. callistoglossa ignescens, and with a thicker substance in the flower. Sepals and petals bright magenta-rose; lip broadly expanded, ruby-red with a clear mauve shade; disc yellow.

Lælio-Cattleya Nelthorpe Beauclerk (L.-C. Gattoiana × C. Enid magnifica), from Messrs. CHARLESWORTH & Co.—One of the most beautiful hybrids shown this year, and remarkable in its reversion to, and enlargement of, the best form of C. Mossia, inherited from C. Enid. The flowers closely resemble a large C. Mossia with very broad petals. Sepals light rose with a slight nankeen tint. Petals white flushed with rose at the base and tips, and tinged with yellowish nankeen in the middle. Lip large, marked with purplish crimson in front, and with orange red lines at the base.

Cypripedium Boltonii, from WILLIAM BOLTON, Esq., Warrington.—A chastely-beautiful hybrid, supposed to have C. insigne Sanderæ on the one side, the other being doubtful. In form it somewhat resembles C. Venus, but is larger and taller. Flowers wax-like and of the purest white, with a few very minute dark dots on the lower part of the dorsal sepal.

Cirrhopetalum longissimum (?).—Under the above name Sir TREVOR LAWRENCE showed a most elegant *Cirrhopetalum*, said to have been imported from Java, and probably nearest to the C. grandiflora of Ceylon. The plant bore a slender scape surmounted by a short raceme of seven flowers arranged almost in an umbel, and gracefully drooping, each being about 9 inches in length, the closely-approached lateral sepals terminating in slender tails. The upper sepal is arched over the lip, white with purple lines, the small petals being similarly coloured. Lateral sepals white with rose lines.

AWARDS OF MERIT.

Cattleya Diver superba (Vulcan × Warscewiczii), from Lieut.-Col. G. L. HOLFORD.—A pretty flower, almost wholly of a deep rosy-mauve, the lip being the darker.

Zygo-Colax Charlesworthii (Z. Perrenondii × C. jugosus), from Messrs. CHARLESWORTH & Co.—A good dark flower. Sepals and petals closely marked with purplish chocolate. Lip violet with white margin.

Lælio-Cattleya King Manoel (parentage unrecorded), from FRANCIS WELLESLEY, Esq. (gr. Mr. Hopkins).—A gorgeously-coloured flower and a new departure in colour. The sepals and petals are bronzy flame-red on a gold ground. The base of the lip is veined with vinous-purple; the isthmus bright chrome-yellow; front ruby-crimson.

BOTANICAL CERTIFICATE.

Bulbophyllum hirtum, from GURNEY WILSON, Esq., Haywards Heath.—A singular Burmese species with a nodding raceme of small white, hairy flowers.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. J. Cheal, P. D. Tuckett, H. S. Rivers, W. Poupard, G. Wythes, O. Thomas, H. Parr, A. R. Allan, J. Davis, G. Reynolds, E. Beckett, A. Dean, J. Willard, G. Woodward, G. Hobday, J. Harrison, and H. Markham.

A dish of rather green, medium-sized Ribston Pippin Apples, gathered from a tree which originated as a sucker from the original tree at Ribston Park, was shown by Major J. DENT (gr. Mr. J. McClelland). The old tree was blown down early in the 19th century, and from its roots sprang a sucker, the origin of the tree now fruiting.

From Mr. GUMBLETON, Belgrove, Co. Cork, came fruits of a brown Walnut, *Juglans ailantifolia*. This is the first time the tree has fruited for 30 years.

P. J. EDMONDS, Esq., Woking, sent a dish of Cox's Orange Pippin Apples grown in Holland. The specimens were of fair size, but lacked the finish seen in English fruits.

The most interesting collection before the Committee was one of numerous baskets and dishes of Apples from the Duke of BEDFORD'S Experimental Fruit Farm, Woburn, Bedfordshire. These fruits were sent to illustrate results obtained from various experiments in manuring, pruning, tilling, and of planting in grass-land. Whereas, in the case of Gascoyne's Scarlet Seedling, fruits were shown from trees grassed-down, and others not so treated, the richest colour was found on the grassed trees, due to the fact that the roots had been kept drier and warmer by the grass covering. But the fruits from the non-grassed trees were the finest. Some samples of Peasgood's Nonesuch, New Northern Greening, Golden Noble, and Yellow Ingestre, from trees growing on tilled soil for 15 years, were generally quite small for the varieties. Where grassed-down for three years, Peasgood's Nonesuch were fairly good, the rest being small and poor. Obviously, the Woburn soil seems unfitted, or is naturally too poor, for Apple culture. Weight of fruits taken from various trees of Bramley's Seedling, grown as dwarfs, were given as also showing the effects of root pruning one, two, three and four years, and various other experiments, all of which the Committee regarded as of no value, and rather leading to the retrogression of Apple culture.

Messrs. W. SEABROOK & SONS, Chelmsford, staged a collection of 27 dishes or baskets of Apples and Pears. The best cooking Apples were Bismarck, Warner's King, Royal Jubilee, Beauty of Kent, Peasgood's Nonesuch, Lord Derby, and The Queen. Amongst dessert varieties were Allington Pippin, Lord Burghley, Royal Snow, Ribston Pippin, Charles Ross, Cox's Orange Pippin, and Gascoyne's Scarlet Seedling. Of Pears we noticed good fruits of Charles Ernest, Doyenné du Comice, and Emile d'Heyst. (Silver Banksian Medal.)

Messrs. J. CHEAL & SONS, Crawley, showed a basket of the new and delicious Pear Beurré de Naghan, and also a basket of their new Apple Encore.

Messrs. A. PALMER & Co., Florists, Grosvenor Square, London, staged, with flowers, though contrary to the rules, very fair samples of Allington Pippin, Cox's Orange Pippin, Newton Wonder and Lanc's Prince Albert Apples; also Beurré Clairgeau, Beurré Diel and Doyenné du Comice Pears.

COMPETITIVE CLASSES.

In the class for three dishes of dessert and six of cooking Apples, the 1st prize was won by

G. D. WILLIAMS, Esq., Tring, Herts. (gr. Mr. F. C. Gerrish), with superb fruits. His deservant varieties, specially fine and handsome, were Charles Ross, Rival and Cox's Orange Pippin. The culinary sorts were Emperor Alexander, Gloria Mundi, Bismarck, Prince Albert, Peasgood's Nonesuch, and Lord Derby. Sir MARCUS SAMUEL, Maidstone (gr. Mr. W. H. Bacon), was placed 2nd, his samples being also excellent. Extra prizes were awarded to C. H. COOMBE, Esq., Cobham Park, Surrey (gr. Mr. A. Tidy), and to C. CAMM, Esq., Welwyn, Herts. (gr. Mr. J. Pateman). There were eight exhibits in this class.

In the class for two dishes of dessert and four of cooking Apples, there were two entries. The exhibitor in one case made a mistake in setting up two dishes of Bramley's Seedling, although one was named Beauty of Kent. A 2nd prize was awarded to T. CHARLESWORTH, Esq., Nutfield Court, Red Hill (gr. Mr. Herbert). He had moderate samples of (dessert) Blenheim Pippin and Gravenstein, and (culinary) Lord Derby, Stirling Castle, Warner's King, and Bramley's Seedling.

Messrs. W. SEABROOK, Chelmsford, were the only exhibitors in the class for traders for four dishes of dessert, and eight dishes of cooking Apples, getting the 1st prize of a Silver-gilt Medal.

The Pear classes brought some fine fruits, especially in the larger class for seven dessert and two cooking varieties. Mr. A. TIDY showed very fine stewing varieties in General Todleben, and Uvedale's St. Germain, and (dessert) Beurré Diel, Beurré d'Anjou, President Barabe, Charles Ernest, Doyenné du Comice, Duchesse d'Angoulême, and Pitmaston Duchess; 2nd, Mr. BACON. There were but five collections.

In the class for six dishes, the 1st prize exhibit included the varieties Charles Ernest Alexander Lucas, Josephine des Malines, Emile d'Heyst, Doyenné du Comice, and Catillac, but the exhibitor's name cannot be given, as the card had disappeared. 2nd, Viscount ENFIELD, Wrotham Park, Middlesex (gr. Mr. H. Markham), who had good fruits of Duchess. Durondeau, Soldat d'Labourer, Glou Moreau, and Uvedale's St. Germain. In this class Mr. ALLAN, of Gunton Park, staged some of the finest fruits, but he was disqualified for staging Beurré Diel as a stewing Pear. He was awarded an extra prize. There were five exhibits in this class.

Scientific Committee.

NOVEMBER 9.—Present: E. A. Bowles, M.A., F.E.S., F.L.S. (in the Chair), J. T. Bennett Poë, A. W. Hill, R. A. Rolfe, W. E. Ledger, W. Hales, J. Douglas, and F. J. Chittenden (hon. sec.).

Variation in blue Primroses.—From the garden of Sir ARTHUR HORT, Bart., came red flowers of Primroses which in the spring bear blue flowers. It was suggested that the change may be due to the cell sap being acid in reaction instead of alkaline, owing, perhaps, to some variation in external conditions such as temperature. Attention was drawn to the fact that several Primulas had varied in the same directions as P. sinensis, particularly noting the fimbriation of the edges of the petals which occurred in P. obconica, P. japonica, P. Sieboldii, and now in P. × Kewensis. He enquired whether any member of the Committee had noticed similar variations in the common Primrose, P. acaulis. Mr. CHITTENDEN said he had once seen a plant with the edges both of the petals and sepals much cut in a cottage garden at Chelmsford, but no other member of the Committee had noticed any. Mr. DOUGLAS and Mr. FRASER pointed out that if seedlings showed signs of roughness at the edges of the petals they would be discarded immediately by florists, and no record would be kept. The Committee would be glad to hear of instances of parallel variations in different species of Primula under either natural conditions or when cultivated. For instance, double forms of P. acaulis are well known in gardens, but appear to be very rare wild, and there seems to be only one record of their being raised from seed (by Mr. MURRAY THOMSON, in litt.), while doubling of a similar nature has occurred in P. sinensis.

Scilla socialis.—Mr. W. E. LEDGER showed a specimen of this uncommon Natal plant, flowering profusely. It was figured by the late Mr. WILSON SAUNDERS in *Refugium Botanicum*, t. 180, and the present plant appeared to be a

direct descendant of the plant originally figured. When treated liberally, it appears to increase fairly rapidly, though slow to grow when starved, numerous plants forming around the central one.

Frost, plant injured by.—Mr. J. FRASER showed specimens to illustrate the damage done by frost acting under varying conditions, e.g., Bracken growing in the open (near London) became quite black, while under an Oak tree it remained green. *Solanum nigrum* varied considerably in the extent to which individuals suffered, the pernicious weed, *Galinsoga parvifolia*, originally from Peru, now too common in market gardens in Surrey and Middlesex, was blackened by 4° to 5° of frost, while *Chrysanthemum frutescens* from the Canaries was uninjured. While *Datura Stramonium* was killed, its fruits were uninjured, and it persists as a weed in this country partly on this account, but also because the seeds from any particular pod do not all germinate in the same season.

Malformed Orchids.—Mr. G. WILSON, F.L.S., showed malformed *Lycaste Skinneri*, *Odontoglossum* and *Cattleyas*, upon which Mr. Rolfe, who examined them, reported as follows:—"The flower of *Lycaste Skinneri* has a free, dark purple filament, $\frac{3}{4}$ inch long, opposite to one of the side lobes of the lip, and as the latter has lost its colour and become like the petals in texture, it is an evident case of replacement. There are three flowers of *Cattleya labiata*, one in which the lip has reverted to a simple petal, giving a regular perianth, while the column is straight and has an additional perfect anther, showing that one side lobe of the lip has been developed as an anther, while the other has been suppressed. In a second flower the sepals have become petal-like in shape and colour. In the third flower there are two sepals, two petals, and a slender column and anther, the lip being totally suppressed, and the flower dimerous. The other is a three-flowered inflorescence of *Odontoglossum crispum*, in which the column is abortive in each case, and the lip rather full, though otherwise normal."

Trifolium hybridum malformed.—Mr. H. T. GÜSSOW, of the Central Experimental Farm, Ottawa, Canada, sent some specimens of *Trifolium hybridum*, which were sent to the botanical division of the Experimental Farms, Ottawa, Ontario, Canada, by a farmer whose crop showed a peculiar development throughout. The heads were produced in axillary, compound, long, peduncled umbels. The umbels measured from $\frac{1}{2}$ to 1 inch in breadth and were 8 to 26 rayed. The pedicels were from 2 to 4 mm. long, flattened, and 1 mm. broad. Involucre none, or reduced to several scale-like bracts, 1 mm. long, acutely linear; involucre, scale-like, membranous bracts $1\frac{1}{2}$ to 2 mm. long, umbellets 6 to 12 flowered. The flowers, unfortunately, could not be examined, as they had not sufficiently developed. Any botanist might have been puzzled to identify the plant if the inflorescences only had been sent. The plant at first sight looked more like an umbelliferous than a leguminous plant.

LINNEAN SOCIETY.

NATURAL INCLUSION OF STONE IN WOODY TISSUE.

NOVEMBER 4.—Mr. CECIL CARUS-WILSON, F.R.S.E., F.G.S., exhibited specimens and lantern-slides, showing the natural inclusion of stones in woody tissue. He said: About twenty-three years ago a gravel-pit was started in the valley-gravels occurring between Syndale and Newnham, some three miles from Faversham, in Kent. Part of a wood, chiefly Oak trees, covered the deposit; as the work progressed these were felled, and the stumps and roots dislodged.

The gravel consists of subangular, water-worn flints, large nodules less worn, and occasional blocks of Sarsen-stone; the whole being mixed with flint grit and quartzose sand, and forming a compact and somewhat coherent mass. Several Paleolithic implements and part of a skull of *Bos longifrons* have been found in the deposit.

The roots and stumps referred to were distributed promiscuously over the surface of the ground as the gravel in which they were embedded was removed. The work of excavating ceased in this particular part of the valley about ten years ago, so the roots still remaining have been exposed for that length of time, the others having been cut up for fuel by the cottagers in the neighbourhood.

Most of those now found there were left intact because of the large number of stones enclosed in the wood. Not only did these resist the work of saw and axe, but when burnt they burst asunder with considerable force, becoming a source of danger to those within range of the flying fragments.

The stones are actually embedded in the solid Oak, and not merely included within forked portions which may have grown together subsequently. The tissue of the wood appears to have grown around the stones and enveloped them, indicating that the process was carried on under conditions of considerable pressure. There are dozens of stones embedded in some of these roots, or snags, so that the substance might be described as "a conglomerate formed of flints enclosed in a woody matrix."

The examples at Syndale are, however, as far as I know, unique, and if trees can enclose stones in such quantities, and retain them within their substance so tenaciously, we have transporting agents capable, under certain conditions, of distributing terrigenous material over sea-beds to an extent not hitherto appreciated.

LEAF-BUDS REPLACING FLOWER-BUDS IN HEATHER.

Dr. A. B. RENDLE, F.R.S., showed a specimen of Heather (*Erica cinerea*) found near Axminster in which the flowers were replaced by dark red leaf-buds of about the same size as the flowers. One side, or about half of a clump of Heather, was affected; the other side bore normal flowers and the two sorts were not mixed. The red leaf-buds, which occupy the position of flowers, consist each of a number of short, strongly ascending leaves closely arranged in superposed whorls of four; the four lines have often a strong spiral twist in the upper part of the bud. The leaf arrangement therefore resembles that of the flower, not of the foliage leaves, which are in whorls of three. The leaves of these special buds also differ in form from the foliage leaves in that they are upwardly concave with a bluntly keeled back, recalling the sepals of a typical flower. They are 32 or more in number, and thus considerably outnumber the parts of a typical flower (24 including bracteoles). The tip of the bud was always damaged, but in many of those examined a shrivelled or more or less mis-shapen pistil or its parts were present, and sometimes below this semiflorescence stamens were found. The appearance suggested insect injury, but Mr. C. O. Waterhouse was unable to find any animal organism; he pointed out, however, that the appearance suggested the work of a Phytotus, which in the normal course of events would have already deserted the buds. Dr. Rendle has, however, been able to find no record of Phytotus in connection with our Heather. The specimen is of interest as resembling a teratological form of *Erica cinerea* described by Maxime Cornu in 1879, where the flowers were replaced by vegetative buds apparently very similar in appearance to those on our specimens, but in which the arrangement of the foliage leaves was maintained (the leaves being in rows of six), while the bud contained no trace of floral organs or of damage by any animal organisms.

A discussion followed in which the following engaged:—Mr. E. M. Holmes, Dr. O. Stapf, and the President; Dr. Rendle replying.

Prof. H. H. W. PEARSON, Sc.D., F.L.S., then gave a lecture, illustrated by a long series of lantern-slides, entitled—"Types of the Vegetation of Bushmanland, Namaqualand, Damaraland, and South Angola (A Preliminary Report of the Percy Sladen Memorial Expedition in South-West Africa, 1908-1909)."

SHEFFIELD CHRYSANTHEMUM.

NOVEMBER 12.—This annual show was held in the spacious Corn Exchange, and made a very imposing display. The classes for Chrysanthemum groups were omitted from the schedule owing to lack of support in recent years. An endeavour, however, is being made to replace the class by providing space on the stages for Chrysanthemums interspersed with foliage plants.

In the class for four vases of large-flowering Japanese Chrysanthemums, Lieut.-Col. BEECH, Drandon Hall, Coventry (gr. Mr. E. J. Brooks), won the 1st prize easily with magnificent blooms of Lady Talbot, President Viger, John Peed, and F. S. Vallis. The blooms of this last-named

variety formed the outstanding feature of this class.

Only three exhibits were staged in the class for two vases of Incurved blooms. With five beautifully compact blooms of C. H. Curtis and Mrs. G. Hifnn, Mr. G. W. DRAKE, 44, Cathays Terrace, Cardiff, was awarded the premier position. Lieut.-Col. BEECH won in the class for one vase of a yellow Japanese Chrysanthemum, his vase of F. S. Vallis being of very high quality. For six vases of Incurved Chrysanthemums, Mr. G. W. DRAKE won the 1st prize with fine blooms of G. F. Evans and May Phillips. In the similar class for six vases of large-flowering Japanese Chrysanthemums, Lieut.-Col. BEECH again secured the 1st prize, his blooms of Lady Talbot and F. S. Vallis being particularly fine. One exhibit in this class included a vase of the variety Magnificent, the dark red petals and bronze undershading of which shone out conspicuously.

In the class for 12 Incurved blooms shown on boards Mr. DRAKE was placed 1st with flowers of rather uneven size, but all showing excellent culture. For 12 Japanese blooms shown on boards Lieut.-Col. BEECH was 1st, which position he certainly deserved, although one bloom of John Peed, with rather a poor centre, detracted somewhat from the otherwise perfect exhibit. Splendour was here represented by a magnificent bloom.

COLLECTIONS OF FRUIT.—Out of five exhibitors G. H. SHAW, Esq., Howden, E. Yorks. (gr. Mr. A. Blakey), was awarded the 1st position with some fine fruit of Gros Colman and Muscat of Alexandria Grapes, Pitmaston Duchess and Berré Clairgeau Pears, and Worcester Pearmain and Blenheim Pippin Apples.

For Messrs. Sulton & Sons' special prize for a collection of vegetables, the Duke of PORTLAND, Welbeck, Worksop (gr. Mr. J. Gibson), was placed 1st.

The district classes were all well represented, and some fine plants and blooms were staged. Indeed, the long tables of varied colours were the best we have seen at Sheffield.

Amongst non-competitive exhibitors were Messrs. ARTINDALE & SON, Messrs. HIRAM SHAW & SON, Messrs. SEAGRAVE & Co., W. WOOLMAN, and Messrs. UPSTONE.

DUNFERMLINE CHRYSANTHEMUM.

NOVEMBER 12, 13.—This show was superior to the one held last year. The Chrysanthemum blooms were the best ever seen at a Dunfermline show. The principal class was for 18 blooms of Japanese varieties. Mr. DAN CARMICHAEL, Stirling, led with a grand exhibit; 2nd, Mr. JAS. PROCTOR, Dunfermline. Messrs. J. PROCTOR, J. LAING, D. CARMICHAEL, J. WALDIE, and J. BROWN led in the other classes for cut blooms.

Pot plants, as usual, were a strong feature, but, owing to a change of date—the show was held a fortnight earlier than originally arranged—the blooms were scarcely developed. Messrs. J. REID and NEIL McLEAN, both of Dunfermline, shared the leading honours in this section.

The vegetable classes were strongly contested. Mr. SHAW, Boquhan, led with a fine collection, having good Celery, Leeks, Beet and Potatos; 2nd, Mr. WALDIE, Dollarbeg.

Messrs. JAS. CAMPBELL and JAS. CURRIE were the most successful exhibitors of floral decorations, also bouquets, sprays, baskets, and other works of floral art.

Amongst non-competitive exhibits Messrs. WM. DRUMMOND & SONS, Stirling, exhibited some excellent Apples and Pears in more than 60 varieties.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 16, 17.—An exceedingly fine display was seen in the Guildhall, Winchester, on these dates, the occasion being the twenty-seventh autumn exhibition of the society. Nowhere this year has keener competition taken place in the various classes set apart for cut blooms, the quality of the exhibits being exceptionally good. Chrysanthemum plants, as well as groups of miscellaneous plants arranged for effect, were also well shown. Vegetables were a notable feature. The arrangements were of the best. Mr. Chaloner Shenton, hon. secretary, aided by his assistant, Mr. A. E. Saunders, and the staging manager, Mr. Axford, being responsible

PLANTS.—Groups of Chrysanthemums arranged in a space of 8 feet by 7 feet were staged by five exhibitors. Mr. M. HOBGSON, Morton House, Kingsworthy (gr. Mr. A. J. Marsh), won the 1st prize easily with plants carrying high-quality blooms and good foliage; 2nd, C. R. SCHWERDT, Esq., Old Alresford House (gr. Mr. A. Mackay), with dwarf plants having slightly smaller blooms.

This society gives much encouragement to the growing of plants suitable for conservatory decoration, i.e., plants that are dwarf, possess good foliage, and carry specimen blooms. They are grown in pots, which must not exceed 9½ inches in diameter. In the class for nine distinct plants there were three entries. J. A. FORT, Esq., 69, Kingsgate Street, Winchester (gr. Mr. G. Cousins), was awarded the 1st prize for dwarf plants of such varieties as F. S. Vallis, Niveum, J. H. Silsbury, Mrs. F. W. Vallis, and Embleme Poitevine, each furnished with about eight high-class blooms. Colonel F. A. DICKENS, Winchester (gr. Mr. G. Adams), was a close 2nd.

In a similar class for white and yellow varieties there were again three competitors, and Mr. FORT excelled with choice plants of F. S. Vallis, Niveum, Embleme Poitevine, C. H. Curtis, Mrs. Judson and Mme. Oberther. Colonel DICKENS again followed closely.

In a local class for six similar plants, Mr. E. YARROW, 38, North Walls, Winchester, was awarded the 1st prize, having freely-flowered specimens of popular varieties.

For a group of miscellaneous plants arranged for effect on the floor, A. G. RALLI, Esq., Twyford Lodge, Winchester (gr. Mr. J. Hughes), was 1st with a pleasing arrangement of Orchids, Crotons, Ferns, &c.; 2nd, F. BIRCH, Esq., Clovelly, Winchester (gr. Mr. E. Long); in the centre of this group was a Palm much too large for the position.

CUT BLOOMS.—The leading class was for 36 Japanese blooms in not fewer than 24 varieties. The best of six exhibits was shown by E. MOCATTA, Esq., Adlestone (gr. Mr. T. Stevenson), who had choice examples, of which the following were noteworthy: Lady Talbot, Purity, Leigh Park Wonder, F. S. Vallis, Duchess of Sutherland, J. H. Silsbury, Mrs. F. W. Vallis, Edith Jameson, Mrs. A. M. Faulkner, Mrs. C. Penford, Maud Jefferies, Mme. P. Radaelli, and Mrs. C. H. Totty. 2nd, C. A. PEARSON, Esq., Frensham Place, Farnham (gr. Mr. C. Moore); 3rd, B. HANKEY, Esq., Fetcham Park, Leatherhead. (gr. Mr. W. Higgs). The 2nd and 3rd prize groups were very close in point of merit. Four growers entered in a class for 24 Japanese blooms in not fewer than 18 varieties. Major WYNDHAM PAIN, Bransgore House, Christchurch (gr. Mr. H. Lloyd), was the most successful exhibitor, and Captain WEINER was placed 2nd.

Japanese varieties in vases made a fine show arranged on a low table down the centre of the hall. For six varieties, three blooms of each sort, there were six competitors. Mr. MOCATTA won easily with high-quality blooms, having Lady Talbot, Mrs. G. Mileham, Algernon Davis, J. H. Silsbury, F. S. Vallis, and Edith Jameson; 2nd, Mr. H. LLOYD.

INCURVED VARIETIES were very good. For 36 blooms, in not fewer than two dozen sorts, there were four entrants. Mr. B. HANKEY easily secured the premier place with large, well-finished examples of Clara Wells, Embleme Poitevine, Mrs. E. Denyer, Daisy Southam, Buttercup, Frank Triston, Le Peysson, W. Higgs, Triomphe de Montbrun, C. H. Curtis, W. Pascoe, Godfrey's Eclipse, and Mrs. J. Wynne. Mr. MATTHEW HODGSON was a good 2nd with slightly smaller blooms; and Lord ASHBURTON, The Grange, Alresford (gr. Mr. C. Garratt), was placed 3rd.

In the class for 18 blooms, in not fewer than 12 varieties, W. GARTON, Esq., Salisbury Court (gr. Mr. J. Edwards), excelled; A. P. RALLI, Esq., Twyford Lodge, Winchester (gr. Mr. J. Hughes), being 2nd.

Single-flowered varieties made a great show. For six bunches, distinct, not disbudded, W. H. MYERS, Esq., Swannmore House, Bishop's Waltham (gr. Mr. Ellwood), won with full-sized bunches of good blooms, well displayed. Roupell Beauty, Edith Pagram, Eureka, Mrs. E. Roberts and Crown Jewel were very fine; 2nd, A. P. RALLI, Esq.

Mr. A. E. TAYLOR, 3, Hillside Terrace, Winchester, had the best six bunches of decorative varieties in bunches not disbudded, among nine exhibitors. F. C. BIRCH, Esq., Clovelly, Christchurch Road, Winchester (gr. Mr. E. Long), was second with smaller bunches.

Exhibits of fruit were numerous. W. H. MYERS, Esq., won the 1st prize for two bunches of black Grapes, with long, tapering bunches of Mrs. Pince.

Lord SWAYTHLING, South Stoneham House, Southampton (gr. Mr. T. Hall), showed the best white Grapes, having Muscat of Alexandria, and he also won the 1st prizes offered for three varieties of dessert Apples, for culinary Apples, and for three varieties of Pears.

In the vegetable classes W. H. MYERS, Esq., won the two chief prizes offered by Messrs. Sutton & Sons and Messrs. Toogood's.

NON-COMPETITIVE EXHIBITS.—A gold medal was awarded to Messrs. S. BIDE & SONS, Alma Nursery, Farnham, for a display of floral designs, and a similar award was made to Messrs. HILLIER & SON, Winchester, for exhibits of Apples, shrubs and flowering plants.

CARDIFF AND COUNTY HORTICULTURAL.

NOVEMBER 17.—This society, having decided some time ago to justify its name and existence by doing something more than merely holding an annual flower show, has arranged to give a series of lectures on horticultural subjects in Cardiff during the present winter. The first of these lectures was given on the above date at the Y.M.C.A. Hall, when Mr. S. T. Wright gave a very interesting address on the Wisley Gardens. A large and appreciative audience was present, and was presided over by Mr. W. Treseder, the chairman of the Cardiff Horticultural Society. The lecture was illustrated by a fine set of lantern slides, which depicted the beauties of the wild and aquatic gardens. Mr. Wright incidentally referred during the course of his lecture to the great generosity of the late Sir Thomas Hanbury, whose love for gardening and appreciation of the work carried on by the R.H.S. resulted in his presenting Wisley Gardens to that Society when it was in great need of a suitable ground.

The lecturer pointed out the plants of greatest interest in each picture, and, while doing so, imparted much useful information regarding their treatment and culture. Some of the most noteworthy pictures were those of *Wistaria multi-juga*, *Cerasus sinensis* var. *pendula* (*Prunus Chamæcerasus* var. *pendula*), stated to be about 40 feet high; *Alnus glutinosa* var. *imperialis*, which was described as being one of the best and fastest-growing trees suitable for water-side planting; also masses of *Iris Kæmpferi* and *Water Lilies*. The lecturer ascribed the success achieved in the culture of *Water Lilies* at Wisley to the fact that, once they have become established, the water is lowered in the ponds every year or two, and about two-thirds of the crowns removed, thus giving plenty of room for the remaining ones to develop.

YORK CHRYSANTHEMUM.

NOVEMBER 17, 18, 19.—The 30th autumn show was held in the exhibition building on these dates. In some respects the exhibition was superior to those of recent years, and especially was this noticed in the classes for cut blooms. Groups showed a decided falling off in point of merit, probably owing to the prizes being reduced. At these autumn shows the public, as well as exhibitors, are yearning yearly for greater variety—a difficult matter to obtain!

PLANTS.—There was only one entry in a class for a group of Chrysanthemums arranged for effect. The exhibitor was Mr. J. W. HELD, Acomb, York, an amateur grower, but who is nevertheless a proficient cultivator. His group contained dwarf plants, each carrying good blooms.

Pillar groups, 17 feet high, of decorative Chrysanthemums, interspersed with foliage plants, made a pleasing feature arranged down the sides of the large hall. Mr. G. COTTAM, Alma Gardens, Cottingham, Hull, easily won the 1st prize with well-grown plants of a bright character, effectively arranged; 2nd, Mr. J. KEY, Clifton Nursery, York.

For a pillar group of miscellaneous plants, the base, 6 feet high, to be furnished with Chrysanthemums and the remainder to be decorated with other plants, five growers competed. Mr. F. H. WARD, Seacroft Nursery, York, was placed 1st with a bright display of small-flowered varieties arranged tastefully with well-grown foliage plants; 2nd, Mr. COTTAM.

CUT BLOOMS.—The leading class was for 36 Japanese blooms in not fewer than 24 varieties. Nine groups were staged. A. JAMES, Esq., Cotton House, Rugby (gr. Mr. A. Chandler), showed a trifle the best, and was awarded the 1st prize. He staged heavy, somewhat irregular blossoms, the best being Lady Talbot, F. S. Vallis, Splendour, Mrs. A. T. Miller, J. Lock, O. H. Bromhead, J. H. Silsbury, Mme. P. Radaelli, Edith Jameson, and Reginald Vallis; 2nd, Lord HOWARD DE WALDEN, Audley End, Saffron Walden (gr. Mr. J. Vert). This exhibitor showed a remarkable bloom of Miss Hilda Rowley; Mrs. W. Knox, J. H. Doyle, and Mme. P. Radaelli were also noteworthy; 3rd, the Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle).

In the class for three blooms, each of four varieties, five competed. The best dozen, a very fine lot, was contributed from the gardens of Lord FEVERSHAM, Duncombe Park, Helmsley (gr. Mr. D. Williams). Mrs. A. T. Miller, Reginald Vallis, J. H. Silsbury, and F. S. Vallis were the varieties staged. Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, was placed 2nd. Mr. IGGULDEN was successful in securing the 1st prize offered for three blooms each, of a white and a yellow variety.

Incurved varieties were well shown. For 12 blooms in not fewer than six varieties six exhibits were staged, the Marquis of NORTHAMPTON gaining the premier award with medium-sized well-finished examples of popular varieties. Baron DE FOREST, Londesborough Park, Market Weighton (gr. Mr. J. McPherson), was second with smaller specimens.

The Marquis of NORTHAMPTON also won six blooms of Incurveds, with neat examples.

Single-flowered varieties in vases each containing three sprays of six varieties were shown by seven entrants. Mrs. GUTCH, Holgate Lodge, York (gr. Mr. E. Everard), was 1st with such varieties as Altrincham (yellow), Mrs. E. Roberts, and Metta. The Hon. H. W. FITZWILLIAM, Wigginthorpe, York (gr. Mr. A. Alderman), was 2nd with an almost equally good exhibit.

For 12 varieties of any decorative sorts, three sprays of each variety, there was a spirited competition. Mr. F. SYMAN, Rawcliffe Lane, York, was 1st with good bunches of such varieties as Bessie Chapman, Mary Richardson, La Triomphe, Soliel d'Octobre, and Source d'Or. 2nd, the Hon. H. W. FITZWILLIAM.

Amateurs were few in number in both the plant and the cut bloom classes. Mr. HELD secured the premier prizes in both sections.

Besides Chrysanthemums there were exhibits of floral designs, fruits, and vegetables.

A Gold Medal was awarded to Messrs. CLIBRAN & SONS, Altrincham, Cheshire, for a non-competitive exhibit of Chrysanthemums and collection of vegetables. A Silver-gilt Medal to Messrs. J. BACKHOUSE & SON, York, for exhibits of Apples, flowering plants, and floral decoration, and a First-class Certificate to Mr. H. WEEKS, Shrimpton Gardens, for Chrysanthemum Mrs. John Cumberland, Japanese Incurved, yellow bloom suffused with bronze.

MANCHESTER ROYAL BOTANICAL.

NOVEMBER 18, 19, 20.—This Society held a Chrysanthemum show in the Ball Room of the White City on these dates. The exhibition was a good one, the blooms being of excellent quality.

Chrysanthemums in pots, however, were hardly up to the average. JAMES BROWN, Esq. (gr. Mr. J. Smith), as usual took the place of honour in the class for nine plants in which Mme. Ferlat and Souvenir de W. Clibran were conspicuous. The other prize-winners in this class were J. ROYLE, Esq., Sale, and L. BRESLAURER, Esq. (gr. Mr. J. Siddall). Mr. BROWN also excelled in the class for six plants of Japanese Chrysanthemums, Messrs. J. ROYLE and G. WILD following, and Mr. BROWN was also 1st for six Pompons, A. R. KELLY, Esq. (gr. Mr. H. Brocklehurst), being 2nd. Mr. BROWN was the only exhibitor in the class for a group of miscellaneous plants: he showed Phoenix Palms splendidly.

CUT BLOOMS.—For 24 Incurved, and 24 Japanese blooms Sir W. H. TATE, Bart. (gr. Mr. G. Haigh), won the 1st prize, having many noteworthy blooms, the chief varieties being (Japanese) F. S. Vallis, Mrs. A. T. Miller, Mary Inglis, Leigh Park Wonder, Mme. P. Radaelli, Hon. Mrs. E. Lopes, and Mrs. Barkley; (Incurved) Buttercup, Miss F. Ashworth, Pantia Ralli, Amber Gem, G. F. Evans, Clara Wells, Daisy Southam, and Romance. 2nd, PANTIA RALLI, Esq., Epsom (gr. Mr. G. Hunt).

For 36 miscellaneous blooms of Chrysanthemums Mr. G. HAIGH again took the lead, his Anemone-flowered Descartes and reflexed Cullingfordii being very good. Lieut. Col. J. B. GASKELL, Wocilton (gr. Mr. J. Stoney), followed.

The best exhibit of 36 Japanese blooms was shown by E. MOCATA, Esq., Adlestone (gr. Mr. T. Stevenson), who showed blooms of splendid colour, the finest blooms being F. S. Vallis, Purity, Algernon Davis, Master James, and Lady Talbot. 2nd, Lady ASHBURTON, Romsey (gr. Mr. G. Hall).

For 12 Japanese blooms the prize-winners were Messrs. T. STEVENSON, W. IGGULDEN, Frome, and G. HALL in the order of their names; whilst for 12 blooms the 1st and 2nd prizes went to Messrs. T. STEVENSON and G. HALL.

The winners in the class for 24 Incurved blooms were Messrs. G. W. DRAKE, G. HUNT, and Sir GILBERT GREENALL, Warrington (gr. Mr. C. Goves), who were placed 1st, 2nd and 3rd respectively. For 12 blooms Messrs. G. W. DRAKE, J. HUNT, and G. HAIGH were placed as named.

In the local class the chief prize-takers were Messrs. C. GOVES, G. HAIGH, and J. STONEY.

Primulas and Cyclamens were best shown by Mr. G. BRAMWELL.

Messrs. TOOGOOD & SONS, Southampton, were awarded the Society's Gold Medal for a display of vegetables tastefully arranged. THE GOVERNMENT OF BRITISH COLUMBIA also received a Gold Medal for a collection of Apples.

SCOTTISH HORTICULTURAL.

NOVEMBER 18, 19, 20.—The annual Chrysanthemum show of this Society was held in the Waverley Market, Edinburgh, on these dates. The entries were more numerous than last year, but many intending exhibitors did not compete owing to the severe frost which prevailed, over 20° being registered in many parts of Scotland. There was the additional difficulty that the large building, constructed chiefly of iron, glass and cement, is unheated. The latter drawback was, however, to a certain extent overcome by the use of a large number of paraffin stoves, distributed in the building so as to raise the temperature in the vicinity of the more tender exhibits.

In the premier class for cut blooms of Japanese Chrysanthemums, in which the City of Edinburgh Queen Victoria Memorial is awarded, there were six entrants, and the 1st prize of £15, with the City of Edinburgh Cup, which is held for one year, but becomes the property of the winner after he has won it three times, fell for the first time to the Dowager Countess of SEAFIELD, Cullen House, Banffshire (gr. Mr. Alex. Morton), the aggregate number of points obtained being 139½ out of a possible 180.

In this class 15 vases in 15 varieties are asked for, three blooms in a vase. The maximum points allowed for each variety is 12, and the highest pointed flowers in the lot were Mrs. A. T. MILLER (11), Mme. P. RADAELLI and Edith JAMESON (10½), Lady TALBOT, Algernon DAVIS, and W. BEADLE (10), Reginald VALLIS, Miss HICKLING, and J. H. SILSBURY (9½), Lady CONYERS (9), Bessie GODFREY and Mme. G. RIVOL (8½), Victoria and Albert and Elsie FULTON (8), and Geo. MILHAM (7). As was the case last year, Messrs. BELL, ROSSIE, FORGANDENNY (gr. Mr. D. Nicoll), took 2nd place, their aggregate being but two points lower than those obtained by Mr. MORTON. The highest pointed blooms in the 2nd prize exhibit were: The Hon. Mrs. LOPES and Purity (10½), Mme. P. RADAELLI and F. S. VALLIS (10), and Mme. G. RIVOL and J. H. SILSBURY (9½). 3rd, the Hon. Mrs. ARMISTEAD, Castle Huntly, Longforan (gr. Mr. J. Beisant), with an aggregate of 131 points, her highest pointed variety being Reginald Vallis with 10 points. 4th, Mr. W. IGGULDEN, Frome, Somerset, with an aggregate of 127½ points.

In the Scottish Challenge Cup class, confined to Scottish gardeners and amateurs, in which the

1st prize is £8, with the cup for one year, competition was much stronger. No fewer than 17 growers entered, though only 13 staged. In this class eight vases are required, in eight varieties, three blooms of each, and entrants in the foregoing class are debarred from competing in this. Mr. BROWN, Summerhill, Shandon (gr. Mr. Finnie), won the 1st prize and cup, with an aggregate of 73 points out of a possible 96. His varieties were Mrs. F. W. VALLIS, Marquise V. VENOSTA, Bessie GODFREY, Reginald VALLIS (9½ points each), F. S. VALLIS, Lady TALBOT, Mrs. A. T. MILLER (9 each), and J. H. SILSBURY (8 points). Mr. L. MCLEAN, Greenfield, Alloa, was placed 2nd with 71 points, and in his lot were Mrs. A. T. MILLER (10), Mrs. E. CROSSLEY (9½), Jumbo (9), Marquise V. VENOSTA (9), Lady CONYERS (9), Bessie GODFREY (8½), A. DAVIS (8), J. H. SILSBURY (8). Lord NINIAN CRICHTON-STUART, Falkland Palace, Fife (gr. Mr. Wm. Young), was 3rd with 70½ points, his flower of Mrs. L. THORN obtaining the highest number of points (10). 4th, Mr. BAILLIE, Dochfour, Inverness (gr. Mr. Roderick Mackenzie), whose aggregate was 69 points.

In the class for six vases of Japanese Chrysanthemums in six varieties, three blooms of each, confined to private gardeners and amateurs, the 1st prize was won by Mr. JAMIESON, St. Marnock's, Dublin (gr. Mr. J. L. McKellar); the 2nd by Mr. DUNCAN MACKAY, Viewbank, Lasswade; the 3rd by Mr. L. MCLEAN, Greenfield, Alloa; and the 4th by Mr. JAS. FRASER, Bonaly Tower, Colinton.

This year a new open class for 24 Chrysanthemum blooms in not fewer than 18 varieties on boards, was included in the prize list, and there were nine entrants. The 1st prize fell to Mr. J. L. MCKELLAR, the 2nd to Mr. D. NICOLL, and the 3rd to Mr. A. MORTON.

The other prizes for cut blooms of Chrysanthemums included those following:—Confined to growers within the municipal boundaries of Edinburgh and Leith.—Two vases Japanese Chrysanthemums, in two varieties, three blooms in each vase—1st, Mr. ADAM STENHOUSE, Morningside Asylum; 2nd Mr. JOHN MACDONALD, Stratham House, Morningside; 3rd, Mr. RICHARD GRIFFIN, Bringlee.

Four vases Japanese Chrysanthemums, 12 distinct varieties, three blooms in each vase—1st, Mr. A. MORTON; 2nd, Mr. DAVID NICOLL; 3rd, Mr. ALEXANDER MCKELLAR.

Four vases Japanese Chrysanthemums, in four varieties, three blooms in each vase—1st, Mr. HUGH MACKSKIMMING, Auchinault; 2nd, Mr. ANDREW BRUCE, Gala House, Galashiels; 3rd, Mr. PETER M'LAUCHLAN, Gracecroft, Liberton.

The Silver Medal offered for the best bloom in the show was won by Mr. D. NICOLL with a bloom of Mrs. A. T. Miller.

The association's Silver Medal for a new Chrysanthemum not in commerce fell to Messrs. W. WELLS & Co. for a light terra-cotta flower named Jessie G. Payne; the Bronze Medal was awarded to Mr. L. MCLEAN, Alloa, for Mrs. W. HOOKEY, a deep crimson flower with bronze reverse.

In the class for three vases of Chrysanthemums, in three varieties, not more than 12 sprays in each vase, the 1st prize was won by Mr. A. E. TODD, Stonybank, Musselburgh; 2nd, Mr. WILLIAM GALLOWAY, Gosford; 3rd, Mr. ADAM BRYDON, Tweedbank, Innerleithen.

For six vases of single Chrysanthemums, in six varieties, Mr. WILLIAM G. PIRIE, Dalhousie Castle, was placed 1st, and Mr. WILLIAM P. BELL, Bothwell Castle Gardens, 2nd.

PLANT CLASSES.

In the class for six plants of Chrysanthemums, in as many varieties, but excluding single and pompon kinds, the 1st prize was won by Mr. W. PULMAN, Colinton Road, Edinburg; 2nd, Mr. JAS. FRASER, Bonaly Tower, Colinton. The best four plants of Japanese Chrysanthemums were shown by Mr. WM. MICHIE; 2nd, Mr. JAS. FRASER. These exhibitors were also again 1st and 2nd respectively in the class for two plants of Chrysanthemums. Mr. PULMAN won the medal for the best plant in the show, and he also showed the best six Chrysanthemums in 7-inch pots, but he was placed 2nd to Mr. MICHIE in the class for six Pompon Chrysanthemums in pots of this size.

In the classes for plants other than Chrysanthemums, the following were the more important:—Six Palms, in not fewer than three kinds—1st, Mr. ALEXANDER M'MILLAN, Douglas Castle; 2nd, Mr. R. W. ANDIE,

Inveresk. Three specimen Palms—1st, Mr. ALEXANDER M'MILLAN. Six Dracenas, distinct—1st, Mr. W. P. BELL; 2nd, Mr. ADAM KNIGHT. Six plants of Primula sinensis, pots not to exceed 6 inches—1st, Mr. ROBERT D. KERR, Langton Duns; 2nd, Mr. WILLIAM PYPPE, Liberton. Six Primula obconica—1st, Mr. G. D. KERR. Six table plants (Ferns excluded)—1st, Mr. ALEXANDER M'MILLAN. Hardy Ferns—1st, Mr. JAMES TURNBULL, Penicuik. Six Ferns for table—1st, Mr. ALEXANDER JOHNSTON, Trinity. Six Salvia splendens—1st, Mr. ROBERT WHANNEL, Gilmerton. Six pots of Roman Hyacinths—1st, Mr. JAMES M'NEIL, Craigerne, Peebles. Three pans of Lily of the Valley—1st, Mr. ADAM KNIGHT. Six Cyclamen—1st, Mr. JAMES BRISANT. Eight decorative stove or greenhouse foliage plants—1st, Mr. A. KNIGHT; 2nd, Mr. A. M'MILLAN. Four decorative stove or greenhouse foliage plants—1st, Mr. JAMES M'NEIL, Begonia Gloire de Lorraine, or its varieties—1st, Mr. A. WILLIAMS, with specimens of B. Gloire de Lorraine 5 feet high and 3 feet broad. Three winter-flowering Begonias, other than "Gloire de Lorraine" and its varieties—1st, Mr. D. M'LEAN.

AMATEUR CLASSES.

CUT BLOOMS.—Four vases Japanese Chrysanthemums, not fewer than four varieties, three blooms in each vase—1st, Mr. JAMES STEWART, Whins, Alloa; 2nd, Mr. D. MILLER PRYDE, Buckhaven.

A Bronze Medal, offered for the best plant, was won by Mr. THOS. BELL.

There were many classes devoted to floral designs, and although the exhibits were not so numerous as last year, they represented fine examples of the florist's art.

FRUIT CLASSES.

There were only two entries in the class for a collection of 18 dishes of fruit (excluding Pineapples), in not fewer than nine distinct kinds, on a space 10 feet by 5 feet. The use of plants, cut flowers, or foliage, or any combination of these, was permitted. Effective arrangement, quality, and suitability of the kinds to their various uses, were considered by the judges in preference to mere size of fruit or number of kinds. The highest points (nine) were offered to Grapes, and then followed Peaches, Nectarines, dessert Pears, and Melons with eight, and so on. The 1st prize of 10 guineas was presented by the Right Hon. the Lord Elphinstone, honorary president of the association, and was won by his gardener, Mr. D. KIDD; 2nd, the AMERICAN AMBASSADOR, Wrest Park, Bedfordshire (gr. Mr. Geo. McKinley). Mr. KIDD also excelled in the class for four bunches of Grapes, distinct varieties; 2nd, Mr. JAMES BRISANT, Castle Huntly. For four bunches of Grapes, two of Appley Towers and two of Lady Hutt, Mr. JAS. BRISANT was awarded the 1st prize; 2nd, Mr. JAS. M'NEIL; Craigerne, Peebles. Two bunches of Grapes (one black and one white)—1st, Mr. THOS. MACPHAIL, Archerfield, Dirlerton; 2nd, Mr. JAS. LAW, Invercail, Dirlerton. Two bunches of Muscat of Alexandria Grapes—1st, Mr. THOS. MACPHAIL. Black Alicante Grapes were best shown by Mr. JOHN HIGGATE, Yester; Gros Colman by Mr. JOHN SHIELLS, and Lady Downes by Mr. D. KIDD. Two bunches of Grapes (any variety other than those specified above)—1st, Mr. WM. G. PIRIE, Dalhousie Castle, Bonnyrigg. In the class for 18 varieties of Apples (grown in Scotland), six of each variety, ripe or unripe, Mr. ROBERT G. SINCLAIR, Congalton Gardens, Drem, won the 1st prize, whilst for 18 varieties of Apples, four of each, ripe or unripe, the 1st prize was won by Mr. M'KELLAR, Portmarnock, Ireland; 2nd, Mr. ROBERT G. SINCLAIR. Eight dishes of Apples and four dishes of Pears (grown in an orchard house), not more than two dishes of any one variety—1st, Mr. M'KELLAR; 2nd, Mr. GEO. MACKINLAY.

VEGETABLE CLASSES.

The most important class was for a collection of 12 kinds. The 1st prize was won by the Duke of PORTLAND, Welbeck Abbey (gr. Mr. James Gibson); 2nd, Mr. ROBERT STUART, Thirlstane Castle, Lauder. In the smaller class for six kinds, the 1st prize was taken by Mr. JOHN GRAY, Middlewood, Uddingstone.

The following awards were made to non-competitive exhibitors: A Gold Medal to Messrs. J. & A. Glass, Edinburgh. Silver-gilt Medals to Messrs. Wells & Co., Mersham; Messrs. William

Thomson & Sons, Clovenfords; Professional and Civil Service Supply Association, Edinburgh; the British Columbian Government; Messrs. Sutton & Sons, Reading; Messrs. Storrie & Storrie, Gloucester. Silver Medals to Messrs. John Forbes, Ltd., Hawick; Messrs. George Williams & Sons, Cardiff; Mr. H. N. Ellison, West Bromwich; the Canadian Government; Messrs. Tillie, White & Co., Edinburgh; Messrs. William Brown & Co., Edinburgh, and Messrs. Young & Co. Cheltenham. Bronze Medals to Messrs. Wilson & Co., Prestonfield; Mr. Rodbourne, Edinburgh; Messrs. Richard Sankey & Sons, Nottingham; the Patent Safety Ladder Company, Peterborough, and Messrs. H. Pattison & Co., Streatham, London.

NORWICH CHRYSANTHEMUM.

NOVEMBER 18, 19, 20.—This annual exhibition was held in St. Andrew's Hall, being again a success. The entries, 606, were more numerous than last year, but fewer than in previous years, and 32 below the average of the past five years.

There were three exhibitors in the class for 48 cut blooms of Japanese varieties, Mr. T. A. RISING showing best, his exhibit being awarded the 1st prize for the silver medal offered for the best exhibit in the exhibition; Miss LANGWORTHY followed.

The 1st prize in the class for 36 blooms was won by Mr. F. J. O. MONTAGU, Lynford, but Mr. EDMUND REEVE, Catton Grange, was only beaten by very few points, so good were the blooms in both stands. The class for 24 blooms brought only two competitors, Mr. G. J. HACKER, Ormesby, showing much the better specimens. For six white blooms of a Japanese variety, Mr. MONTAGU took 1st place with the popular variety "Mrs. A. T. Miller." Each of the seven exhibitors in this class staged this variety. For six blooms of a variety other than white, Mr. I. B. COAKS, Thorpe, showed Reginald Vallis, with which he won 1st prize.

There were three groups. Mr. I. B. COAKS for the second time took the 1st prize in the competition for the cup, which was presented by Mrs. E. Reeve, Catton Grange.

In the class for miscellaneous cut flowers the premier award was won by Mr. ROBERT FELLOWES, Shotesham Park. The class for six bunches of exotic flowers brought out a spirited competition. The winner of the 1st prize was Sir F. ADAIR, while the 2nd prize was secured by Mr. G. E. WHITE.

The following awards were made to non-competitive exhibitors:—Mr. R. C. Nottcutt, Bronze Medal; Hobbies, Ltd., Silver Medal; Messrs. Seabrook & Sons, Silver Medal; Messrs. Holmes & Co., Bronze Medal; Messrs. F. Smith & Co., Certificate of Merit; Messrs. Daniels Bros., Silver Medal; Messrs. Sutton & Sons, Silver Medal.

BOLTON CHRYSANTHEMUM.

NOVEMBER 19, 20.—This exhibition was held in the Albert Hall, and fully sustained its high reputation.

For a miscellaneous group, arranged in a circular manner, JOHN HARWOOD, Esq. (gr. Mr. W. Burgess), secured the leading award. J. W. MAKANT, Esq. (gr. Mr. H. Shone), was 2nd, with a good display.

Mr. W. BURGESS was again to the fore for a group of naturally-grown Chrysanthemums, having brightly-flowered plants in good variety; 2nd, CHARLES TAYLOR, Esq. (gr. Mr. H. Wainwright).

J. MCCARTNEY, Esq. (gr. Mr. W. Holmes), had the best table of Orchids, with a collection comprising Cattleyas, Oncidiums, Odontoglossums, and a good plant of Lycaste Skinneri alba; 2nd, Mr. H. ARTHUR. Mr. MCCARTNEY also exhibited the best table of Cyripediums.

Four classes were devoted to Roman Hyacinths, the 1st prize-takers being Messrs. W. HOLMES, C. WEAVER, D. WILSON, and JOS. TREVINA.

Mr. J. LLOYD had the best Primulas; Mr. W. BURGESS the best Cyclamen; Mr. D. MCKELVIE the best Begonias; and Mr. J. LLOYD the best table plants.

In the classes for cut blooms, the 1st prize exhibit of 12 Japanese and 12 Incurved blooms was shown by Mr. G. W. DRAKE, Cardiff, who showed, amongst others, F. S. Vallis, Lady Talbot, W. Greenham, C. W. Mathews, and F. Ham-

mond; 2nd, A. JAMES, Esq., Rugby (gr. Mr. A. Chandler).

For 36 Japanese blooms, Mr. A. CHANDLER led with a collection of average flowers, President Viger and Purity being the best examples. Sir E. EVANS, Bromborough (gr. M. C. Jones), and Mr. G. W. DRAKE won the 2nd and 3rd prizes respectively.

Mr. H. SHONE had the best six vases of Singles, and also the best six vases of decorative varieties.

In the fruit section, the best two bunches of Black Alicante Grapes were shown by Mr. H. SHONE. Mrs. S. COOK, St. Helens (gr. Mr. T. Barclay), excelled for two bunches of white Grapes.

Lady HANDLIP (gr. Mr. L. Bayley) showed the best Apples and Pears, and Mr. E. MITCHELL was awarded the 1st prize for a collection of vegetables.

varieties. Meanwhile, the frame lights should be withdrawn, as Daffodils in full root-growth require ample supplies of moisture.

DATURA (BRUGMANSIA) KNIGHTII, &c.; Amateur, Kensington. The protracted dull weather and occasional fogs will account for your plants dropping their leaves. You will do well to continue to keep the plants tolerably dry until the turn of the year, when they may be more freely watered, and given some weak liquid manure occasionally. It does not matter where you get the Roses from so long as you are satisfied with their condition and that they are true to variety. The Hippeastrums you name can be purchased from most of the nurserymen and seedsmen.

GERANIUM SEED: W. L. & Co. You do not state what species of Geranium you refer to. Perhaps you mean Pelargonium!

GLADIOLUS CORM: K. F. R. The corm is not diseased; the outgrowths are small corms. Their presence in such numbers is unusual, and it may be that they have been formed as the result of mechanical irritation. Bulbs and corms are frequently reproduced for commercial purposes in this manner. In the issue for May 1, 1909, p. 283, you will find an account of Hyacinths propagated in the Dutch bulb farms by means of bulbils which have been induced to form by merely scoring or notching the base of the bulbs. This method of propagation is well shown in the Supplementary Illustration in the same issue.

MUSCAT OF ALEXANDRIA GRAPE: O. H. The variety appears to be Muscat of Alexandria, but the flavour is very deficient. Perhaps your vine is budded or grafted on an unsuitable stock? If you cannot improve the flavour, throw out the vine and plant a fresh one.

NAMES OF FRUITS: H. Nichol. 1, Catillac; 2, Hayshe's Prince Consort; 3, Hacon's Incomparable; 4, Beurré Hardy; 5, Lane's Prince Albert (a very fine fruit); 6, Hornead Pearmain; 7, Brabant Bellefleur; 8, Ribston Pippin.—*R. P. I.* Baxter's Pearmain; 2, Annie Elizabeth.—*E. O. S.* 1, Forge; 2 and 3, Dumelow's Seedling; 4, Norfolk Stone Pippin; 5, Braddick's Nonpareil; 6, Chautemont.—*W. C.* Pear Fondante du Panisel, Apple Summer Strawberry.—*W. H. D.* Stirling Castle.—*L. D.* 1, Bedfordshire Fountling; 2, Flanders Pippin; 3, Hollandbury; 4, Blenheim Pippin; 5, Jolly Beggar; 6, Beauty of Kent.—*J. L.* The two Nuts are those of the Black Walnut (*Juglans nigra*). The other fruit is the Japanese Quince (*Cydonia japonica*).

NAMES OF PLANTS: O. R. 1, *Pteris longifolia*; 2, *P. tremula*; 3, *Davallia bullata*; 4, *Selaginella Kraussiana*; 5, *Adiantum tenerum*; 6, *Blechnum occidentale*.—*W. O.* *Cymbidium Mastersii* (*Cyperorchis*). *P. O. II.* 1, *Oncidium flexuosum*; 2, *Calanthe Veitchii*; 3, *Oncidium pubes*; 4, *Masdevallia simula*.

RECORD CROP OF ONIONS: E. A. Our *Record Book* contains no entry on this subject.

ROSE SPORT: W. S. The flower is too small to judge of its qualities as a garden variety: the colour is pleasing and the shape is desirable. Submit specimens next season to the National Rose Society.

SCALE ON VINES: Bath Boy. First remove all the loose bark from the rods, then thoroughly scrub them with a solution of soft soap, sulphur and slaked lime, putting about 4 ounces of each substance in a gallon of water. Repeat this operation in the spring just before the buds break into growth, but on this second occasion more care will be necessary to prevent the buds from getting damaged. Keep a sharp look-out during the early stages of growth, and, should any scale insects appear on the young shoots, sponge the affected parts with the same mixture at about half the strength recommended above.

VINE LEAVES: A. R. We failed to find any insects on the leaves received for examination.

Communications Received.—E. H. J.—J. Heap—O. T.—A. W. P.—W. P.—J. O.—E.—S. A.—D. A.—Orleans—E. J. C.—A. C. B.—A. H.—W. A. C.—E. J. G.—S. E.—and Agricultural College—A. B.—W. W. & S., Ltd. (your letter has been forwarded)—West Sussex—C. W. J.—J. E. Tyler—S. C.—R. E. W.—V. G. W.—Berlin—T. H.—A. O.—W. B. H.—May Sharp—H. S. T.—G. F. Scott—Elliot—W. M.—W. H. P.—W. W. F.—T. H.

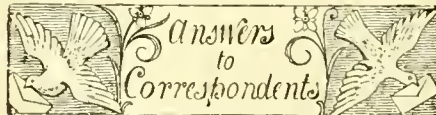
Obituary.

MRS. WILLIAM TRESSEDER.—The death of Mrs. William Treseder occurred at the Cowbridge Road Nurseries, Cardiff, on the 19th inst. Her husband—brother of Mr. Stephen Treseder, whose death was recorded in these columns a few weeks ago—predeceased her some 15 or 16 years ago. He was a highly-respected nurseryman and florist in the town, and was at one time a member of the Cardiff Corporation. Mrs. Treseder leaves a grown-up family, of whom two sons have been in the business for a number of years past.

JAMES M. LONSDALE.—The death of this florist is recorded in the American papers. He was born in Shenstone, Staffordshire, England. Before proceeding to America, Mr. Lonsdale held garden appointments at Derby and other places. A trip to Salt Lake City, U.S., led to his permanent settlement in that town, where he became a prominent retail florist.

TRADE NOTE.

MR. GEORGE NOTTAGE, for 13 years gardener at Mill House, Bourne End, has commenced business in partnership with Mr. Geo. Brown. They have taken over Mr. W. Broughton's old-established nursery and florist's business in the Norfolk Road and High Street, Maidenhead, and will continue to trade under the name of W. Broughton. Mr. Brown was formerly manager for Mr. Broughton.



Editors 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 *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ARIES AFFECTED WITH MITE: A. G. S. Please send samples of attacked shoots for inspection.

ASPLENIUM: G. II. No disease is present. The injury is due to some check to growth, probably caused by cold.

BEGONIA LEAVES ROTTING: II. B. There is no disease present; the trouble is due to excess of atmospheric moisture.

COMMISSION: W. M. II. We do not know the exact rates, but they would probably vary with individual firms.

DAFFODILS FOR MARCH: Narciss. You have omitted to mention the name of the variety to which your letter refers. Should it prove to be Golden Spur or the Double Daffodil (*Narcissus Pseudo-Narcissus* fl. pl.), the first week of the New Year will be early enough to introduce it to the greenhouse, but if it is Emperor, Empress, or a similar variety, the bulbs should be placed in heat some 10 days earlier. If this reply does not meet your case, please repeat the question, giving the name of the variety or



Photograph by H. N. King.

THE GARDENS, ST. CATHERINE'S COURT, NEAR BATH.

THE
Gardeners' Chronicle

No. 1,197.—SATURDAY, December 4, 1909.

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A BOTANICAL JOURNEY IN SOUTH-WEST AFRICA.

I.—BUSHMANLAND.

AMONG the objects of the Percy Sladen memorial expedition in South-West Africa was the study of the vegetation of the dry regions of Namaqualand, Little Bushmanland, Damaraland, and South Angola. Although these regions have been to some extent botanically explored by Welwitsch, Baum, Schinz, Dinter, Schlechter, Bolus, Marloth, and other naturalists, their investigation is yet far from complete, and what little is certainly known about them is by no means common property. They present many features which must be of interest to all lovers of plants.

Little Bushmanland is an extensive region with somewhat ill-defined boundaries situated on the southern side of the lower course of the Orange River. To the west it reaches the mountainous belt of Little Namaqualand and to the east, beyond Pella, merges into Great Bushmanland. To the south it comes into contact with the high plateau region, whose vegetation is distinguished by a preponderance of Composites and which Dr. Bolus has named the "Composite" or "Upper" Region. Its rainfall is small

and remarkably fitful; but in many places a fairly abundant supply of subterranean water is reached by borings at no very great depth.

Broadly speaking, Little Bushmanland is a vast plain of reddish sand, in the south some 3,000 feet above sea level, falling gradually towards the Orange River, whose bed has here an elevation of about 1,000 feet. The intense monotony of these plains is, to some extent, relieved by abrupt hills of granite, gneiss and other ancient rocks, rising 500 feet to 1,500 feet above the general level. Their slopes are frequently of smooth, sand-polished rock and support no vegetation whatever; where, however, they are broken up, various

Bushmanland is to-day almost without permanent inhabitants, except in the vicinity of the Orange River. The bushmen, from whom it receives its name, have long ago retreated northwards, and maintain a losing strife for existence in the recesses of the Great Kalahari and Ngamiland. The limited and isolated areas which, in any season, enjoy a rainfall sufficient to revive the dormant vegetation are visited by trek-Boers with their flocks and herds from the less favoured districts of Namaqualand, who depart as soon as the new growth is exhausted. Little enterprise has yet been expended upon boring operations, and the water holes are separated by long tracts of arid sand. Where surface water is available it is usually uncare for, and its conservation, and, still more, its utilisation for purposes of irrigation are neglected. Consequently, large quantities are wasted, and that which remains is commonly polluted. A very striking exception to this prevailing lack of energy and foresight is seen in the Catholic mission station at Pella. Here a copious supply of good water is pumped up from a well, 20 feet below the surface, and, by the skill of Bishop Simon and his associates, is most effectively applied to various useful purposes. A large swimming bath, probably the only institution of its kind in S.W. Africa north of Cape Town, is maintained. An extensive garden is supplied by water furrows, and contains many fruit trees—Oranges, Pears, Grapes, Dates, Plums, Figs, Pomegranates, and Loquats (Eriobotrya japonica)—and a large supply of vegetables. Owing to the nature of the underlying rock, the useful life of most fruit trees is here of short duration. A new garden has therefore been started, six miles to the north, on the banks of the Orange River. Here an area measuring 100 by 500 yards is irrigated from the river by steam pumps, using as fuel the wood of Salix capensis and other constituents of the riverside bush. Cereals, fruit trees and vegetables are grown with great success. There is at present no access to a market, and the produce is mainly used by the mission and by travellers who visit the station. At Rietfontein, about 30 miles south of O'okiep, bore-holes in the dry, sandy river bed support an extensive cultivation, while at Henkriesfontein, a few miles from the river, south of Raman's Drift, what is perhaps the best water supply in Bushmanland is used only for drinking purposes by a few bastards and their cattle.

The most prominent grass on the plains is a shrubby species of Aristida (probably A. namaquensis); with it occur short-lived species of the same genus, as well as the curious spiny-leaved Ehrharta spinosa, and a few other grasses. Associated with these is frequently a leguminous shrub or small tree, Parkinsonia africana, giving a characteristic aspect to extensive areas. Numerous smaller species—Indigofera, Scrophularineae, Solanums, Tribulus spp., Acanthaceae, Mesembryanthema and other Ficoideae, Zygophylla, Sarcocaulon spp., and a few other succulents

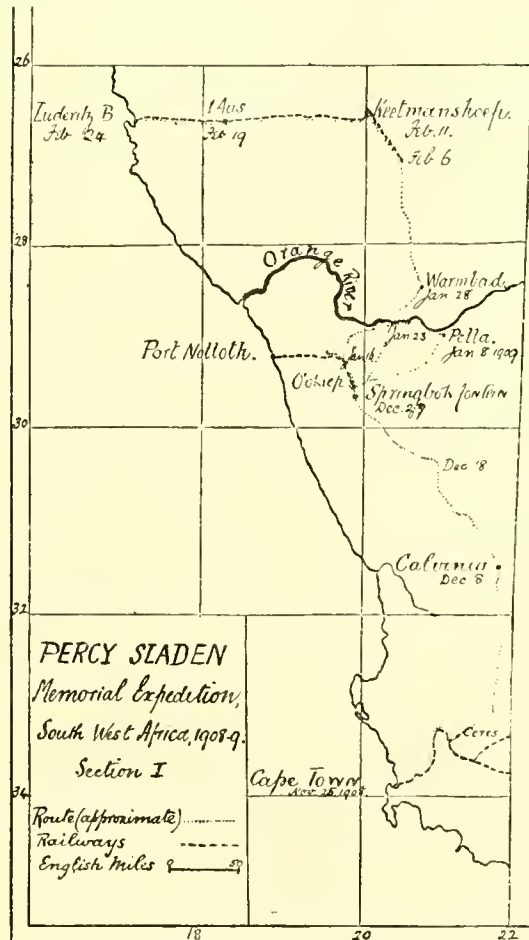


FIG. 160.—THE ROUTE OF PROF. PEARSON'S TRAVELS.

bushes (Acanthaceae, Asclepiadaceae, Compositae, &c.), succulents (Euphorbias, Asclepiads, Cotyledons, Mesembryanthema, &c.), grasses, and the well-known tree Aloë, A. dichotoma, maintain a foothold in the fissures. The plains are characterised by the presence of grasses which, if not abundant in species, yet constitute the predominant element in the vegetation. Powerful winds arise, frequently very suddenly, and sand storms are a common result; whirling columns of sand rising to great heights career aimlessly across the country and threaten the stability of tents, wagon covers and other movable objects which may lie in their path. In many places the sand accumulates in high dunes, among which travelling is extraordinarily heavy—even for Bushmanland, where it is never easy.

—are scattered about the sandy stretches which separate the clumps of grasses. Among the succulents, perhaps the most striking is the Asclepiad, *Hoodia*, *Gordonii*, whose leafless, columnar stems are frequently quite concealed by a wealth of large flesh-coloured, saucer-shaped flowers. This plant is of some economic importance on account of the large amount of water stored in its tissues. The natives eat it with avidity, and are able to subsist upon it when free water is unobtainable. Here and there the grasses and their associates are replaced by bushes of *Rhigozum trichotomum* and a species of *Hermannia*. The former, a member of the *Tecoma* family, is, in January, profusely bedecked with pink-white flowers. The *Hermannia* is a remarkably handsome bush, which would be well worth cultivating. Standing about 3 feet high, it bears hundreds of large pendent pink flowers, whose weak pedicels allow them to yield to the slightest breath of wind.

The hills of Bushmanland near the Orange River are remarkably barren, but the few species found upon them include some of quite exceptional interest. The most extraordinary of these is an Apocynaceae plant, ascribed to the genus *Pachypodium*—*P. namaquanum*, Welw. (*Adenium namaquanum*, Wyl.)—see fig. 162. It was first recorded by Lieut. Paterson, who met with it in October, 1779, and published a sketch of the top of the stem in his account of his journey*. A description and figures of flowers and leaves are given in Harvey's *Thesaurus Capensis*, from material supplied by Mr. H. Wyley. It is here stated that the plant was popularly known as "Elephant's Trunk." A Dutch transport rider recently called it a "Telegram"—presumably from the slight resemblance which it bears to a distant telegraph pole. It occurs on the very barren schistose ridges at Dabainorup, a few miles south of the Orange River, where it is associated with *Aloë dichotoma*, a species of *Commiphora* and a few *Acanthaceae* bushes. The stout, fleshy stem emerges from rocks which daily become so heated in the sun that a thick-soled boot is quite inadequate as a protection, and the nails therein become so much enlarged that as soon as they cool down they fall out. The inner tissues store an enormous quantity of water, and the development of hard-walled cells is so slight that the whole mass can be cut through with the greatest ease by a pocket-knife. The large, yellow flowers occur in June among the lower of the leaves which crown the stem; in January the seeds are already scattered, and only vestiges of the dried-up corollas remain.

In the sandy valleys leading down to the Orange River one of the commonest plants is *Bauhinia garipensis*, a bush with scattered, mottled flowers and purple, sickle-shaped fruits. It extends far into the tropics and is quite frequently met with at the edge of the desert in South Angola. A fairly dense bush fringes the sandy banks of the Orange River. It is poor in species, the most conspicuous of which are *Salix capensis*, *Zizyphus mucronata*, *Tamarix articulata*, *Acacia horrida*, and a *Ficus*. In the summer the water level sometimes rises very suddenly, and the trunks of overhanging trees are torn away and carried down to the sea, where they are commonly found floating in the muddy water some miles from the coast. H. H. W. Pearson.

* Paterson, W., a narrative of four journeys, &c. London, 1779, p. 124.

† Vol. ii., p. 11, pl. 117.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM EPIDENDROPSIS.

AN inflorescence of this singular Philippine *Dendrobium* is sent by Mr. F. W. Moore, M.A., V.M.H., from the Royal Botanic Gardens, Glasnevin, Dublin. It is not a showy species, but it is specially interesting by reason of the singular Epidendrum-like appearance of the face of the flower, and especially the labellum, and the singularly large, inflated spur, about three-quarters of an inch in length, and which has the back compressed into a keel which is continued to the apex. In general appearance the short raceme of eight flowers resemble in some degree those of *D. sanguinolentum* and *D. nudum*, but they are of a pale olive-green colour slightly tinged with a bronzy hue on the outside, the labellum, recurved at the tip, being greenish-yellow and having a fleshy, bilobed crest.

AGANISIA LEPIDA.

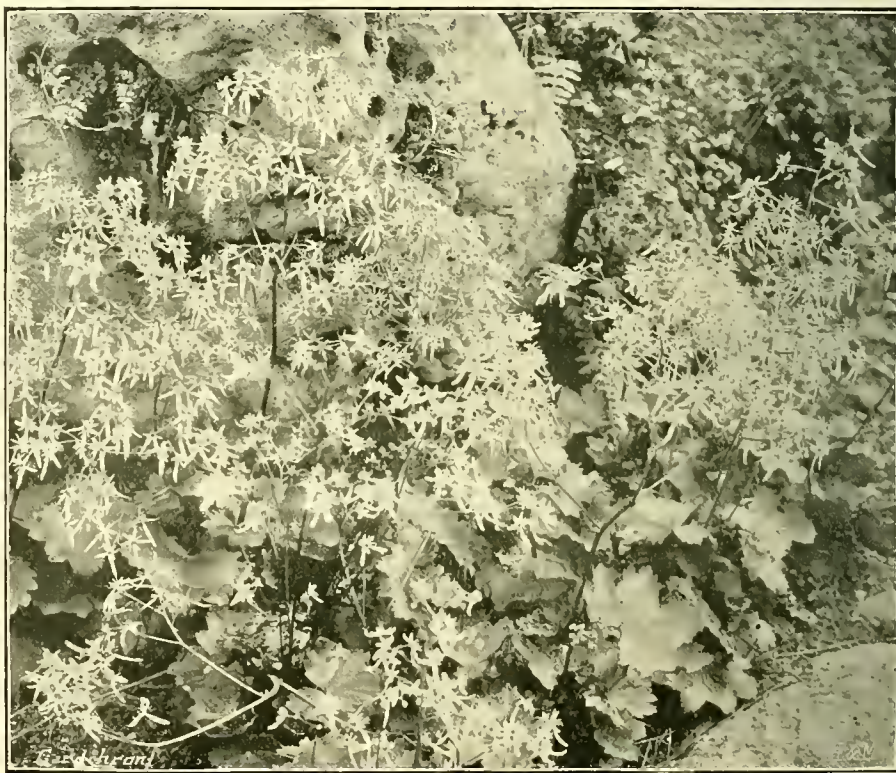
This is a pretty species of tufted growth, and with grassy leaves about half an inch in width

which no other colour appears than the clear canary-yellow tint of the crest and the face of the column. The original *O. crispum virginale* received a First-class Certificate in 1882, and occasionally a similar variety has appeared in collection, a flower being now sent by Mr. H. Haddon, gardener to J. J. Neale, Esq., Lynwood, Penarth, who has just flowered a small plant of it out of some imported pieces recently acquired.

THE ALPINE GARDEN.

SAXIFRAGA MADIDA.

SAXIFRAGA MADIDA (see fig. 161) is a new addition to the small number of autumn-flowering *Saxifragas* received from Japan. These Japanese species, including *S. cortusefolia* and *S. cuscuteformis*, both confined to Japan, with *S. Fortunei* and *S. sarmentosa*, which are found both in China and Japan, form a distinct section of the genus. In all four species the flowers are remarkable for possessing petals of unequal size, one or two exceeding the others by two or three times their



[Photograph by W. Irving.]

FIG. 161.—*SAXIFRAGA MADIDA* FLOWERING AT KEW.

and producing erect spikes about a foot in height and bearing on the upper part attractive, white flowers, bearing in a general way a resemblance to those of *Odontoglossum pulchellum majus*. It is a tropical American species, and has again been introduced by Mr. H. A. Tracy, of Twickenham, with whom it has recently bloomed. A good stock of it was imported by Messrs. Linden some years ago, and Messrs. Sander & Sons, of St. Albans, by crossing it with *Zygotetaleum maxillare Gantieri*, obtained the graceful bigeneric hybrid *Zygonisia Rolfeana*, which has pretty cream-white flowers blotched with violet colour, illustrated in the *Gardeners' Chronicle*, July 19, 1902, p. 30.

ODONTOGLOSSUM CRISPUM VIRGINALE.

THE blotched varieties of *Odontoglossum crispum* have had a phenomenal run of favour, and they are among the most prized in collections; but still more rare are the pure white forms on

length. Seeds of *S. madida* were received at Kew from Tokio Botanic Garden in the spring of 1907, and plants flowered in the autumn of 1908 in pots. Last spring they were planted out in a sheltered, low-lying portion of the rock-garden, where they flowered freely in October. Although considered a distinct species by Japanese botanists, *S. madida* is closely allied to *S. cortusefolia*, of which several varieties are figured in Japanese works. It differs from the older species in having more deeply-lobed leaves, and in flowering nearly a fortnight earlier, but it has the same habit, and the flowers possess entire petals. During the past autumn *S. madida*, *S. Fortunei* and *S. cortusefolia*, all flowered at Kew at about the same time, and were not cut down by frost until they had all produced seeds. All three species are found naturally in damp, semi-shady places, and such a position should be chosen for their planting. The plants should be covered with some light litter during the winter. W. I.

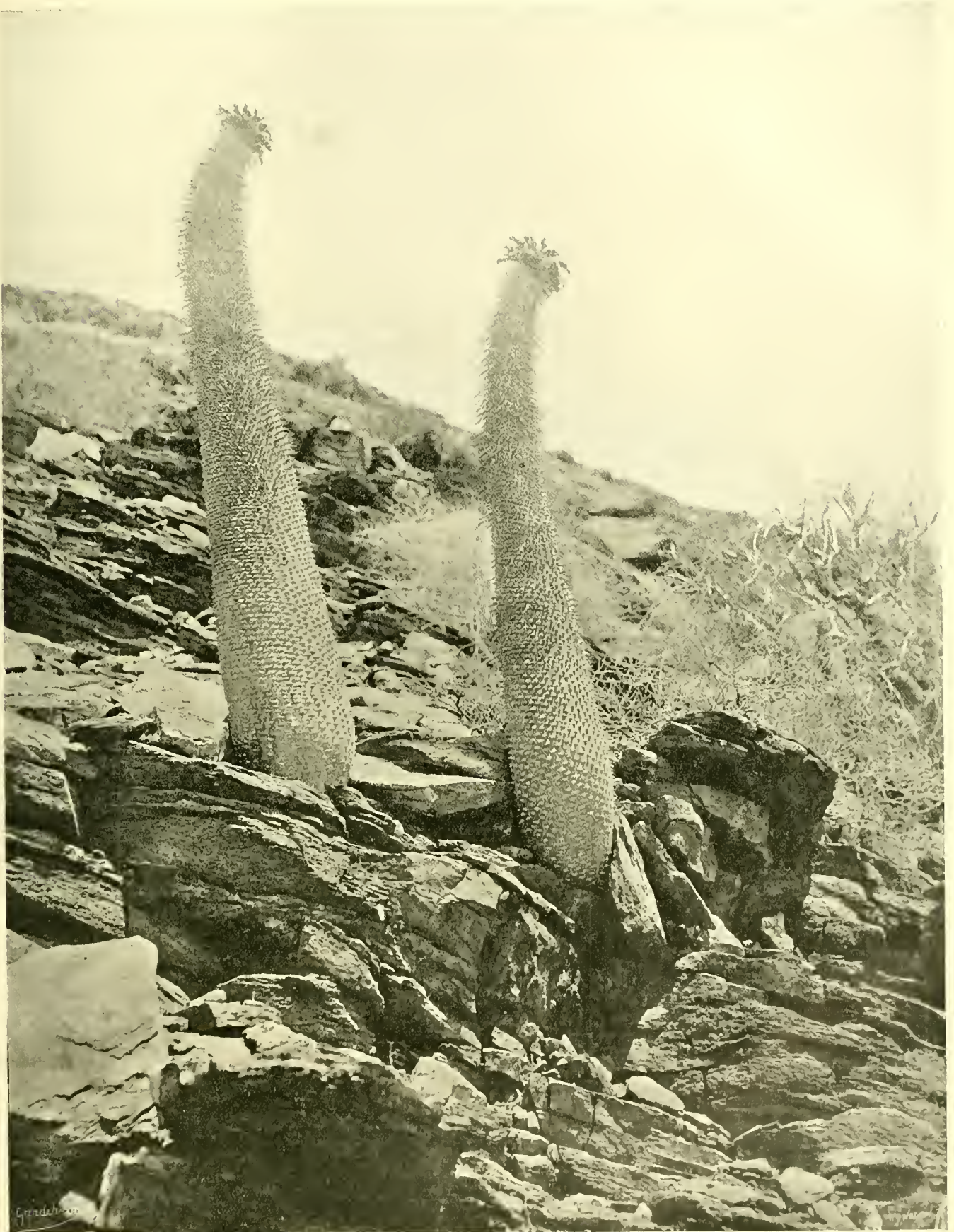
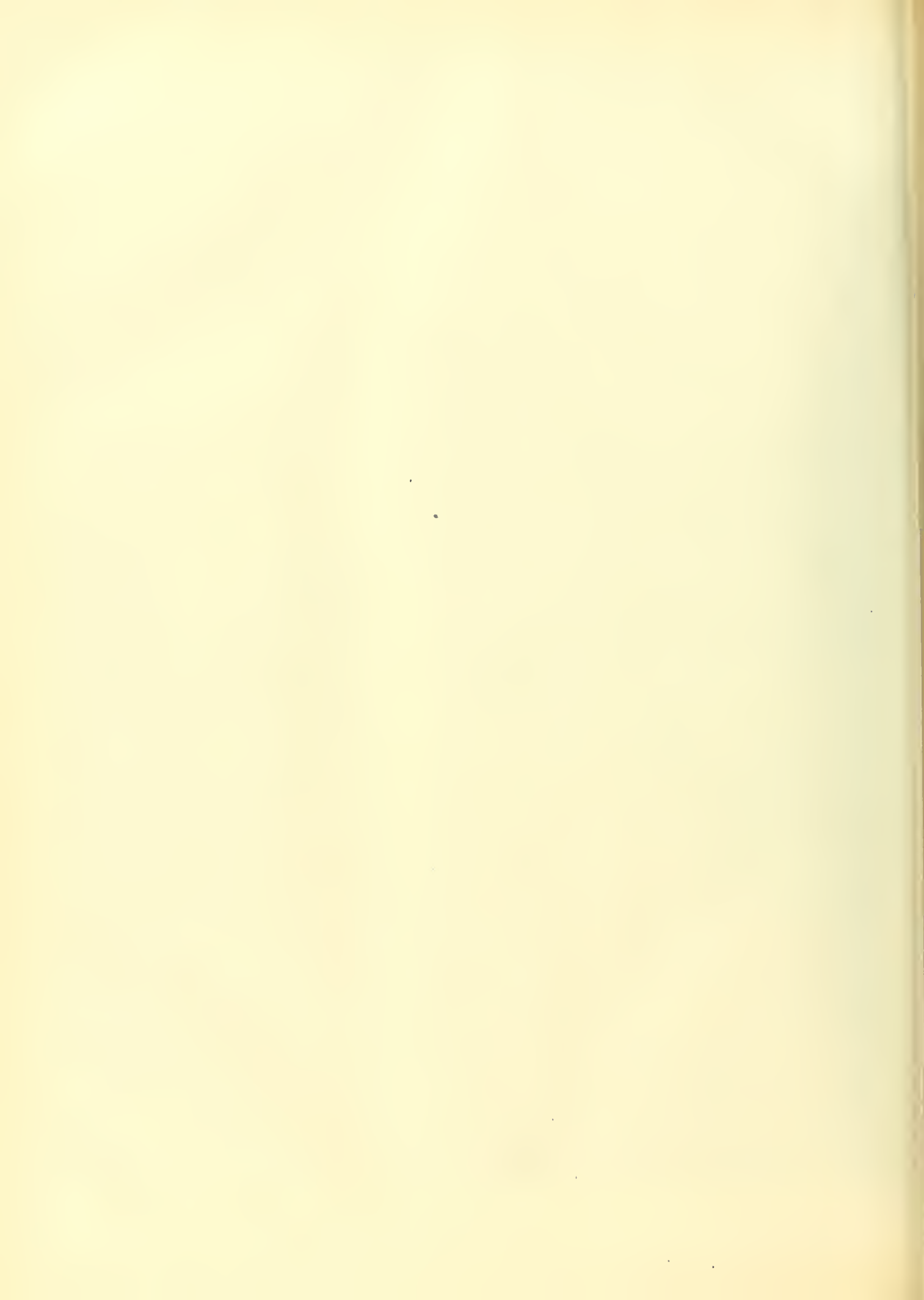


FIG. 162.—PACHYPODIUM NAMAQUANUM, WELW., GROWING IN SOUTH-WEST AFRICA.

From a photograph taken in January, 1909, at Dabainorup, in Little Bushmanland, six miles south of the Orange River. The stems are 9-15 inches in diameter, and about 5 feet in height.



NOTICES OF BOOKS.

* IN A YORKSHIRE GARDEN.

THE host of readers who have enjoyed Mr. Farrer's other gardening books will turn with feelings of expectation to his latest volume; nor will they be disappointed, for there is much in it of interest to those who garden with their heads and hearts, as well as their hands. Though there is, perhaps, nothing in the book so altogether delightful as the account in the author's first volume of the discovery of a mass of *Eritrichium nanum* in full bloom, we have something of the same kind in a minor key in the charming description of the finding of *Anemone nemorosa* in a Cornish wood, and of a "botanising" expedition in the Dolomites. These accounts of his travels add very much to the charm of Mr. Farrer's books, and there might well have been more of them in the present volume.

The author's methods and his views on gardening are such that he could hardly be expected to write sympathetically of what one generally sees in the so-called "great" gardens of this country, and he does not hesitate to express his feelings on the show places of Cornwall in the following words:—"What did I see in Cornwall? Well, I saw, as I said, the perils into which too soft circumstances and specialism can lead a gardener. But I also saw, as I have not yet said, many a spectacle of bewildering gorgeousness and splendour. Holy souls, too, did I find, holy and humble ones, that loved their flowers and tended them as friends, and caused them to rejoice. But (will my Cornish friends allow me to say it?) I saw no gardens. I saw a number of places, indeed, where a number of rare and exquisite plants were made to grow in luxury. I saw collections beyond price, and culture high beyond imagining. But of a garden I never saw a trace. Everything was aimless, formless, haphazard. Precious *Rhododendrons* dumped in a straight line through a wood, tree Ferns in a sort of square, paddock-like clearing. Bamboos in a jostle down a glade, with no attempt to show up their individual graces or masses; nowhere, in fact, the least or most elementary notion of design, neither for garden-proper nor for garden-wild."

When all is said and done, it is a question of one's point of view, and gardeners in Cornwall, who are able to grow *Camellia reticulata*, to say nothing of a host of other difficult things, so well as to draw from our author the ungrudging statement that he had never seen anything approaching it in beauty, may take in good part the criticisms of a fellow-gardener whose interests and sympathies are avowedly and obviously more with the minutiae of the Alps than with other things, and who has for his garden such a lovely natural setting as obtains at Ingleborough.

Probably the best of the many good things in the book is the account of the Ingleborough cliff garden, and here the author does no more than bare justice to a splendid idea thoroughly well carried out. The photographs, unfortunately, convey a totally inadequate idea of what, beside being in itself as exquisite a bit of scenery as is to be found in a lovely district, is possibly the only really natural piece of rock-gardening in the country, and which, under Mr. Farrer's fostering care, should, in a year or two's time, be a sight worth going a long way to see.

Mr. Farrer has come to the conclusion, as have other gardeners in different parts of the country during the past few years, that, to grow the more difficult Alpine plants, a rock-garden in the ordinary sense of the term, with all its artificiality and expense, is quite unnecessary. All one has to do is to choose a likely spot, and take out the ground to a depth of 3 feet; then put in drainage, and fill up with granite chippings, or what is known in the north as path granite, without

a scrap of earth in it, but with just sufficient peat dust mixed with the granite to colour it a light brown. In this mixture even *Gentiana Lawrenceii* and *Eritrichium nanum* may be grown with success, provided—and this is the secret on which everything depends, and the importance of which Mr. Farrer does not seem altogether to realise—water under control can be conveyed naturally or artificially to the subsoil without necessarily wetting the surface. To make the arrangement quite perfect, it is as well to arrange so that the surface may, when required, receive moisture in the form of a fine artificial rain, as is done, for example, by Professor Balfour, at Edinburgh.

In common with its predecessors, the book has, what to some will appear a defect and to others an added charm, namely, a copious discursiveness. It has, too, the waywardness and wilfulness which we have learned to associate with Mr. Farrer's manner, and the absence of which we should regret. For, and this is his supreme merit, his writing has character. Mr. Farrer not only loves plants and understands a great deal about them, but he is also an artist, with a rare gift of expression. The colours he uses may be crude, but the effects of his word-pictures are charming. By them he has permanently enriched the literature of gardening. A.

WILD FLOWERS.

THE study of wild flowers by young people, as opposed to the formation of collections of dried specimens of plants with their botanical names attached, is deserving of all encouragement, and any help in this direction is welcome. Mr. Furneaux's little book* is certainly calculated to promote a real interest in plant life, and we strongly recommend it for beginners, especially those who have not the advantage of competent teachers. It is one of a series, and is somewhat restricted in its scope; and, to prevent disappointment, it should be explained that plants peculiar to the seaside and aquatic plants are not dealt with in this volume, as they form the subjects of *Life in Ponds and Streams* and *The Sea Shore*, two other volumes of the series by the same author. Of course, this separation detracts from the general value of the work. As the author explains, the leading feature of the book is the arrangement of the plants and trees according to their seasons, habitats and habits. Much of the space has necessarily been allotted to descriptions of the plants; "but not a little has been devoted to an attempt to create an interest in some of those wonderful habits which lead us to look upon plants as living beings with attractions even more engrossing than their beautiful forms and colours."

The book may be termed complete, so far as it goes. A concise introduction on the external morphology and classification of flowering plants is followed by short chapters on the pollination and fertilisation of flowers and on climbing plants. With regard to the aerial roots or suckers of the Ivy, the author says: "If they come in contact with a bare rock, or with a surface from which no nutriment can be derived, they serve the one purpose of clinging only; but if they reach even a small amount of nutritive soil they produce absorbent fibres that are capable of extracting food." This was our opinion, based upon the vigour with which young shoots, well provided with roots, grow; but certain biologists of repute assert that they never contribute to the nourishment of the plant. "Early Spring" is the title of the next chapter, which is devoted to the description and illustration of the development of foliage and flowers from the dormant buds. The rest of the book consists of chapters or sections, illustrating the flora of waysides, meadows, cornfields, chalk downs, &c., at different seasons. The illustrations, both coloured and plain, are excellent, the only drawbacks being that their scale is not indi-

cated below the figures. The descriptions are remarkably good, without being too technical, and they are supplemented by numerous interesting facts in the life-history and properties peculiar to each subject. At the end is a short but sufficient glossarial index. W. B. II.

THE ROSARY.

CULTURAL HINTS FOR DECEMBER.

If tender varieties were not sufficiently protected during the recent severe frosts some of them will probably have suffered damage, for the frosts were unusually early and the growths were less well matured than is the case in most seasons. However, those cultivators who have not yet applied such protection should lose no time before getting it ready. The plants may be protected either by straw or by Fern, or in the case of dwarf plants, earthing them up with soil. Standards are sometimes covered with porous cloth, when frost is likely to be severe and prolonged.

During open weather continue to press forward the work of lifting and replanting, it being necessary to bring this operation to a conclusion as soon as possible. Trenched ground may be somewhat beaten down before the planting is finished, owing to the rains; therefore, it will be as well to apply a light dressing of wood-ashes, burnt earth, or ballast, and prick in this material with a fork. This is especially desirable in heavy soils, for it will render the surface more friable.

Dwarf Roses which have been budded should be planted sufficiently deep that the point where the bud is inserted is several inches below the surface. Care should be taken to remove all sucker growths that appear below the union. If sufficient Roses on their own roots are available and are of equal strength to budded specimens, then the troublesome question of sucker growth will not arise. At the same time the budded plant has this advantage, it will make growth in one season equal to that made in two seasons by a plant which is upon its own roots. In town and suburban gardens it may be preferable to defer planting after this date, until February or even March, when a better atmosphere may be expected than is usually present in towns during December or January.

Hardy climbing Roses may now have any weak and unripened shoots cut back severely, leaving the firm, matured growths their full length until February or March, unless these are too plentiful, when they may be thinned out. If packages of Roses are received from the nurserymen during severe weather, it is better not to unpack them, but place them in a cellar or other cool place until a thaw sets in. Then, if the wood is shrivelled, place the roots in a tub of water for several hours; afterwards lay the trees in a trench, well water them, and cover them with earth. In a few days the wood will be quite plump again.

Tea and other Roses in pots which were propagated last autumn and spring, and which have been kept in frames for supplying flowers for cutting, may now be brought into a cool house. If they have finished blooming they may be kept drier at the roots, which will cause the wood to mature. In February they should be shifted into larger pots, and be grown in gentle heat for giving a succession of blooms. The earliest forced Roses in pots which were started in November will now be making progress. They should have an atmospheric temperature of 50° to 55° by day, with a little top ventilation. Close the house early in the afternoon, and damp down the paths and stages at the same time. The plants may be syringed occasionally on bright mornings, provided the foliage will become perfectly dry again before evening. If insect pests appear fumigate the house with the XL-All vaporising compound.

* *In a Yorkshire Garden*, by Reginald Farrer. (London: Ed. Arnold.) Price 10s. 6d.

* *Field and Woodland Plants*, by W. S. Furneaux. (London: Longmans, Green & Co.) 1901. Price 6s. net.

The grafting of Roses under glass will now be taking place. The heat of the frame may be increased a few degrees, and by the end of December the earliest plants will have made growths an inch long and be ready for placing on the stages of the house. When these plants are removed from the frame others may be put in their places. The stock should be placed in a heated structure for a day or two before the bud is inserted.

Roses planted out under glass have made considerable progress. A gentle heat can now be given during favourable weather. Much moisture is likely to arise from soil in the beds, therefore one good syringing early in the day in bright weather will suffice. When there appears to be an excess of moisture present, the bottom ventilators as well as those at the top of the house should be opened a little. The atmospheric temperature should now be 55°.

THE JERUSALEM ARTICHOKE.

ABOUT 30 years ago the late Dr. Asa Gray, in a communication to the *American Agriculturist*,* gave his reasons for believing that the Jerusalem Artichoke of gardens had been developed from a species of *Helianthus* which grew wild in North America, then supposed to be *H. doricoides*, but subsequently altered to *H. tuberosus*. The wild plant differed from the cultivated form only in the shape of its tubers, which were long and slender. He had cultivated this wild plant for about a dozen years, and some of its tubers were then "good Artichokes." He summed up the evidence as follows:—Jerusalem Artichokes went from Canada to Europe within a dozen years after the first settlement of Canada, viz., at Quebec; they reached England in 1617, and Italy early enough to have got their popular name there, *Girasole* being Italian for Sunflower. Sir Joseph Hooker published a figure of the wild form in the *Botanical Magazine*, t. 7547 (1897), where he states that *H. tuberosus* is indigenous in the lake region of Canada, as far west as the Saskatchewan, and from thence southward to Arkansas and the middle parts of Georgia. He adds that *H.*

tuberosus, appears to be nothing more than a form of this wild *H. tuberosus*. It is not *H. decapetalus* as known at Kew, and the only difference between it and the wild Artichoke is in the colour of the

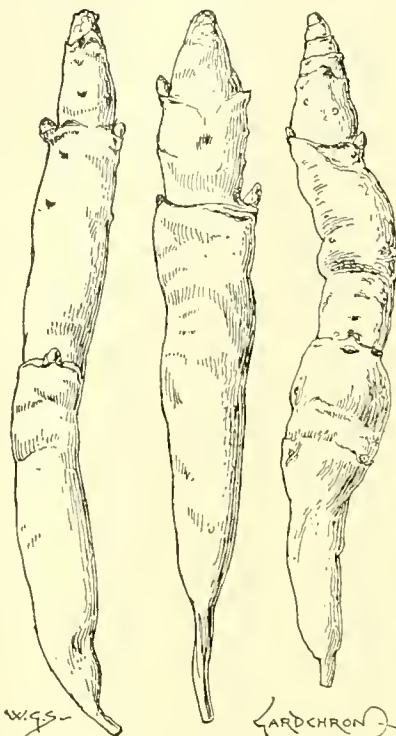


FIG. 164.—WILD FORM OF *HELIANTHUS TUBEROSUS*, PARENT OF THE CULTIVATED ARTICHOKE: TUBERS YELLOWISH, WITH PURPLE EYES.

tubers, those of the latter being potato-yellow with a tinge of purple about the eyes, whilst the tubers of "Helianti" are wholly purple. Figures of both plants from examples grown at

latiflorus. This is all the more puzzling because in Gray's *Botany of the United States* there is no mention of tubers in the description of this species. There is, to my mind, strong evidence in favour of reducing all these tuber-bearing Sunflowers which have got about under such names as *macrophyllus*, *giganteus*, *decapetalus*, and *latiflorus* to the position of forms merely of *H. tuberosus*, the parent of the Jerusalem Artichoke. Dr. Asa Gray must have just missed seeing his way to this conclusion when he confused *H. doricoides* with *H. tuberosus*.

Considering that the plant we know as the Jerusalem Artichoke was an article of food among the Indians in North America long before the arrival of Europeans, and would, therefore, be modified by cultivation and varying conditions as other plants were, the Potato for example, it is probable that all the Jerusalem Artichokes in Europe, India, &c., are descendants from the "two small roots obtained in 1617 by Mr. John Goodyer, of Maple Durham, which, being



FIG. 165.—*HELIANTHUS LATIFLORUS*: TUBERS PURPLE.

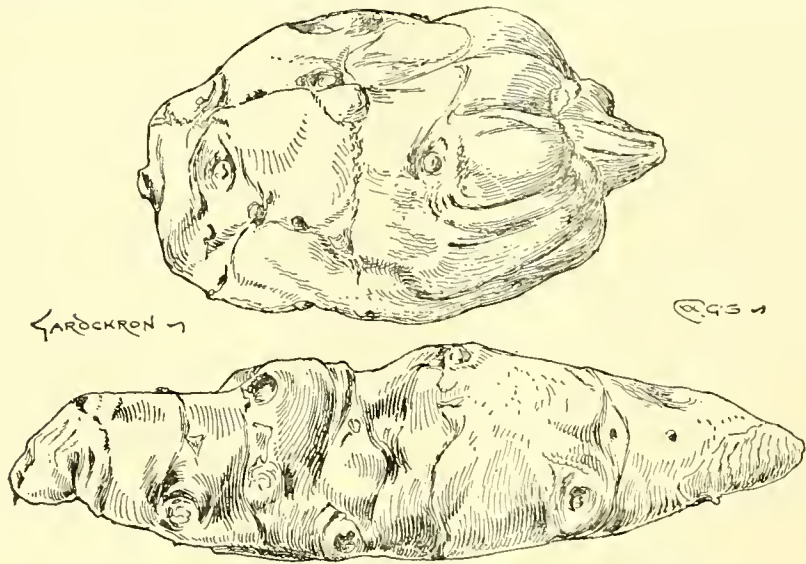


FIG. 163.—THE CULTIVATED ARTICHOKE (*HELIANTHUS TUBEROSUS*).

planted, enabled him before 1621 to stock Hampshire." It has varied under cultivation here, both in the shape and colour of the tubers. The purple tubers of "Helianti" suggest it rather than the yellow-tubered form as being the parent of the purple-tubered Jerusalem Artichoke. There appears to be an error in the *Botanical Magazine* figure of *H. tuberosus*; the tubers of that plant are never borne as they are there shown, but on the apex of long string-like roots as in the garden form. The only Sunflower grown at Kew with a root-stock like that represented in the *Botanical Magazine* figure is *H. strumosus*. The economic properties claimed for "Helianti" by Mr. R. de Noter are those of edible tubers, and stems and leaves good for fodder. Have the stems of the Jerusalem Artichoke ever been fed to cattle in this country? W. W.

giganteus, figured at t. 7555, is a near ally. My belief is that it is probably only a form of that species.
A third plant, recently brought into notice by Mr. R. de Noter, and figured and described in the *Revue Horticole*, 1907, p. 136, where it is called "Helianti" and is referred to *H. decapetalus*.

Kew are here given, also a figure of the cultivated Jerusalem Artichoke. I have cooked and eaten tubers of all three, and could detect no difference in flavour; they were all equally good. This purple-tubered plant has been in cultivation at Kew for many years, not as a vegetable, but as a species among those grown in the botanical collection in the herbaceous garden. At Kew, however, it has always borne the name of *H.*

* Reprinted in *Gardeners' Chronicle*, 1877, p. 472

HARDY PLANT BORDER.

ORIENTAL POPPIES.

No perennial border plant needs less attention in culture, is more thoroughly hardy, or grows and flowers more freely than the Oriental Poppy. During May and June it provides a gorgeous display of colour in the border or shrubbery. It has been said that when the flowering season of these plants is past they leave great gaps in the borders for the remainder of the year. This can also be said of other subjects, such as Pæonies, but a thoughtful cultivator will make arrangements for the filling in of such gaps by the aid of Gladioli, Galtonias, Lobelias, Montbretias, Chrysanthemums, and annuals grown in pots for the purpose.

I have long been interested in *Papaver orientale*, and I grow more than 50 varieties. The culture of the plants is quite simple; the ground should be deeply trenched and mixed with manure. A stiff soil suits them best, and abundant space should be allowed for a free development of the foliage. Having thick, fleshy, deep roots, the Oriental Poppy can withstand drought remarkably well, while its weeping foliage does much to conserve moisture in the soil by shading the ground during hot weather.

October is the best month for planting, and it may be undertaken even earlier in the season if circumstances permit. Well-prepared plants in pots do well planted out in spring, but autumn planting gives the best results the following season. As a rule, the flower-stems are self-supporting, but they are best kept in place by looping up the shoots with a piece of string, for if allowed to fall about, the flower-stems grow crooked and are then much more difficult to arrange as cut blooms.

The propagation of the plant may be carried out in several ways. Pieces of the fleshy roots cut into lengths of 2 inches may be planted in rows in sandy soil in spring. But division of the roots with some of the crown attached is the quicker way when a limited number of plants are required, and if this is undertaken in July, after the flowering season is past, and the divided plants kept watered and shaded until new growth is assured, they will quickly become established, and give a crop of blossom the following season. The blooms of all Poppies should be cut when the calyx is unfolding, and not when the petals have expanded.

The blooms will last longer in a fresh condition if the cut ends of the stems be sealed by the aid of a lighted candle. When sending by post, the flowers should be packed in damp moss in a closely-fitting tin or wooden box.

The flowers possess a rather disagreeable odour, which is very pronounced in some types and varieties—notably in *P. bracteatum*, which is quite distinct from *P. orientale*, although it is stated in Nicholson's *Dictionary of Gardening* to be only a variety of *P. orientale*. I have several varieties of the bracteatum type that are totally distinct in habit of growth, stoutness of stem, shape of petal, and each with a different centre. Each bloom is subtended by a stout bract immediately under the base of the petals. Although there are many gorgeous varieties belonging to this section, I prefer the Oriental type as being less rigid in appearance and in having the disagreeable perfume less pronounced.

The following varieties embrace a choice collection, beginning with the Oriental type dating from 1714. This old variety is the earliest to flower: the petals are deep scarlet, with a deep purple blotch at the base. The variety Bobs is especially free in flowering; the blooms are developed on stiff stems, thus making them useful for cutting. In colour it is a soft, satiny rose. Lady Roscoe has blooms of a medium size. They are freely produced and have rounded petals; the colour is salmon-rose. Queen Alexandra, clear rose, of good shape; Meduse, rich satiny-pink flowers, borne on stiff, erect stems of medium

growth. Mrs. Marsh is the only variety I am acquainted with that is of two colours; the petals are of a rich orange-scarlet, with dull yellow stripes. Silver Queen grows but 2 feet high; in colour it is silvery-white, slightly tinted with blush and without the dark blotch on each petal which almost all varieties possess. Hesperia has petals flushed with maroon. Psyche is a delicate rose-blush, shading to white. Tom Tit is a small-flowered variety, but most useful for furnishing cut flowers as it blossoms abundantly. The colour is deep orange-red, with a very dark blotch on each petal. The deeply-cut leaves are very pronounced. Fringed Beauty produces its rich crimson, deeply-cut flowers very early in the season. Mahony is the darkest of the varieties, being almost maroon. Rembrandt has extra large petals, which are coloured intensely red. The plant is of compact growth, and bears erect, stiff stems. Mrs. Perry, crimson with gold shading, but paler on the edge; Prince of Orange, pale orange-red; Semi-duplex, which grows less than a foot high, and has two rows of bright, salmon-red petals, bears its flowers on extra stout stems; and Goliath, with intensely red petals deeply blotched and with purple anthers, are other desirable kinds.

The following varieties belong to the bracteatum section: Duke of Teck, height 4 feet 6 inches, the flowers being dark red and with orange shading; Monarch, light orange-red, with stems of erect growth; Menelik, satiny-rose, with a dark blotch on each of the five petals; and Mogul, with six short, rounded, deep red petals. *E. Molyneux*.

FOREIGN CORRESPONDENCE.

NOTES FROM LA MORTOLA.

SCHOTIA BRACHYPETALA.

WE have several plants of this beautiful and rare shrub in the garden, one of which recently flowered. The flowers, which are of a deep crimson tint, appear along an old branch in the lower part of the shrub, several being clustered together on the top of the branchlets. Their chief characteristics are the five very tiny petals, which are only $\frac{1}{8}$ inch long and filiform, and thus are easily overlooked.

The shapes of the flowers, and also of the leaves, are somewhat different from those figured in Harvey's *Thesaurus capensis*, plate 32. The four calyx lobes are patent, almost at right angles. The stamens are nearly three times as long as the calyx lobes. The leaflets of our plants are never as entire and flat as in the plate, but more or less undulated along the margins and crenate, and also more obtuse; they are coriaceous, bright and of a shining green. They vary in size and shape, the largest leaflets being 4 inches long. According to Harvey, *Thes. cap.*, p. 21, the plant grows in Natal "in sheltered valleys, where the soil is dry and rocky, 3,000 feet." It is said to flower there in September. Our plant is growing in conditions which approach as near as possible those of its native land, in a sheltered valley, and on dry soil. Harvey calls it a very ornamental shrub, which is certainly true, but I think the plant, to be at its best, ought to be grown under better conditions, and especially that it should receive sufficient water whilst growing.

Schotia latifolia also grows at La Mortola. It is a smaller shrub than *S. brachypetala*, with smaller, strong and leathery leaves, somewhat similar to those of *Cerantonia Siliqua*, but flat and not undulated. It flowers annually in August, and ripens its large pods. The flowers are rosy, fairly numerous, in small panicles, but not very showy. The pod is rather large, about 2 to 4 inches long, and contains one or two large seeds, with a great, yellow arillus. *A. B.*

NOTES ON IRISES.

SELF-FERTILISATION IN IRISES.

It is usually supposed that Irises are a good example of Nature's provision that self-fertilisation should be impossible, and it is a plausible theory that the co-operation of insects is necessary in this genus. Having regard to the position of the stigma relatively to that of the anthers, it does seem at first sight as though fertilisation would be impossible without the intervention of insects. The latter are said to collect pollen on their backs as they brush against the anthers in their endeavours to reach the nectaries at the base of the flowers, and then to deposit the grains on the stigma of the next flower they visit. Knuth (*Handbuch der Blütenbiologie*, vol. ii., Part II.) has even gone so far as to draw up lists of the various insects that have been observed to visit each species.

Some Irises are undoubtedly fertilised by this means, but anyone who visits a garden containing a number of species of Iris cannot fail to be struck by the number of capsules of seed on such species as *pseudacorus*, *sibirica*, *versicolor*, *Hookeri* (or *setosa*), *graminea*, *ochroleuca*, *spuria*, &c. Nearly every flower seems to produce a capsule, while the larger, bearded Irises set seed only comparatively rarely, unless artificially fertilised. A little observation reveals two facts; firstly, that the ripe pollen of all the species mentioned is very easily dispersed from the anthers by the slightest movement; and secondly, that the stigma is in every case a triangular tongue, which projects downwards. The motion of the plants in the wind precipitates the pollen on to the hafts of the falls, which are touched from time to time by the pendulous stigma, and self-fertilisation is thus effected. The shape of the pollen grains of these Apogon Irises is entirely different from that of the bearded groups, and herein, apparently, lies the explanation of the phenomenon. *W. R. Dykes, Charterhouse, Godalming.*

The Week's Work.

THE ORCHID HOUSES.

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

Ornithidium sophronites.—A well-grown plant of this dwarf-habited species, when covered with several hundreds of its small, scarlet flowers, is a very effective object. The plant is easy of cultivation, for even small pieces will, in a few years, under proper treatment, form neat, compact specimens. If, on the completion of their growths, they are placed in a light position, they will produce a profusion of bloom. The plants do best in shallow pans, which should be suspended in a light position in a house having a cool, intermediate temperature: when a larger receptacle is needed, it may easily be elevated near to the roof-glass by means of a large pot or Orchid stand. *Ornithidium sophronites* delights in plenty of root moisture the whole year round, and will root freely in the *Osmunda* and *Polypodium* mixture, to which plenty of small crocks are added to ensure efficient drainage.

Sophronites grandiflora.—Because of the colour of the flowers of this well-known plant, it is a suitable companion to *Ornithidium sophronites*. It is now sending up its flowering shoots from the partially-developed growths. Plenty of water will be needed at the roots till the flowers are over, but, by refraining from sprinkling the latter with water when they are open, the flowers may be kept fresh for a long time. Repotting may be performed when growth commences, or immediately after the flowers fade: a small quantity of the new Orchid compost is all that is needed. *S. cernua*, now in bloom in the cool house, thrives better in the new mixture than it did in peat and Sphagnum-moss, especially if the plant is potted quite firmly. After growth is completed, it requires a long period of rest, and very little water must be afforded until growth recommences.

Oncidium cheiroporum.—The dwarf, yellow-flowered *Oncidium cheiroporum* is now opening its flowers. The plant requires a thin layer of

compost only to root into, and thrives well when suspended or stowed near to the roof-glass of the intermediate house. The flowers, however, open better if the plants are removed to a light position in the East Indian house, for, if exposed to a little sunshine at this time of the year, it assists the flowers to expand. This *Oncidium* is not a lover of much water at any time, nor does it appreciate wettings overhead, especially during the growing period, as, when damp, the tender, young growths are very liable to decay.

Cochlidias.—*C. Noezliana*, *C. vulcanicum*, *C. sanguinum*, and *C. stricta* are all growing freely, and should be given a light position in the cool house, with plenty of water at all seasons. This treatment will also suit the rare *C. rosea*, formerly known as *Odontoglossum roseum*.

Vandas.—Place the *Vandas* in the lightest position available. Plants of the pretty *V. Kimballiana* which have recently passed out of bloom should be kept rather dry at the root for several months. The *Sphagnum*-moss on the surface of the pot should not be watered heavily, a slight sprinkling whenever it becomes fairly dry being sufficient. The pure white-flowered *V. Watsonii*, a rare and lovely *Orchid*, is now developing its inflorescences, and will require copious waterings at the roots till the flowers open, when the amount of moisture should be gradually lessened. After the flowering stage this plant should be treated the same as advised for *V. Kimballiana*. These *Vandas* thrive well when elevated near to the roof-glass of the Cattleya house. Plants which produced large spikes of bloom last year, and which are now showing weak inflorescences, should not be allowed to flower: a season's rest will be beneficial to them.

THE FLOWER GARDEN.

By W. A. COOR, Gardener to Sir EDMUND G. LODER, Bart., Leonardlee, Sussex.

Hardy Ferns.—Let a few inches of dry, rough peat be placed over the crowns of the less hardy species and varieties. Do not remove the withered foliage of these Ferns until spring, as it forms a natural protection. Evergreen Ferns serve an excellent purpose in winter, therefore it is desirable to place some of these amongst the deciduous kinds in order that the bareness during winter may be lessened. A good collection of Ferns is more interesting and effective than many people imagine. In forming a hardy fernery, it must be remembered that, above everything else, Ferns require shade from bright sunshine, yet they must not be deprived of light. There is a great deal of difference between shade from sunshine and absence of light. Let the warmest nooks be chosen for the more tender varieties, provided they are not exposed in such positions to the sun, either early in the morning or at mid-day. The ideal fernery should afford a kind of retreat. It might be situated on a north-west bank, partly shaded by trees, and, if possible, the site should be near to water. Old pieces of rock and stone may be employed to good effect in the hardy fernery. Ferns may be planted at any time between now and the period of renewed activity in spring. The deciduous Ferns now at rest include such as *Athyrium*, *Cystopteris*, *Osmunda*, *Lastrea*, *Asplenium*, *Blechnum*, *Polypodium*, *Scolopendrium*, and *Polystichum*. Most of these require a good loamy soil, such as is often found on banks, with plenty of leaf-mould and small sandstone or pieces of rock mixed with it. The freestone chips serve to retain moisture, and the roots may usually be found clinging to them. Hymenophyllums look very pretty travelling over large pieces of stone. The hardier forms of *Lycopodium* should be planted at the foot of a rock or stone, excepting the species *L. clavatum*, which succeeds best on a bank exposed to sunshine.

Lily of the Valley.—The present is a very good time to make a fresh plantation of *Lily of the Valley*. Any that have occupied the same piece of ground for three or four years, should now be taken up and divided, the ground should be drained deeply and plenty of leaf-mould and manure added to it. If the plants are lifted from time to time in this manner, and planted in deeply-dug, well-manured soil, the flowering spikes will be very large. In replanting the crowns, it is useful to put some on south, some on west, and others on north borders, for thereby the flowering period will be extended. In divid-

ing the crowns, select all the largest, those which are sure to produce flowers, and plant them by themselves, utilising the smaller ones for planting in the nursery ground or on a border by themselves. A fresh bed should be planted each year. The best way to plant the crowns is to chop down a trench by means of a spade or trowel, and in this trench place some silver sand and fine leaf-mould, upon which the crowns may be planted. Do not expose the crowns to the atmosphere for a longer time than is necessary.

General work.—This will consist of planting operations whenever the weather is fine, clearing up leaves, sweeping and rolling lawns and gravel paths, pruning and top-dressing deciduous shrubs and trees, and, during wet days, preparing stakes and labels. Clean plants in cool houses or pots, and overhaul tools, machines, and other implements.

Planting shrubs.—The present season is the best in the year for the planting of trees and shrubs. If the ground has not been made ready, however, time must be taken to prepare it. Shrubberies are too often neglected. The commonest species are allowed to crowd out the choicer specimens. Autumn is the season to put these matters right, either by transplanting or chopping out the commoner sorts. There are so many beautiful species, that most gardens can ill afford the space for numerous plants of such shrubs as Box, Laurel, and Privet, excepting when they are used for shelter or in woods. Shrubs of one kind or another may be had in flower during the whole year, either on the walls or in the open border. The fewer that flower in a particular month the greater should those few be prized, and these include *Jasminum nudiflorum*, *Chimonanthus fragrans*, *Viburnum Tinus*, *Hamamelis virginica*, and *Azara microphylla*, all of which flower in cold weather.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Pines.—It is desirable to have some kind of protective material in readiness for covering the pits at night during severe weather. By using such a covering an even temperature can be maintained in the pit with less fire-heat. Be careful not to overheat the hot-water pipes, there being nothing more detrimental to the welfare of the plants. Let watering be done with careful judgment, and remember that plants now resting will be better if their roots are kept rather on the dry side. Those plants which are nearest to the water-pipes will need water more frequently. All water applied to the roots should first be warmed to the same temperature as the atmosphere of the house. Plants which are swelling fruits need more heat than others. Let the atmosphere be kept moist by damping the paths in the house; especially will this be necessary during sunny weather. An effort should be made to have some ripe Pineapples for the Christmas festival. Should it be necessary to hasten the plants for this purpose, let them be placed at the warm end of the plant stove, near to the glass. For successional plants and suckers, an atmospheric temperature of not less than 60° or 65°, varying in accordance with outdoor conditions, will be suitable, but 5° more heat may be employed for plants now fruiting.

Queen Pines.—Let the house be prepared for the earliest batch of "Queens" which are expected to yield fruits early next summer. A suitable structure is a low pit well supplied with water-pipes. The plants should be plunged in a hot-bed, which may be maintained at a temperature of 80°. Let the plants be placed as close to the glass as possible without actually touching it. Select the most promising plants for early fruiting, which are those having thick collars and open centres. It is important that the plants be fully exposed to the light, therefore let the roof-glass be frequently cleaned, especially after foggy weather.

Winter Cucumbers.—For the next few weeks *Cucumber* plants will require extra care in their management, growth now being very slow: they must not be over-watered or given stimulants either too strong or too frequently. When roots can be seen on the surface, a top-dressing of fibrous loam and leaf-mould may be applied. Open the top ventilators just a little for a short time in the forenoon, whenever the weather is

favourable. Cut away old leaves and regulate and tie in the young growths, but do not train in more growths than there is ample room for. Keep the glass of the house or pit perfectly clean. A minimum atmospheric temperature of 70° will be suitable except during very severe weather, when 65° will be sufficient. Cover the roof on frosty nights with mats or tiffany. Damp the walls and paths three or four times daily to keep the atmosphere moist. Syringing had better be discontinued, especially if there is the least evidence of *Cucumber spot*, which is due to a fungus, whose spread is favoured by moist conditions.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Bathing.—It is not always possible to have any great diversity in the attractiveness of a park, so that where special conditions do exist which tend to make it possible to provide certain kinds of pastimes, sports or other forms of amusement, it is wise to make the most of them. The presence of water in considerable quantity and covering a sufficient area is one of the greatest advantages any park can possess. Water is usually capable of providing four popular pastimes, viz., bathing, boating, fishing, and—in winter—skating. The first of these, even in places where it can be indulged in, is not encouraged by the authorities to anything like the extent it might be. As a general rule bathing is restricted to the early hours of the morning when the ordinary visitor is not taking his walks abroad. This certainly was the practice in this city until last summer, although for seven or eight years past an agitation had been going on in favour of extending the hours. The management realised that it would be altogether out of the question to allow bathing to go on during the day unless dressing-boxes were provided, for, although all the requirements of early morning bathing were met by the provision of a stage fitted up with seating accommodation for close on 200 persons, it was quite unsuitable during the time visitors were about.

Provision of dressing-boxes.—As a result of the agitation the city council decided a little over a year ago to erect 60 dressing-boxes on the site of the bathing stage, at a cost of £400. This decision was arrived at much against the wishes of a strong minority, who professed that the introduction of "all-day" bathing would spoil the amenities of the park and drive away a great many of the lady visitors. For the first time in the history of these parks bathing was permitted, from May 1 to September 30 this year, during certain portions of the day after 9 a.m. So far from this innovation detracting from the pleasures of the park it has had quite an opposite effect, for not only has it proved a boon to bathers but it has also turned out a source of interest to visitors. During the afternoon and evening of most fine days a large crowd of on-lookers was invariably to be seen enjoying the sight of bathers disporting themselves in the water.

Depth of water.—About three-quarters of an acre at the deepest end of the lake was set aside for all-day bathing. As the average depth of water at this point is over 10 feet no one but expert swimmers were allowed to bathe in it. As a good deal of boating goes on at the lake, it was found necessary to mark out the bathing ground with a line of strong lifebuoys. This prevents boats from passing into the area reserved for swimmers, and at the same time deters bathers from passing beyond the boundaries and making themselves objectionable to persons using boats.

Fees for bathing.—Prior to the introduction of dressing-boxes, bathing was free, but since these have been erected a charge—in which action we are supported by the Public Health Amendment Act, 1907—will now be made to everyone using the bathing stage. A small portion of the lake is, however, during the season still set aside for free bathing, but is not available after 9 a.m. each day. The bathing boxes are set aside one day a week for the exclusive use of ladies—a privilege that was not taken advantage of so much this year as it may be next. Notwithstanding the cold summer experienced, nearly £100 has been taken this year in bathing fees.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Violets in frames.—Any attempt to coddle these plants will be sure to result in weakly crowns and a deficient supply of flowers. The lights may be shut down on cold or stormy nights, but do not cover the frames unless more than 5° of frost is anticipated. On all other occasions ample ventilation should be afforded, remembering that a close atmosphere causes the foliage to damp off. Unless the plants are growing in heated frames, water will be rarely necessary until the New Year. Should the root need moisture in the meantime, let it be applied on a mild morning, that the plants may be left fully exposed for the remainder of the day; by this means the excessive surface moisture will evaporate before night. If Violets gathered during cold weather are placed in tepid water in an intermediate temperature for half-an-hour before being taken into the house, their perfume will be improved.

Euphorbia pulcherrima (Poinsettia).—These plants will now need a drier atmosphere, as the brilliantly-coloured bracts are approaching their full development. Manure water must soon be discontinued or the bracts will shrivel earlier than would otherwise be the case. If Poinsettia heads are required for use as cut flowers, they should be cut on the previous night, or at least several hours before they are needed for decorative purposes, and the cut ends placed in hot water in order to check the bleeding, which, if allowed to continue, would cause the leaves and bracts to flag.

Lachenalia.—Unless the plants are required to flower at a particular time, it is better not to attempt to force them. They succeed best when grown in a cool pit where frost is excluded in a position fully exposed to the light. They need a certain amount of atmospheric moisture, but this must not be excessive. Liquid manure may be applied to the roots until the first flowers open, when its use should be discontinued.

Herbaceous Calceolarias.—The most forward plants, having nearly filled the pots with roots, should be shifted into other pots of a larger size, but this work should not be carried out in very cold weather. A richer compost may be used on this occasion, and it should contain a larger proportion of sand. Let care be exercised in order to prevent the leaves being bruised during the handling which is necessary in the act of potting. No plant should be repotted except when the soil about the roots is in a medium state of moisture.

Chrysanthemums.—Cut down any of the plants on which the blooms have ceased to be decorative. Those plants which are required to furnish cuttings may be removed to a light position where, under careful attention, they will produce sturdy suckers. The prompt removal of plants which have ceased to be attractive will permit of the inclusion in the display of many later-flowering varieties, which are now coming into bloom. The latest plants should be still in a cool structure, where abundant ventilation can be employed whenever the outdoor conditions are favourable.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Planting Apple trees.—The Apple crop is usually the most important one amongst fruits in a private garden, therefore every care should be taken to have the best varieties of both dessert and kitchen kinds that will furnish a succession for the longest period. In a well-ordered garden, which has been under the same management for some years, all that will be necessary is to replace worn-out and inferior varieties by some of the better and newer kinds for trial; but in a garden that has been neglected for some years, a considerable amount of planting is usually necessary. In most gardens it is convenient to plant fruit trees by the side of the paths; but in some cases it may be found best to plant the fruit trees together in breaks or quarters. When planted by the side of walks, they serve to divide up the garden, and are very convenient for pruning or any other treatment they may require, besides being more interesting to visitors, who may require to take notes as to the varieties planted. Bush or pyramid-trained trees will usually be

found the most suitable; the open bush I consider to be the best form, as, in their case, every part of the tree is exposed to sunshine and air. Standard trees are out of place in the garden proper, because, when fully grown, they shade and draw the moisture from a considerable area of land, quite spoiling it for other crops. Bush trees are planted much more closely than was at one time thought practicable, and a good number may be accommodated in a garden of moderate size. They may be placed at a distance of 6 feet from the edge of the paths, and from 9 to 12 feet apart, according to the number to be planted. Currants and Gooseberries may be grown between the trees for some years. Three-year-old trees should be selected, as these grow quickly, and soon give a crop of fruits. The Apple is not very particular as to soil, and will succeed in any good garden loam; but if the ground is of poor quality, introduce some fresh loam about the roots when planting.

Varieties for planting.—The following varieties are to be recommended for planting; they will furnish fruits over a long period:—*Culinary:* Early Victoria, Lord Grosvenor, Stirling Castle, Ecklinville Seedling, Golden Noble, Golden Spire, Hambling's Seedling, Toddington Seedling, Warner's King, Gascoyne's Scarlet Seedling, Lane's Prince Albert, Sandringham, Tower of Glamis, Blenheim Pippin, Mère de Ménage, Norfolk Beauty, Alfriston, Bismarck, Annie Elizabeth, Bramley's Seedling, Newton Wonder, Royal Lake Cooking, Barnack Beauty, Norfolk Beefing, Northern Greening, and Wellington. *Dessert:* Irish Peach, Mr. Gladstone, Beauty of Bath, Langley Pippin, Lady Sudeley, Worcester Pearmain, Yellow Ingestre, James Grieve, Ben's Red, King Harry, Washington, Christmas Pearmain, Charles Ross, King of the Pippins, Margil, Abington Pippin, Ribston Pippin, Adams's Pearmain, Ashmead's Kernel Wealthy, Cox's Orange Pippin, King of Tompkins County, Melon Apple, Claygate Pearmain, Lord Hindlip, ReINETTE de Canada, Rival, Brownlee's Russet, Paroquet, and Lord Burghley. It is sometimes contended that many varieties are not desirable, but some kinds which succeed in one garden often fail in another, and only experiment will prove which are most suitable in any given case. Besides this, a fair number of varieties generally ensures a crop from some of the kinds when the majority are not fruiting.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Manuring and tilling.—At the time of writing the weather is favourable for most kinds of kitchen garden work. Therefore, it is the proper time to push forward any extensions or alterations contemplated in the garden, and to wheel manure and other kinds of material on to the ground. The trenching of light land should be pushed forward as expeditiously as possible. If sufficient labour is available, do not hesitate to break up the subsoil to as great a depth as practicable. If this is done it may be necessary to add various ingredients to modify the nature of the lower soil now brought to the surface. These ingredients will depend partly upon the soil, whether it is heavy or light, and upon the kind of crop it is intended to cultivate. Do not make the surface of the soil smooth, but leave it in a rough condition, that as large a quantity of soil as possible is exposed to the influences of the weather.

Storage of manure.—In the proper management of a kitchen garden it is essential that some place be set apart for storing various kinds of manure, and other materials necessary for the various crops. The site should be situated in one of the most out-of-the-way places, but at no great distance from the kitchen garden. During the present month additions should be made to the heaps, and each made tidy by squaring them up, and seeing that the whole of the place is properly drained.

The root stores.—These should be carefully examined this season, especially such tubers and roots as Potatoes, Onions, Shallots, Garlic, Beet root and Carrots. If these crops are under cover, the work can be done in inclement weather. All bad specimens should be removed, but any that are not actually bad, but appear to be incapable of being kept for a considerable time, should be placed on one side for immediate use.

Turnips.—Late sowings of Turnips have succeeded excellently, consequently there has been little difficulty in maintaining a supply of first-rate roots. Any that are fully developed should be lifted and stored, pitting them quite thinly in the open. Place a little soil or fine ashes between each layer of roots and let the clasp be well ventilated, as Turnips are liable to generate heat, which, if retained, would be injurious. A little soil should be pulled over partially-developed Turnips still in the ground, and, in the event of very severe weather, a little light material such as Bracken, leaves, or long stable litter may also be strewn over them.

Swedes.—Though Swedes are not strictly kitchen garden crop, the forced tops are often appreciated in the winter months. Therefore, put a number of roots into boxes containing soil, and place them in a dark cellar or room. They will soon provide leaf-growth suitable for cooking purposes.

Broccoli.—Examine the Broccoli every week, and directly a plant commences to develop, the head may be protected in the open by tying together the leaves in such a way as to cover the flower. A better plan, however, is to carefully lift each plant at such a stage and place it either in a cold frame or in an open shed with a little soil about its roots.

Celery.—If the earthing-up of Celery has not been completed, this should be done at once. Get in readiness plenty of protective material in case of severe frost.

THE APIARY.

By CHLORIS.

The honey season of 1909.—In beekeeping, as in other pursuits or business, it is well at the end of the season to consider what circumstances contributed to success or failure. This season the honey crop has been a failure in many parts of the country, and in some cases from preventable reasons. In these notes I purpose stating a few of the causes of failure. In one case, a beekeeper examined his colonies very early and found everything going on in a most promising and prosperous manner. When the right time came to overhaul his stocks in the spring he discovered that several hives were queenless. There was brood, when he first examined the hives, so there is no doubt that the queen had survived the winter, and it was known in each case that a young queen of 1908 headed the colonies. But it is a great mistake to overhaul colonies too early in the season, for it seems to cause the bees to "bell" the queen and kill her. Of course, last spring was very cold, and bees ought consequently to have been examined proportionately later. Again, deferring an examination too late has a bad effect. Many colonies died in some apiaries for the want of proper attention at the right time. The bees were unable to take advantage of the early forage, and consequently the home larder was empty. In other cases the stores were very low, and the queen was not laying up to her full capacity, and when the bees ought to have been storing the crop of fruit honey, they were simply making good the arrears caused by a shortage of food, and rearing brood which ought to have been available for work in the fields.

In a third instance the bees of each hive had swarmed during June after doing excellent work in May among the fruit. One day the beekeeper went to his apiary and discovered a fairly large swarm, and at once set to work to hunt for the queen. As he was certain it was a second swarm, he was prepared to discover more than one queen, and he destroyed each as he found it. He was very much surprised to find that there had been 10 queens in the swarm. He put back the bees and was very much perplexed when he remembered the number of queens destroyed, and next day determined to overhaul his stocks. To his great grief he found that three out of eight stocks were queenless. It came to the conclusion that three queens were returning from their wedding trip and had joined the swarm just as it emerged from the hive or whilst clustering. It is not wise therefore to be in a hurry to destroy superfluous queens, if you have no nucleus colonies. This beekeeper obtained a very good result for such a season, considering he had lost the advantage of the two weeks of excellent weather in August.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 7—

Rev. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. C. Herman Senn, on "The Cooking of Vegetables"). British Gard. Assoc. Ex. Council meet.

WEDNESDAY, DECEMBER 8—

Perpetual Flowering Carnation Soc. Exh. at Hort. Hall, Westminster.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—40.9°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 1 (6 p.m.): Max. 48°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, December 2 (10 A.M.): Bar. 29.4; Temp. 50°; Weather—Dull.

PROVINCES.—Wednesday, December 1: Max. 49° Cornwall and S.W. Ireland; Min. 36° Carlisle.

SALES FOR THE ENSUING WEEK.

MONDAY AND FRIDAY—

Herbaceous and Border Plants, at 12; Roses at 1.30, by Protheroe & Morris.

MONDAY, TUESDAY, WEDNESDAY AND THURSDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., at 10.30.

TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Fruit Trees and other Nursery Stock, at St. John's Nurseries, Worcester, by Protheroe & Morris, at 11.30.

WEDNESDAY—

Herbaceous and Border Plants, at 12; Roses and Fruit Trees, at 1.30; Palms and Plants, at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—

Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The hot-water method of forcing Lilac and similar plants has been developed considerably during the last few years in Germany.

Indeed, according to the experience of Herr Löbner, quoted in *Der Handlungsgärtner*, it bids fair to replace the etherisation method in the production of winter blooms of Lilac. As our readers know, the process of etherisation, introduced a few years ago, is employed on a considerable scale for this purpose. Since, however, simple immersion of the plants in warm water, under appropriate conditions, suffices, like etherisation itself, to awaken them from their winter rest, it is not surprising that the comparatively new method of etherisation is being discarded in favour of the yet newer, hot-water process. The latter method is not only cheaper and simpler, but also more certain in its results. Experiments made at the Research Station of the Royal Society of Horticulture of Saxony show, according to Herr Löbner, that treatment with hot water gives actually better results with Lilac (Charles X.) than exposure to ether vapour. In these experiments the plants were immersed in water heated to 95° F. (35° C.) for 10 hours.

Another remarkable fact, pointed out by Dr. Molisch, the discoverer of the hot-water treatment, and confirmed by subsequent experiment, is that its effects are lasting. Plants which have been submerged may be stood for some weeks in a cold place without

losing their power of speedy response to subsequent forcing treatment. The winter-rest condition appears to be permanently interrupted, and the plants, awakened to potential activity, respond as soon as the temperature makes response possible.

Just as plants which have been "hardened" by exposure to frost force more readily than those not so exposed, so it is found that Lilacs which have been subject to the early autumn frosts respond the more quickly to the hot-water treatment; for example, Lilacs, which had been in the open and exposed to frost on several days of October and November, responded almost as well to a five-hours hot-water treatment as to a 10-hours treatment, the water in both cases being at 95°. The plants submerged for 10 hours (on November 9) flowered on December 8, and those submerged for five hours, on December 11.

The results of trials of the most suitable temperature for the hot-water bath show that though no harm is done, even if the temperature of the water is as high as 100°, there is no advantage in the higher temperature. For the plants experimented with 95° is best.

How easy the method is in application may be judged from the fact that there is no need to maintain the temperature constant during the immersion of the plants. If a large vessel is used, it suffices to wrap it round and to cover it with straw or other non-conducting material to prevent too great a loss of heat during the bath. It is, however, important not to add very hot water for the purpose of raising the temperature during the bath, for if this is done, the flower-buds are apt to be injured.

OUR SUPPLEMENTARY ILLUSTRATION.

With respect to the natural home of *Rhododendron bullatum*, Mr. GEORGE FORREST states that the eastern slopes of the Tali Range are, above any place in Western Yunnan, the habitat of this species. The range trends almost due north and south for a distance of fully 35 miles, and is seamed on its eastern face with numerous, deeply-cut, funnel-like gorges, filled for the most part with dense scrub. This, from the level of the plain at 6,500 feet up to 8,000 feet, is mainly composed of thickets of dwarf Bamboos, but from that point up to the level of the Alpine pasture, at about 11,000 feet, the vegetation consists almost solely of Ericaceous shrubs, *Rhododendrons* predominating. The view illustrated in fig. 166 shows a gorge on the eastern flank of the Tali range, looking west towards the backbone of the range. The height of the range is 14,000 feet, and the photograph was taken at an altitude of 8,500 feet. Without considering those already known, 19 new species of *Rhododendron* were discovered on the range by PÈRE DELAVAY, who was the pioneer collector there. Since then several others have been added to the list, and, undoubtedly, many remain to be found, only very few of the side valleys having been systematically explored. Most, in fact all, of the new species mentioned, are worthy of introduction, but a few pre-eminently so, and amongst these stands the species figured, *Rhododendron bullatum*, which takes its name from the puckered or bullate surface of the foliage, clearly shown in both figures of the Supplementary Illustration. One portrays a full-sized plant in a characteristic habitat, the other a single truss of blooms on the same plant. The species is loosely branched, from 3 to 5 feet in height, with the upper surface of the leaves a dark shining green, the under surface, as well as the petioles, pedicels and the young wood, being covered with a dense

light-brown wool. The flowers are in compact umbels of three to six, and deliciously fragrant, in form widely campanulate, 2 to 2½ inches in length, and at the apex almost the same in breadth. The corolla is thick and fleshy, the interior of a pure waxy-white, with a blotch of canary-yellow at the base, the exterior white with a tinge of rose-pink, which is deepest along the centre of each segment. Unlike most in the genus, this species is not gregarious, and, though plentiful enough over a fairly extensive area, it is not to be found in large colonies as is the case with most of the *Rhododendrons* of Yunnan. It favours moist, rather than dry, shady situations, on humus-covered ledges, and along the base of cliffs at an altitude of 8,000 to 10,000 feet, or even 11,000 feet. The specimens found at the higher altitudes are generally much stunted, but bear the largest flowers.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on Tuesday the 7th inst. At the afternoon meeting of Fellows a lecture will be delivered by Mr. C. HERMAN SENN on "The Cooking of Vegetables."

THE SMITHFIELD SHOW.—We are officially informed that Lord CARRINGTON will be "At Home" to farmers at the offices of the Board of Agriculture and Fisheries, 4, Whitehall Place, S.W., on Tuesday and Thursday, December 7 and 9, from 12 to 2 p.m. and from 3 to 4 p.m. It is not possible for him to accept many of the numerous invitations he receives to attend agricultural gatherings in different parts of the country, and he hopes, therefore, that farmers, who are in London for the Cattle Show and who desire to see him, will do him the honour of calling upon him on the days mentioned. Lord CARRINGTON will visit the show of the Smithfield Club on Monday, December 6, and he has accepted invitations to be present at the annual dinners of the Farmers' Club and the Central Chamber of Agriculture on Tuesday, December 7, and of the National Farmers' Union on Wednesday, December 8.

THE NEW VICTORIA MEDALLISTS.—As was announced in these pages last week, the Council of the Royal Horticultural Society has awarded the Victoria Medal of Honour in Horticulture to Mr. BOTTING HEMSLEY, Mr. MCKELLAR and Mr. J. H. GOODACRE. On another page we publish a portrait and an appreciation of Mr. BOTTING HEMSLEY by Sir WILLIAM THISELTON-DYER. Mr. HEMSLEY has been closely connected with this journal during his long service in the Herbarium at Kew, and we are glad to say that he is still a valued contributor. Mr. MCKELLAR, who was head gardener to his MAJESTY THE KING, whilst PRINCE OF WALES, at Sandringham, is known to most of our readers as head gardener to THE KING at Windsor. A portrait of Mr. MCKELLAR, with some details of his career, was published in our issue for November 21, 1908. On that occasion we referred to the radical alterations and improvements made at Windsor under Mr. MCKELLAR's superintendence, and to the general good appearance of every part of the extensive gardens. Respecting Mr. J. H. GOODACRE, our columns frequently proclaim his victories at the competitive horticultural exhibitions up and down the country. In recent years no private gardener has won so many first prizes for choice fruits at first-class shows as Mr. GOODACRE. He has brought the Elvaston Castle Gardens into world-wide repute, and the award now made him is certainly a popular one. That we do not give our readers a portrait of Mr. GOODACRE is due to deference to the wishes of that gentleman himself.

JOURNAL OF THE R.H.S. GARDENS CLUB.—The issue for 1909, forming the second number of this journal, contains articles by members at home and abroad, including one from the pen of the President, the Rev. W. WILKS, M.A., and another by Sir TREVOR LAWRENCE, Bart., President 1908-9. Portraits of these gentlemen form the only illustrations in the *Journal*. Especially interesting is an article by the Secretary, Mr. R. J. WALLIS, entitled "Garden Staff." It contains a list of all who can be traced as having been employed in the Society's garden since 1823. The information is gathered from the *Book of the Handwriting of*

nowadays. Students were first admitted in 1866, and they were paid 2s.—afterwards increased to 2s. 4d. per day; the two first students are still alive and members of the Guild. *The Handwriting of Under Gardeners and Labourers* was an official book, in which the Chiswick employes on entering the gardens wrote a brief account of their career. From PAXTON's entry we learn that his father was a farmer at Milton Bryant, in Bedfordshire; PAXTON commenced gardening at the age of 15, being 22 years of age when he entered Chiswick. Mr. JOHN FRASER, who was at Chiswick in the early 'eighties, writes reminiscences of Chiswick. It is amusing to

tributes an article entitled "A Day's Holiday at Vancouver." Mr. SEATON's climb to the top of Grouse Mountain makes interesting reading. Mr. LUCAS's contribution on the "Surrey Dragon-flies" is of interest to the entomologist. The *Journal* also contains the first records of a "Fauna and Flora of Wisley," but the lists are "wretchedly incomplete and only see light now, with the hope of stimulating further search." The doings of the Mutual Improvement Society and the clubs are of most concern to the present students, though they will doubtless be referred to in future years with increasing interest.

NATIONAL ROSE SOCIETY.—The thirty-third annual general meeting will take place at the Westminster Palace Hotel, Victoria Street, on Thursday, December 9, at 2.30 p.m. In addition to receiving the report of the committee and electing officers for the ensuing year, a number of alterations in the rules and bye-laws will be proposed at the meeting. Instead of the usual annual dinner, a conversation will be held from 4.30 to 6 p.m. in the large room at the hotel. Each member will receive, on application, one free ticket, and is entitled to purchase other tickets for friends, including ladies, at 2s. each. Application for tickets must be made to the hon. secretary, Mr. EDWARD MAWLEY, Rosebank, Berkhamstead, on or before Saturday, December 4. A selection of music will be played by members of the Alexeda Orchestra, and Miss HOLBROOK, of the Guildhall School of Music, will sing. The floral decorations will be carried out by Mr. R. F. FELTON, Hanover Square.

ROYAL GARDENERS' ORPHAN FUND.—We record with satisfaction that the committee of the Cradford and District Chrysanthemum Society have sent a subscription of £7—the result of a collection made at the recent show—to this fund. May other committees do likewise!

MR. BERNARD N. WALE, B.Sc., senior lecturer on Agriculture at the South-Eastern Agricultural College, Wye, has been appointed Principal of the Seale Hayne Agricultural College in Devonshire.

THE EXHIBITION OF THE FRENCH NATIONAL SOCIETY OF HORTICULTURE.—The annual exhibition of the Société Nationale d'Horticulture, which was held in November, was amongst the most successful of those held under the auspices of the society. The exhibition was inaugurated on November 5 by the PRESIDENT of the Republic, who was accompanied by Mme. FALLIERES and by the Minister of Agriculture and of the Colonies. The Chrysanthemums shown by MM. VILMORIN-ANDRIEUX ET CIE received the well-merited recognition of a Grand Prix d'Honneur. Among other notable exhibits were those by MM. SALAMON ET FILS, vine growers (Grapes and vines in pits), which received a Grand Prix; Chrysanthemums shown by M. PININ; fruit trees and fruits by MM. MOSER ET FILS, both of which exhibits gained gold medals.

JUBILEE FLOWER SHOW, HAARLEM, 1910.—We learn that this show will be continued until May 29. The late Tulips and other May flowering bulbous plants will not be at their best before the second fortnight in May. Moreover, by prolonging the show, visitors to the Brussels International Exhibition and Congresses will be able to visit the Haarlem Flower Show, for which they will receive special invitations. We have already mentioned that three special temporary shows will be held. A fourth exhibition of this kind is now fixed for May 20-22, when the Dutch Horticultural and Botanic Society will hold its usual spring flower show in the buildings of the Haarlem Jubilee Show.



(From a photograph by George Forrest.)

FIG. 166.—HABITAT OF RHODODENDRON BULLATUM.
(Being a view in the Tali Range, Western Yunnan, China.)

Under Gardeners and Labourers, 1823-29; from the weekly pay sheets, 1834-92, and from the register of employment since 1896. The list shows the great number of celebrated gardeners who have been connected with the Society's gardens, including Sir JOSEPH PAXTON, ROBERT THOMSON, JAMES BARROW, GEO. GORDON, GEO. BROWN, ROBERT FORTUNE, F. W. BURBIDGE, ARCHIBALD BARRON, and many others. It is interesting to learn that the pay of under gardeners in 1834 ranged from 14s. to 38s. per week, which is equal to the average remuneration

read how the staff assisted with fireworks and illuminations at the fêtes and how some tumbled down the grass terraces in the dark, to the great danger of the only lucifer each was furnished with. Mr. FRASER states that when ROBERT FORTUNE was sending home consignments of new plants from Japan, the gardeners remarked on each fresh arrival, "Hallo, another Japonica," until the name stuck to the gardeners themselves, with a little alteration, as a nickname. Mr. ARTHUR HERRINGTON writes on "Gardening in New Jersey, U.S.A.," and Mr. H. SEATON con-

BRUSSELS INTERNATIONAL SHOW, 1910.—Judging from the schedule of prizes to be offered at the International Exhibition to be held in Brussels in 1910, the event is likely to be important. Altogether there will be 662 classes at the temporary exhibition taking place on April 30 to May 3 inclusive. The first section is for new plants, and includes 20 classes. In the most important class, the 1st prize includes a gold medal worth 75 francs, and the 2nd prize is a silver-gilt medal. The next section—for Orchids—includes 78 classes. For the most varied and meritorious collections of exotic Orchids, the 1st prize offered is a gold medal worth 500 francs. Then follow sections for hot-house plants, special classes for Aroides, Palms, Cycads, Pandanaces, Ferns, greenhouse plants, hardy trees and shrubs, including Rhododendrons and Azaleas, spring-flowering plants, bulbous plants, succulent plants, fruits, vegetables, and decorative or florist's arrangements. Another show will be opened on September 24 and extend to September 27. There are 119 classes. The first section is for fruit; the next is for market garden produce and vegetables. Then follows a third show, held on October 29 to November 2. A gold medal worth 500 francs will be awarded for the best collection of exotic Orchids. There are numerous classes for autumn-flowering plants, including Begonias, Chrysanthemums, Cyclamens, Primulas, Carnations, &c. Permanent exhibits may be entered in any of the 269 classes. These are for such things as landscape gardening, hardy spring flowers, flower bedding, bulbous plants, Rose trees, decorative trees, and fruit trees. Those needing further information may apply to the SECRETARY to the Horticultural Committee of the Royal Commission of the Brussels, Rome and Turin Exhibitions, 8, Whitehall Place, London.

CATALOGUE OF ROSES.—Rose cultivators will be thankful to the National Rose Society for issuing a new edition of the Society's official Catalogue of Roses, which is only one of the many valuable publications of this popular floral Society. The present edition follows the plan of the 1906 edition, and therefore is adapted to the requirements of amateur Rose growers. It contains in a convenient form a list of the more reliable varieties now in cultivation, together with a brief description of each, and the purposes for which a variety is more particularly adapted. Many of the older varieties have been eliminated, and a selection has been made from the newer sorts. At the beginning is a descriptive catalogue, in which the names are arranged alphabetically. Then follow, a list of synonyms, a list of Roses arranged according to the classes to which they belong, and selections of Roses for various purposes. We notice that a collection of the best 10 Roses for cultivation in towns is as follows:—Caroline Testout (H.T.), Gustav Grünerwald (H.T.), Hugh Dickson (H.P.), La Tosca (H.T.), Mme. Abel Chatenay (H.T.), Mme. Isaac Pereire (B.), Mme. Ravary (H.T.), Mrs. John Laing (H.P.), Mrs. Paul (B.), Ulrich Brunner (H.P.). Copies of the Handbook may be obtained by non-members of the Society at 2s. 6d. each.

COLD STORAGE OF FRUIT.—At the recent exhibition at Geneva, MM. CHARDRET ET MOREL received a Grand Prix d'Honneur for an exhibit of 10,000 fruits which had been kept for several weeks in cold storage at the dépôt of the Lyons Cold Storage Company. Another similar exhibit, which included Pears, Peaches, Apricots, &c., was shown by the CO-OPERATIVE COLD STORAGE COMPANY, of Condrien (Rhône). According to the *Revue Horticole*, co-operative cold storage companies are being developed by fruit-growers in various parts of France. Such fruits as Cherries, Peaches, and Apricots appear to remain

in excellent condition for several months when kept in cold storage. Thus Peaches gathered on July 19 were found to be in a thoroughly good state when examined on September 13.

THE SO-CALLED FALSE HYBRIDS OF STRAWBERRIES.—Owing to the fact that the off-spring of the cross *Fragaria virginiana* × *F. elatior* exactly resembles the male parent (*F. elatior*), doubt has been expressed as to the truly hybrid nature of the plants. Professor STRASBURGER in the course of a memoir on the inheritance of sex and allied phenomena, shows that there is no room for doubt of the hybrid nature of the descendants raised from seed of *F. virginiana* pollinated by *F. elatior*. The result is to be explained as a remarkable case of complete dominance of all the characteristics of the male parent over the corresponding characters of the seed-parent. Thus we receive yet again evidence of the importance in plant-breeding of carrying hybridisation experiments beyond the first generation.

THE ASPARAGUS FLY.—Observations made on the habits of the Asparagus fly (*Platyparea porcilloptera*, Schrank) by Mr. LENSE (C.R.Ac.Sc., Paris, cxlviii., January, 1909) show that the means adopted to exterminate this pest, which causes such losses among Asparagus growers in the neighbourhood of Paris, are altogether insufficient. The fly produces but one brood each year. The life of the larvæ lasts only 15 days, but the resting stage of the pupæ continues for 10 months. Therefore, it is not enough to destroy the well-developed shoots which remain at the end of the season in a withered condition. The feeble shoots which soon die, and which are allowed to rot on the surface of the ground harbour the pupæ in large numbers. Therefore, all the shoots must be destroyed if the pest is to be kept in check.

TOMATO LEAVES AS INSECTICIDE.—Many observers have noted that the leaves of Tomatos are obnoxious to certain insects. Applying this idea, Mr. BOSCHER, a French grower, has experimented with decoctions of Tomato leaves, and finds, according to the *Revue Horticole*, that the extract is sufficiently poisonous to destroy green fly. By syringing Peach trees infested with these insects he succeeded in completely ridding his trees of the pest. The value of the observation lies, of course, in the cheapness of the specific, its cost (to growers of Tomatos, at all events) being far less than that of nicotine.

A NEW VEGETABLE.—Monsieur D. BOIS, assistant in the Museum of Natural History, Paris, and editor of *La Revue Horticole*, has published recently in the *Bulletin de la Société Nationale d'Acclimatation de France* (February, 1909) an account of the results of his cultural experiments on the possibilities of *Chenopodium amaranticolor* as a culinary vegetable. The plant in question, which has a Spinach-like flavour, was discovered some 30 years ago in the neighbourhood of Marseilles, where it had established itself. Its native country is unknown. According to M. BOIS, the plant has good flavour, a luxuriant habit, and grows well during the summer when Spinach is out of season. The several colleagues of M. BOIS who have carried out cultural experiments are all agreed that *C. amaranticolor* (*L'Anserine amarante*) is well suited for cultivation for the purpose of producing a crop after Spinach is over, and that its flavour is practically identical with that of the latter vegetable. The new vegetable succeeds best in warm situations, and, when growing vigorously, as in the

South of France, its leaves may be gathered at intervals without detriment to the plant. In the neighbourhood of Paris, though specimens grow to a height of 6 feet, the temperature is not high enough for its seeds to ripen. The culture recommended is: sowings from mid-April to mid-May in pots in frames, the plants to be pricked out and kept under glass till about the end of May or the beginning of June, when they may be planted in the open, at a distance of about 2 feet from one another. Inasmuch as it appears that, in cool seasons, the growth of *C. amaranticolor* is slow, the plant may not, perhaps, be of much value in this country. Nevertheless, those interested in novelties might well give it a trial.

NATURE OF CHLOROPHYLL.—No plant substance has been more studied by the botanical chemist than chlorophyll, the green colouring matter of plants; yet, in spite of all that has been done, our knowledge of its constitution is but small. Perhaps the main fact hitherto established in the close similarity between the decomposition products of chlorophyll and those of hæmoglobin, the red colouring matter of blood. Whatever may be the meaning of this resemblance, the two substances differ widely in one most important respect, namely, in the nature of the metal they contain. Hæmoglobin contains a certain proportion of iron intimately bound up in its structure; it is to this content of iron that the function of hæmoglobin as a carrier of oxygen is due. Chlorophyll, on the other hand, although only formed when iron is supplied to the plant, does not contain iron. According, however, to the latest researches of Professor WILLSTÄTTER, of Zurich, a certain small proportion of magnesium is always present in the chlorophyll molecule. The all-important work of chlorophyll in forming sugar and starch from carbon dioxide and water is in some way connected with the magnesium which it contains. Magnesium has been proved to be a constant component of chlorophyll derived from every class of plant, the types studied ranging from the green algae to the dicotyledons. It is obtained in the form of magnesium oxide to the extent of 6 per cent. or more when the chlorophyll is burnt to ash. The reason that the presence of magnesium in chlorophyll had not been demonstrated previously is shown by WILLSTÄTTER to be due to the facts that, previous to his investigations, acids were always employed in the preparation of pure chlorophyll, and that acids quickly dissolve out the magnesium. The action of alkalies is less drastic, and by their aid it is possible to obtain from chlorophyll a series of brightly-coloured, well-crystallised products known to chemists as the magnesium salts of carboxylic acids. Professor WILLSTÄTTER finds that chlorophyll comprises from $\frac{1}{2}$ to 1 per cent. of the dried leaf. Thanks to his researches, we are brought a step nearer to solving the all-important problem of the mode of action of chlorophyll in effecting the manufacture of sugar in the leaves of plants.

ARSENATE OF IRON AS AN INSECTICIDE.—In recommending the use of arsenate of iron, FeHAsO_4 , as an insecticide, Messrs. VERMONEL and DANTONY (*C. R. Ac. Sc.*, cxlviii., Feb., 1909) point out that copper arsenite and copper acetoarsenite lack adhesive power, and that lead arseniate gives a white paste likely to be overlooked, and, therefore, dangerous in use. The authors state that a spray-material composed of iron arseniate, of a strength of 100-200 grams per hectolitre, is effective in destroying insects. The mixture adheres well, proclaims its presence by its dirty green colour, and does no damage, even when used in considerably greater strengths, to the sprayed plants, e.g., vines.

WILLIAM BOTTING HEMSLEY.

THE Victoria Medal of Honour in Horticulture was established by the Royal Horticultural Society to recognise the services of those who have conspicuously aided in promoting the art. But the distinction has always been awarded by the Council in a large-minded spirit. It has not been confined to those who are eminent from cultural skill; it has been awarded to men who have aided the gardener to combat disease, or to unravel the problems of hybridism; it has recognised the services of the traveller who has enriched our collections, and of the botanist who has described the new accessions, discriminated their affinities, and established their nomenclature and this has continued the tradition of history. For our English horticulture has grown out of botany. The passion to form collections of interesting plants necessitated the mastery of the difficulties of their cultivation. The fathers of the art in this country, Turner, Gerarde, and

conservators, successful men of business, writers, to say nothing of men of mark in the horticultural profession. Kew has done this because, from top to bottom, it has always kept alive a lofty ideal of some interest in life beyond mere immediate bread-winning. But those who have taken advantage of it had need, on their side, of no small amount of moral fibre and patience to wait on opportunity. But this is all as old as Esau.

Hemsley, then, started at Kew in 1860, as many a boy has done before and since. Three years later he won a prize for botany at the Society of Arts. Whether from this, or because his ability had already been recognised, he was transferred to the Herbarium in some temporary capacity. There his work earned the approval of Mr. Bentham, a thing not easily won, and in 1865 he was appointed Herbarium clerk.

The title is significant. In those days the scale and equipment of the Kew Herbarium, though it was the seat of botanical work of the

bly based on the French work of Decaisne and Naudin, but was really almost entirely original. It has always been a favourite book of mine, and I have never understood why it has not run into successive editions, for it treats the contents of our gardens from a scientific point of view, as if they were the flora of a country. It spares anyone who wants to know the precise systematic facts about a garden plant the labour of consulting a whole library.

I think it must have been some time in the 'sixties of the last century that I first made Hemsley's acquaintance. I was occupied with my friend, the late Dr. Trimen, on the *Flora of Middlesex*, and Hemsley was busy collecting materials for a *Flora of Sussex*, of which he was never able to publish more than an outline in 1875. A common interest threw us together. I think there is no training more profitable to a young botanist than a thorough study of the flora of a limited district. The eye becomes educated to the minute discrimination of plants, and to their recognition in every stage of their growth. More than this, it becomes accustomed to those subtle indications of affinity which the total aspect of a plant reveals, and which can hardly be expressed in words. It must have done Hemsley good service when he was temporarily attached to Rothamsted, and accomplished the laborious task of separating the constituents of the different plots in the grass experiments. Darwin had the advantage of a thorough early training as a naturalist. He moves amongst his facts with a firm step. Huxley expressed this (I cannot quote the exact words): "Unless a man has had experience in distinguishing species, he cannot profitably theorise about their origin." I wholly agree with Wallace that much of the criticism directed against the Darwinian theory arises from lack of a naturalist's experience. I may go farther and say that this lack vitiates much recent biological work.

In 1874 Hemsley's health improved, and he was able to return to Kew as an independent worker. It was, fortunately, possible to put into his hands many considerable undertakings which could not be accomplished by the official staff. The earliest and, perhaps, the most important of these was the botany of Godman and Salvin's *Biologia Centrali-Americana*, which dealt with a sharply-defined area of extreme interest. Later on he was entrusted with the task of working out the botanical collections of the "Challenger" expedition. No botanist was attached to this expedition, but Professor Moseley undertook to make what collections were possible. It was obvious that these would be mostly only scrappy representatives of the vegetation of the countries at which the ship touched. It was therefore decided that the work would be most usefully confined to oceanic islands, and that the opportunity might be profitably used to bring to a focus all the available material for the study of their vegetation. The result is one of the most important contributions to geographical botany of the last century. At my suggestion, Hemsley worked at the contents of the crops of fruit-pigeons which Moseley had carefully preserved, as well as various collections of drift seeds in the Kew Museums. In 1882 Hemsley prepared, with all the advantage of a wide knowledge of the vegetable kingdom, an admirable guide to the North Gallery at Kew.

When, in 1878, I was engaged in preparing for the Royal Geographical Society a lecture reviewing our actual knowledge of the vegetation of the earth, I was impressed with our scanty information as to the flora of the Chinese Empire. In 1883 I made a determined attempt to remedy this, and procured from various sources considerable funds for the purpose. This enabled Hemsley to be engaged to compile the *Index Flora Sinensis*, the object of which was to bring together all the scattered notices of Chinese plants, to catalogue the material in the Herbaria of Kew and the British Museum, and



WILLIAM BOTTING HEMSLEY, F.R.S., V.M.H.

Parkinson, were botanists first and gardeners afterwards. The greenhouse in the Chelsea Botanic Garden was one of the first erected in this country.

There could be no more worthy recipient of the Society's distinction than Mr. Hemsley. For, if he found the starting point of an honourable career in horticulture, he has amply repaid the debt, and no moment could be more fitting for the award than the first vacancy which has followed his retirement from the distinguished position of keeper of the Herbarium and Library of the Royal Botanic Gardens, Kew.

As a boy, the love of plants got hold of him, and, at the age of 16, he entered Kew as a young gardener. One of the most valuable but least-recognised services to the public of that great establishment is the stepping-stone it has afforded to a multitude of young men of capacity, which elsewhere might have perished for want of an outlet, to careers of the most varied usefulness. It has produced pioneers of empire, travellers, botanists, collectors. Government officials, forest

first rank, was of extreme penury. The scientific character of Kew was due to the intelligence of the Hanoverian Royal family, no doubt because it was Hanoverian. But, being so, it was exotic, and when, on the accession to the throne of the late Sovereign, Kew was disestablished as a Royal domain, the Government of the day would have swept away its scientific work. Public opinion was sufficiently enlightened to frustrate this. But governments do not like a rebuff, and ours had scant sympathy with the work and development of an institution which it would have willingly suppressed. Clerical assistance it could hardly refuse; but scientific assistance it would not recognise, and it had to be smuggled in under disguise.

Hemsley had, at any rate, got a fair start on a scientific career. But in 1867 ill-health compelled him to abandon his post. This would have been the end with most men; but "fibre" came in. I do not know how he managed, but in 1875 he produced his *Handbook of Hardy Trees, Shrubs, and Herbaceous Plants*. It was ostensi-

to describe any new species to be found in either or obtained as the work proceeded. I found that the late Mr. F. Blackwell Forbes had had a somewhat similar idea, and, in 1876, had employed Mr. Hemsley to draw up a list of names of known Chinese plants. Forbes was, therefore, first in the field; but he joined hands with us, and his name was associated with Hemsley's in the publication of the *Index*. As a matter of fact, the work, apart from the subsequent assistance of other contributors, was entirely Hemsley's, and Forbes had no actual share in it.

In 1883 official employment was again found for Hemsley at Kew as assistant for India in the Herbarium, the nomination to which appointment the Director has, fortunately, in his own hands. In 1890 he was reappointed to the permanent staff of the Herbarium as a principal assistant, and in 1899 he succeeded Mr. Baker as keeper. It became impossible for him to finish the *Index* without the co-operation of other helpers. It was at last accomplished, though the single octavo volume which had been thought sufficient had expanded into three. An impulse was given to the botanical exploration of China, of which it will be long before the harvest is completely reaped.

Space will not allow me to touch on Hemsley's numerous other contributions to botanical literature. They all bear the same mark of competent achievement. To the readers of this journal he is known as an invaluable contributor over a long period; but I may single out two notable pieces of work. Under my direction, he superintended the preparation of the second supplement to the *Index Kewensis*, and in 1897 he had the privilege, with which few systematic botanists can hope to meet, of laying before the Royal Society (into which he had been elected the previous year) the detailed definition of a new natural order—the Julianaceæ.

Here I might lay down the pen on a record—which is little more than a bald statement of fact—of a career which is not merely distinguished in its own province, but represents solid service to our science. But Mr. Hemsley will forgive me, as his old chief, if I touch a more personal note. He overlapped me at both ends of my Kew service. We are amongst the survivors of those who have seen the growth of the Kew Herbarium and Library from the meagre staff and the cramped quarters in the house of the last King of Hanover—I saw with regret that the last historic link, the long-respected wall-paper in the Queen of Hanover's room, had been swept away—to its present commodious quarters and vigorous activity. We have laboured together in many undertakings of which he has borne the principal burden. And, looking back on a past which must reach to some 40 years, I recognise throughout the same retiring and unpushful disposition and modest diffidence which I well remember when we first met. These pages will meet the eye of many young men. They may well take note of the career of a man, without backing, and with nothing to start with but character and love of knowledge, whose early education must have been slender, and who throughout life had to struggle with ill-health. Yet he taught himself German from a colleague, and to write French and Latin fluently, and, in the most unassuming way, but with unwearied industry and courage, attained scientific distinction, and, within the limits of his science, a reputation which is cosmopolitan. W. T. Thiselton-Dyer.

PRESENTATION TO MR. T. F. CONWAY.—

After several years' service as head gardener to the Earl of DYSART, Ham House, Petersham, Surrey, Mr. T. F. CONWAY is leaving England to engage in farming duties in New Zealand. On Thursday, November 25, he was presented with an illuminated address and a purse of gold by his many friends in the Petersham district. Mr. CONWAY was, until recently, the hon. secretary of the Ham Horticultural Society.

TREES AND SHRUBS.

TWO UNCOMMON WALNUTS.

The genus *Juglans* is conspicuous amongst ornamental trees by the long, pinnate leaves of most of the species; whilst several may be taken into account for the economic value of the fruit. In those places where Walnuts thrive they are useful trees to plant for the sake of their timber, for though it takes a long time to grow to maturity, it is very valuable when cut, especially when well marked and, therefore, suitable for veneer work. The common Walnut is met with in most gardens in the southern counties, but is less common in northern parts. There are, however, several less common species that are well worth planting. The best known of these is *J. nigra*, but two others to which special attention is directed here are *J. cinerea* and *J. cordiformis*. Both of these have a very ornamental appearance, and both are rare. *J. cinerea* is a North American tree, which is known under the names of Butternut and Grey Walnut. According to Prof. Sargent, it grows in rich, moist soil near the banks of streams, and on low, rocky hills from southern New Brunswick and the Valley of the St. Lawrence, in Ontario, to eastern Dakota, south-eastern Nebraska, and to northern Georgia and Alabama. Its largest proportions are assumed towards its northern limit, and its maximum dimensions are stated to be 100 feet in height and 9 feet in girth, with a clean trunk of 20 or 30 feet and a good-sized, branched head. A very good description of the species is given in Elwes and Henry's *Trees of Great Britain and Ireland*, vol. ii., pp. 271, 272. Its probable date of introduction to this country is there given as previous to 1656, yet the largest tree recorded (in 1902) was only 52 feet in height and 4 feet 2 inches in girth, this being in the grounds of Mr. C. S. Dickens, at Coolhurst, near Horsham. The leaves are often more than 2 feet long, and they are composed of oblong leaflets which vary in number from 11 to 17. These, together with the young bark, are covered with a brownish pubescence. The staminate flowers are borne in rather dense catkins, 2 to 3 inches long, in early June, and the female flowers are borne, six or eight together, in roundish heads. They are very distinct both from the common and black Walnuts, the nuts being oval, $1\frac{1}{2}$ to 2 inches long, with rather thick shells, which are divided into numerous sharp ridges of indefinite shape. The covering of the nut is thin, and bears glandular, viscid hairs. The kernel is closer and more oily than that of the common Walnut. Trees do not appear to fruit very freely in this country, but a young tree at Kew, 30 feet in height, bore between 50 and 60 fruits this year.

J. CORDIFORMIS is a Japanese tree, which was introduced into European gardens through the St. Petersburg Botanic Garden. Seeds were sent to that institution in 1862 by Dr. Albrecht, Physician to the Russian Consulate at Hakodate. The species is said to inhabit the lowlands in the temperate regions of Japan, where it forms a tree 50 feet in height and 6 feet in girth. The leaves on vigorous examples measure as much as 2½ feet in length; they are composed of 13 large, more or less oval, or cordate leaflets. The male catkins, which are upwards of a foot in length, and composed of green flowers, have a very singular effect, as seen hanging from the branches in June. The female inflorescences are also in the form of catkins 5 to 7 inches long, and made up of 6 to 12 flowers. As many of these flowers are followed by fruit, the result is a long string of round nuts quite different from other species. A young tree at Kew bore this year six or eight catkins of fruit, made up of six or seven nuts each. The nuts are $\frac{3}{4}$ of an inch or so across the widest way, the sides being flattened. The shell is smooth for a Walnut, the markings being very shallow, and it is terminated by an acute apex. The nuts are said to be sold in the markets in Yokohama. W. D.

PLANT NOTES.

THUNBERGIA FRAGRANS.

THIS is a desirable climber for a small or medium-sized structure in which an intermediate temperature is maintained. Under such conditions, it will continue to flower from the early part of the summer till nearly the end of the year. It may best be described as a twining plant of moderate vigour. It is clothed with oblong leaves, heart-shaped at the base, and of a decided, deep green tint. The flowers, which are nearly 2 inches in diameter, are pure white, and contrast markedly with the deeply-tinted foliage. The species is seen to the best advantage when trained up a rafter or some similar support, the axillary shoots disposing themselves in a loose and informal manner. I have also met with it as a pot specimen, the twining shoots being allowed to ramble over some twiggy branches stuck in the pot. Notwithstanding the fact that this *Thunbergia* bears the specific name of *fragrans*, the blossoms are very little, if at all, scented. Nicholson, in his *Dictionary of Gardening*, gives the date of its introduction as 1796, so that it must be one of the oldest cultivated species. It can be readily propagated from cuttings of the young growing shoots taken during the spring and early summer months. Whilst this species is a desirable climber for a small structure, the vigorous-growing *T. grandiflora* is equally valuable for a large house. W.

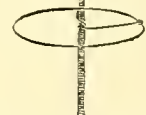
NERINE FLEXUOSA ALBA.

AMONGST the many brilliantly coloured varieties this pure white form is very beautiful, and it flowers in October and November in a cool greenhouse. The flowering scape is some 18 or 20 inches in height, and is terminated by an umbel of a dozen or fifteen perfectly white flowers, with recurving, undulating petals. The arching leaf character reminds one of a vigorous growing *Sternbergia lutea*, though the arched character is less pronounced, and the colour a paler shade of green. The slightly glaucous colour of the flowering stem is also distinct, and the fact that the leafage is not merely contemporaneous with the appearing of the flowering scape, but decidedly in advance of it, is by no means the least interesting feature of the plant. The short-necked bulb has a decanter-shaped outline, and the outer coats or tunics are capable of being drawn out into the finest of silken threads, although, possibly, other members of the group may be similar. My own experience of *N. flexuosa alba* does not prove it to be free blooming, though firm potting and a good season of growth, followed by a long, complete rest, appears most conducive to flowering. E. H. Jenkins.

ALLWOOD'S PATENT PLANT SUPPORT.

THIS consists of a ring of wire with one end formed as a clip to fasten it to a stake (see fig. 168). The support when attached to the stake serves to hold the shoots in position, and is very useful in the case of such plants as Carna-

FIG. 168.



tions, the stems of which are liable to tumble out of position. The ring can be made smaller or larger by simply contracting or expanding it, one end running free with a loop. The inventor is Mr. Montague Allwood, Carnation grower at Messrs. Low's Enfield nursery.

CULTURAL MEMORANDA.

CHRYSANTHEMUMS.

The sucker-like growths that spring from the base of the plant are the best for furnishing cuttings. They should be of a stout, vigorous character, and 2½ inches to 3 inches long. December and January is the best time for striking cuttings for big bloom culture, but a later period will do for those plants which will merely supply flowers for cutting purposes. For the first batch of cuttings a pit or house with an atmospheric temperature of 45° to 50° is convenient, and the cuttings may be placed under handlights or in frames situated near the roof-glass. Cuttings inserted singly in thumb pots make the best plants. The soil should be pressed firmly round the stem, and a watering applied soon after the cutting is inserted. Place the pots on a bed of ashes in the frame, and keep the atmosphere close until roots are formed. Wipe the glass of the frame each morning, in order to prevent damping off.

Another good method of propagation is that of inserting seven or eight cuttings round the outside of a 5-inch pot; they will root freely enough, but in this case the roots have to be disturbed at the time of potting. The best compost for rooting the cuttings is one containing turfy loam and leaf-soil in equal parts, with a liberal addition of sharp sand. For the next two shifts a compost of three parts loam, one part leaf-mould, and one part dried cow manure, with a good sprinkling of wood-ashes and bonemeal, and enough sand to keep the whole porous, will be suitable. At the final potting the soil should be of a coarser character, consisting of four parts fibrous loam, pulled to pieces by the hands to about the size of a Walnut, one part leaf-mould, and about half a part of decayed manure, with a sprinkling of suitable guano, bonemeal, soot, sand, and wood-ashes. Mix these ingredients well together four or five days before potting is commenced.

When the cuttings are rooted well, place them in a temperature of 60° on a shelf in a cool greenhouse or some other suitable structure. The next shift must be into 6-inch pots before they become root-bound. They should be removed to a cold frame about the middle of March, and in April or the beginning of May let them be placed out-of-doors, keeping protecting material handy in case of frost. In June the final potting may be done, using 10-inch pots for the purpose. See the pots are crocked carefully and ram the soil very firmly round the roots, leaving a good space, from the soil to the rim of the pot, for watering. An open place should be selected for the plants for their growing quarters and good, rough stakes put to each plant, these being supported by a wire running along the top. *Chas. Herridge, Penrhyn Castle Gardens.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE WOBURN EXPERIMENTAL FRUIT FARM EXHIBIT.—In your reference (see p. 364) to the collection of Apples shown by us at the Royal Horticultural Society, your reporter represents the high colour of the fruit from trees in grass to be due to the extra warmth and dryness of the soil. Such an explanation is entirely at variance with our own experiments on the subjects; any extra warmth of soil would tend to improve the crops, whereas grass is most deleterious to them. On the strength of the size of fruits exhibited he condemns our soil as being "obviously unfitted for Apple culture." The fruits exhibited represented the relative average size of fruits, from the whole trees, throughout fifteen years, and there was nothing in the exhibit on which any opinion could possibly be based, either as to the actual size of the best fruits, or the actual

weights of the crops. That we suffer from poverty of soil was, however, disproved by one of our exhibits itself, which showed that our Apple trees have been in no way benefited by the application of manure for 15 years. Lastly, your reporter states that the committee regarded all these exhibits as of no value, and rather leading to the retrogression of Apple culture; the fact, however, is that the Council has awarded us their Certificate of Appreciation for the educational value of our show. It is not my wish or intention to enter into any controversy on the subject, but I consider that the above simple statement of facts should be made. *Spencer Pickering.*

AN ABNORMAL POTATO.—The accompanying figures are from photographs of a Potato discovered by Mr. Felles, of Cambridge, in October, 1909, among a collection of the tubers bought three months previously; it was handed to Prof. Seward as a curiosity. When discovered (fig. 169), the exterior was in the shrivelled, corky state which ensues upon germination, and a small, fresh tuber had apparently



FIG. 169.—ABNORMAL POTATO TUBER.

burst out at one side. On cutting the old tuber open it was found that a large "eye" at one end had germinated (fig. 170), and that instead of producing runners towards the exterior, a number of short runners had been formed internally. These runners had branched to some extent, and the tips were swollen into small tubers. In the process of germination the parent Potato had become hollow, owing to the loss of the reserve materials which had been transferred to



FIG. 170.—THE SAME POTATO SHOWING SHORT RUNNERS IN THE INTERIOR WITH THE TIPS SWOLLEN INTO SMALL TUBERS.

the young tubers. The result of the process is comparable with a frequent occurrence in certain bulbs, e.g., *Freesia*, which, under unfavorable conditions, germinate to produce not leafy shoots but a number of smaller bulbs. The special interest in this case is the peculiar manner in which the change is effected, namely, by the production of runners towards the interior of the tuber. *R. H. Compton.*

LIME-LOVING PLANTS (see pp. 246, 290, 346).—Although a chalk or a limestone flora is in many of its salient features totally different from, say, a granite or a peat flora, yet, as your correspondents have pointed out, lime must not be regarded as essential for any particular class of plants. Sir Herbert Maxwell seems to have hit the nail on the head when he states that "Many chalk and lime-loving plants would doubtless grow wild on other soils if they got a fair

chance, but they are choked by ranker vegetation." This correspondence only tends to substantiate the theory which Prof. Warming arrives at in his excellent book, *Ecology of Plants*, already reviewed in these pages, in concluding that the physical rather than the chemical characters of the soil are more important in determining vegetation. He reminds us that sometimes a plant flourishes under conditions which are not the most favourable for it, because those which it would prefer suit some rival species still better. Thus, "Alders attain their most luxuriant development on well-drained soil, but they are usually expelled from this by competing trees. Only in swamps, where they do not thrive so well, are they dominant. In like manner *Calluna vulgaris* flourishes upon rich soil better than on poor soil, but it is excluded from the former by competing species." This summer in Switzerland I was astonished to find, as already mentioned in the *Journal of Botany*, large clumps of the common Meadow-sweet (*Spiraea ulmaria*), growing at the foot of perpendicular limestone cliffs, some 4,500 feet above the sea, near the road to the Grand St. Bernard. A little water was dripping from the rocks, but at the base of the cliff was a steep, stony scree, only partially covered with vegetation; and yet there was no sign of any Meadow-sweet in the valley of the Drance itself, which flows a few hundred feet below; partly, I believe, because of the repeated mowing of the grass, but also because close to the stream, where one might expect the *Spiraea*, some other plants, being better suited, survived in the struggle for existence. Sir Herbert Maxwell also states that some *Campanulas* and *Gentiana acaulis*, when grown in rich loam and peat, make vigorous leaf-growth at the expense of flower. Now the true *G. acaulis* is not often seen in English gardens; it grows on some of the limestone Alps, and is less common than the larger *G. Kochiana* of modern botanists, which generally prefers the older rocks. After long and careful observation in the Alps, and notwithstanding certain differences of structure in the calyx, &c., I am inclined to think that, after all, the differences in this perplexing group of *Gentians* are chiefly a matter of soil and situation; and possibly what was originally sent to England as *G. acaulis* has gradually developed under cultivation in richer soil into what is known on the Continent as *G. Kochiana*, Perr. et Song. Mr. Reginald Farrer, in his last article on the Dolomites, laments that on reaching a spot after much toil, where might be expected a hundred varieties, there were no *Androsaces*, only three miserable bits of *Saxifraga oppositifolia*, "an abundant limestone plant, almost a typical limestone plant," and no sign of the ubiquitous *Saxifraga aizoon*. He says as *Aizoon* is seen "rioting in every sort of garden, in every sort of soil and situation, who could entertain a doubt of its flourishing everywhere in the Alps?" One would have thought that, with Mr. Farrer's experience of the Alps, he would have realised that, whether on limestone or granite soil, however likely the situation may appear to be for certain Alpine species, they are never certain to be found. Indeed, some of the commonest Alpines are either very local or quite absent from large districts where they might be expected. This applies to the common and very variable, but always beautiful, *Saxifraga aizoon* as much as to anything, and also to the *Sempervivums*. *Saxifraga oppositifolia* again, though so widely spread in Europe and in the Arctic regions, is quite local, and I have seen it more frequently in gritty, granite soil, and especially on glacier moraines, than on limestone. In Nature, Alpine plants, at least, appear to be influenced more by the physical than by the chemical properties of the soil. In my herbarium I have *S. oppositifolia* from 10 feet above the sea in Spitzbergen and from 11,500 feet on a snow-clad col in Dauphny. But the variety in the Western Alps and the Pyrenees is somewhat different, and now goes by the name of *S. Murithiana*, Tess. As to *Lithospermum prostratum*, it is indeed "often a puzzle"; but, perhaps owing to its very long roots, it grows on almost any well-drained, sloping bank in loam, peat or leaf-mould and grit or sand in equal proportions. In a Bonnemouth garden, where it flowers most of the year, it forms huge masses on a south-east slope and seems quite satisfied with its home of sandy peat and clinkers. *H. Stuart Thompson.*

LILIES.—I read the article in the issue for September 4 with keen interest. The author has the hearty thanks of one who would be a specialist, but is engaged at present in stumbling about among an assortment of troubles, climatic (I am almost in London) and otherwise. Under the circumstances, perhaps he will forgive me for troubling him in search of supplementary information on one or two points. May I, for brevity, categorise? 1. I should like to try the importation, as an experiment, of a few bulbs of *L. rubellum* and *L. Krameri* from Japan (by the new parcels post mentioned) if I could arrange with a Japanese Lily grower to send them with their roots intact in some soil and in a double box with some wet moss packing between the boxes. Does the writer happen to know such an address in Japan, or any source whence I could obtain one? 2. I have examined microscopically a large number of imported bulbs (Japanese) which have failed, and in over 80 per cent. of cases there have been either eelworm or mite or fungus, and the impression is gaining on me that the general failure of such bulbs may be due to a widespread infection of the bulbs in the market gardens of Japan, where I believe the bulbs spend a year or so prior to export. After centuries of Lily growing one can understand that practically every garden in Japan would be infected. 3. Is there any source from which I might obtain seed of *L. rubellum* or *Washingtonianum*? 4. Is *L. Krameri* known to carry seed? I have fertilised it every year for a long time, but failed to get any result. This would seem to be the consequence of the fact that the bulb is practically all gone by the time the plant flowers; indeed, in the race between flowering and decay the latter often gets there first, and the plant dies when in bud. 5. Are the bulbs of *L. rubellum* or other Lilies raised from seeds at Wisley and Kew, subject to the same or similar deterioration to that observed in imported specimens (from which, of course, we might infer that the deterioration was to some extent natural to the species), or are they free, in which case it would seem worth while to endeavour to take steps to improve the present conditions. *Edward W. Bottle.*

Bulbs of *L. rubellum* can be obtained by parcels post from Japan, via Siberia, from Messrs. L. Boehmer & Co., of Yokohama, or from the Yokohama Nursery Co. Whether or not exporters will fall in with your views as to packing is a matter of arrangement between you and the firm from whom you order the Lilies. The season is now too far advanced to do anything this year. The insects usually found in diseased Japanese bulbs are not eelworms but "skip jacks," but whether these are the cause of the disease or only secondary, has not been definitely settled. If seed of *L. rubellum* or *L. Washingtonianum* is not to be obtained from Kew or other botanic gardens, it may possibly be obtained by advertising for it. *L. Krameri* seeds fairly abundant in this country, provided the bulbs are planted early. Bulbs of *L. rubellum* and other Lilies raised from seed are not subject to the deterioration observed in many imported bulbs. *The writer of the article.*

MUSCAT OF ALEXANDRIA GRAPES INARCHED UPON FOSTER'S SEEDLING.—Some four or five years ago, Mr. Molyneux described in the *Gardeners' Chronicle* what he had seen in connection with Grape culture at Gunton Park. If I remember rightly, it was that he saw a splendid lot of Muscat of Alexandria Grapes, free from shanking, on vines which Mr. Allan had inarched upon Foster's Seedling. He explained that the experiment had been tried as a preventive against shanking, and was a success. At that time I was on the point of planting vines of Muscat of Alexandria, so I planted two of Foster's Seedling, and inarched the Muscats upon them, planting the other Muscats in the usual way. I now wish I had inarched the whole of the Muscats upon Foster's Seedling, for, although the vines produce rather shorter bunches, the Grapes are practically free from shanking (only about two berries in one bunch were shanked), the berries are much larger, and the colour and flavour equal to those grown in the usual way. The vines that were not inarched produced Grapes that shanked badly. I strongly advise those troubled with shanking in their Grapes, and especially in cold districts, to try the experiment. *Thomas S. H. Doven, Basing Park Gardens, Alton.*

WINTER-FRUITING SHRUBS.—I saw recently some plants of *Cotoneaster rugosa* Henry (illustrated on p. 339) growing in Coombe Wood Nurseries. The plant naturally produces one central stem, from which side shoots radiate horizontally, carrying their bright red fruits in great abundance. The plants seem to form natural, flat pyramids, and for that reason seem to be fitted for covering a wall. There are new Chinese species of *Berberis* in the nursery which will presently make first-class, winter-berried shrubs. Few perhaps would regard *Sambucus canadensis* as a winter decorative plant, as its long stems are now leafless, but its broad bracket-like heads or panicles of greenish berries are very graceful, and with a little foliage would be effective in vases. The dwarf, spreading *Berberis Wilsonii*, so admirably fitted for the margin of large beds, carries a free crop of small, red fruits. Strong plants of *Retinospora obtusa*, when covered with yellowish-brown fruits at the point of the branches are also effective in winter. *A.*

GRASS POISONOUS TO TREE ROOTS.—Referring to the interesting subject raised by Mr. Willis on p. 337, as to the assumed poisonous exudation emitted from grass roots, is it to be assumed that such excreted toxin is a product of grass only, or are we to assume that all plants differing materially from each other, as grass does from trees, are equally offensive to each other? Seeing how freely, and indeed too freely, trees and shrubs, deciduous and evergreen, hardy and tender plants of so many descriptions, bulbs, and, indeed, all sorts of things, thrive and grow together in a mixed border, is it possible that these do emit any form of excretion that is poisonous? It may be said that because the soil of the mixed border is cultivated, and hence freely aerated, that this free aeration renders any form of toxin thus produced quite inoffensive. But Mr. Willis mentions what is so difficult to follow, namely, that the roots of Peach trees in pots, the soil of which is, of course, fully aerated, are injured when brought into proximity with certain other plants. Does he mean to the plants or to the roots of those plants? Then, unless the surface soil of a pot Peach tree is covered with some carpet plant, the most unlikely thing in the world, how can other plants or their roots come into contact with the roots of the Peach tree? Then it is so difficult to understand this theory as to the emission of a poisonous toxin by grass in an orchard. Does it do the same thing in an ordinary pasture, on which there are no trees? And, if so, how is it that the most fertile of soil possible to obtain for other plants is the top spit from an old pasture? Without entering into these considerations, is it not enough to know, as is certainly the case, that grass growing near shallow tree roots does rob those roots of food and moisture, and that the best remedy is to remove the grass, fork up the soil about the trees, and feed the roots by applying good manure dressings? *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL

Scientific Committee.

NOVEMBER 25.—*Present:* E. A. Bowles, Esq., M.A., F.L.S. (in the Chair). Messrs. C. E. Shea, R. A. Rolfe, W. Hales, E. M. Holmes, A. Wersley, Spencer Pickering, F.R.S., J. Fraser, J. T. Bennett-Poë, and F. J. Chittenden (hon. secretary).

Potentilla with virescent flowers.—Mr. E. M. HOLMES showed a flower of *Potentilla* sp., in which the carpels were leafy. He also reported that the *Acorus* which stock refused to eat, shown by Mr. BOWLES at a recent meeting, were those of *Quercus pedunculata*, and showed no morphological difference from the ordinary form characteristic of that plant.

Monstrous Apple flower.—Mr. PICKERING showed the flower of Bramley's Seedling Apple, to which he referred at a recent meeting, having 25 petals, but otherwise completely formed.

Garden Pansies.—Mr. FRASER referred to the degeneration of the flowers of garden Pansies when allowed to seed themselves in cultivated

ground. He found that bees, Cabbage butterflies, and other insects, but especially the silver Y moth, visited them with great regularity, and it seems probable that the degeneration is due to crossing.

Cattleya with diphyllous growth.—Mr. HAWKES, of Osterley Park Gardens, sent a growth of *Cattleya Gaskelliana* which had produced two leaves. This condition, Mr. ROLFE said, is probably a reversion to an ancestral type, and is occasionally seen in other monophyllous *Cattleyas*. Mr. HAWKES also sent a vigorous shoot of *Rochea* (*Kalosanthes*) *coccinea*, having at the apex of the stem numerous shoots about 6 inches long, instead of flowers. The Committee thought that the condition was the result of growing the plant in a moist atmosphere, an opinion confirmed by the fact that roots had made their appearance at the apex of the main stem.

Juglans ailanthifolia fruiting.—Mr. W. E. GUMBLETON sent ripe fruits of *Juglans ailanthifolia* from his garden at Belgrove, Queenstown. This is the first time the tree has fruited since Mr. GUMBLETON planted it 30 years ago. The fruits are dark and velvety in appearance, smaller than those of *J. regia*, and are borne six to eight in a raceme. Mr. GUMBLETON said that, so far as he was aware, the tree had only once before fruited in the kingdom, at Abbotsbury, in Dorsetshire.

Bitter-rot in Pears.—From Mr. R. B. ROGERS, of Hexworthy, Launceston, came Pears attacked by the fungus *Gloeosporium fructigenum*, causing the "bitter-rot." It was stated that "the disease seems to begin as small rounded brown patches on the outside, and, in some cases, if these are cut out, the rest of the Pear is quite good, but in other cases, although the inside of the Pear looks quite good, a strong bitter flavour goes right through it. The varieties which have suffered most are Thompson, Fondante d'Autonne, and Beurré Hardy; Louise Bonne has also suffered a good deal, and some other varieties slightly, but Durondeau not at all." The fungus is said to form canker spots on the stems, and these should be cut out, and, with the Pears, destroyed by fire. If thrown on the rubbish heap, or if the diseased fruits are allowed to rot on the ground, or are fed to pigs, there is a danger of the spores escaping and attacking the fruit next year. The spores produced on diseased fruits in the store are able to attack and cause disease in neighbouring fruits. The disease is to be kept in check by the destruction of the diseased fruits, as recommended, and the spraying of the trees with potassium sulphide or ammoniacal copper carbonate. If, however, the trees are sprayed against "scab," that operation will tend to keep the "bitter-rot" in check.

COLONIAL EXHIBITION.

DECEMBER 1, 2, 3, 4.—The exhibition of Colonial produce opened on Wednesday last by H.R.H. the Princess Louise, in the Society's Hall, Westminster, was the best of the series of these shows. The display was of a varied character, and it may be roughly divided into four sections: (1) Colonial produce proper, (2) home-grown fruits, (3) bottled fruits, jams and other preserves, and (4) miscellaneous, which ranged from winter washes to fountain pens.

A meeting in the lecture-room at 3 p.m., presided over by Sir Daniel Morris, K.C.M.G., Mr. Robert Newstead, A.L.S., F.E.S., delivered a lecture on "West Indian Insect Pests." Mr. Newstead illustrated his remarks by many excellent lantern slides. We hope to publish extracts from this paper in a subsequent issue.

Taking the Colonial exhibits first, by far the most important display was made by the GOVERNMENT OF BRITISH COLUMBIA. It comprised about one-quarter of the show and consisted almost exclusively of boxes of Apples. These were selected packages—in all, 500 cases, from about 10 growers in the colony. The fruits were in splendid condition, and the grading was much admired. In addition there were several branches of Apples, Cherries, Pears, and Currants preserved in spirit, for the purpose of showing that large crops are obtained in that colony. The collective exhibit was awarded a Gold Medal, and numerous medals of lesser value were given to the individual exhibitors.

Another large display of Apples was made from the PROVINCE OF NEW BRUNSWICK; these were also shown in boxes.

From NEW ZEALAND came remarkably fine samples of honey, there being 61 jars, each from a different apiary. This colony also showed Apples that had been kept in cold storage since March last. Other exhibits from New Zealand included wines, preserves in variety, canned fruits and vegetables, and cereals. We were informed that all these products find a ready market in the colony, and that none is at present exported.

The WEST INDIES were represented by exhibits from Dominica, Montserrat, and Trinidad. From the island of Dominica were seen a variety of fruits of the genus Citrus. This colony is noted for its Limes, and every effort was made to bring this to the notice of visitors, samples being freely distributed. There were also fine Oranges, large specimens of the Bread-fruit (*Artocarpus*), which greatly resembled in size and appearance—save colour—the common hedgehog. Montserrat also showed Limes and Oranges, together with Cotton, Arrowroot starch, citrate of Lime, and a great assortment of preserved fruits. The most varied exhibit was from Trinidad. Fresh fruits from this colony included Avocado or Alligator Pear (*Persea gratissima*), Golden Apple (*Spondias dulcis*), Mammy Apple (*Mammea americana*), Papaw (*Carica Papaya*), Shaddock (*Citrus decumana*), Grape fruit, Pineapples (*Ananas sativa*), and Granadillas; also fresh vegetables such as Dasheens and Eddoes (both species of *Colocasia*), Yams (*Dioscorea alata*), Cassave (*Manihot utilisima*), Cush-Cush (*Dioscorea trifida*), Cristophine (*Secium edule*), Egg-plant (*Solanum Melongena*), Bitter Cassava, Vegetable Sponge (*Luffa acutangula*), Karaila (*Momordica* sp.), and Prickly Cucumber (*Cucumis Anguria*). There were also Nuts, spices, preserves, jellies, condiments, and other comestibles.

The WEST INDIAN PRODUCE ASSOCIATION staged a variety of preserves, sugars, fresh and dried fruits, and exotic vegetables, personal ornaments made of coloured fruits. Cocoanuts, Limes, Oranges, tobacco, tea, and other products.

The ARMY AND NAVY STORES, LTD., Westminster, made a similar display.

Home-grown fruits included displays of Apples by MESSRS. GEO. BUNYARD & CO., LTD., Maidstone, and MESSRS. JAS. VEITCH & SONS, LTD., Chelsea. The former showed 60 varieties, all highly coloured and attractively staged, Belle de Boskoop, Winter Queening, Rival, and Gascoyne's Scarlet Seedling being magnificently shown. Messrs. VEITCH showed about 40 dishes of Apples and Pears and four pot trees of Calville Blanche, well cropped. All the fruits were excellent samples. A Silver-gilt Hogg Memorial Medal was awarded in each case.

An exhibit of Apples was shown from the Duke of BEDFORD'S Experimental Fruit Farm, at Woburn. This exhibit demonstrated the results of various experiments in Apple culture conducted by Mr. Spencer Pickering, and was similar to the exhibit contributed to the meeting on the 25th ult., when the Council awarded it a Certificate of Appreciation.

MESSRS. AMBROSE, PALMER & CO., 87, Mount Street, Hanover Square, showed Apples, Pears, Grapes, Oranges and Bananas. A Silver Banksian Medal was awarded.

A large assortment of edible Nuts was shown by MESSRS. B. SHEARN & SON, 231, Tottenham Court Road, London; also a very palatable sweetmeat called Stamanut, made from ground nuts, sugar, and milk.

PRESERVED FRUITS AND VEGETABLES.

The competitive classes for preserved fruits were well contested, and in addition there were several honorary exhibits of this character. Some of the finest of these preserves were shown by Mr. W. POUPART, Twickenham, who was awarded a Gold Medal for his collective exhibits. The following are the principal prize-winners:—

(A) FRUITS PRESERVED IN PURE WATER.

Home-bottled British-grown fruits.—1st, Mr. W. POUPART, Twickenham; 2nd, SWANLEY HORTICULTURAL COLLEGE.

Twenty-four bottles of British-grown fruits.—1st, Mrs. BANKS, 102, Park Street, W.; 2nd, Mrs. E. BECKETT, Aldenham House Gardens, Elstree.

Twelve bottles of British-grown fruits (including six different kinds).—1st, Mr. H. TOBUTT, Wallington; 2nd, Mrs. M. PALMER, Darlington.

Six bottles of British-grown fruits.—1st, Mrs. HARTSHORN, Bond Street, W.; 2nd, Mrs. W. H. PLOWMAN, Westminster.

(B) FRUITS BOTTLED IN SYRUP.

Home-bottled British-grown fruits.—1st, Mr. W. POUPART, Twickenham.

Twenty-four bottles of British-grown fruits (including twelve different kinds).—1st, Mrs. V. BANKS; 2nd, GENERAL POST OFFICE REFRESHMENT CLUB.

Eighteen bottles of British-grown fruits (including nine different kinds).—1st, Miss E. G. COOK, Ashford.

Twelve bottles of British-grown fruits.—1st, Mrs. F. L. PIKE, King's Langley.

(C) VEGETABLES.

Eight bottles (including four different kinds) of home-bottled vegetables (amateurs).—1st, Mrs. E. BECKETT; 2nd, Mrs. V. BANKS.

(D) JAMS, JELLIES, & C.

Jams in clear glass jars or bottles (jellies excluded), made of British-grown fruits only.—1st, MESSRS. W. MILES & CO., Hove, Sussex.

Eighteen 1 lb. clear glass jars or bottles of jam (jellies excluded), made of British-grown fruits.—1st, Mr. E. G. BADCOCK, St. George's Square, S.W.; 2nd, Mrs. E. BECKETT, Aldenham House Gardens.

Fruit jellies and fruit cheese in clear glass jars or bottles (open).—1st, SWANLEY HORTICULTURAL COLLEGE, Kent; 2nd, Miss COOK, Ashford Farm.

AWARDS MADE BY THE COUNCIL:—

GOLD MEDALS.—The Permanent Exhibition Committee of Trinidad, for fruits and preserves; the Government of British Columbia, for Apples; the Permanent Exhibition Committee of Trinidad, for fruits; and the West Indian Produce Association for a collection of fruits and vegetables.

SILVER-GILT HOGG MEDAL.—Messrs. James Veitch & Sons, Chelsea, for Apples; and Messrs. George Bunyard & Co., Maidstone, for Apples.

SILVER-GILT KNIGHTIAN MEDALS.—Permanent Exhibition Committee of Dominica, for a collection of fruits and vegetables; Province of New Brunswick, for Apples; Botanic Station, Dominica, for Citrus fruits; Okanagan Fruit Union, British Columbia, for Apples; Messrs. B. Shearn & Son, for Nuts; the Jamaica Agency, for a collection of fruits and vegetables; the Government of Barbados, for a collection of fresh fruits and vegetables, and the Jamaica Agency, for jams, &c.

SILVER-GILT BANKSIAN MEDALS.—Mrs. John Smith, British Columbia, for Apples; Kaslo District Association, British Columbia, for Apples; Stirling and Pitcairn, British Columbia, for Apples; and the Roseau Valley Fruit Co., for preserved fruits and jams.

SILVER KNIGHTIAN MEDALS.—The Permanent Exhibition Committee of Montserrat, for a collection of fruits and vegetables; Wall House Estate, Dominica, for Limes; Victoria District, British Columbia, for Apples; Salt Spring Island, British Columbia, for Apples; Mr. C. T. Cooney, British Columbia, for Apples; the New Zealand Government, for a collection of fruits, &c.; and the Government of Dominica, for fresh fruits and vegetables.

SILVER BANKSIAN MEDALS.—Mr. F. A. Hubbard, Burton, Sunbury Co., New Brunswick, for Apples; Mr. C. W. Peters, Queenstown, Queen's Co., New Brunswick, for Apples; Mr. H. Belyea, Lower Gagetown, Queen's Co., New Brunswick, for Apples; Mr. J. G. de Gannes, Trinidad, for Oranges; Gordon Grant & Co., Trinidad, for Limes; Mr. J. G. Haines, Trinidad, for Cocoanuts; Mr. Gordon Grant, Trinidad, for Cocoanuts; the Government of Victoria, for preserved fruits, also for vegetables; Messrs. E. Westmacott & Co., for Colonial-grown, tinned fruits; the Roseau Valley Fruit Co., for jams, &c.; Messrs. Ambrose Palmer & Co., Grosvenor Road, London, for English and Colonial fruits; Mr. W. Pattinson, for Banana specialities; the Army and Navy Auxiliary Stores, Westminster, for fresh fruits and vegetables; and the Government of Jamaica for fresh fruits and vegetables.

Bronze Banksian Medals.—St. Arment Estate, Dominica, for Oranges; Everton Estate, Dominica, for Oranges; Corona Estate, Dominica, for Oranges; Carlholm Estate, Dominica, for Limes; and Mr. J. J. Brown, Trinidad, for Cocoanuts.

BARNESLEY CHRYSANTHEMUM.

NOVEMBER 18, 19.—The 23rd annual show in connection with the Barnesley Chrysanthemum Society was held in the Harvey Institute on these dates. The entries in all the classes were quite up to the average, and the show, on the whole, was a distinct success. The opening ceremony was performed by the Mayor, H. M. Walker Esq.

In the class for 18 blooms of Incurved varieties, there were four exhibits. J. W. JAMESON, Esq., North Ferriby (gr. Mr. C. Jennings), was awarded the 1st prize. He had especially choice blooms of Mme. Pascoe, Mrs. Clibran, and Lady Isabel.

Mr. JAMESON also won in the class for 13 Japanese blooms, for which a challenge trophy was offered; and for 12 Incurved blooms, his two best specimens being Mrs. Clibran and Mme. Pascoe; and for 12 Japanese blooms.

For six blooms of one variety of a Japanese Chrysanthemum, Sir WM. BASS, Bart., Burton (gr. Mr. R. Nisbet), staged some fine examples of F. S. Vallis variety, the colour of which was exceptionally good.

The classes for vases of Chrysanthemums were disappointing, single Chrysanthemums being almost entirely shown, and not all of these of the best quality.

FRUIT.—As at the Doncaster and Sheffield shows, G. H. SHAW, Esq., Howden, E. Yorks. (gr. Mr. A. Blakey), was awarded the 1st prize for a collection of fruit. He was also 1st in the classes for a bunch of black and white Grapes respectively.

Mr. G. H. SHAW, Howden, secured the 1st prize for a collection of vegetables, with a first-class exhibit.

LEEDS PAXTON.

NOVEMBER 19, 20.—The Albert Hall, Leeds, was brilliant in colour effect on the occasion of the Leeds Paxton Society's Chrysanthemum Show held on these dates. The entries were not quite up to the average in number, but the quality of many of the exhibits was very good. Groups of miscellaneous plants added greatly to the generally charming effect of the show; but there was only one group of Chrysanthemums, and this was awarded a 2nd prize.

J. CARR NICHOLSON, Esq., Moorfield House, Headingley (gr. Mr. J. Phillips), was awarded the 1st prize for a group of miscellaneous plants, with a most excellent collection, comprising well-grown Crotons, Begonia Gloire de Lorraine, various Orchids, Lily of the Valley, Chrysanthemums, and Palms.

The special prize offered by Messrs. Clibrans for an exhibit of Roman Hyacinths was won by T. G. MYLCHREEST, Esq., J.P., Eltosto Hall, Thorne (gr. Mr. W. Crossfield).

There were two exhibitors in a class for six plants of Begonia Gloire de Lorraine, the 1st prize being awarded to J. CARR NICHOLSON, Esq.

CUT BLOOMS.—A challenge cup was offered in the class for 36 blooms of Chrysanthemums, including 18 Incurved and 18 Japanese, distinct varieties. It was won by F. W. JAMESON, Esq., Aston Hall, North Ferriby (gr. Mr. C. Jennings). G. F. Evans and Mme. Pascoe were two of the best Incurved blooms, and Mrs. A. T. Miller and Lady Talbot were excellent amongst the Japanese varieties.

In the classes for 12 Japanese and for 12 Incurved blooms respectively, Mr. JAMESON was again awarded the 1st prize, but in these, as also in the preceding class, this gentleman had only one competitor.

FRUITS AND VEGETABLES.—The best two bunches of black Grapes were shown by G. H. SHAW, Esq., Howden, E. Yorks. (gr. Mr. A. Blakey), the variety being Gros Colman; the berries were superbly finished.

In the class for two bunches of white Grapes, ARTHUR TANNETT-WALKER, Esq., Weetwood (gr. Mr. F. Norman), was placed 1st, but the bunches were not of great merit.

G. H. SHAW, Esq., won the principal prizes in the classes for Apples and Pears, and Messrs. Suttin's prize for a collection of vegetables, Parsnips being especially good.

Messrs. Webb's prize for a collection of vegetables was awarded to W. D. CLIFF, Esq., J.P., Meanwood Towers (gr. Mr. W. N. Hagne).

TRADE EXHIBITS were set up by Messrs. MANSSELL & HATCHER, Rawdon, Yorks., and Messrs. E. J. BATCHELOR & SONS, Haslegrave.

HORTICULTURAL CLUB.

"CANADA OF TO-DAY."

NOVEMBER 23.—On this date the usual monthly dinner of the club took place at the Hotel Windsor. Mr. Chas. E. Shea presided, and Mr. Joseph Cheal gave a lecture on "Canada of To-day, Horticulturally and Generally, from the Atlantic to the Pacific," illustrating his address by a number of lantern slides from photographs taken by himself.

Commencing with a few views of New York City and of the Hudson River, he quickly passed on to Canada itself, via Niagara, giving a vivid idea as he proceeded from city to city of the marvellous rapidity with which these cities had risen to importance,

a few rude sheds by the side of a railway track being transformed in a very few years into a flourishing and populous town. Views of the wild and splendid scenery of the Rocky Mountains taken from the train and sometimes curiously evidencing the sinuous nature of the track, by including the tail end of the same train at almost right angles, interspersed with groups of settlers and natives, glimpses of fruit farms and irrigation works and of the associated buildings, vehicles and other details were shown on the screen, and a constant stream of anecdote and personal recollections added interest. Trees, 40 to 50 feet in girth and estimated at about 200 feet in height, were shown, both growing and felled in connection with the vast forests there, the views of which showed also now and again the dire effects of forest fires. Mr. Cheal had taken the opportunity of visiting some of the settlers known to him prior to their leaving the old country. Most of them had done very well, and the moral to be drawn from their experiences is, that, given a fair constitution, a fund of common-sense, and, above all, a determination to work hard, there was no better place than Canada for an energetic young man with a little capital. Mr. Cheal's advice in this connection was that the emigrant should refrain from investing until he had obtained practical experience by hiring himself out for a year or two and so making himself thoroughly acquainted with the climatic and general working conditions. The lecture was followed by a discussion, in which Mr. Griffiths, secretary to Lord Strathcona, High Commissioner of Canada, while confirming Mr. Cheal's observation, added some interesting information. This related more particularly to the vast areas of prairie land in Canada, which formed, in his opinion, one of the greatest future fields of agriculture in the world. Here there was required no laborious clearance of forest, since there were no trees. The whole level expanse of thousands of square miles consisted of rich alluvial soil, 2 to 4 feet deep, resting on clay and only requiring to be "tickled with a plough, to laugh with a harvest."

ROYAL BOTANIC.

NOVEMBER 27.—The first monthly meeting of Fellows of the above Society was held in the club-rooms on the above date. Mr. Pembroke Stephens, K.C., who presided, stated that a most courteous letter had been received from the Royal Horticultural Society, asking them to appoint a committee of six members to confer with an equal number of their own Council. This was done, and a meeting had been held at the Royal Horticultural Hall during the past week. A note of the proceedings had been received from the Royal Horticultural Society, and no time would be lost in placing the matter before the R.B.S. Council for consideration. He further stated that the most careful attention would be given to the matter, but until the whole question was settled and the result known nothing would be published. The chairman further announced that £500 of the first £1,000 required by the National Bank had been paid in, and at the present time only £100 was required to complete the second £500. This sum was thereupon subscribed by Fellows present at the meeting.

NATIONAL CHRYSANTHEMUM.

ANNUAL DINNER.

NOVEMBER 29.—The annual dinner took place on the above date at the Holborn Restaurant, the company numbering about 100. The President, Sir Albert Kaye Rollit, LL.D., D.C.L., occupied the chair. After the usual loyal toasts had been observed, the prizes won at the recent show, including the challenge trophies, the Holmes Memorial Cups, and the President's special prizes, were presented to the winners.

Mr. E. F. Hawes proposed the next toast, "The Donors of Special Prizes," thanking those who had assisted in this matter and appealing for a continuation of their kindness. Mr. E. F. Felton, who replied, stated that it was an excellent investment for the donors.

"The Exhibitors and Affiliated Societies" was next given by Mr. J. W. Moorman, who pointed out the great indebtedness of all to those who so ably supported the exhibitions of the

Society. Mr. H. J. Jones replied for both exhibitors and affiliated societies.

The chairman next proposed the principal toast—"The National Chrysanthemum Society." He stated that the Society had grown from a small beginning into national importance, as could be judged by the magnificent show recently held at the Crystal Palace. The great palace at Sydenham was not the best place in which to hold a flower show because of its distance from town, but nevertheless the Crystal Palace possessed many advantages for the purpose. The National Chrysanthemum Society owed much to trade exhibitors, and he was sure that the decision to offer a competitive class for market blooms during the coming year would be much appreciated. Conferences such as the one recently held by the Society were also of great assistance in spreading a love of the flower, and the papers published from time to time were valuable. The financial position of the Society was in a more satisfactory condition, and the management endeavoured to work with economy consistent with efficiency. Sir Albert Rollit concluded his remarks with an appreciation of the work of the officers and committee. Mr. T. Bevan, chairman of the Executive Committee, who responded to the toast, pointed out the valuable support trade growers had afforded the Society, and particularly in regard to the collective exhibit sent to the Continent to an international exhibition.

Other toasts included "The Ladies and Visitors," proposed by Mr. J. T. Simpson and responded to by Mr. E. J. Husey, F.C.A., the receiver and general manager of the Crystal Palace Co.; "The Chairman," proposed by Mr. J. H. Witty; and "The Press," given by Mr. D. B. Crane and responded for by Mr. G. Gordon, V.M.H.

FRENCH HORTICULTURAL.

AMONG the novelties to which Certificates of Merit have been made during the month of October of the present year are: *Aconitum volatile* var. *latisectum* (MM. Vilmorin-Andrieux et Cie). The plant was collected in China for MM. Vilmorin, and is the first and most remarkable of a group of Asiatic *Aconites* which possess a twining habit. It is regarded by Mr. Komarow as a distinct species and named by him *A. Vilmorinii*. The plant is perennial, robust, reaches 9 feet in height, and bears large blue flowers in groups of five to eight. It flowers in September and October. It is a suitable plant for trellises, pillars, &c., and is propagated from seed.

Cattleya labiata alba var. *Gilmouriae* (shown by Mr. O. Doyn) is remarkable in bearing a single flower 7 inches long and with a pure white perianth. The labellum, which is 3 inches by 2 inches, white, lined by yellow, centre reddish-violet, with faint white lines, column cream.

Cypripedium × *Abel* Chatenay was shown by Mr. Opioix, head gardener at the Luxembourg Palace, Paris. This new hybrid is derived from *C. Gaston Bultel*, which was obtained from C. Fairrienum. It is the product of the cross *C. Gaston Bultel* × *C. Druryi* × *superbiens*. The flowers of *C. Abel* Chatenay are larger than those of either parent, and it is, according to the *Revue Horticole* (No. 22, November 16, 1909), one of the most beautiful hybrid *Cypripediums* obtained of recent years.

Numerous other Orchid hybrids are recorded in the *Revue*, to which those interested in the subject should certainly refer.

SHOW ITEMS.—Mr. T. Pateman, Node Gardens, Welwyn, informs us that he won the 1st prize in the competitive class for six dishes of Pears at the meeting of the R.H.S. on November 23. Our reporter was unable to supply the name, as the exhibitor's card had been removed. At the same exhibition Messrs. Ambrose Palmer & Co., Upper Halliford, Shepperton, were awarded a Silver-gilt Banksian Medal in the class for four dessert and eight culinary Apples. At the Northampton Show, held on November 10, the 2nd prize for a circular group of single Chrysanthemums was won by A. Clinwell, Esq., Cheyne Walk, Northampton. The 1st prize for 12 blooms of Japanese Chrysanthemums shown at the Stirling Chrysanthemum exhibition on November 10 was won by Mr. Carmichael, Langgarth.

DEBATING SOCIETIES.

READING GARDENERS'.—On Monday, November 22, Mr. H. G. Drew, of the Horticultural Department, University College, Reading, gave a lecture on "Insect and Fungal Pests of Fruit Trees and their Eradication." Mr. Drew said that these pests had of late years been increased, but he did not think their numbers were to be accounted for by climatic conditions. It was on record that gloomy seasons were just as prevalent 50 or more years ago. In his opinion the increase was due to many causes, including the extensive breadth of trees grown nowadays, the use of "dwarfing stocks," over stimulation in youth, planting too closely, and too early fruiting. Mr. Drew informed his audience of the best way to combat insect and fungal enemies, emphasizing that good cultivation, proper attention to drainage and cleanliness would do much in this direction. The recent exhibition resulted in a profit of £18, and this will be given to the Royal Gardeners' Orphan Fund and the Gardeners' Royal Benevolent Institution.

BATH GARDENERS'.—At the meeting held on Monday, November 22, Mr. W. C. Wall read a paper on "Decorative Chrysanthemums." The lecturer gave details of their cultural requirements from the rooting of the cuttings to the flowering stage. He also enumerated a list of the best varieties. Mr. Wall offered prizes for six vases of decorative Chrysanthemums. A. B.

BRITISH GARDENERS' ASSOCIATION (LONDON BRANCH).—A smoking concert in aid of the Branch funds was held at Carr's Restaurant, Strand, on Saturday, November 27. Mr. E. F. Hawes occupied the chair, the company numbering nearly 100 members and friends. The late secretary, Mr. A. J. Hartless, was presented with a set of bronze figures, representing agriculture, horticulture, and commerce. The present was subscribed for by members and friends and bore a suitable inscription.

BRISTOL AND DISTRICT GARDENERS'.—A crowded and enthusiastic meeting was held in St. John's Parish Rooms on November 25, presided over by Mr. S. Shaddick. A paper on "Grapes" was given by Mr. Wilkinson, gardener to Mr. R. A. Gibbs, M.P., Tyntesfield. The paper was full of cultural hints and was much appreciated. Mr. Wilkinson said the wires for training purposes should be 30 inches below the roof-glass. This would prevent much burning of foliage and scalding of berries. A border 3 feet in depth was all that was necessary, allowing 10 inches for drainage; the higher the border was made the better, as it would allow for the quicker removal of excess of water. May and June were the best months for planting, the vines being previously grown in 7-inch pots. H. W.

KINGSTON GARDENERS'.—At the meeting of this society, held on November 18, Mr. E. Scaplehorn (of Messrs. Cutbush & Sons, Highgate) gave a lecture, illustrated by lantern slides, on "Rock-gardens and Alpine Plants." The pictures included views of the rock-garden at Kew and of Sir Frank Crisp's rock-garden at Henley. Mr. Scaplehorn showed pictures of many interesting examples of improvised rock and water gardens, erected under his supervision, at the shows in the Inner Temple Gardens and Holland Park. He spoke somewhat fully upon a large number of Alpine plants, and further demonstrated by pictures the most serviceable subjects for a variety of rock-gardens. Several new members were elected.

GARDENING APPOINTMENTS.

MR. JAMES COMPTON, for the past 2 years General Foreman at Grove Hall, Craven Arms, as Gardener to R. J. P. THOMAS, Esq., Sharcombe Hall, Wells, Somerset.

MR. F. SIMMONS, for the past 2 years Gardener to W. HORN-BLOWER, Esq., Underwoods, Etchingham, as Gardener to SIDNEY HOWARD, Esq., Moulsecombe Place, Lewes Road, Brighton.

MR. E. M. LANGDON, for more than 5 years Foreman to H. TUDD, Esq., Chesterton Lodge, Hicester, as Gardener to E. S. WILMOT-SWELL, Esq., Northbrook, Farnham, Surrey.

MR. GEORGE H. ROSE, previously at Brookfield Nurseries, Swinton Rotherham, as Gardener to D. B. HALL, Esq., Barton Park, Petworth, Sussex.

MR. GEORGE FERGUSON, for the past 2 years Gardener to Sir R. BROOKE, Bart., Norton Priory, Kuncorn, Cheshire, and previously Foreman and Propagator at the Royal Horticultural Society's Gardens, Wisley, Surrey, as Gardener to JACOB WAKEFIELD, Esq., Sedgwick House, Kendal, Westmoreland.

MR. JAMES MACHAR, for the past 6 years Gardener to Mrs. FRYER, Smelt House, Howden-le-Wear, Durham, as Gardener to HERAM CRAVEN, Esq., The Briery, Sunderland.

MR. J. CHAMPION, for 23 years Gardener to Colonel SHAKERLEY, the last 3 at Glebelands, Wokingham, Berks., has removed with that gentleman to Enham Place, Andover, Hants. (Thanks for 2s. sent for R.G.O.F. Box.—Eds.)

MR. WADGE, for the past 4 years General Foreman at the Vice-Regal gardens, Dublin, was recently presented with a dictionary by his fellow employés on the occasion of his leaving Dublin to take up his appointment as Gardener to Lord O'NEILL, Slane Castle, co. Antrim.

MR. W. BUCKLES, for about 5 years Gardener to the late G. B. RENNIE, Esq., Denford, Hungerford, Berks, as Gardener to Captain E. H. SAWBRIDGE, at the same place.

MR. F. MARK, formerly Gardener to the late A. Y. LETHBRIDGE, Esq., at Trevissonne, Flushing, Cornwall, and W. H. SPOTTISWOODE, Esq., at Portgwithden, Cornwall, as Gardener to GEORGE CADBURY, Esq., jun., Primrose Hill, near Birmingham. (Thanks for contribution received for R.G.O. Fund.—Eds.)

MR. A. H. DOW, for the past 23 years Gardener to JAMES YOUNGER, Esq., Mount Melville, St. Andrews, N.B., as Gardener to the Marquis of WINCHESTER, Amport St. Mary's, Andover, Hants.

MARKETS.

COVENT GARDEN, December 1.

[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.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices, including Acacia longifolia, Azalea, Carnations, and others.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices, including Adiantum, Asparagus, Berberis, and others.

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

Table listing various plants in pots and their prices, including Ampelopsis, Aralia, Arctostaphylos, and others.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices, including Apples, Lemons, Nuts, and others.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices, including Artichokes, Asparagus, Beans, and others.

REMARKS.—American Apples continue in good demand, with increased supplies. The trade for Newtowns has improved, and prices are slightly firmer. There are only a few varieties of English Apples selling, the principal sort being Cox's Orange Pippin. Oranges are selling well, but the quantities arriving are much below the average at this season. Lemons are in good demand. Muscat Grapes, packed in handle baskets, sell readily. The Grape trade generally is slightly improving. A consignment of Pears of very fine quality arrived from Russia last week, and the fruit was sold for good prices. Vegetables are selling freely. E. H. R., Covent Garden, Wednesday, December 1, 1909.

Table listing various potatoes and their prices, including Bedforde, British Queen, and others.

REMARKS.—There is no great demand for tubers except for those of best quality. Prices remain about the same as those of last week. Edward J. Newbourn, Covent Garden and St. Pancras, December 1, 1909.

COVENT GARDEN FLOWER MARKET.

The trade in cut flowers has been a little better during the past week, yet it cannot be recorded that there has been any great advance in prices. The bad weather has, to a great extent, checked the demand. The Chrysanthemum growers complain of "damping" in their flowers, yet remarkably bright, fresh blooms are seen in the market. Large specimen blooms are not so much in demand as medium-sized flowers on long stems. The

decorative varieties, also singles, gain in favour. They are better grown, and marketed in a more attractive manner than formerly, and consequently make better prices. Incurved varieties are also in favour. The green-flowered variety sells well, and makes higher prices than most of the others, but there is a limited demand. Roses vary; the weather has been unfavourable for their development. Prices for the best flowers have advanced; the supplies of Roses from France have decreased. Carnations have advanced in prices; they are now almost entirely confined to the American section or English varieties raised from that type. Lilliums fetch good prices and L. longiflorum is scarce. L. lancifolium is dearer. Lily of the Valley, which was over plentiful in the previous week, is not seen in such large quantities. Violets are good and plentiful. Paper White Narcissus, also N. Soleil d'Or, is selling well.

POT PLANTS. Erica byemalis is well developed; E. gracilis is good, also the white variety "nivalis." Of Cbrysanthemums, the variety niveum is one of the best whites. Esme Read has also been very good. All sports from Caprice du Printemps make good pot plants. Begonia Gloire de Lorraine is more in demand, and several growers are sending in well-flowered plants. Cyclamen and Solanums are much better than they were a few weeks ago, but there may still be seen some that are inferior.

The trade for foliage plants has improved a little, and during the next week buyers will be purchasing for Christmas orders. Holly, Mistletoe, and Christmas trees (Spruce Firs) are already in the market. A. H., Covent Garden, December 1, 1909.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 7. A change to milder weather.—After a fortnight of cold weather there came a change to warmer conditions on October 28. That this change was a very marked one is shown by the fact that on the coldest night the exposed thermometer registered 11° of frost, whereas three nights later the same thermometer never fell below 41°—a difference of 20°. The ground temperatures have risen but are still 2° colder than is reasonable, both at 1 and 2 feet deep. Half an inch of rain has fallen during the week, but previous to October 27 the weather had been perfectly dry for ten days. After six days, when there was no measurable percolation through either of the soil gauges, the percolation through both of them was restarted on October 29. The sun shone on an average during the week for 1 1/2 hours a day, which is about the average duration at this period of the year. On four days no sunshine at all was recorded. Light airs and calms prevailed for the first three days, but since then the wind has been rather high. For the first time for three weeks the winds have come from some southerly point. There was about a seasonable amount of moisture in the air at 3 p.m.

NOVEMBER.

An exceptionally cold, dry and sunny November.—During the last twenty-four years there have been only three Novembers as cold. The most noteworthy feature of the month as regards temperature, was three weeks of cold weather, which lasted from the 6th to the 27th, during which period the mean temperature was on only one day above the average. On the warmest day the temperature in the thermometer screen rose only to 55°—which is with four exceptions the lowest November maximum reading I have recorded here. On the coldest night the exposed thermometer showed 15° of frost—which is in no way remarkable. Rain fell on only ten days, and to the total depth of less than an inch, or less than a third of the average quantity for the month. There have been here only six drier Novembers in the last fifty-three years. On the 14th a good deal of snow fell for the time of year, but only for a very short time was the ground completely covered. The sun shone on an average for two and three-quarter hours a day, or for an hour a day longer than is reasonable. In only one of the last twenty-four Novembers has there been a longer duration of sunshine. The winds were, as a rule, of about average strength, and in the windiest hour the mean velocity only amounted to 18 miles—direction west. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by 3 per cent.

THE AUTUMN.

A remarkably cold autumn.—Taken as a whole this was a very cold and rather dry autumn. There have been only four colder autumns during the last 24 years, yet one of the three months (October) proved remarkably warm, and was also very wet. The mean duration of sunshine was rather short of the autumn average.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the drainage year began in October the rainfall has been about average for that period. Last year at the same time there was a deficiency of 60,500 gallons per acre. E. M., Berkhamsted, December 1, 1909.

CATALOGUES RECEIVED.

JAMES DICKSON & SONS, 46, Hanover Street, Edinburgh—Fruit Trees and Roses. Hogg & Wood, Coldstream and Duns, N.B.—Nursery Stock.

FOREIGN.

VILMORIN-ANORIEUX ET CIE, 4, Quai de la Mégisserie, PARIS, FRANCE—Seeds of Trees and Shrubs; Stove and Greenhouse Plants. BON ARBOR CHEMICAL CO., Paterson, N.J.—Dry and Liquid Bon Arbor Soluble Plant Life, also Radix Worm Eradicator. DAMMANN & CO., San Giovanni a Teduccio, near Naples, Italy—Seeds.

LAW NOTE.

WATER SUPPLY FOR A NURSERY.

A CASE of interest to horticulturists, and having relation to the cost of water supply for nurseries, was discussed before his Honour Judge Bray at Brentford County Court on the 26th ult. It arose from the terms of agreement under which Mr. Joseph Darby, a nurseryman, became the tenant of about three-eighths of an acre of land at Twickenham. One clause therein provided that the amount of the water rate should be deducted from the rent, and stipulated that there should not be any waste of water. The landlord now sought to recover rent, allowing only, in deduction, an amount, estimated at 35s. per annum, which would have been chargeable as a rate for a domestic supply, and he further asked for a judicial declaration that that was the true interpretation of the clause.

On the contrary, Mr. Darby, whose water supply is regulated by meter, contended that he was entitled to deduct from his rent the amounts he was charged for water. It was stated that in six years those charges reached £63 12s., and that in the Michaelmas quarter they exceeded £9, while the gross rental for the three months was only £10.

For the plaintiff, who declared that, in any event, an excessive quantity of water had been used, bringing defendant under the stipulation that there should not be any waste, evidence was given by Mr. William Bates, a market-gardener, and Mr. Charles Philip Brookhouse, a nurseryman, both of Twickenham.

Mr. Darby denied that he had used more water than was necessary, and produced figures showing that the daily average was only half a pint to the square foot of the land, upon which there were eight glasshouses. He added that, by reason of the ground being drained into four wells, from which was obtained the water supply for some adjacent dwelling-houses belonging to the plaintiff, the quantity of water required for nursery purposes was larger than would otherwise have been the case.

His Honour remarked that the case had been complicated by the plaintiff's acceptance, without appeal, of an adverse judgment given by a deputy judge in proceedings of a similar nature some years ago, and his subsequent acquiescence in the defendant making the deductions accordingly. Judgment was reserved.

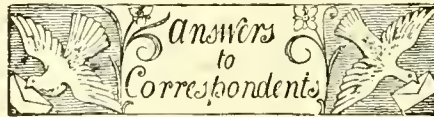
Obituary.

WILLIAM NEVE.—The death, at the age of 56 years, of Mr. William Neve, Groombridge, took place suddenly at Hastings on Monday, November 22. Mr. Neve had been staying at Hastings, and was walking to the station in order to return home when he was taken ill in the street and died almost immediately. Mr. Neve, with his brother, Mr. Albert Neve, was in business as a nurseryman at Hollamby's Nurseries. Over 40 years ago he entered as a boy the nurseries of Mr. Edwin Hollamby, and on the death of Mr. Hollamby some 15 years ago, Mr. Neve and his brother took over the business. The funeral took place at Eridge Church on Saturday, November 27.

WILLIAM GEORGE MARTIN.—We regret to record the death of William George Martin, which occurred at West Green Gardens, Winchfield, Hants., on November 25. Deceased has held appointments as head gardener and bailiff in Dorsetshire, Hertfordshire, Rutland, Essex and Hampshire. His father was for many years head gardener near Southampton, and his brother, C. E. Martin, is head gardener at the Hoo Gardens, Welwyn, Herts. The funeral took place at Mattingly Churchyard, Winchfield, Hants. Among the flowers sent was a beautiful wreath from his employer, the Duchess of Wellington. Deceased leaves a widow and family. One of his sons will succeed him as gardener and bailiff at West Green.

ENQUIRY.

AUSTRALIAN MYRTLE.—Can any reader give me the botanical name of an Australian shrub which grows freely in the gardens round Falmonth, and is locally known as Australian Myrtle. *Austral English*, a dictionary of Australian words, by Professor Morris, states that, among others, *Myoporum serratum* is known locally as Native Myrtle. Mr. S. W. Fitzherbert, in an article on the Trebah Garden (*Flora and Sylva*, vol. ii., p. 354), mentions *Myoporum laetum* as growing there, so I am inclined to believe that the Australian Myrtle is the latter plant. The plant I mean grows, I know, in the next garden to Trebah, and I think I saw it also at Trebah. C. W. F. [Mr. Fitzherbert informs us that, in the western counties, *Myoporum laetum* is known as the Australian Myrtle. It may be pointed out, however, that in Miller's *Dictionary of English Names of Plants* (p. 91) the Australian Myrtle is stated to be *Acmena floribunda*.—Eds.]



Editors 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 *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

* * * *The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.*

CYANIDING TO DESTROY MEALY-BUG: *West Sussex.* It is not essential to have a special machine for cyaniding plant-houses, but the work can be performed much better and with greater safety if one is used. We have seen a house successfully cyanided by means of ordi-



FIG. 171.—A SIMPLE APPARATUS FOR CYANIDING PLANT-HOUSES.

nary wine hottles and enamelled iron or earthenware pans. The sodium cyanide was placed in the pan and the acid in the bottle, which was tilted above the pan (see fig. 171). A string attached to the wooden support led through the keyhole of the door, and when everything was in readiness the operator went outside, locked the door, pulled the string, and the acid flowed into the pan below, causing the fumes to be given off. At or about pruning time, when the vines are quite dormant, for the destruction of vine-scale, mealy-bug, red spider, &c., two cyanidings should be given at intervals of 24 hours of 2½ ounces sodium cyanide, 5 fluid ounces sulphuric acid, 15 ounces water, exposure 50 minutes, temperature of house 50 to 55 degrees.

BEGONIAS AT KEW GARDENS: *A. T.* The Begonia house at Kew contains very many species and varieties of Begonia, so that it is difficult to know exactly to which you refer. We have noticed some decorative plants of the variety President Carnot, and perhaps this is the one to which you refer. The Kew collection also includes the beautiful hybrid winter-flowering

Begonias raised by Messrs. Jas. Veitch & Sons. These Begonias are highly decorative, most floriferous, and last in bloom for a long period.

CELERY: *W. G. J.* The wild Celery is *Apium graveolens*, the parent of all the cultivated Celery. It grows in marshy places by the sea, and near the shores in England and Ireland. In Hooker's *Student's Flora of the British Isles* one habitat is given in Scotland for this species, this being Cantire. The plant flowers naturally from June to August. As you want it for wild-fowl, we presume that the situation is near to water, in which case you will probably find little difficulty in cultivating the plant. A stock could easily be raised from seed obtained from wild specimens.

FELLOWSHIP OF THE ROYAL HORTICULTURAL SOCIETY: *T. S.* Anyone interested in horticulture is eligible for election as Fellow of this Society. Candidates for election are proposed by two Fellows of the Society. Forms for proposing new Fellows may be obtained from the Society's offices, Vincent Square, Westminster, S.W. A Fellow who subscribes only one guinea a year is required to pay an entrance fee of £1 ls., but bona fide gardeners earning their living thereby, and persons living permanently abroad, are exempt from the payment of the entrance fee. Associates who subscribe 10s. 6d. a year must be bona fide gardeners, or employés in a nursery, private or market garden, or seed establishment, and must be recommended for election by two Fellows of the Society.

FROSTING HOLLY: *R. J.* The leaves are usually dipped into some adhesive liquid such as that known as liquid glue, and the silvery material is then dusted over them while they are still wet. A suitable glue may be made with three parts gum shellac and one part india-rubber. Dissolve these materials in separate vessels in pure ether, and when they are thoroughly dissolved mix them together. If the fluid is too thick, it can be thinned down by adding more ether. Another solution can be made with equal parts of oil of turpentine and copal black; a third and perhaps the simplest method is to dip the leaves in a very thin solution of gum Arabic, sprinkling the silvery material on as before.

HIPPEASTRUM ROOTS: *J. A.* The white flocculent substances which you mistake for a fungus are insects allied to mealy-bug. Carbon bisulphide will destroy them; make holes in the soil with a stiff piece of wire, and pour into these a teaspoonful of the liquid. When the roots are bare of soil during the repotting process give them a good washing in warm water.

NAMES OF FRUITS: *Mrs. Sharman.* The Apple is Dumelow's Seedling, known in many gardens as Wellington. It is one of the very best late-keeping, cooking Apples.—*Lorraine.* 1, Nonesuch; 2, Gravenstein; 3, Beauty of Kent; 4, General Todleben; 5, Léon Leclerc; 6, Beurré d'Anjou.—*H. L.* We cannot name the Grapes from the few berries received. We suggest that you should forward a typical bunch of each variety, with a leaf or two, to the Royal Horticultural Society's Fruit Committee.

NAMES OF PLANTS: *Constant Reader.* We cannot undertake to name varieties of *Chrysanthemum*.—*Foreman.* 1, *Dracena terminalis*; 2, *Oncidium flexuosum*; 3, *Plenrothallis picta*; 4, *Oncidium barbatum*; 5, *Odontoglossum Lindleyanum*; 6, *Dendrobium moniliforme*.—*A. E. P.* *Cypripedium apiculatum* (*Boxallii* × *barbatum*).—*H. A. S.* 1, *Pteris Childsii*; 2, *Nephrolepis rufescens*; 3, *Asplenium bulbiferum*; 4, *Davallia platyphylla* (*Microlepia*); 5, *Nephrolepis tuberosa*; 6, *Nephrodium molle*.—*H. E. P.* A good yellow form of *Cypripedium insigne*.—*J. F. M.* 1, *Begonia argentea*; 2, *Begonia Evansiana*; 3, *Campanula variegata*; 4, *Campanula isophylla*; 5, *Campanula fragilis*; 6, *Begonia Ingramii*; 7, *Sedum Sieboldii* variegata.

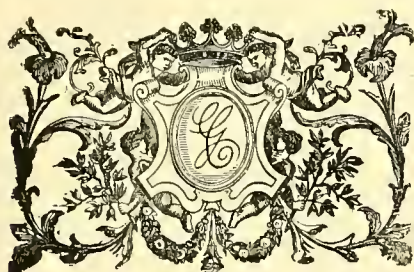
Communications Received.—*J. E. T.*—West Sussex—A. D.—George B.—J. C.—Owen T.—George W.—George R.—H. M.—George M.—W. A. C.—H. H. W. P.—J. G. W.—E. B.—T. M.—A. Loher, Manila—A. B. R.—Justus C.—W. B. H.—W. Goldring—G. H. J.—J. C.—C. F. B.—W. T.—George P.—Thomas F.—W. E. P.—S. W. P.—J. Melville—A. O.—D. A. Orleans—W. G. S.—Hilderic F.—Prof. B. B.—J. L. Whittle—W. H. A.—H. S. T.—R. N.—C. B. U., Straits Settlements—W. W.



Photographs by G. Forrest.

RHODODENDRON BULLATUM GROWING WILD IN CHINA.

FLOWERS WHITE, WITH YELLOW BLOTCH.



THE
Gardeners' Chronicle

No. 1,198.—SATURDAY, December 11, 1909.

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MADRESFIELD COURT.

(See figs. 172, 173 and 175, and Supplementary Illustration.)

THE Madresfield Court Grape has obtained such world-wide distinction that it has invested the home of its birth with a peculiar interest to horticulturists.

Madresfield Court is the Worcestershire residence and property of Earl Beauchamp. It is distant from Worcester about seven miles, and from Malvern Hills and town three miles. The nearest station, Malvern Link, is about two miles away. Few English homes are situated in pleasanter surroundings, for not many counties are so beautiful or so richly clothed with trees as is Worcestershire. Giant Elms are so common that the term "Worcestershire weeds" is frequently applied to them. In the home park and plantations at Madresfield some magnificent specimens of Oak and other forest trees are to be seen. One Oak which I examined measured 16 feet in girth of trunk at 5 feet from the ground, and had a spread of branches of about 98 feet. Those who have seen the many hun-

dreds of acres of Worcestershire orchards in full blossom in spring or laden with fruit in autumn, or the delightful sight of the hop-fields are not likely to forget the pleasant impressions created by these homely scenes of English rural industries. It is amongst such scenes as these that Madresfield Court is situated, but, as if these charms were not enough to invest the situation with an absorbing interest and beauty, there is on the west side, in close proximity, the glorious range of the Malvern Hills, towering high in majestic and

show their hoary beauty. The other climbers include Rose Félicité-Perpétue, Wistaria, Fig, Pomegranate, Olive, Bay, Clematis in variety, Ampelopsis, Abelia, blue Hydrangea, Escallonia langleyensis, and Jasminum. The view of the house also includes a glimpse of one of the most delightful old-time gardens I have seen. Instead of the orthodox gravel walks, there are stepping-stones or flags laid down irregularly to serve as walks between the flower-beds. [See supplementary illustration]. The soil between the stones is planted

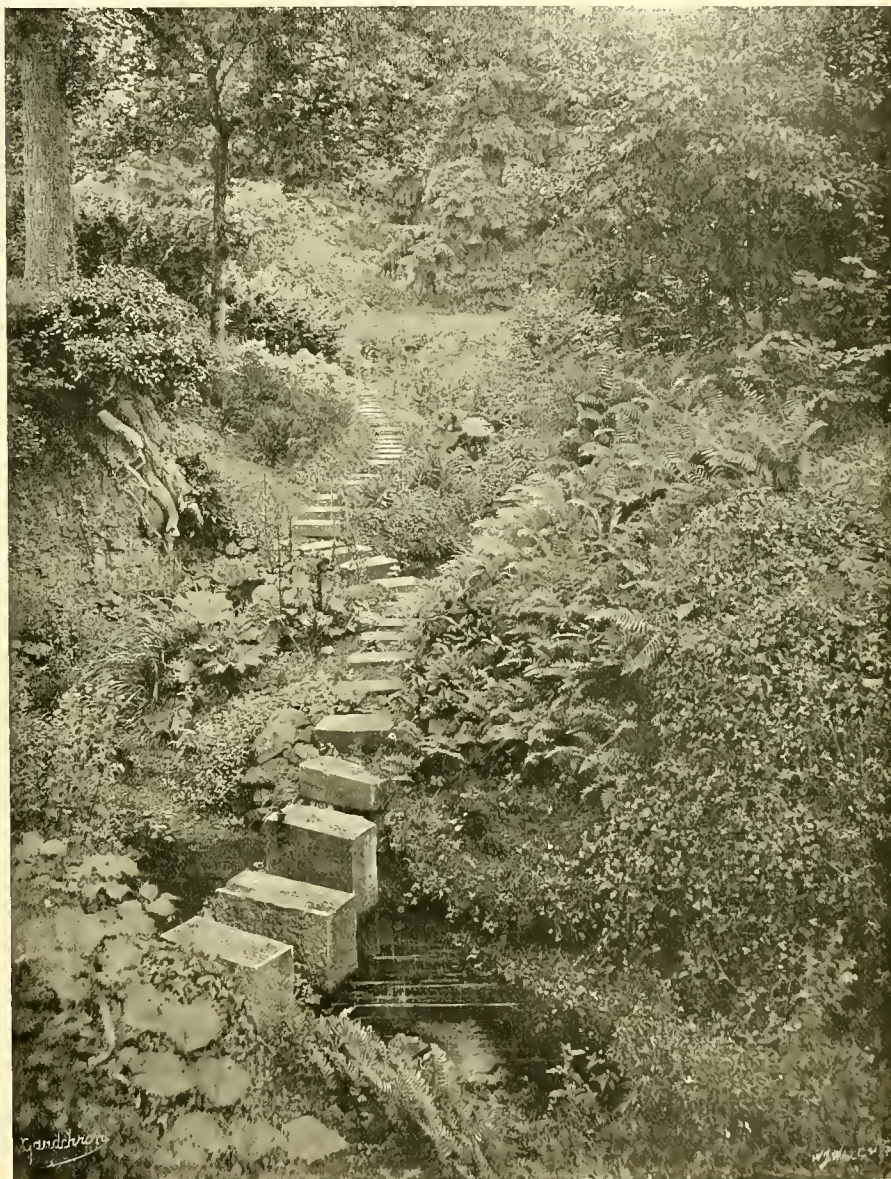


FIG. 172.—MADRESFIELD COURT: THE STEPPING-STONE GARDEN.

(See p. 390, col. iii.)

lonely grandeur and forming a background of rare and impressive beauty to the picture.

The Court, as may be seen from the illustration in fig. 175, is a moated, creeper-clad, delightful old mansion. On the side depicted in the illustration the walls are clad with the Espiran and Muscadine vines, these varieties being well suited for wreathing windows with tints of light green in summer and warm gold and crimson in autumn, and yet to give the old bricks and stones a chance in winter to

with low-growing or sweet-smelling plants, including the following:—Saxifraga, Sempervivum, Antennaria, Thymus, Veronica repens, single Indian Pinks, Cheddar Pinks, Ionopsidium acule, Arabis, Aubrietia, Iberis, Thrift, and Gentian. The beds in this garden are planted with such plants as Lavender, Rosemary, and Santolina, with groups of Lemon-scented Verbena (Aloysia citriodora), Heliotropes, Stocks, Tea and other Roses. Having viewed the garden from

beneath the windows of the private chapel, I retraced my steps and passed out through the front door facing the south-entrance carriage drive. This drive is flanked on either side by broad lawns, on which is planted a choice collection of rare and distinct Conifers, all glaucous or golden specimens. As they have been planted for a considerable number of years, it may be presumed that they are perfectly hardy. The names of the best of them may be useful to those contemplating the planting of trees for lawn effect:—*Picea pungens glauca*, *Pseudotsuga Douglasii glauca*, *Tsuga canadensis*, *T. pattoniana glauca*, *Thuja orientalis elegantissima*, *Cedrus atlantica glauca*, *C. atlantica aurea*, *C. Deodara aurea* (perhaps the finest specimen in the kingdom). It is 20 feet in height and 10 feet in diameter, a perfect specimen with an elegant, drooping habit and of a rich golden colour. *Cryptomeria elegans*, *Cupressus pisifera var. filifera aurea*, *C. Lawsoniana lutea*, *C. Lowii*, *C. macrocarpa lutea* (20 feet high), *Juniperus chinensis aurea*,

of late years, and made to appear more in harmony with the age and surroundings of the Court. The top part of it consists chiefly of sections divided by Yew hedges and scalloped out rather low in the middle, so as not to hide the flowers or the view of the home park beyond from the windows of the Court. Each of these sections form a miniature garden of itself, with beds of flowers formed on turf. Most beautiful they were when I saw them, each one disclosing some particular charm of its own. They were planted chiefly with tuberous-rooted Begonias, Salvias (blue and red), Calceolarias, Verbenas, and Heliotropes. A statue of Mercury stands in the centre of the garden, rising from the middle of a large basin of water, in which were growing hybrid Water Lilies.

On the side of the flower garden facing the part of the Court illustrated is a sunk terrace, extending the length of the flower garden, by the side, and level with, the water of the moat. Against the retaining wall of this terrace a border is planted with a choice collec-

tion of hardy herbaceous and annual plants, the wall itself being draped with climbing Tea Roses and Clematis in variety, among the former are Bardon Job, Mrs. W. J. Grant, W. A. Richardson, and Mme. Alfred Carrière. On the walls of the terrace and on the stately steps which communicate with the upper garden, handsome vases are placed, containing in summer-time pink, ivy-leaved Pelargoniums. I saw them in glorious bloom, and, with the Rose-embowered banks of the old moat, the herbaceous border on the terrace, and the climbing Clematis and Roses on the wall, they presented, from the windows of the Court and from the terrace, as gay and beautiful a garden picture as heart could wish or mind conceive.

Perpetual" Rose garden, backed by a Lime-pergola semi-circular in shape. A short distance from this is a garden for choice bulbs which refuse to thrive in the grass; here there are grand masses of Anemones, Ranunculi, Montbretias, Hyacinthus candicans, and Darwin and Cottage Tulips, arranged in successional order; the curved walk of this garden has a border 3 feet wide of *Gentiana acaulis*, whose rich, blue flowers produce a magnificent effect. Then we come to the stepping-stone valley garden (see fig. 172), where, between each stone, a different variety of plant is found. On the water's edge many new and highly-interesting water-loving plants are to be found, and in larger openings here and there masses of bog plants, such as *Primula capitata*, *P. japonica*, *P. cashmeriana*, *Senecios*, *Cypripediums*, *Gunneras*, *Lilium giganteum*, *Iris Kämpferi*, the late Sir Michael Foster's hybrid Irises, and hardy Ferns innumerable.

I next passed to higher ground, passing, on the way, a bank devoted to Saxifragas, *Sempervivums*, hardy Pitcher plants, planted between stones. After leaving a grand collection of Michaelmas Daisies, growing in grass, I came to the spring garden, where all the choice hardy and half-hardy bulbs are cultivated, specially prepared pockets on the side of a valley being provided for many of them. Passing through a portion of the kitchen garden under pergolas of Pear trees and Loganberries, I reached the Peacock garden, laid out in fan-shaped, box-edged beds and planted alternately with Tea Roses and Carnations (see fig. 173), including true tree-varieties. Next is the wild garden, planted with masses of strong-growing plants, including large breadths of *Kniphofias*, *Rudbeckias*, *Hollyhocks*, *Campanulas*, *Valerians*, *Polygonums*, *Delphiniums*, *Anemone japonica*, *Yuccas*, *Papavers*, &c. Whilst crossing the cascade at the head of the stepping-stone garden I noticed splendid masses of the Royal Fern (Welsh Polypody), and saw *Saxifraga pedata* being splashed by the falling water. Here *Hydrangea* bushes were bearing lovely trusses of pure Forget-me-not blue flowers, the admiration of all who saw them. The secret of inducing them to come of this colour lies in getting a particular soil from North Wales, where the *Hydrangeas* always produce blue flowers. Owen Thomas.

(To be continued.)



FIG. 173.—MADRESFIELD COURT ROSE GARDEN WITH FAN-SHAPED BEDS.

J. c. albo-variegata, *J. drupacea*, *J. neboriensis* (syn. *macrocarpa*), *J. virginiana aurea*, *Retinospora plumosa aurea*, *R. pisifera aurea*, *Thuja gigantea aurea*, *Thuja occidentalis argentea*, and *Sciadopitys verticillata*.

After standing near the entrance doorway, looking towards the drive and the Conifers, I turned to the left and came in full view of the moat, the flower garden, and of the glorious landscape of the home park and trees beyond. A moat in itself cannot be termed artistic or beautiful, but here its banks are clothed in summer and autumn with a wealth of bloom which can be better imagined than described. The sides next to the Court have Dorothy Perkins and other similar weeping Roses planted in huge masses, wreathing the banks of the moat to the water's edge with brilliant colour, the side next the flower garden being planted in a similar way with other procumbent flowering plants.

The flower garden has been reconstructed

tion of hardy herbaceous and annual plants, the wall itself being draped with climbing Tea Roses and Clematis in variety, among the former are Bardon Job, Mrs. W. J. Grant, W. A. Richardson, and Mme. Alfred Carrière. On the walls of the terrace and on the stately steps which communicate with the upper garden, handsome vases are placed, containing in summer-time pink, ivy-leaved Pelargoniums. I saw them in glorious bloom, and, with the Rose-embowered banks of the old moat, the herbaceous border on the terrace, and the climbing Clematis and Roses on the wall, they presented, from the windows of the Court and from the terrace, as gay and beautiful a garden picture as heart could wish or mind conceive.

I must mention a few of the many distinct flower gardens which adjoin the pleasure grounds, and which are nearly hidden from view by splendid Yew hedges, of which there are miles at Madresfield. The first is near the centre of the Cedar avenue, and is an old "Hybrid

BRITISH COLUMBIA. CORNUS NUTTALLII.

THIS attractive, deciduous tree flourishes amongst the dense growth of Conifers on the Pacific coast in British Columbia. It is common in this district of Vancouver Island, being most frequent on rocky hills and on open spaces caused by forest fires, though it often grows with lessened vigour in the deep shade of the Firs.

This *Cornus* is very hard to kill; even forest fires do not subdue it; for, in the year following after a fire, vigorous shoots will spring from charred crown and roots and grow up 5 or 10 feet, fresh and green.

It is in early May that the tree is most conspicuous; then the five or six pointed white bracts, surrounding the disc of flowers, often 4 inches across, cover the tree from top to bottom like a huge, many-branched candlestick, and look incongruous amongst the sombre Firs.

It is so conspicuous an object here when in flower, that even the ordinary settler respects it and knows its name, sparing it where he can in his clearing operations. In autumn the forest is lit up by the glow of its pale yellow and bright scarlet leaves, which last until knocked off by the torrential autumn rains for which this district is noted. *Cornus Nuttallii* often breaks again into flower in October, though not all over the tree. The tree frequently attains to a height of 50 feet. R. Glendenning, *Somenos, Vancouver Island, B.C.*

A MARKET FRUIT-GROWER'S YEAR.

THE dryness of November enabled fruit-growers to clear up a large portion of the arrears of work that should have been done in October, as well as to make good progress with that proper to the month. At my station, only a little over half an inch of rain fell up to the evening of the 27th, when the dry period came to an end. In some parts of the country there had been falls of rain or snow much more frequently than in my neighbourhood; but, generally, the month was an exceptionally dry one. It was remarkable also for much more frost than is common in November, and the extreme severity of 10° to 20° below freezing point, reported from some parts of Scotland on two or three occasions, was phenomenal for the time of year, the unfortunate result being the freezing of a large acreage of Potatoes which were in the ground.

FRUIT PLANTING.

This operation was, most fortunately, facilitated by the dry weather, so that much planting was done in the best of all months for the work. Frost hindered progress everywhere for a few hours on every morning in the latter part of the month, and, possibly, for some whole days where it was most severe; but the interruption was less than would have been caused by rainy weather. The tremendous rainfall of October had solidified the land which had been ploughed and subsoiled just before the wettest period began, so that the soil taken out in digging holes for trees turned up in a "clung" condition. In the case of a heavy soil, this was a disadvantage from the point of view of planters generally, though not from the Woburn ramming and puddling standpoint. In my own case, the lumps of consolidated loam broke finely enough when trodden over the roots, and rendered firm planting, in which I believe—though not in puddling—easier than it would have been if the field had been a mass of dry mould to the depth of a few inches. Not half the leaves were off the Apple trees when the work began, and not nearly all off some varieties up to the end of the month; but this is not of much (if any) consequence where the trees are planted immediately after being dug up.

A PLAN OF PLANTING.

Perhaps a description of the plan of planting which I have carried out for some years, and by far the best of the methods I have tried, may be of interest to some readers. It is in course of being applied to the 6½ acres of land for Apples and Black Currants referred to a month ago. After the land had been ploughed and subsoiled, before the wettest part of October set in, it was allowed to remain untouched for three weeks, to allow of the germination of weed seeds. As soon as it was dry enough, after November began, it was harrowed up and down and across, and marked out for planting. The marking was done with a ridging plough, without its breasts, and with a marker attached similar to that used for marking Potato ridges, but, of course, longer. For a start, a row of canes was set up and carefully sighted. Along this row the plough was driven to make the base line, marking the line to be followed by the plough in returning, and so on until the whole field was marked in one direction. Then the same process was repeated in the transverse direction, at right angles to the base line. The distance between the lines was 6 feet, the best to allow where horse cultivation is to be carried on up and down and across the field. Where the two sets of marks intersect each other are the places in which trees or bushes are to be set, in this case Apples and Black Currants, the former 12 feet apart and the latter 6 feet each way. Or, to be precise, the Apple trees are 12 feet apart up and down the tree-and-bush rows, and a few inches more transversely, as they are angled, a tree in one row being placed opposite to a bush in the next tree-and-bush row. It will be understood that there is a row of bushes alone between each pair of

tree-and-bush rows. Each tenth row, one of bushes only, is omitted throughout the field, in order to leave a set of roadways, which are a great convenience and saving of labour when manure has to be carted into the plantation and distributed, or when spraying is carried on with any machine other than a knapsack, or when fruit has to be carried off.

Into each cross-mark for a tree a stake is driven, the hole being afterwards dug around it. The holes are not dug until the trees are ready to be placed in them, as it is a great mistake to follow the direction of writers who advise digging the holes beforehand, possibly to be half filled up with water by rain before the trees can be planted in them. The stakes are not over 3 feet above the ground level, that being the height of the stems free from branches, as the trees are trained to grow. Much harm is often done when stakes are high enough to be among the branches, through bruising or even cutting the latter nearly asunder, as the result of repeated chafing in windy weather. Three good stakes can be made out of a stout 14-foot Hop pole, allowing for 2 feet of waste at the small end. Living in a district where woodlands are extensive, I can buy these poles at 10s. per 100 in the woods, so that, allowing for carting, cutting, and sharpening, the stakes cost only about 5s. per 100. The stakes are creosoted or tarred about 18 inches from their points. Gas tar for this purpose is much cheaper than creosote. It is not so good; but, finding that the creosote cost about three-fourths as much as the stakes, its use was discontinued in favour of gas tar.

For protection against ground game, each tree is encircled with wire netting of 1 inch mesh, 13 inches wide, and cut in lengths of 18 inches, the cut sides being slightly twisted into each other.

When the trees have all been planted, the bushes are set in the intervening spots marked, except where roadways are to be left. There are then five rows of trees and bushes and four of bushes alone on each side of every roadway. Leaving the roadways does not reduce the number of trees to the acre.

DISTANCES IN PLANTING.

For Apple trees of free-growing varieties a greater distance apart than 12 feet is desirable; but where horse cultivation is to be pursued for a good many years after planting, no less space than 6 feet between one bush and another, or a bush and a tree is suitable, and the distance of one tree from another must be a multiple of 6 feet. There cannot be any variation to allow for the different growing habits of the several varieties, unless the free growers are allowed 18 feet, which is too much in my soil. Five feet would be enough distance for the bushes, but too narrow for horse cultivation after a few years, and that great means of economising labour and expense I regard as indispensable. It is done much oftener than hand-hoeing would be, and with much better effect. A field can be horse-hoed quickly when the weather is dry and sunny; whereas the slow work of hand-hoeing is often interrupted and its effect spoiled by rain. Again, there is hardly any treading behind the horse cultivator, and a great deal behind the hand hoe. Lastly, when horse cultivation can be done late in the autumn and early in the spring, the costly work of winter forking, or digging, as it is miscalled, can be dispensed with. It is true that the small spaces left by the implement around the trees and bushes have to be hoed by hand, but that work can be done at small expense.

DEPTH OF PLANTING.

The trees are planted at about the same depth below the level of the surface as they were grown in their nursery beds. The plan of planting them almost upon the surface of the soil and mounding them up with earth appears to me a very bad one, because the roots must be almost uncovered in a year or two by repeated hoeing, un-

less the laborious operation of throwing the earth back around them is pursued. The plan is recommended chiefly for wet land; but this should be drained properly, and then surface-planting will not be needed.

AGES OF TREES.

It is hardly necessary to say that two-year-old trees are preferred for planting. This season, however, I am planting some maidens also, because I have a great many of my own raising, and the nursery plot is to be cleared. It seems better to plant the strongest and tallest in their final quarters than to transplant them for planting out next year. In the latter case, they would have two checks to growth, as compared with only one check in the former. If they could remain where they are, it would be better to leave them standing till next year; but this is not allowable, because they would not properly occupy a quarter of the space over which they would be scattered after all the two-year-old trees have been taken from among them. In the previous plantation made, some maidens planted to fill up one side of the field (about a quarter of an acre) have done remarkably well, so that no one could distinguish them from those close to them which were two years old when planted.

HOME-RAISED VERSUS PURCHASED TREES.

In previous seasons, after the first, when planting was being done, there were sufficient trees raised on the farm for the land to be planted. This year, on the contrary, a few hundreds had to be purchased. The contrast between the two sets is a striking illustration of the superiority of home-raised trees to those purchased without selecting at a high price. The former have been trained from the first for trees to branch out from single stems at the height of 3 feet from the ground level, shoots competing with the leader having been cut off the maidens, while growths low down on the stems in the second season were cut off if gross, and stopped if feeble. In commercial nurseries, on the other hand, it is common to leave the young trees to grow as they please for the first season, and to prune them, if they are to be standards or half-standards, only at the end of it, the result being much loss of vigour to the leader from shoots competing with it. By this it is not meant that side shoots should all be cut off. On the contrary, it is necessary to let short ones grow to cause the enlargement of the stem, and it is only those which would divert too much sap from the leading growth that should be shaved off. Similarly, in the second season, the trees are commonly left feathered, the result being that the young branches at the top are not as vigorous as they would be if lower shoots had been cut off or stopped. It is true that trees trained as half-standards can be bought easily enough; but these would be on stems too high to suit me.

CHEAP TREES.

A small experiment in purchasing some cheap advertised trees is enough for a lifetime. They came from a very large nursery, and were found only fit for the rubbish fire, as they were stunted, nearly covered with fruit-buds, and almost devoid of vigorous wood-buds.

VARIETIES OF TREES AND BUSHES.

The Apple trees in course of being planted are chiefly dessert kinds and late cookers, mid-season varieties of cooking Apples being avoided because of the glut in the markets common at mid-season. Similarly with Plums, for which a piece of land, in extension of an old plantation, has been prepared, a very late variety, President, has been chosen. There is no kind like the Victoria for cropping, excepting the common Pershore Egg Plum; but the prices when these two varieties are in the market are barely remunerative in a good season even for great yields. The earliest and the latest of all fruits, as a rule, pay best. The Black Currants are all of the variety Boskoop Giant, raised at home. *A Southern Grower.*

MODERN HEATING APPLIANCES FOR GREENHOUSES.

THE purpose of most recent improvements in the heating appliances used in greenhouses is to reduce the amount of attention they require. So serious are the results of inattention that a small increase both in first cost and in running cost is more than compensated by the better cultural results.

Heating by hot water still holds its own for greenhouse work, though there are signs that, in special circumstances, hot air, gas radiators may gradually be introduced, and, where the running cost is not of importance, electrical heating appliances are very suitable. For many purposes, electric radiators are almost the ideal sources of heat for greenhouses, and, in particular, the luminous electrical radiator, which, in addition to heating, furnishes light, may take an important position in greenhouse work in the future. But the great difficulty in connection with the development of heating by electricity for every purpose is the very heavy cost of the current. Electrical engineers claim that their apparatus is very efficient, that something like 95 per cent. of the energy furnished by the current appears as heat. This is correct; but, unfortunately, the cost of the current required to furnish a given quantity of heat is at least ten times that of gas and considerably more than ten times that of coal or coke. Electric radiators are of two forms: the luminous pattern, in which energy is furnished by large electric incandescent lamps, specially constructed for the purpose, and the non-luminous, in which the heat is furnished by a substance offering a high resistance to the passage of the current, and embedded in material which protects it from oxidation, the whole being enclosed in some ornamental casing. Both of these forms have been employed for heating what may be termed lounge greenhouses or conservatories, and those which form annexes to the living rooms of large houses. But the heating has been primarily for the comfort of those who used the conservatory as a lounge.

Practically the whole of the work of heating greenhouses commercially, using the term in its widest sense, is done either by stoves burning anthracite coal or coke, or by gas-heated appliances. The coal and coke-using appliances have been developed on two lines, both so designed as to render attention to them during the night unnecessary. In one form the boiler furnace itself is made of sufficient capacity to hold fuel lasting for 12 hours. In the other form the idea of the well-known, self-feeding, anthracite stove, so much liked in France, and so much used for domestic heating in America, has been developed. In this form of stove the supply of fuel is again sufficient to last for 12 hours, but the arrangement is different from that in the sectional boiler. In the sectional boiler, the quantity of fuel is made sufficient to last through the night, burning in the ordinary way. In the other forms of stove, the fuel is fed automatically to the furnace as it is consumed. There is usually a cylinder above the furnace, into which the fuel is put at night, and a small quantity of the fuel is fed downwards on to the grate bars of the furnace, as that which was there previously is consumed. The sectional boiler has also been developed with respect to cheap construction in two directions. It often happens that after a boiler has been put in the owner of the greenhouse makes extensions, or finds that he would like a higher temperature. Now, previous to the development of the sectional boiler, it was necessary to scrap the old apparatus and fix a new one. As its name implies, the sectional boiler is made in sections, exactly alike, and it is always possible, so long

as the original stove is in good order, to insert additional sections and so to increase the furnace and water capacities; each section, with the exception of the front and back sections, being complete in itself. A section contains the space for the water, its portion of the fire-bars, and of the bed-plate upon which the whole rests. To extend the boiler either front or back, or both, may be removed, an additional section or two, or more, put in, connected up, and bolted together again. Thus boiler and fixtures can be turned out much more cheaply, as so many parts are alike, and machines can be employed on them.

In the various sectional boilers the same principle is followed, viz., the space containing the water to be heated surrounds, or is surrounded by, the space in which the hot gases generated by the combustion of the fuel pass on their way to the chimney, and the difference in the construction of the different boilers is merely the difference between the methods adopted by different inventors and manufacturers to accomplish the same object, viz., to expose the largest surface possible of the water space to the action of the hot gases.

In gas-heated boilers the same principle holds good. The heating is performed by one of the usual ring burners, which work upon the Bunsen principle, and burn with a blue flame. It will be remembered that the Bunsen burner, with its blue flame, furnishes a very much larger amount of heat than the white or yellow flames which issue from the ordinary burner. In the case of both coal-heated boilers and gas-heated boilers, it is the hot gases which are formed by the combustion of the fuel which heat the water. When the carbon in coal or coke burns, and when the gases in ordinary illuminating gas burn, carbonic acid gas and water vapour are formed. The gases remaining after combustion are heated to a very high temperature, and made to pass, by somewhat tortuous paths, over the surfaces behind which the water that is to be heated is lying. In their passage they give up much of their heat to the water, the remainder being carried up the chimney. The design of all boilers is arranged to check the passage of the hot gases to the chimney, so far as it can be done without checking the combustion unduly: so that the gases may be made to part with the maximum amount of their heat. The forms of gas-heated boilers vary; but in all cases there are pipes and spaces carrying the water, and the hot gases circulate in the spaces surrounding the pipes, the whole being enclosed inside an iron case. The iron case carries a chimney, just as a coal fire boiler does, and there are the usual inlet and outlet connections to the water space. The pipes are arranged either in the form of a coil or are fixed across the body of the enclosing case, or the two methods are combined.

The hot-air, gas-heated radiator mentioned above is intended to be placed in the greenhouse itself. On behalf of the gas-heated hot-water radiator it is claimed that complete combustion of the gas is obtained within the apparatus. The arrangements for combustion in the different forms vary, in one form ordinary white flame burners are employed, and in another a Bunsen burner is used. In both cases the products of combustion are made to take a somewhat tortuous path on their way out into the space to be heated, and are subject to the action of bodies of hot metal, heated, in the first place, by the burning gases themselves. It is stated that the hot air which issues from the stove into the surrounding space contains only air and a small percentage of carbonic acid. The great danger in connection with the use of stoves of that kind is, of course, the possibility of unburnt gas passing into the greenhouse. As usual, it is a question of care. The writer believes that so far these stoves have not been used to a large extent, but it is possible that as they are better understood they will come into more general use. *Sydney F. Walker.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT GLEBELANDS.

THE collection of J. Gurney Fowler, Esq., at South Woodford (gr. Mr. J. Davis), gives a very instructive example of successful Orchid cultivation in the neighbourhood of London. From the first year that the present Chairman of the Orchid Committee of the Royal Horticultural Society seriously commenced to form a collection of Orchids, not only have the extent and value of the collection increased, but also the condition of the plants, until at the present time the collection is a model one. Many useful ideas may be gained at Glebelands in respect to the internal fittings of the Orchid houses, and in the culture of some reputedly difficult plants, notably *Eulophiella Elisabethæ* and *E. Peetersiana*, which thrive admirably in the warm-house. *E. Peetersiana* is in baskets suspended from the roof, a position which, in some degree, may contribute to the success, for those who fail to grow the plant successfully usually have it in pots placed on the staging.

The absence of damaged pseudo-bulbs and leaves, so noticeable throughout the whole collection, allows the stout pseudo-bulbs and bright green leaves to appear to the best advantage. This is due to removing all old pseudo-bulbs which are detrimental to the general health of the plants, and is a practice which might be carried out in many other collections with advantage. It is done periodically, but especially at repotting time.

Osmunda fibre is considered of great value as a potting material for epiphytic Orchids, but a small proportion of leaves and of *Sphagnum-moss* is added for many kinds. In the large intermediate houses is a very fine selection of handsome hybrids and rare varieties. Among those recently in bloom were the original *Brasso-Lælia Digbyano-purpurata* King Edward VII., with very beautiful, white flowers, the fringed lip being brightly coloured with rosy-mauve; and a richly-coloured variety of another pretty *Veitchian* hybrid, *Lælio-Cattleya lione*, with brighter flowers of better shape than any of its class in bloom at the time. *L.-C. Haroldiana* had bronzy-orange sepals and petals, and ruby-crimson lip. *Phaio-Cymbidium Chardwarensis*, *Scuticaria Steelii*, with its pendulous rush-like leaves and large yellow and red-brown flowers; *Brasso-Cattleya Mme. Chas. Maron*, with large white and rose flowers, were all in bloom, and a good number of fine hybrids were in bud.

In the *Cypripedium* houses a great number of handsome varieties were in bloom, and an equally large number in bud, among the latter being the remarkable *C. Lceanum* J. Gurney Fowler, which promises to show itself at its best; *C. Ernest Read*, whose flowers are of the largest and best in form; and *C. Thalia* Mrs. Francis Wellesley, which has developed from a very small plant into a strong specimen. Among the best of those in flower were *C. Ville de Paris*, a shining yellow flower with a spotted dorsal sepal; *C. Memoria Jerninghamiæ*, also a large and darkly-coloured flower with a glossy surface, and a clear white upper half to the dorsal sepal; *C. Tityus superba*, *C. triumphans*, and *C. Milo Cobb's* variety; *C. Actæus* Fowler's variety, a very charming flower; varieties of *C. Prospero*, *C. Fowlerianum*, of fine shape and rich colour; *C. Troilus*, *C. optima*, with a fine white dorsal sepal spotted with rose; *C. Aëson giganteum*, raised and flowered by Messrs. Veitch some years ago, but still the best of its class; varieties of *C. aureum*, *C. Eurvades*, *C. Lceanum*, *C. nitens* Glebelands variety, a large and finely-marked flower; *C. F. K. Sander*, in great vigour, and a large number of other rare varieties.

In the cool *Cypripedium* house one side was thickly studded with the blooms of all the best forms of *C. insigne*, including a good batch of that best of all yellow varieties *C. i. Sanderæ*;

and the largest, *C. i.* Harefield Hall. *C. isaigne* Fowlerianum had a fine dorsal sepal with dark blotching on the lower half, and rose spotting on the white upper part. On a shelf in the same house were seedling *Odontoglossums*, and in a warmer house a very fine lot of seedling *Lælio-Cattleyas*, *Cattleyas* and other *Orchids*, including a few *Aerides* and *Vanda* crosses.

In the *Odontoglossum* house there are more rare varieties than ever, especially of the blotched forms of *O. crispum*, including the varieties *Fowlerianum*, Mrs. J. McBean, and some of the rare hybrids, many of which were in bud, but only a few in bloom. At the end of the house a batch of *Masdevallia tovarensis* was covered with their snow-white blooms, which contrasted effectively with the varieties of *M. coccinea*, *M. Schlimii*, *Oncidium Forbesii*, *Sophronitis grandiflora*, &c., in flower beside them.

Each of the other houses contained healthy specimens, some of them being in bloom. In one house many tall spikes of *Zygopetalum Mackayi* were observed, and in the same house, in a shady situation, some very strong plants of *Miltonia Warszewiczii* were developing stout spikes. In another little group were the orange-coloured *Lælio-Cattleyas* *Cappi* with the scarlet *Sophro-Cattleya* *Deris* and the rosy-mauve *S.-C. eximia*. In a warm-house the hybrid *Calanthes*, principally *C. Veitchii* *superba*, were commencing to make a good show. In another house *Lycaste Skinneri*, the graceful *Cymbidium erythrostylum* and others were in bloom. The varieties of *Lælia anceps*, suspended from the roof of a lean-to house, the back wall of which is covered with *Epidendrum O'Brienianum*, *E. Boundii* and *E. radicans*, were developing flower-spikes.

Plants of *Miltonia Roezlii*, potted in *Osmunda* fibre and *Sphagnum*-moss, with a sprinkling of leaves, and kept moist in a sheltered corner of the house, have become very strong and will flower well. Formerly they did not succeed.

THE DREI ZINNEN RIDGE.

I KEPT my greatest expedition for my last day at Misurina. The Drei Zinnen do not look very far away from the end of the lake, but there is seen to intervene, on second glance, a suspicious gulf between the woods and those three great naked peaks. Fortunately, however, that valley does not really isolate the Drei Zinnen, but forms a cul de sac at the back of the *Cadinenspitze*, where a long ridge connects the two mountains.

Level and luxurious at first goes the way, until you lose it. It runs through woodland, among *Atragenes* and trifoliate *Anemones*. Then mounting higher, it comes into more open places, sunny and marshy, where for the first time this year I came on *Gentiana bavarica*, shining among wide stretches of *Primula farinosa*. Here the path ends in bog, or, at least, I lost sight of it. It was only after weariful wanderings up and down that I at last struck it again, mounting stilly over a shoulder called the *Tre Croci di Rimbianco*. As a matter of fact, there are now only two crosses—and poor specimens at that.

Here, however, the ground becomes more promising to the collector. For now we are in the high valley between the Drei Zinnen and the *Cadinenspitze*—wandering along the stone slope. At the ghastly, ruinous back of the latter mountain *Rhodothamnus* abounds, *Papaver rheticum* in great glory, *Iberidella* in sheets of harmonious pink among the coarsest white detritus, and the *Saxifrages casia* and *squarrosa* in their usual promiscuity.

Thus one reaches the end of the valley, where it is closed by the tiered ranges of the ridge that connects the Drei Zinnen with the *Cadinenspitze*. One crosses a little meadow all a rosy fire of *Silene acaulis*, growing in mats among the grass; and so, over stony banks bestarred with *Dryas*, one mounts arduously towards the highest shingles at the foot of the Drei Zinnen. In successive flights the ground rises—stony slope and grassy dell, stony slope and grassy dell. And the grassy dells are carpeted with *Gentiana acaulis* in magnificent abundance—millions of sapphire trumpets, far finer in colour than the dingy types of *acaulis*, that too often disappoint the Alpinist. And so one continues climbing.

And, in the last level below the ultimate ridge, I had my first excitement of that day. This was

Primula longiflora, growing in its thousands—the first time in my life that I had ever so seen it. In cultivation, perhaps, the plant may tend to become cabbage and coarse, but here, among the fine, short grass, waving three or four great flowers at the most, above a rosette no larger than a good *farinosa*'s, *longiflora* is a delicate beauty indeed. But, alas! it was in vain that among all these blossoming myriads, I looked for an albino.

So one comes out on the ridge itself and suddenly sees—far away down on the other side—the huge stone slopes of the Drei Zinnen, and the tiny threads of great rivers flowing amid the indistinguishable darkness of the Pine forests below. The ridge is all of loose rubble and fine Dolomite shingle, lashed by the wind into curious, permanent ripples such as are left on sea sand by the lapping of the outgoing tide. It is matted and held together by sheets and yard-wide carpets of *Potentilla nitida*, on whose prostrate groundwork of silver foliage there now lie crowded a glory of great rose-pink flowers. And few pink tones in the garden have quite as warm a purity as these of this *Potentilla*, to say nothing of the enhancing argent of its leaves. If only it more readily displayed its flowers in cultivation. Here, on the ridge, it grows in the shingle, but lower down, and typically, it is a plant of hot crevices. And it is by such squeezing in rock that it can be best induced to flower under cultivation; the same treatment will probably answer also with the rarer *P. Valderia* of similar habit; both are being so grown now in chinks of my cliff-garden. But the albino *nitida* is a freer grower and flowerer in ordinary conditions than the type.

What else is there on the Drei Zinnen ridge? *Gentiana Clusii*, *G. verna*, and *G. verna Chionodoxa* in abundance. This last, the pure albino of *verna*, I had not sighted for some years. Then, of course, all over the levels, *Edelweiss* grows by the million, like any *Daisy*; you trample tufts of it at every step. Higher up, on the huge stark-red precipice of the mountain, there is nothing, but round the near corner, where the grassy ridge falls away in shelves of bare shingle, *Anemone baldensis* abounds, with *Ranunculus Thora* and *R. Seguieri*. This last seems a *Dolomitic* form of *glacialis*—very lovely in a tuft, with big white flowers over fine ferny foliage. But, bright and clean as it is, it has nothing like the monumental solid magnificence of *glacialis*, as you see it under the Schwarzhorn or the Pir Ot. (I have never found it in the Dolomites—but always *Seguieri* taking its place.) These, with *Saussurea alpina* and various golden *Potentillas* are the staple of that slope. I round the corner and come down on a broad, white shelf of rubble, clayey from a little spring. At first glance there is no vegetation here.

At the second, I stand still. I gasp in amazement. I vödel, strangle-throatedly, for my companion, higher up under the cliff, to hurry down and share my joy. All over this wet tract is growing the most astounding *Buttercup* I have ever seen. Huge, *Honorine-Joubert*-like blossoms, snow-white, marble-solid, expand over broad, heart-shaped leaves of a very dark, glossy green. I have already collected *Ranunculus parnassifolius* in dry earth pans on *Pir Padella*—a rare, rather insignificant tuft. It takes me quite a time now to surmount my incredulity, and realise that here is *R. parnassifolius* again, raised to a higher power, raised to a place at the head of all Alpine *Buttercups*. Away into the background sink *crenatus* and *glacialis* and *alpestris*. And here *parnassifolius* is growing in a sodden grey clay, perpetually wet, which clogs fingers and trowel alike, and weighs such tons that it all has to be washed away from the bunched white roots, waxy and fat (with their curious root-stock like a bitten bulb), before the plant can be packed for export. Of which wet clay the moral probably is that *R. parnassifolius* will best thrive here (though I won't so try it) in a sun-baked ashpit, on the principal of *Primivatarestii*—which, difficult plant of sun-flogged precipices, is now proving sound and vigorous in shade, in heavily-manured soil, in the damper reaches of the bog-slope.

Ranunculus Seguieri is growing with *parnassifolius*, too; in all its bright prettiness it clean disappears by the side of that other tremendous refugence. It takes one about five minutes to realise that it is there at all, and it seems almost a bathos to collect it after the other. *Reginald Farrer*.

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM AMABILE.

REFERRING to the exhaustive note under *Callista amabilis* Lour., by Dr. F. Kränzlin, in the *Gardeners' Chronicle*, November 27, 1909, p. 354, I may say that all interested in *Orchids* will be grateful to Dr. Kränzlin for the very plain manner in which he has stated the case.

After careful examination of the now famous specimen in the Herbarium of the Botanical Department of the Museum of Natural History at South Kensington, I have no doubt about its being a *Dendrobium*. The name *D. amabile* will be the best name for this species, which I hope will soon be better represented in gardens, for when in bloom it must be a rather pretty plant. When one considers the very wide range in size, form, habit, and colour of the members of the great genus *Dendrobium*, the species in question cannot be excluded.

Fortunately, in this case the Vienna Conference has saved us from the necessity of referring the genus *Dendrobium* to *Callista*, a change which could not well be adopted in gardens where the name *Dendrobium* is so common. In the rules of nomenclature passed by the Vienna Conference in 1905, under Section 15 it is stated:—

"Each natural group of plants can bear in science only one valid designation, namely the oldest, provided that it is in conformity with the rules of Nomenclature and the conditions laid down in Articles 19 and 20 of Section 2."

Article 20 provides:—

"However, to avoid disadvantageous changes in the nomenclature of genera by the strict application of the rules of Nomenclature, and especially of the principle of priority in starting from 1753, the rules provide a list of names which must be retained in all cases. These names are by preference those which have come into general use in the fifty years following their publication, or which have been used in monographs and important floristic (horistiques) works up to the year 1890. The list of these names forms an appendix to the rules of Nomenclature."

In the Appendix (p. 239) we find under:—

"*Nomina conservanda*.
Dendrobium Swartz in: *Nova Acta Upsal.* vi. (1799) et in: *Vet. akad. Nya Handl.* xxi (1800) 224.
Nomina rejicienda.
Callista Lour. Fl. Cochinch. 1790. 519.
Ceraia Lour. *ibid.* 518."

It is therefore plain that the time-honoured name *Dendrobium* need not be superseded. *James O'Brien*.

FOREIGN CORRESPONDENCE.

HYBRID NEPENTHES.

I AM sending you three pitchers of *Nepenthes* hybrids which have received certificates of merit from the French National Horticultural Society.

The three hybrids, but particularly *N. × remillyensis* and *N. × Sanglant* have a reddish colouring which comes from the male plant. They were raised at Remilly three years ago from a cross between *Nepenthes Curtisii* *superba*, fertilised by the pollen of *Nepenthes Northiana pulchra*, a beautiful variety of *N. Northiana*. The point of interest is that most of the seedlings have greenish pitchers, whilst few are reddish.

The brown spotted, greenish pitchers are generally of a clearer shade than *N. Curtisii* *superba* or *N. Northiana*. A series of seedlings raised about the same time and obtained from *N. sanguinea* fertilised by *N. Northiana pulchra* are still quite small, and the pitchers are far from attaining their maximum dimensions. The slowness with which the seedlings grow is very remarkable. In one year the seedlings of *N. Curtisii* *superba* and *N. Northiana pulchra* grew to a larger size than the seedlings of *N. sanguinea* and *N. Northiana pulchra* are even now. It must therefore be admitted that the female plant has a very considerable influence in the vigour and the rapidity of growth of the hybrids. It is curious to add that for the other seedlings it has been shown that the male plant had a good influence on the vigour of the seeds. Seedlings derived from a cross between *N. Curtisii* *superba*, and *N. Sir Thiselton-Dyer* have never been raised until the present. Germination of seeds from this cross is very difficult, and the growth afterwards is slow. *R. Jarry Desloge, Paris, France, 80, Boule. Haussmann.*

NOTICES OF BOOKS.

* A HISTORIC VOLUME.

WE have pleasure in welcoming a work which, for its historic associations, as well as for its intrinsic worth, is of no ordinary interest. In 1751 Jean Bergeret, a distinguished botanist, commenced the publication of the *Flore des Basses-Pyrénées*. Nearly 50 years after, his son, who, like Jean, was both doctor and botanist, published a revised and extended flora. Now, in 1909, Gaston Bergeret, a direct descendant of the original author, has carried out a long-cherished idea by publishing the whole of the original *Flore* which Jean did not live to see issue from the press. Though the author of this latest edition disclaims modestly the title of botanist, it is evident that he has inherited the scientific gifts of his ancestors, and that he has real knowledge of the plants of the Pyrenean region.

Gaston Bergeret has chosen, and rightly, in our opinion, to leave intact the old Linnean system which Jean used in the first edition. Thus, for this reason, and because of the many notes on the medicinal value of the plants, the work has a unique and old-world character which gives it a peculiar charm.

The preface, which deals with things in general, with ideas on the nature of existence of man as well as plants, stands, by its leisurely tone, in pleasing contrast with the business-like directness of the modern text-book. It shows, moreover, a glimpse of the modes of thought of a bygone race of men who were, it must be confessed, by no means inferior in scholarship and knowledge to men of modern times.

Though the volume is far too large for the traveller, and though, maybe, it offers more information of a discursive kind than the busy man of the present day cares to receive, yet those with a sense for history and for whom the past is sacred and living, will find in the study of this volume much enjoyment and profit. The labour which Gaston Bergeret has expended in the preparation of the work is labour well spent, for he has preserved a monument to the memory of a distinguished man, and has proved, by the devotedness with which he has discharged his filial task, that the race of philosophers for which the 18th century is so justly famous has not become extinct, despite the hustle and hurry of a later, commercial age.

* FRUIT-CULTURE IN JAPAN.

THE astounding appearance of Japan in the front rank of nations and her strenuous efforts to encourage industrial activity are amongst the most interesting features of modern history.

That horticultural interests are not being neglected is proved by a recent work by Mr. Ikeda, which sums up the present position of Japanese fruit-culture in a succinct and interesting manner. The introductory chapter deals with the status of the industry in ancient times, and shows how small a part fresh fruit has played in Japanese diet. Thus, even at the present day, fruit is regarded more as a sweetmeat than a necessity. Several chapters are devoted to a consideration of the geology and meteorology of the country, and the reader is reminded very forcibly of the immense variation in temperature and rainfall within the kingdom. The author lays special stress on the moisture of the atmosphere over the greater part of the country, and the consequent rapid growth of all fungal pests.

It is curious to note that the Japanese Quince, *Cydonia japonica*, is called Marumero, and that this name is said to be derived from the same Portuguese word, the fruit having been introduced by the Portuguese sailors from Cambodia in 1634. The Kakhis, or Date Plums, are treated

in some detail, about 800 varieties being said to exist at the present day. Peaches and Nectarines, both local forms and introduced varieties, are largely cultivated in all parts of Japan. Plums are produced in large quantities, one village marketing 690 tons, which sold for £4,000.

Specially interesting are the particular methods of culture which are detailed, many of them being of great antiquity. The system of growing fruits on a kind of pergola is largely practised, for the accessibility of the fruit and protection from sudden storms render this method very suitable for growing the choicer Pears, &c. An example of this system, called Tanazukuri, upwards of a hundred years old, is said to exist near Tokyo.

An interesting cultural practice is that of watering Plums with saline water as a preventive of fruit-casting. Packets of salt are often buried near the trees, and the author suggests that it may be that the salt acts osmotically, and thus creates a condition of dryness in the roots, which is known to prevent premature dropping of the fruit. Oblique cuts are also made on the bark to check a superabundant flow of sap when fruit is ripening.

There are many similar points which are extremely suggestive, but we must refer the reader to the work itself, which is well worthy of study by all who are interested in fruit-culture.

* THE PRINCIPLES OF AGRICULTURE.

THIS work opens with the following sentences: "Agriculture deserves to be definitely outlined. What is agriculture? We answer the question with a view to show what constitutes agriculture. It is not a science, for this statement is misleading. A science is an exact knowledge, like mathematics or botany. Agriculture does not belong either to the fixed or mixed sciences. It is a pursuit, an occupation. It does not centre round mysterious processes, but round the profitability of it."

Soil "is a loose, round material usually present on or under all parts of the surface of the earth."

It must be confessed that this somewhat confused language did not inspire us with confidence in the ability of the author to act as agricultural guide to the schoolmaster, young farmer, or student. What is in many respects a worthy attempt at the production of a text-book on the "Principles of Agriculture" is very materially reduced in value for educational purposes by the obscure language used and the lack of order in presenting the facts and subject-matter with which the volume deals.

The first five chapters are concerned with the nature and origin of the soil, its cultivation and drainage. A satisfactory account is given of the weathering processes at work on the soil, the external indications of its fertility, and its chief chemical and physical properties. The various implements used in cultivating the soil are also well illustrated, and a useful résumé is given of the principles and practice of drainage.

Three chapters follow upon the nature and use of fertilisers, and these are succeeded by three upon "Plant Life" and the crops of the farm, which are too concise to be of much value. The latter criticism also applies to the three final chapters, which refer to the feeding of live stock and the dairy industry.

The book contains a large amount of undigested information, most of which is accurate enough, but the author has attempted to crowd too much into too small a space.

The usual want of balance in treatises on the "Principles of Agriculture" is conspicuous here: the soil gets too much consideration, the plant and animal being correspondingly neglected.

* A text-book for Lecturers on Agriculture, &c., by James McCutchen, F.C.S. (Edinburgh; E. & S. Livingstone.) 1909. Price 3s. 6d. net.

* *Flore des Basses-Pyrénées*, Nouvelle édition, complète, publiée avec une préface et des Notes par Gaston Bergeret. J. Empéranter, Pau. 1909. 20 francs.

* *The Fruit Culture in Japan*, by T. Ikeda, Seibido, Tokyo, Japan. (London: W. Wesley & Son.)

Possibly, in a subsequent edition, improvement may be made in the work. The statement on p. 27 that good soil contains 15 per cent. of phosphoric acid, and the extraordinary chemical equation on p. 92 should be corrected, as well as the statement on p. 76 that "the composition of bones is put chemically in the formula $Ca_3P_2O_6$."

It might also be advisable to alter the English of such a sentence as this: "Farmyard manure owes its value to a large number of considerations" (p. 68).

FLORISTS' FLOWERS.

NEW DECORATIVE CHRYSANTHEMUMS.

HAVING visited several of the leading Chrysanthemum shows in various parts of the country I have made a note on the best of the newer varieties that have come under my observation.

The term "decorative" is capable of a wide definition, and, although all varieties may strictly be brought under that heading, I refer more particularly to those that are specially adapted for this purpose by reason of their colour, form, freedom of flowering and dwarfness of growth. They include several of the Japanese type, which, though new, are not large enough to rank among the ordinary, exhibition varieties.

Keith Luxford is crimson amaranth in colour, with rather short, narrow florets, yet a bold-looking flower with a dwarf habit of growth. David Ingamells is a typical, decorative, market variety, producing six to eight blooms on each shoot. The height does not exceed 2 feet 6 inches. The colour of the flowers is a deep, rich yellow. The variety named after Sir Frank Crisp has short florets of a dull, yet deep, red colour. Leslie Morrison, although not actually new, has not been seen much until the present season. Although this is a good exhibition variety, it is equally good for decorative purposes. The colour is rich, rosy crimson, and the florets are stiff and broad. Phosphorescence is a variety of terra-cotta red shade, the florets, not too closely set, make an elegant bloom. It is especially good grown as sprays. The variety Mrs. R. Luxford grows from 3 to 4 feet high, with good foliage. The flowers have drooping florets that twist at the point. The flowers of Mrs. Wagstaff Smith are produced in clusters. The colour is chrome-yellow. Felton's Favourite is not quite new, but deserves to be better known. It is one of the best of the newer, white-flowered varieties, having a stiff habit of growth.

The above varieties belong to the Japanese section; those named below are single flowered.

Leo has narrow, drooping florets, coloured a rich, dark red, with a golden ring next to the disc. It is a very effective blossom. J. H. Greswold Williams is in colour a rich yellow. The blooms are large. Mensa is a pure white variety of good form. Pictor, a pale blush-pink variety, is good either grown disbudded or in sprays. Arcturus is a velvety-crimson flower and very circular in form; the plant is of dwarf habit of growth. Leo is a shade of bright chestnut with a golden centre. Hilda Lawrence is a pretty variety of rose-pink shade. Sylvia Slade, amaranth, has a white ring around the disc. This is one of the most effective of the section. Nellie Riding is a rather short-petalled variety of a rich, terra-cotta red. Robert Thorp is a large white flower, with a deep yellow disc and Narcissus, a small, rich yellow flower. Miss Mary Pope, a pale pink variety, is especially good when the flowers are produced in clusters. Mrs. R. C. Pulling has rose-pink, narrow florets which widen at the tip; the disc is deep yellow. Canary Bird is a very pleasing yellow variety. F. Molyneux

HARDY PLANT BORDER.

THE VERATRUMS.

THE Veratrums, known popularly as the "False Hellebores," have an extremely wide range, extending through Europe, North and Eastern Asia, and North America. Some 15 species have been recognised, but so many of them are similar in habit and appearance that it is doubtful whether there are half a dozen sufficiently distinct to warrant specific rank. They are all herbaceous perennials; several of them have a stately habit and handsome foliage. The larger-habited species form admirable subjects for the

having been grown since 1548. There are several forms which differ slightly from the type, and are spread over Europe, Northern Asia and North America. One known under the varietal name of *Lobelianum* has almost green flowers, and narrower segments to the perianth than the type.

V. CALIFORNICUM.—This species (see fig. 174) is the best garden plant in the genus. Under favourable conditions, it grows to a height of 8 feet or more, and bears large panicles of ivory-white flowers in July. Its habitat is North-western America, and one district where it is found is the Sequoia region. Plants of this species were first received at Kew in 1896 from

V. NIGRUM.—This species has been in cultivation nearly as long as *V. album*. The plant grows from 3 to 4 feet high, and develops leaves 1 foot long and 8 inches broad. The flowers, like those of *V. Maackii*, are of a blackish-purple colour, and are borne in dense panicles, the flowering period being June. It is a native of Central Europe.

V. VIVIDE.—A North American plant which has been grown in gardens since 1742. It produces greenish flowers, and is considered by many to be a form of *V. album*. The popular name is "Indian Poke."

Although the Veratrums do not seed freely, they are all easily increased by division of the roots in autumn or spring. W. I.

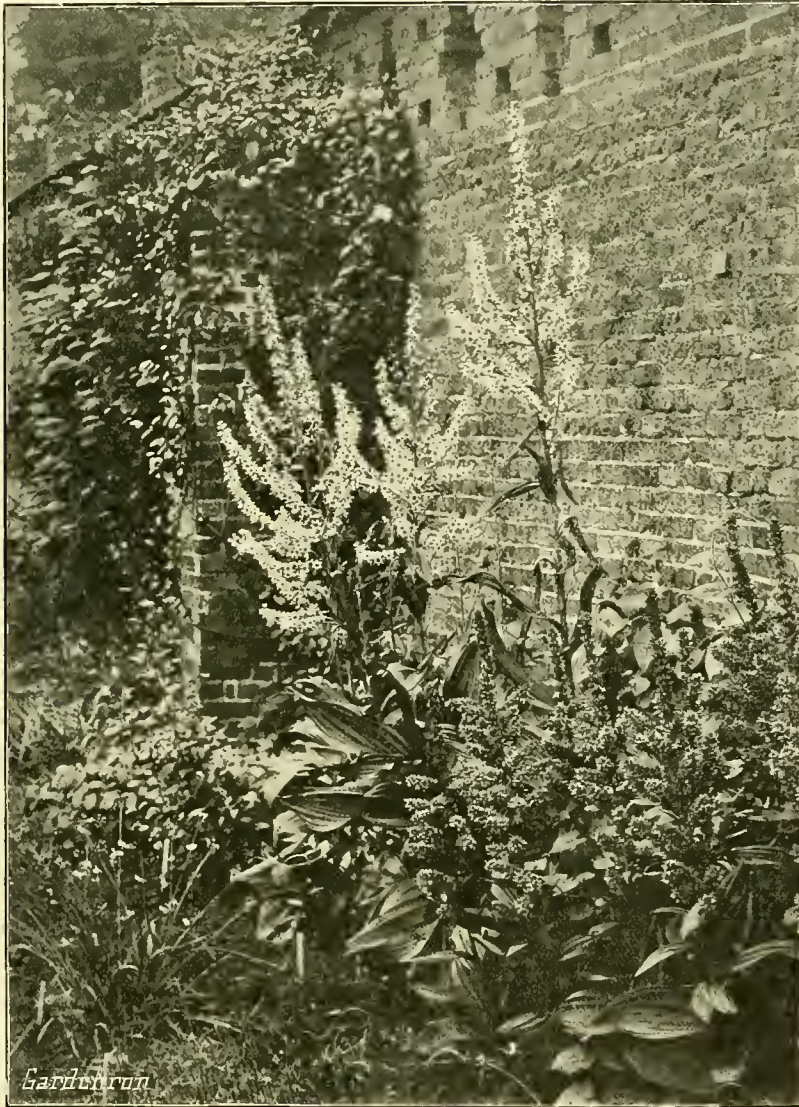


FIG. 174.—VERATRUM CALIFORNICUM FLOWERING AT KEW.

wild garden, or for planting in groups in open woods. They grow best in rich, heavy soil that has been deeply cultivated, and they prefer a somewhat damp, sheltered, and partially-shaded position. Although they can be transplanted, Veratrums are best left alone when well established. The following are the best of those in cultivation:—

V. ALBUM.—This is known as the "White Hellebore." The plant grows from 4 to 5 feet high, and is extremely variable in habit. The colour of its flowers varies from pure white to almost green. It is the oldest cultivated species,

Herr Max Leichtlin, of Baden-Baden, and they have since flowered annually. The plant ripened its seeds at Kew for the first time last year, but only a few seeds germinated, although they were sown as soon as ripe. *V. californicum* is closely allied to *V. album*, but is much larger in all its parts.

V. MAACKII.—This Siberian species has slender stems about 2 feet high, and long, narrow leaves. The flowers are dark purple in colour, and are borne in loose panicles in summer. The species was introduced to this country in 1883.

PODOCARPUS TOTARA OR P. TOTARRA ?

IN the latest monograph of the Taxaceae (Engler's *Das Pflanzenreich*, vol. iv., 5, p. 84), Dr. R. Pilger substitutes the specific name *totarra* for the universally-accepted *totara*, citing Allan Cunningham as the author in the *Annals of Natural History*, vol. i., 1838, p. 212. He explains this change in the following words: "Descriptio speciei primum dedit A. Cunn. l.c. —Cl. Don ne nomen quidem scientificum speciei dedit, sed in editone ultima operis Lambert, Genus Pinus, epitole cl. Bennett publicatæ sunt in quibus species verbis sequentibus designatur": it is an unpublished species of *Podocarpus*, called by the natives *totara*. Had Dr. Pilger but cast an eye over the next page of the book from which he quotes it would have lighted upon D. Don's definition of *Podocarpus totara*, which runs: "Foliis undique versis lineari-lanceolatis mucronatis subtus glaucis." Don erroneously cites *Dacrydium taxifolium* Solander, Msept., as a synonym, which made it appear that Banks was the discoverer and first collector of this notable tree in 1769.

Under "*Podocarpus totarra*," in A. Cunningham's *Flora Insularum Novæ Zealandiæ Præcursor*, in the *Annals of Natural History*, as cited above, D. Don's brief Latin diagnosis is repeated, and the source indicated. It is true that Cunningham spells the name with two "r's," but that was probably a slip, for almost all other writers on the flora of New Zealand consulted employ only one "r."

In Hooker's *London Journal of Botany*, vol. i., 1842, p. 572, t. 19, the name is *Totara* in the letterpress and *Totarra* on the plate, which, by the way, is an excellent one.

In the foregoing note the initial letter of the specific name has been repeated as it stands in the various works quoted; but, according to the now generally adopted Vienna rules, it should be written *totara*.

There is yet one other point in this connection which ought to be definitely settled, and that is the authorship of the combination *Podocarpus totara*. It is unnecessary to enter into particulars here. Suffice it to say that some subsequent writers attribute it to A. Cunningham, whilst others give it to D. Don, and in the *Index Kewensis* it stands as *Podocarpus Totara*, G. Benn., ex D. Don. As to the first, Cunningham himself cites Don as the author. As to the second, some explanation is necessary. G. Bennett contributed to the last edition of Lambert's *Genus Pinus* some "Observations on the Coniferous Trees of New Zealand." Following these observations, at the end of which Bennett's signature appears, but cut off by a cross line, are brief Latin diagnoses of some of the trees in question. Now, D. Don was the general editor and author of the descriptions throughout the work, and all the evidence seems in favour of retaining the combination as *Podocarpus totara*, D. Don. W. Botting Hemsley.

NOTES ON LILIES.

In a recent issue reference was made by a correspondent to the lax habit exhibited by *L. Henryi* in cultivation, and Dr. Henry was quoted as having observed the peculiarity in the wild plant, which he first found growing near Ichang. He has put it on record that he never saw this Lily in a wild state more than 3 to 4 feet high, and with four or five flowers, and as it is not at all uncommon to see it in gardens 8 to 9 feet high, and bearing 14 or 15 blooms, it might reasonably be supposed that, in the extraordinary vigour induced by high cultivation, the "lazy" habit would be modified, if, indeed, it did not entirely disappear.

The contrary, however, appears to be the case, for, paradoxical though it may seem, it is in the stronger-growing specimens that the peculiarity under notice is the more pronounced.

In casting about for some explanation of the almost prostrate habit of this Lily, a peculiarity which is not shared to anything like the same degree by other members of the genus, one is almost driven to conclude that it is an inherited tendency, probably due to the fact, as recorded by Dr. Henry, that the wild Lily grows on the walls and slopes of precipitous places where, presumably, there is very little in the way of support for the stems.

In many Eastern Lilies, the result of high cultivation is often to produce an exaggerated head of flowers, which the stem is unable to carry, therefore the stem collapses unless supported in some way. Not so, however, with *L. Henryi*, the long, tapering stem of which is so supple that, no matter how heavily-laden it may be with flowers, nor how strongly winds may blow, it does not seem to break. Unsupported plants may be seen in which the stems, measuring 8 feet long, hang over to such a degree that the blooms are within a foot or two of the ground. Whether these tall-growing specimens should be supported or allowed to fall about over shrubs as they please is a matter of taste into which it is not necessary to enter.

If, in point of fact, the prostrate habit is inherited, it will be interesting to see if the plant adapts itself to altered circumstances and throws off the laxness in cultivation; no doubt the process, if it takes place at all, will be so slow as to be hardly noticeable.

An unusual point about the Lily in cultivation is the precocity of the offsets, which are produced in such numbers, and bulblets removed from the parent bulb in the autumn of one year will quite commonly produce a flower or two the following year, by which time the bulbs, when suitably grown, will be found to be as large as a hen's egg. In congenial surroundings, the size rapidly increases, till, in the fifth year, one finds an enormous bulb, as much as 5 inches across, and in shape not unlike a huge Globe Artichoke. Those who have only handled the bulbs in a dry or dirty condition can have but a faint idea what a beautiful thing a well-grown bulb of *L. Henryi* is when freshly lifted and washed clean; symmetrical in shape, the large scales, like those of *L. sulphureum*, are a fine, deep, plum colour at the tips, the ruddy hue gradually shading off till, at the base of the bulb, it gives place to a warm, flesh colour, thickly spotted, and like nothing so much as the belly of a mountain trout.

The very large bulbs are not infrequently included in dealers' catalogues, but are hardly worth buying, as they cannot conveniently be lifted without breaking the mass of long, fleshy roots, with the result that, if moved, the Lily usually "sulks" for a season (as do old bulbs *L. Szovitsianum* and other sorts under similar circumstances), and, as a rule, will be caught up in growth by a younger bulb.

The cultivation of this very robust Lily does not seem to present any particular difficulty. In common with all the later-flowering species,

the plant appears to appreciate as much sun as it can get in the ordinary way, and, though doing well in divers soils and under varying conditions, thrives best, as far as one can judge, when planted about a foot down in a deep, cool, loose, leafy soil, having in it a large proportion of coarse grit. The absence or presence of lime in moderate quantities in the ground does not, apparently, make any difference to the plant, which, however, may often be observed to fail in light, sandy soils.

There is little doubt that, like many sorts, this Lily takes kindly to heavy feeding, and that is probably the reason why it grows so well in rich, open, leafy soil, with manure some way under the roots, which, in the older bulbs, often travel as much as 3 feet in search, no doubt, of food and moisture.

L. Henryi seldom seems to ripen seed when grown in the open in this country; but as the flowering season is so late in the year, there is nothing remarkable in this, and, in any case, the point is not of importance as far as reproduction is concerned, since bulbs and offsets are produced in wholesale fashion by healthy bulbs, and propagation by scales is easily managed.

Notwithstanding the vigorous growth of the plant, the foliage falls an easy prey to that curse of the Lily grower, *Botrytis cinerea*, though, unlike those of *L. candidum*, *L. testaceum*, and *L. croceum*, the bulb appears to remain unaffected. A curious point about the disease in connection with this Lily is that the upper leaves seem invariably to be attacked first, so that the mischief travels down the stem and not up, as in the case of so many other kinds. Taken in time, the progress of the disease can be arrested; but, if left too late, the stem should be cut down and every bit burnt.

Naturally rather late in making an appearance, once out of the ground in the spring, growth is extraordinarily rapid, and will often average 6 inches a week for the first month or so. When the ruddy "points" first push through the earth, the stem is sheathed in the most beautifully symmetrical way by the narrow leaves, which fall back as soon as the plant is a few inches out of the ground, and when their protecting covering is no longer needed by the young shoot. A.

The Week's Work.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Early pot vines.—The buds on vines started at the beginning of last month are now on the move, and it will be advisable to increase the atmospheric temperature of the house 5°. As soon as it can be seen that all the buds are breaking freely and evenly, the rods must be taken from their present horizontal position and secured more or less upright to the trellis, where they will remain for the season. Extreme care is still necessary in applying water to the roots, for any excessive watering would be very injurious. Each time a plant is watered it is a good plan to fill the pot with water twice, so that the cultivator may be sure that the roots are thoroughly moistened. The water should be first heated to the temperature of the house. If the heat of the plunging material falls below 70°, mix a little fresh litter with it, but use only litter that has been prepared by frequent turnings. Continue to syringe the vines until the shoots are about an inch long, but not afterwards. The atmosphere must be maintained moist afterwards by frequently damping all the available surfaces in the house.

Early Figs in pots.—Trees which were started last month may now be plunged in a moderately warm hot-bed. The atmospheric temperature may be raised to 55° at night, allowing it to rise to 60° or 65° during the day. Great care in watering, fringing, and ventilation must be practised, especially until the trees are actively growing.

Early Fig trees in borders.—The earliest permanent Fig trees may now be pruned and cleaned and thus made ready for starting. The time of closing the house will be determined by the date at which it is desired to have ripe fruits. Generally speaking, about five months is necessary for this purpose. If the trees were given proper attention during the growing season in the matter of stopping and regulating the shoots, there will be little pruning to be done now. Look carefully over the trees and cut out as many as can be spared of the old branches which are bearing but little fruiting wood. Their removal will make room for newer and more fruitful wood, which will improve the appearance and productiveness of the trees. It is best to remove all suckers unless some are necessary for furnishing the base of old trees which would otherwise be bare of any young growths. Mealy bug and red spider are special enemies of the Fig, and unless care is taken every season to cleanse the trees whilst dormant, they will occasion considerable trouble during the growing season. Wash the roof of the house and trellis thoroughly, then cleanse every portion of the trees with a strong solution of soft soap and sulphur. If the trees were very dirty last season, it will be advisable to repeat this operation later. Take away two or three inches of the surface soil, and in its place supply a good top-dressing of fresh loam with a mixture of old mortar rubble. If the trees appear to be in need of manure, some crushed bones may also be included in this top-dressing.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. Ford, Pencarrow, Cornwall.

Nepenthes.—Although these plants must have a reduced supply of water during the winter months, at no time must the roots be allowed to become quite dry. On fine days, the baskets in which the plants are growing should be syringed to maintain the roots in a moderately-moist condition, but, in addition, it is necessary to immerse the receptacles occasionally in warm water to prevent the soil in the centre becoming excessively dry. At this season an atmospheric temperature of 65° will be ample, and a little air, admitted on fine days, will assist in keeping the plants dormant.

Lily of the Valley.—For some time to come fresh crowns will take the place of the retarded roots for forcing purposes. As soon as they are obtained, the crowns should be potted, and the pots plunged to their rims out-of-doors; a layer of fresh moss placed over the crowns will serve to keep them fresh. Introduce batches into the forcing house as frequently as necessary, affording them a bottom heat of about 85°. The surface moss must be kept moist. Under these conditions flowers may be expected in about six weeks.

Chrysanthemums.—To obtain large flowers, it is necessary to insert cuttings of many of the exhibition varieties soon, but those plants to yield useful flowers for decorative purposes may well be left for fully another month. Where large-flowered plants are required in considerable numbers, a shallow frame should be placed on the staging of a house in which the atmospheric temperature is about 50°. A smaller number of plants may easily be raised under a handlight or in a box covered with a sheet of glass. Whichever method is adopted, the pots should be stood on a layer of clean ashes to ensure perfect drainage. After the cuttings are inserted apply a watering and allow the pots to drain before placing them in the frame. The glass covering should be removed for fully an hour each morning to dispel superfluous moisture, which is a common cause of "damping off." If the glass has not dried during this time, wipe off the condensed moisture before replacing it. If they are properly prepared and carefully inserted, the occasional flagging of the cuttings need cause no alarm. In any case, do not coddle them or spray the foliage frequently, for this would force the cuttings into premature growth and result in hollow stems, and, if cuttings so treated do eventually produce roots, they will fail to make satisfactory plants. Now that good single-flowered Chrysanthemums can be raised from seed sown each spring, it is to be hoped that many of the mop-headed varieties, which have no real beauty or decorative value, will disappear from cultivation. But whilst they are in demand, gardeners must grow them.

THE ORCHID HOUSES.

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

Zygopetalum.—Most *Zygopetalums* are now growing freely, and will require copious waterings at the roots as each plant becomes dry. *Z. Mackayi* produces its strong flower-spikes at this season and will need extra water until the flowers are open. When the flowering is passed, the plant may be repotted. It is a free-rooting species and requires plenty of pot room and a good depth of compost. The pots should, therefore, be filled only to about a quarter of their depth with drainage. A suitable potting compost is one consisting of good turfy loam, *Osmunda* fibre and *Sphagnum*-moss, with plenty of small crocks mixed with these. This plant, and also such species as *Z. crinitum*, *Z. Lindenii*, *Z. velatum*, *Z. leucociliatum*, *Z. Clayi*, *Z. Murrayanum*, *Z. Protheroeianum*, *Z. Gottianum*, grows well in a warm, shady corner of the intermediate house. The rare *Z. Ballii*, now in flower, requires a course of treatment identical with that recommended for *Z. Mackayi*, *Z. maxillare* and its variety *Gautieri*, which always thrives best on its imported piece of tree Fern. *Z. Gautieri* is now at rest, and should be suspended from the roof in the same house and be kept moderately moist at the root at all times. The intermediate house is also the best place for such bigeneric hybrids as *Zygo-colax Veitchii*, *Z.-c. Wiganianum*, *Z.-c. Amesianum*, *Z.-c. leopardinum*, and *Z.-c. Charlesworthii*. *Zygotopetalum rostratum* and *Z. Roeblingianum* should be grown in the warm, moist plant stove, while *Z. Burkei*, which comes from a very high altitude, requires cool-house treatment. *Zygotopetalum (Promenæa) citrinum*, *Z. Rollisonii*, *Z. micropterum*, and *Z. stapelioides* also thrive well when suspended from the roof of the cool house.

Sobralia.—The *Sobralias* that were repotted some time ago will have become re-established in the fresh compost. It is advisable to remove all the old flowering breaks, cutting them down to the roots. Afterwards tie out the young growth clear of each other so that light and air may pass freely between them. *Sobralias* require plenty of water at all times. Give the plants every encouragement to make strong healthy growth.

Dendrobiums.—Plants of *D. Wardianum*, *D. crassinode*, and their hybrids, that are now showing their flower-buds, should be kept in the cool resting house for the present; but when the buds become more prominent, the plants may be removed to the *Cattleya* or Mexican house. Water must be afforded carefully, and at long intervals, or the young shoots that develop at the base of the pseudo-bulbs will grow too quickly, and thus weaken the flowers.

Vanda.—Such plants as *Vanda teres*, *V. Hookeriana*, and the hybrid *Miss Joaquim* have now made sufficient growth for the season, and should be removed to a cooler and drier atmosphere, such as is maintained in the Mexican house during the winter, the temperature ranging between 50° and 60°. These terete-leaved plants, while at rest, should be kept less moist at the root than in summer, but not so dry as to cause the stems to shrivel, or many of the lower leaves will fall. Afford them an occasional spraying overhead on warm, sunny days. All deciduous and semi-deciduous Orchids now resting, including the *Vandas*, should be exposed to full sunlight in winter.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LODER, Bart., Leonardslee, Sussex.

Effects of grouping. Many plants are suitable for grouping which produce but a poor effect when planted in a formal manner. In some cases where it is desirable to group plants of one kind in beds or borders for the purpose of getting rich and broad effects, their appearance may be much improved by interspersing amongst them a few taller-growing species or specimens trained as standards; these will break the level which might otherwise be monotonous. One of the commonest mistakes in grouping of trees or shrubs is that of planting them too close to one another. Certain plants possessing uncommon interest, either on account of their rarity or beauty, are suitable for cultivation as isolated specimens on the lawn, where they will be seen to the best advantage. The beautiful tints of

many such plants form a splendid contrast in winter to the sombre tones of tall Cedars and Cupressus. Notice should be taken of the beautiful bark some trees have in winter. As illustrations, among many others may be mentioned species of *Cornus*, *Rubus leucodermis*, *R. biflorus*, *Acer pennsylvanicum*, *A. Davidii*, *Salix alba vitellina*, *Stephanandra Tanakæ*, and *Betula papyrifera*. Another beautiful tree, either in groups or isolated, is *Cryptomeria elegans*. The golden forms of *Cupressus* are especially attractive during winter.

Bulbs and roots.—Examine the bulbs, tubers and other roots that have been taken indoors for the winter, in order to remove any that show signs of decay, which is more likely to be present this season, owing to the wet weather in autumn.

Plants in unheated frames.—Admit plenty of air on favourable occasions, and remove decaying leaves and growing weeds. Cover the frames during severe weather with mats, and with tarpaulin. The tarpaulin will keep the mats dry, and the mats being dry will the better exclude frost. Examine the stocks of bedding plants, and, whilst refraining from stimulating them into growth, see that they are taking no harm.

Tender Roses and shrubs.—Should the weather prove severe, it will be necessary to cover tender varieties of *Roses* with dry Bracken or Heather, and a light, dry mulch of ashes or fine peat should be placed over the roots of such tender shrubs as *Solanum jasminoides*, *Hydrangea*, *Crinodendron*, *Carpenteria*, *Buddleia*, and *Callistemon*.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Fruit trees as cordons.—The cordon method of training is convenient in cases where a large number of varieties are desired in a limited space. The system was formerly employed mainly for Pears, Apples and Cherries, but it is now extensively used for other kinds of fruit, notably Gooseberries, Plums, and Red Currants. Not only do cordons possess a special value where the wall space is limited, but they enable the cultivator to plant a few choice kinds in various aspects. This has the effect of prolonging the season of dessert fruit. No other system of training affords equal results from the same amount of space.

Cordon Gooseberries.—These are advantageous in several ways: first, they usually produce better fruits than any other form of tree or bush, and, for dessert purposes, quality in Gooseberries is the first consideration. It is desirable to plant a number of cordons representing early, mid-season and late-fruiting varieties for succession. Then, too, Gooseberries trained as cordons are very convenient to work amongst, the stopping and thinning of the shoots, training, affording protection from birds; all these details can be carried out easily. If the borders at the sides of the main paths are utilised for larger kinds of fruit, the borders flanking the smaller side paths may well be used for the Gooseberries. For providing supports, upright posts should be placed about 2 or 3 feet from the edge of the path, and from these posts wires should be strained at distances of 1 foot apart to a height of 5 or 6 feet from the ground, according to circumstances. Cross-pieces of wood about 18 inches long should be nailed to the uprights, and these will serve to keep the nets, employed to protect the fruit from birds, well away from the fruit itself. The present time is the most suitable for planting, and this should be carried out in ground which has been trenched well and manured liberally. Gooseberries never succeed to their best unless they are provided liberally with plant food.

Red and White Currants.—These are grown as cordons principally on walls of cooler aspects for the purpose of continuing the supply after the bushes in the open quarters have fruited. Red Currants, for instance, will hang on a north wall, and keep in good condition until very late in autumn.

Apples.—Apples may be cultivated as cordons on walls in order to obtain early and highly-finished fruits, whether for exhibition or home use. In some of the colder localities many of the best dessert Apples never succeed to their best except in the open garden. In regard to

newly-planted fruit walls, the cultivator may often obtain crops of fruits from these before the permanent trees come into bearing, by planting a few cordons between these trees.

Pears.—Pears are probably more commonly grown as cordons than any other fruit, for by this means a good supply is obtained of first-class fruits. There are various styles of cordon-training, such as the single, double and triple, and each of these may be upright or horizontal. The horizontal cordons are recommended for planting in front of bush or pyramid trees fairly close to the edge of the path. For the purpose of training these dwarf horizontal cordons a single wire fastened to small posts at about 1 foot from the ground is sufficient.

Plums and Cherries.—These fruits likewise yield excellent results as cordons.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

French Beans.—If means exist for the cultivation of French Beans in winter, every effort should be made to maintain a continual supply, for they are generally appreciated. Winter Beans, however, are a crop that, in the shortest days of winter, necessitate an immense amount of care. Too much or too little fire-heat are equally injurious, just as is too little or too much moisture in the atmosphere. The atmospheric temperature should never exceed 60°, nor be less than 55°. A little too much heat and a slight deficiency of moisture are quite sufficient to cause an attack of red spider, and the spread of the pest will be very quick unless the conditions are altered. Whenever the weather is bright, the under part of the foliage should be syringed with soft, tepid water, at the same temperature as the atmosphere of the house. Whilst the plants must not be over-watered at the roots, at the same time they would suffer much damage if exposed to drought, even for a short time. The plants should be grown as near to the glass as possible. Those in bearing should be supplied with diluted manure water at every alternative watering. Successional plants should be thoroughly top-dressed with a moderately light mixture of fibrous loam, manure from an old Mushroom bed, and leaf-mould in equal portions, adding sufficient coarse sand to keep the soil in a porous condition. The plants should be neatly supported with brushy twigs. Successional sowings should be made in pots every 10 days or a fortnight, and care should be taken to see that the soil is provided with ample means of drainage. Canadian Wonder and Ne Plus Ultra are both excellent varieties for sowing in winter and spring. Though these varieties are longer in coming into bearing than some others, they have a vigorous constitution, which enables them to succeed in winter.

Carrots.—Provision should now be made for making a liberal sowing of Carrots under glass, either on a mild hot-bed of leaves, or, better still, at this season, in brick pits, just sufficiently heated to exclude frosts. The soil used for this purpose should be finely sifted, light in texture, and, above all, free from wireworm. There is no better material than old potting soil, but some well-decayed leaf-mould, after it has been passed through a fine sieve, or some road or river sand may be added to it, also a small quantity of fresh soot and bonemeal. It will be necessary to mix all these materials thoroughly together. When the compost is in a moderately dry condition, it should be placed firmly on the prepared beds. There are many capital stump-rooted varieties suitable for cultivation at this season, the variety Inimitable being one of the best. Sow the seeds in drills 10 inches apart. The space between these rows may be utilised for growing Radishes, forcing Cauliflowers, Cabbages, and Lettuces, without causing damage to the Carrots.

Crops in portable frames.—Admit plenty of air to these crops whenever the weather is favourable, remove the lights entirely during mild weather, but on frosty nights take means to cover the lights sufficiently to exclude the frost. Examine the plants, and remove any rubbish or decayed leaves there may be about them. Stir the surface soil frequently to keep it fresh and sweet. Parsley should be given dressings of soot from time to time.

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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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DECEMBER 13—

United Hort. Ben. & Prov. Soc. Com. meet. Nat. Chrys. Soc. Executive and Floral Coms. meet at Essex Hall, Strand.

WEDNESDAY, DECEMBER 15—

Roy. Meteorological Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—40.5°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 8 (6 P.M.): Max. 42°; Min. 32°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden London—Thursday, December 9 (10 A.M.): Bar. 30.4; Temp. 38°; Weather—Dull.

PROVINCES.—Wednesday, December 8: Max 41° Lancaster and N.W. Ireland; Min. 35° Carlisle.

SALES FOR THE ENSUING WEEK.

MONDAY AND FRIDAY—

Dutch Bulbs, Perennials and Border Plants, at 12; Roses, at 1.30, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

MONDAY—

Trimmed specimen Yews, Hollies, &c., and other Nursery Stock, at Lee's Nursery, Hounslow Road, Feltham, by Protheroe & Morris, at 11.

WEDNESDAY—

Dutch Bulbs, Herbaceous and Border Plants, Lilliums, &c., at 12; Roses, at 1.90; Palms, Azaleas, &c., at 6, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—

Thousands of miscellaneous Bulbs and Roots, at 12; 1,700 cases of Japanese Lilliums, at 2.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

Mr. James Britten.

After a period of service extending over 38 years, Mr. James Britten has retired from the Department of Botany at the British Museum. Before entering the museum in 1871, when Mr. Carruthers had just succeeded Mr. J. J. Bennett as Keeper of Botany, Mr. Britten had the advantage of two years' training as an assistant in the Kew Herbarium under Dr. (now Sir) J. D. Hooker and Professor Daniel Oliver. He was already known to British botanists as a keen student of our native flora, and had worked specially on the plants of South Buckinghamshire; in 1867 he had published a catalogue of Buckingham plants, which at the time was regarded as a Prodrromus of a complete flora of the county. It is to be regretted that Mr. Britten has hitherto been unable to find time for the more important work which is still a desideratum. Another careful piece of work was a *Contribution to a Flora of Berkshire*, a record of plants known from the county up to the date of publication (1871) arranged in tabular form, showing their distribution in the botanical divisions which were suggested for the county. An acknowledgment of the value of Mr. Britten's work is made by Mr. G. C. Druce in his *Flora of Berkshire*, published 26 years later (1897). Though Mr. Britten's name cannot be associated with the production of a

complete flora of either of the counties in the plants of which, as a young man, he was so keenly interested, British botanists none the less owe him a debt of gratitude. For 30 years he has edited the *Journal of Botany*, which, though not restricted to British botany, has been the recognised organ of students of the British flora, and contains, besides innumerable notes and records, useful lists and valuable critical papers by the best workers in this field. Special reference may be made to some of the larger contributions, several of which have been issued as supplements to the monthly parts and subsequently as independent publications. Such are Mr. Hemsley's *Outline of the Flora of Sussex*, Mr. J. E. Bagnall's *Flora of Staffordshire*, Mr. E. A. L. Batters' *Catalogue of British Marine Algae*, Mr. W. A. Clarke's *First Records of British Flowering Plants*, Mr. F. N. Garry's *Notes on the Drawings for English Botany*, and others. Mr. Britten undertook the editorship of the journal in 1880, when Dr. Trimen left London to take charge of the Ceylon Botanic Gardens, and in 1882 assumed financial as well as editorial responsibility. Since that time the journal has maintained its position as a medium for the publication of papers, mainly of systematic interest; it has also served a useful purpose as the unofficial organ of the Department of Botany of the British Museum. We may express the hope that in his retirement Mr. Britten will find time to prepare the much-needed general index.

Mr. Britten's name is especially associated with the literary and bibliographic side of botany. The general index to the journal will reveal a number of communications of this nature from the Editor's pen, and in this connection mention should be made of the classic *Dictionary of English Plant-names*, which Mr. Britten prepared, in conjunction with Robert Holland, under the auspices of the English Dialect Society (1878-1886). Another useful reference work, the *Biographical Index of British and Irish Botanists*, was published, in conjunction with Mr. G. S. Boulger, first in the pages of the journal, then as a separate work (1893); two supplements have since appeared, and the time is ripe for a new edition which will bring the whole up to date in one volume. The subject of botanical nomenclature has found, in Mr. Britten, an able exponent. A strong advocate of law as opposed to slipshod methods of so-called convenience, he was an early supporter of Dr. Otto Kuntze; the principle of strict priority seemed to afford the surest method of ensuring uniformity of nomenclature. Moreover, the literary work involved in the careful study of early, post-Linnean authors, a task which many botanists regarded with impatience, was to a man of his bent a labour of love. Mr. Britten was never happier than when successfully resuscitating one of Miller's names from the often overlooked *Dictionary of Gardening*, and was proud of having introduced John Hill to the notice of modern botanists. It was a great disappointment that official duties prevented him from attending the International Botanic Congress at Vienna in 1905 and from taking part there in the revision of the De Candolleian rules of nomenclature. In the preparation of the *List of British Seed-plants and Ferns* recently issued by the Trustees of the British Museum, in which Mr. Britten shared, his knowledge of the British flora and

of systematic literature were invaluable factors. This list, which was issued shortly after the Vienna Conference and according to the principles of the new code of rules, served as an object-lesson in the working of these rules as applied to a well-known flora.

Mr. Britten also did important service in bringing forward the work of the collectors and botanists of the eighteenth and early nineteenth centuries, whose plants are included in the collections of Sir Hans Sloane or of Sir Joseph Banks, which formed the nuclei respectively of the British Museum itself and the Department of Botany. No one appreciated this more than American botanists, who always found Mr. Britten willing to help in unravelling problems in which the plants or types of the early American collectors such as Catesby, Bartram, Walter, and others were concerned. Many valuable notes on these collectors and their plants are to be found in the numbers of the *Journal of Botany*. Mr. Britten was also responsible for the preparation of the large volume in which are reproduced the illustrations of Australian plants collected in 1770, during Captain Cook's voyage round the world in H.M.S. "Endeavour," by Sir Joseph Banks and Dr. Solander. These illustrations were made under Banks's directions, but unfortunately the work on the voyage which they were to illustrate was never published.

Previous to his retirement Mr. Britten had been engaged in the preparation of a catalogue of the Sloane Herbarium, which will shortly be issued by the Trustees as a British Museum publication. This work, for which Mr. Britten is peculiarly fitted, will form a valuable contribution towards the history of pre-Linnean botany, and will be useful in making more widely known the extent and value of the Sloane Herbarium.

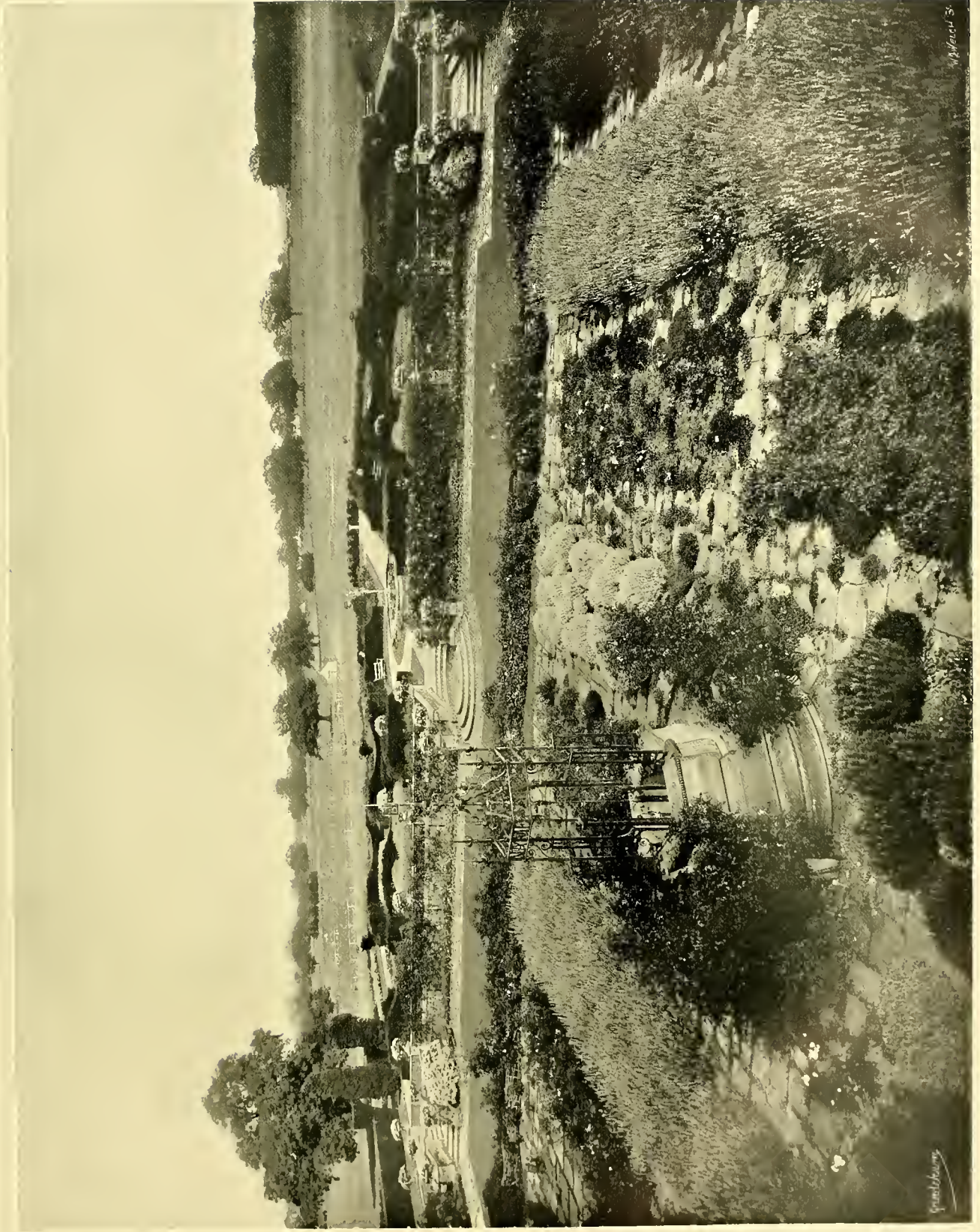
LINNEAN SOCIETY.—The next meeting will take place on Thursday, the 16th inst., at 8 p.m., when the following papers will be read:—Rev. T. R. R. STEBBING, F.R.S., "Report on the Crustacea collected by Mr. C. Crossland in the Sudanese Red Sea;" Prof. J. H. CARPENTER, "Pycnogonidia from the Red Sea and Indian Ocean, collected by Mr. C. Crossland;" Mr. R. SHELFORD, "On a Collection of Blattide preserved in Amber, from Prussia;" Rev. T. R. R. STEBBING, F.R.S., "Isopoda from the Indian Ocean and British East Africa;" Mr. A. W. WATERS, "The Bryozoa, from collections made by Mr. C. Crossland, Part II."

BIRMINGHAM CHRYSANTHEMUM SHOW, 1910.

—We are informed that the next annual show of the Birmingham and Midland Counties Chrysanthemum Fruit and Floricultural Society will be held on November 8, 9, 10, at Bingley Hall, Birmingham.

THE EXPORT OF FLOWERS FROM THE RIVIERA.

—We learn from the *Petite Revue Agricole et Horticole du Litoral* that no fewer than 879,115 parcels of flowers were despatched by parcels post from various parts of the Riviera during the winter months of 1908-9. Of this number, more than a quarter of a million of parcels were sent from Nice, and nearly a quarter of a million from Cannes, the other chief centres of distribution being Hyères, Antibes and Golf-Juan-Vallauris. The numbers compare very favourably with those of the corresponding period of the previous season, and show an increase of as many as 143,765 parcels.



Photograph by H. N. King.

VIEW IN THE GARDENS AT MADRESFIELD COURT, THE RESIDENCE OF THE RT. HON. EARL BEAUCHAMP, K.C.M.G.

MEMORIAL TO PETER BARR.—We are glad to learn that definite steps are being taken to promote a permanent memorial of the late PETER BARR. On Tuesday last a joint committee was elected from the Narcissus and Floral Committees of the Royal Horticultural Society to consider what form the memorial should take. It will be remembered that suggestions have already been made that a sum of money should be raised to maintain a pensioner on the Royal Gardeners' Orphan Fund, the annual cost being £13 a year. It appears likely that this excellent scheme will be adopted. The scheme may also include a "Barr Memorial" Medal to be awarded for Narcissi. The joint committee elected on Tuesday is composed as follows:—HENRY B. MAY,

was prepared last year, but for the present is stopped by frost. The area of the nursery at Ford has been extended, and at the present time occupies about five acres. The following seedlings for the nursery were purchased in the United Kingdom in February last:—45,000 Scots Pine, 40,000 Larch, 180,000 Spruce, 15,000 Douglas Spruce, and 5,000 Sitka Spruce; and at the same time 100,000 Spruce, which were purchased in Germany. The following plants have been ordered in the United Kingdom for direct planting on the hillside (no plants having been ordered abroad for this purpose):—150,000 Larch, 80,000 Scots Pine, 35,000 Douglas Spruce, 45,000 Silver Fir, 240,000 Spruce, and 40,000 Sitka Spruce.

well-known fact that German agriculture has been benefited greatly by the establishment of the Raiffeisen credit banks and like institutions, it is a matter of astonishment that no method of supplying the farmer with similar facilities has been adopted in this country. Nor, as would appear from an able article published in the *Times* on October 9, is the need for greater and easier banking facilities felt only by the agriculturist. The writer of the article points out that, with the merging of the private banks into the great London banks, commercial men generally find that the means open to them of procuring loans easily and cheaply have been in no small measure curtailed. It is time that this matter received serious legislative consideration. If the credit-



FIG. 175.—MADRESFIELD COURT, MALVERN.

(See p. 389.)

WILLIAM MARSHALL, J. T. BENNETT POË, CHAS. E. SHEA, REV. J. JACOBS, R. HOOPER PEARSON, W. POUPART, W. T. WARE, W. CUTHBERTSON, and C. H. CURTIS (secretary).

AFFORESTATION.—In the House of Commons, recently, Sir S. SCOTT asked the Secretary to the Treasury what progress had been made with the Government afforestation scheme in Scotland; what number of the necessary trees had been ordered in the United Kingdom, and what number in Germany or elsewhere abroad, specifying the species of tree ordered. Mr. HOBHOUSE replied that the fencing of the area to be planted during the next two years had been put up. Planting, which will extend this season to about 150 acres, has been begun upon the ground which

PRESENTATION TO MR. J. C. GOULD.—In commemoration of 60 years' connection with the firm of Messrs. CHAS. SHARP & Co., Sleaford, Mr. J. C. GOULD was on Thursday, 2nd inst., presented with a silver Rose bowl. The gift was subscribed by the employés of the nursery, the presentation being made by Mr. A. J. JESSOP.

INDUSTRIAL BANKS.—The need for assisting agriculture and kindred industries by the formation of industrial banks has been again and again urged upon those responsible for legislation in this country. Recently, and in connection with the Development Bill, attempts to bring about the foundation of these much-needed institutions have been made, though not, as it would appear, with any measure of success. Inasmuch as it is a

banks have proved a boon to German agriculture, it cannot be doubted but that they would prove of benefit to British agriculture. The Board of Agriculture would be doing a valuable service to the community if it were to circulate information on the mode of working of credit-banks in various European countries, and if, also, it would ascertain through its correspondents and its *Journal* the extent of the need for such institutions in this country.

ON CAUSES DETERMINING THE FORMATION OF RESTING-SPORES IN FUNGI.—The conditions under which various fungi produce their characteristic spores have been the subject of much investigation, which has led to interesting and unexpected results. The latest research of this

kind, conducted by Dr. HEALD and published in the 22nd annual report of the Agricultural Experiment Station of Nebraska, U.S.A., shows that the formation of perithecia, the receptacles containing the resting-spores, is determined in the case of *Melanospora pampeana*, a fungus concerned in the production of "mouldy corn," by a chemical stimulus. Grown in pure cultures the fungus fails to produce its long-necked, flask-like perithecia; but when grown in company with other fungi, e.g., species of *Fusarium*, it produces perithecia in abundance. Inasmuch as perithecia are also produced if, to the culture medium in which the mycelium of *Melanospora* is growing, there be added the remains of a *Fusarium* culture, which has been sterilised by heating to 100° C., it follows that the stimulus to perithecia-formation is not dependent on the presence of living *Fusarium*; but to some chemical substance formed by the latter fungus in the course of its growth. Every year shows more convincingly how close are the inter-relations between living things, and shows, moreover, how important it is, both in the interests of science and practice, to clear up the obscurities of these relations. It is not at all improbable that the virulence of a given fungus disease in one year as compared with another may be due to some such causes as those discovered by Dr. HEALD to be at work in the production of perithecia in *Melanospora*.

NATIONAL VEGETABLE SOCIETY.—The Secretary informs us that the work of preparing the schedule of competitive classes at the forthcoming exhibition of vegetables of this new Society is proceeding. A meeting of a specially-appointed sub-committee will be held on Monday next to arrange the details. The value of the sums offered for prizes amounts at present to £140. Every section of vegetable growers will have opportunities to compete, and practically every kind of vegetable will be represented. There is yet reason to hope that a special class for the newly-created small-holders will be provided. The Duke of PORTLAND, as president, has offered a prize of 10 guineas, which will be given in an open class for 12 dishes of distinct kinds of vegetable.

FRUIT CONGRESS AT HEXHAM, 1910.—At a meeting of representatives of gardeners' societies, and others interested in horticulture, held at the Abbey Hotel, Hexham, on November 27, it was decided that a congress and show should be held on Thursday, Friday and Saturday, October 20 to 22. Hexham was agreed upon as the most central and convenient place for the event, owing to the presence of the French gardens, suitable hall accommodation and railway facilities. The trade classes will be open, but in all other classes exhibitors must be residents in the four northern counties.

WINDOW LEAVES.—The versatility of adjustment of plants is endless, and provides a constant theme to the botanist. The most recent discovery of remarkable adaptation is provided by Drs. SCHÖNLAND and MAZLETH. The former observer describes the remarkable window-leaves which occur in South African species of *Haworthia*; the latter, the similar structures which are possessed by various South African succulents, such as species of *Bulbine*. The leaves of *Haworthia* are mainly underground, the parts exposed resembling small pebbles, so that, for those who seek among plants for analogies with animals, these *Haworthias* may be regarded as instances of mimicry. The significance of the absence of chlorophyll from the exposed part of the leaf is fairly clear. In intense sunlight, chlorophyll is destroyed: plants, therefore, exposed to intense light may be expected to show evidence of protecting their chlorophyll—assimi-

lating apparatus from this fate. Even our own ordinary plants form no green chlorophyll in the epidermis of their leaves, though the epidermal cells contain colourless rudiments of chlorophyll grains. Shade plants such as Ferns and submerged aquatics on the other hand, running no risk of damage from intense sunlight, bring their chlorophyll grains up to the light by developing them in their surface cells. In *Haworthia* and in *Bulbine* the truncated apices of the leaves form windows through which the light filters. Mitigated in intensity, it passes to the deeper green layers, which are thereby enabled, without risk of damage by too intense light, to carry on the work of carbon-assimilation. Whilst in this land of but too little sun, our broad-leaved trees spread out their chlorophyll grains in flat plates, in the leaves, in countries of intense sunlight, like South Africa, the chlorophyll is protected in an almost endless variety of ways, the most remarkable of which is that exhibited by the window-leaves of the *Haworthias* and *Bulbines*. In these plants it is protected from the glare of the mid-day sun by window-like layers of colourless tissue.

* **"TREES AND SHRUBS."**—This work is now issued in two volumes. It deals with the trees and shrubs of the British Isles, including native and acclimatised species. There are 16 full-page coloured plates, most of them good representations of the different subjects, and 70 full-page black and white plates, all of them from drawings. We have already referred to the letter-press, when reviewing the different parts. The work is not exactly a book to read, but, by reason of the facts it contains, it is a reference book for those interested in tree life, but who need accurate knowledge of the habits and structural characteristics of the species.

PUBLICATIONS RECEIVED.—*The Book of Flowers*, by Katherine Tynan and Frances Maitland. (London: Smith, Elder & Co.) Price 6s. net.—*A Preliminary Report on the Volusia Soils: Their Problems and Management*, by Earl Carr; *Fertilisers for Cotton Soils*, by Milton Whitney; *Hibernation of the Mexican Cotton Boll Weevil*, by W. E. Hinds and W. W. Yothers, under the direction of W. D. Hunter; *Some Insects Injurious to Forests (the Southern Pine Sawyer)*, by J. L. Webb, M.S.; *The Locoweed Disease*, by C. Dwight Marsh. (United States Department of Agriculture, Washington.)—*Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew, Appendix 1, 1910.* Containing list of seeds of hardy heraceous plants and of trees and shrubs. (Wyman & Sons, Ltd.) Price 2d.—*Eleventh Report of the Woburn Experimental Fruit Farm*, by the Duke of Bedford, K.G., F.R.S., and Spencer U. Pickering, M.A., F.R.S. (London: Amalgamated Press, Ltd.) Price 4s. 3d., post free; summary only, 6d. post free.—*Report of the Minister of Agriculture on Experimental Farms, Otawa.* Printed for the Government by C. H. Parmelee.—*Hayward's Botanist's Pocket Book*, revised by G. C. Druce, M.A. (London: Geo. Bell & Sons.) Price 4s. 6d. net.—*Warley Garden*, by Ellen Willmott, F.L.S., V.M.H. (London: Bernard Quaritch.) Price £1 1s.—*Income Tax Appeals and Recovery of Overpaid Tax.* (Liverpool: The Income Tax Recovery and Appeal Agency.) Post free 3d.—*Report on a Botanical Survey of Stewart Island*, by L. Cockayne, Ph.D., &c. (Wellington: John Mackay.)—*Report on the Agricultural Department for the year 1908.* Gold Coast Government Printer.—*Report on the Sand Dunes of New Zealand*, by L. Cockayne, Ph.D., &c. (Wellington: John Mackay.)—*Annual Report of the Department of Agriculture and Stock for the year 1908-9.* (Brisbane: A. J. Cumming, Queensland.)—*The Englishwoman's Year Book, 1910*, by G. E. Milton. (London: Adam & Chas. Black.) Price 2s. 6d. net.—*Who's Who,*

1910. (London: Adam & Chas. Black.) Price 10s. net.—*The Writer's and Artist's Year Book, 1910.* (London: Adam & Chas. Black.) Price 1s.—*Who's Who Year Book, 1910.* (London: Adam & Chas. Black.) Price 1s.—*Popular Bulb Culture*, by W. D. Drury. (London: L. Upcott Gill.) Price 1s. net.

IMPORTANCE OF FOWL DUNG.

ALTHOUGH the excretions from domestic fowls are only gathered in relatively small quantities, they are not without value, for they constitute a manure rich in soluble constituents, corresponding somewhat to the guano of the second grades.

In former times, when fowl rearing was more common than at present, the value of their dung was better appreciated. The ancient Romans particularly praised their pigeon dung; they gathered it in large quantities and utilised it, especially for fruit trees.

As is the case in respect to other domestic animals, the richness of poultry manure as a plant stimulant depends largely upon the character of the food the fowls consume. When they consume many insects and worms or are fed with bonemeal and meat-refuse, their voidings are much richer than if fed on grain or vegetable matter exclusively. Likewise, if pigeons are fed largely with Peas, Lentils, or Vetches, their manure will be correspondingly rich in nitrogenous plant-food.

Dr. Groff, who has experimented with domestic fowls, advises feeding them with all the fresh-ground bone they will eat. The result will be that their droppings will not only be richer for manurial purposes, but the value and number of eggs will be greatly increased. Dr. Groff gives the following analysis of fowl manure. In the case of No. 1 the hens were bone-fed, while in those of No. 2 the analysis consists of an average of four samples of dung, air-dried, from fowls fed in the ordinary way.

	Phosphoric		
	Acid.	Potash.	Nitrogen.
	Per Cent.	Per Cent.	Per Cent.
No. 1. Bone fed ...	4.36	1.64	6.01
No. 2. Ordinary fed ...	1.60	1.85	1.03

These figures show that the dung from the bone-fed fowls was about three times richer in phosphoric acid and six times richer in nitrogen than the dung from the ordinary-fed fowls.

The following table gives the amount of selected chemical constituents in one ton of poultry manure in a fresh condition:—

	Phosphoric			
	Nitrogen.	Potash.	Acid.	Lime.
	Lbs.	Lbs.	Lbs.	Lbs.
Hen ...	43	19	39	58
Pigeon ...	47	25	41	44
Duck ...	27	13	31	23
Goose ...	15	21	12	13

Poultry manure is thus shown to be an exceedingly valuable fertiliser. The richest manure is from hens and pigeons. Geese eat grass, and both ducks and geese drink large quantities of water.

We have sometimes heard the remark that poultry manure poisons plants to which it has been applied. This is simply because it is used in excess. It should be applied in moderate quantities only at a time, and for preference used in the spring, and not dug too deeply into the soil. It must be remembered that young and delicate plants are more often injured in the spring months by too much stimulating manure than by too little. Small doses frequently repeated should be the rule for early crops. This also prevents waste of plant food.

Plants growing in pots are frequently starved to death for want of sufficient food, owing to their limited soil area, and to the frequent waterings rendered necessary, hence the value of an occasional sprinkling on the surface of the soil of dried and pulverised fowl manure. The dung may also be usefully employed in making soil composts for potting purposes. *J. J. Willis, Harpenden.*

* *Trees and Shrubs of the British Isles*, by C. S. Cooper and W. Percival Westell, with drawings by C. F. Newall. (London: J. M. Dent & Co.) 2 volumes, medium quarto. Price 21s. net.

A BOTANICAL JOURNEY IN SOUTH-WEST AFRICA.

(Continued from page 370.)

GREAT NAMAQUALAND AND DAMARALAND.

GREAT NAMAQUALAND forms the southern half of German South-west Africa. It is separated from Cape Colony by the Orange River; its northern limit is a little north of the Tropic of Capricorn, coinciding approximately with a line drawn due east from the northern limit of Wal-fish Bay. It includes a great stretch of practically unexplored desert running parallel with the coast and merging, at higher elevations to the east, into the less arid region of the high plateau beyond which, and at a somewhat lower eleva-

ledge of the lower-lying desert belt along the coast has been but little advanced.

While in the desert region the rainfall is very small, and frequently wanting entirely for years together, on the plateau and among the mountains which intervene between it and the coastal belt, it is at times copious, but always local, in-constant and unreliable. In the late winter and early summer of 1909 unusually heavy rains fell in many districts, and were followed by a period of extraordinary vegetative activity; areas commonly arid and barren were suddenly converted into fields of green grass and bright flowers. In such a season the water holes are much frequented by farmers from the north, attracted by a greater supply of food for their flocks than is obtainable in their own districts. But these periods of plenty are so rare that permanent settlers are few and widely scattered. Warm-

scenery (fig. 176). Its branches are frequently laden with the enormous grass nests of the social weaver bird (*Philetærus socius*), a small creature hardly larger than a chaffinch. The lower surface of the nest is perforated in many places by passages leading into the interior of the structure, which contains "from 20 to more than 300 separate habitations." It "is added to, year by year, until either the tree in which it is built gives way, or its branches can afford room for no more material."† As in Bushmanland, the deep sand makes travelling slow and heavy, and the water holes are far apart. Such as it is, the water is, on the whole, more carefully guarded than in Bushmanland; but that attention to detail for which German administration is justly famous is more clearly seen in the condition of the transport roads, along which directions and distances are indicated by legends painted on solidly-constructed cairns.

In the latitude of Lüderitzbucht (see map in the first article), the high plateau merges into the desert about 60 miles from the coast at an elevation of 2,700 feet. The vicinity of the arid coast belt is clearly indicated by changes in the vegetation among which the following are conspicuous:—grasses become fewer; all the trees disappear save the Camelthorn and the tree *Aloë* (*A. dichotoma*); other constituents of the vegetation of the plateau—especially *Mesembryanthema* and some other succulents—consequently play a more important part in the flora; *Euphorbias* (fig. 177), similar in habit, but of more than one species, become very numerous and form by far the most dominant feature in the vegetation. The desert itself commences very abruptly. A journey of no more than 5 kilometres brings us from a plain fairly rich in species to a lower elevation at which rain rarely falls, and where the bare spaces separating each plant from its nearest neighbours are measured in scores or hundreds of yards. The water famine which prevails in the upper layers of sand is aggravated in its effects by the remarkably clear atmosphere in which distances of 50 miles, when judged by English standards, appear to be no more than 10; the sun's rays beat upon the exposed surfaces of sand and rock and heat them to such an extent that to touch them is painful. The temperature falls rapidly after sunset, and a cold mist forms before midnight; this lasts through the night, but is soon dissipated when the sun rises, except upon the hilltops, which it conceals frequently for some hours longer. This fact probably affords a partial explanation of the presence of a richer flora on the upper slopes and summits than at lower levels. Conspicuous among the few species which have been able to adapt themselves to the high degree of insolation which prevails are the *Euphorbias* already mentioned, and two *Sarcocaulons* (*Geraniaceæ*), whose thick cuticle affords a most efficient protection against evaporation. This covering, which completely envelops the stem, is rich in hydrocarbons, and burns energetically with a yellow, smoky flame; it is commonly known as the "Bushman's Candle."

The desert belt extends southwards to the Orange River, and probably beyond it, in the neighbourhood of the mouth. Apart from the German settlement at Lüderitzbucht, and a few stations on the recently-completed railway—whose water supply is mainly obtained by the condensation of sea-water—there are no permanent inhabitants save a few nomadic bushmen and Hottentots on the banks of the Orange River. Their existence is largely dependent upon that remarkable Cucurbitaceous plant the "Naras"—*Acanthosicyos horrida*—which flourishes in a wild state upon the sand-dunes of Wal-fish Bay. It is believed that it does not naturally occur so far south as the Orange River, but has been introduced there by the natives, to whom its fruits and seeds are essential



FIG. 176.—SOUTH-WEST AFRICA.

A scene on the high plateau of Great Namaqualand. The specimen of the "Camelthorn" (*Acacia giraffæ*) in the foreground bears a large nest of the Social Weaver-bird (*Philetærus socius*). In the middle distance, along a dry river bed, are bushes of *Tamarix articulata*.

tion, lies the southern end of the desert and semi-desert region of the great Kalahari. The first white man to traverse the whole length of this trackless wilderness was Sir J. E. Alexander, who left Cape Town in September, 1836, and, in the face of enormous difficulties, due mainly to the lack of water, at length arrived on the coast at Wal-fish Bay in April, 1837. The account of his journey, published in 1838,* constitutes one of the most interesting chapters in the history of the exploration of South-west Africa. Since these early days the high plateau has been crossed many times by missionaries, traders and other travellers; but our know-

bad (formerly called Nishet's Bath), an old settlement on the banks of the periodical stream Houm, a tributary of the Orange River, and the headquarters of the Bondelzwart Hottentot tribes, has assumed some importance in recent years as a military station. It is well known for its natural springs of warm water impregnated with sulphuretted hydrogen.

The flora is closely related to that of Bushmanland, except at elevations above 3,500 feet, when Bushmanland grasses, succulents, and shrubs are associated with the Camelthorn (*Acacia giraffæ*) and other *Acacias*, which are either absent or rarely met with at lower elevations south of the Orange River. On flat, sandy ground the Camelthorn is so abundantly represented that it gives a distinct character to the

* Alexander, J. E., *An Expedition of Discovery into the Interior of Africa*.

† Selater and Stark, *The Birds of South Africa*, 1900 vol. 1., p. 116.

‡ *Kew Bulletin*, 1907, plate I.

articles of food. The recently-discovered diamond field lies along the coast south of Lüderitzbucht: its exploitation is very seriously hampered by the difficulty of providing an adequate

are small, frequently minute. They possess, further, strongly-developed root systems which penetrate to considerable depths, and reach subterranean water supplies derived from the

PLANT NOTES.

MONSTERA DELICIOSA.

To grow this tropical aroid in all the magnificence of its wonderful foliage, a hothouse after the style of the lofty Kew Palm house would be required. The height to which the stems of this plant would ascend is limited only by the pillars, or, in its natural state, the trees, around which it tightly wraps its supporting, flexible roots. The amount of growth a plant makes each year in tropical heat is astonishing. The leaves, when they first appear, although destined to be strong and leathery, 2 to 3 feet long, and as much broad, are very tender and soft and of a pleasing shade of pea-green. As soon as they uncurl, these leaves are almost of full size, and the blade of the leaf hangs straight downwards—thus they are less exposed to injury from heavy tropical rains. The leaf soon matures and hardens, then it assumes a horizontal position through a stiffening of the hinge-like arrangement at the junction with the leaf-stalk which continues stiff, and at the same angle throughout. Equally interesting is the shape of the leaf; the margins are boldly cut, and the central portions perforated with irregularly-shaped holes which admit the light to the leaves growing on a lower plane. While many of its roots closely entwine their support, others hang straight down to a considerable length; they are stout, flexible and very tough. In the native habitat in Mexico, these roots are used as a rough cordage for tying bales of merchandise. Most of the fruits of Aroideæ, if not actually poisonous, are very bitter, but *Monstera deliciosa* is a remarkable exception. In this species the fruits are deliciously fragrant and luscious, so luscious that few people could eat them in great quantity, whilst with some persons they leave a somewhat unpleasant tickling sensation in the throat. The boat-shaped spathe is nearly white, and it does not fully open. It quickly discolours and falls, leaving the stout, club-like spadix to slowly mature. The fruits often take 15 or more months to ripen. The flavour of the fruits is improved if they are cut when nearly ripe and placed in a warm



FIG. 177.—SOUTH-WEST AFRICA.

Aloë dichotoma and *Euphorbias* on a barren ridge at the eastern edge of the littoral desert of Great Namaqualand (about 2,500 feet above the sea).

water supply. To the north the desert stretches continuously, but with considerable differences of breadth, through Damaraland and beyond the Cunene River, whence it is continued as a less arid belt almost to the mouth of the Congo. In Damaraland, about 200 miles north of Lüderitzbucht, and some 40 miles from the coast, *Welwitschia mirabilis* occurs in considerable numbers, in that part of the desert usually known by the Hottentot name "Namib." Here the flora is somewhat richer than farther south in Namaqualand, though the rainfall is almost a negligible quantity. With the *Welwitschia* is usually found a plant in many respects hardly less remarkable: this is *Commiphora saxicola* (Burseraceæ) a specimen of which is shown in fig. 178. The tissues of its short and corpulent stem and branches contain great quantities of water. Its leaves are very small, and probably, in some years, none at all are produced; its flowering certainly depends to some extent upon atmospheric moisture, for in very dry years some plants do not flower at all.

Broadly speaking, the vegetation of this waste may be subdivided into two classes. There are species in which the whole life of the individual is crowded into the space of a few weeks. The majority of these only appear in favourable seasons when a little more rain than usual has fallen. Their existence therefore depends primarily upon the power which the seeds possess of remaining dormant on the periodically-heated surface for periods of years of intense drought. They are further endowed with the faculty of responding promptly to a slight increase of atmospheric humidity and precipitation and of germinating with great rapidity. The bulk of the vegetation, on the other hand, is composed of woody or more or less succulent species which persist for several years. These all possess water-storing tissue to a greater or less extent, and, without exception, their leaves

drainage of the Eastern highlands, and absorbed by the thirsty ground on its way to the sea. The ephemeral parts of the plant—leaves and flowers—normally develop with great rapidity, the latter usually very profusely, and their production is to some extent dependent upon local rainfall. H. H. W. Pearson.

(To be continued.)



FIG. 178.—SOUTH-WEST AFRICA.

Commiphora saxicola, a stout-stemmed bush occurring commonly among rocks with *Welwitschia mirabilis* in the Damaraland littoral desert.

cupboard. *Monstera deliciosa*, when growing in tropical conditions, quickly assume enormous proportions, but in a glasshouse having an intermediate temperature, its growth, although equally healthy, is not nearly so rapid, and the plants fruit much more freely. At Pencarrow we fruit it regularly in such a house, and the plants, which grow against an Elm post at the end of an aquatic tank, are cut down when they have become 7 or 8 feet high. The tops of the plants, with a foot or more of stem, are inserted around the Elm post, where they quickly root. *Monstera*s growing in pots make useful subjects for use in sub-tropical groups where such are arranged in warm, sunny places. *A. C. Bartlett, Pencarrow Gardens, Cornwall.* [Our correspondent forwarded a spadix of ripe fruits with his notes.—Eds.]

FRUIT REGISTER.

THE STRAWBERRY-RASPBERRY.

This plant was introduced from Japan some-where about the year 1895, and ever since then has been cultivated in gardens in this country under a variety of names already applied to other species, so that Strawberry-Raspberry, although a misnomer, was the only name by which one could be certain of what was meant. At least three erroneous names have been given it—*R. rosaeifolius*, *R. palmatus*, and *R. sorbifolius*. The first-named is a tall, woody species, with downy leaves and stems and a branching inflorescence. The leaves of *R. palmatus* are palmately five or six-lobed, and therefore quite distinct from those of the Strawberry-Raspberry. *R. sorbifolius* has tall stems, densely covered with bristly prickles, like those of the common Raspberry, only more numerous and of a different colour. The plant under notice was described by the celebrated German botanist, Dr. W. O. Focke, in 1899, under the name of *Rubus illecebrosus*, referring to the enticing appearance of the fruit. Its distinctive characters are the glabrous, pinnate, and prickly leaves, and the annual, glabrous, prickly stems, 1 foot to 3 feet high, and bearing solitary, fragrant, white flowers of large size from the apex and from the axils of one or two of the upper leaves. The root-stock is perennial and creeps extensively. The fruit is useful for preserving and for cooking with Apples for immediate use. *J. F.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

A NEW SPINACH.—On p. 380 it is stated that *Chenopodium amaranticolor*, or the new Spinach, may not thrive in this country because it is a warmth-loving plant. However, we are already well off for leaf plants of the Spinach type. This *Chenopodium* is presumably of the same type as Good King Henry (*Chenopodium Bonus Henri-cus*), one of the oldest of garden vegetables. Of this leaf plant it is said in *The Vegetable Garden*, by M.M. Vilmorin & Andrieux, that it is "an excellent vegetable, and deserving to be more generally planted." But old as it is and good as it may be, we never see it constituting a general crop in gardens, although a few plants may be seen. Why has so useful a vegetable been thus superseded? Is it due to the fine, true Spinaches we have and which are so easily grown? It is said that the new *Chenopodium* will grow well in hot, dry seasons, when common Spinaches will not. But if seed of such a fine variety, for instance, as Longstander, be sown thinly, in succession, in shady positions, especially on the north side of walls, or between rows of tall Peas and Beans, an ample supply of leaves can be had all through the summer. Then the quality and flavour of the leaves are well known. But apart from common Spinaches, there is the free-growing, spreading New Zealand Spinach, which is rapidly becoming so popular in the market;

and single plants of which on good soil will cover a square yard of ground, and give several abundant leaf-pickings. That is specially a kind suited to tide over hot summers. Besides that kind there is the perpetual or mountain Spinach, which does well in any cool place in the garden and gives a large leaf supply over a long season; and, still farther, there is the Seakale or Beet Spinach, which is an excellent substitute for common Spinach. But with all this abundant leaf production, none of these plants can well be classed among high-class or popular vegetables. Of these latter we have a wealth of kinds and varieties. I trust, when the exhibition of the National Vegetable Society is seen at Westminster next September, it will be amply evidenced that we have the finest vegetables in the world. *A. D.*

EUCALYPTUS CORDATA.—Doubtless many readers of the *Gardeners' Chronicle* are acquainted with the beauty and elegance of *Eucalyptus cordata* as a decorative plant for summer bedding. In my opinion it is graceful and itself. My friend, Mr. A. Campbell, gardener to Lady Ardilaun, St. Ann's, Clontarf, Co. Dublin, informed me a week or two ago that he planted a plant 9 inches high, in August, 1904, in a permanent position out-of-doors. It was only slightly protected during the first winter, but it has now attained a height of 20 feet, and has beautiful, drooping branches, which sweep the ground. The specimen is now well set with flower-buds, which are white, and, when developed, are about 1 inch in diameter, resembling the flower of *Hypericum*. It is interesting to mention that seed was saved from a tree in the spring of 1904 and sown at once, and it was one of these seedlings which Mr. Campbell planted. I enclose herewith a small spray containing a number of undeveloped flower-buds. I am not aware that this *Eucalyptus* has previously flowered out-of-doors, in the United Kingdom. I think I may claim to have been the first to introduce *E. cordata* as a bedding plant some years ago. Since that time I have had many enquiries respecting the plant from all parts of the kingdom. *J. Melville, Superintendent, Finsbury Park, London.* [An illustration of the foliage of this species was given in these pages, June 30, 1888, p. 802.—Eds.]

THE JERUSALEM ARTICHOKE (see p. 374).—May I point out that Asa Gray, and all those who commonly give the same etymology, are undoubtedly wrong in connecting the epithet "Jerusalem" with the Italian "girasole"? This is merely an unfounded but plausible guess without either historical or philological foundation. As a matter of history the vegetable gained its name in England long before it was cultivated or known in Italy. Other plants, which neither in name nor in origin are connected with Italy, bear this same epithet "Jerusalem," e.g., *Phlemis fruticosa*, Jerusalem Sage; *Pulmonaria officinalis*, Jerusalem Cowslips. The meaning is simply "foreign," "outlandish," and dates from as far back as the time of the Crusades, when Jerusalem was the typically foreign place to the English mind. "Saracen" was used in the same sense, and still survives in its corruption "Sarsen." The great boulders which lie on the Marlborough Downs (most of Stonehenge was built from them) are to this day called the Sarsen, or foreign and unexplained stones. A very old Hampshire villager, once employed in my garden, always called French Beans Jerusalem Beans, the meaning being Beans introduced from abroad later than the old English Broad Bean. *G. H. Engleheart.*

The interesting notes on Jerusalem Artichokes in last week's issue refer to the use of "Helianti" as fodder, and the question is asked whether the common Jerusalem Artichoke stems have ever been "fed to cattle in this country." On two occasions in my experience I have had to clear large quarters devoted to these Artichokes before the roots were sufficiently developed to be utilised as a crop, and the tops were given to horses, cattle, and pigs with various results. In the first case, the stems were not more than 2 feet high, and were therefore in quite an early stage of growth, fresh and succulent. These were readily eaten by cattle and pigs, but horses would not touch them, though the same horses would greedily devour such apparently untempting fodder as Cow Thistles. In

the second example, the Artichoke stems were more advanced, about two-thirds of the average height, but still fresh and comparatively tender, though the stems were hardening somewhat. Neither horses nor cattle would touch these tops, and pigs would only eat the younger leaves. As to the actual food value I cannot speak, but it is obvious this would not count for much if animals would not take to such fodder. However, I give my experience for what it is worth, and should like to know more of the qualities claimed for *Helianti* as fodder. *R. Lewis Castle.*

LILIU GIGANTEUM SEED.—Early in October I notified that I would send seed of this Lily to any reader of the *Gardeners' Chronicle* who wished for some. At that time there was promise of a most abundant supply, but I regret to say that the heavy wet of October, followed by severe frost early in November, had destroyed the crop. The capsules are full of seed membranes, but the seeds are totally devoid of albumen, owing, I suppose, to the cold and wet weather prevailing since June 25. I am compelled, therefore, most reluctantly to confess myself unable this year to fulfil the request of between 30 and 40 persons who asked for seeds. I have kept their addresses, and next year, if the season is more favourable, I hope to fulfil my undertaking to them. *Herbert Maxwell, Monreith, December 6.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 7.—Although much smaller than usual, the exhibition at the fortnightly meeting in the Society's Hall, Westminster, on this date, was very varied. Some of the exhibits had remained from the recent Colonial Show, and there were others which were intended for the Carnation Show on the following day. Groups of Carnations, Cyclamen, and Begonias formed the principal subjects brought to the notice of the FLORAL COMMITTEE. Novelties in this section were fewer than usual, and only two Awards of Merit were granted by the committee, both being to new Chrysanthemums. There were, for the time of year, many good exhibits of Orchids, and two novelties were granted Awards by the ORCHID COMMITTEE.

The FRUIT and VEGETABLE COMMITTEE made no award to a novelty. An exhibit of Brassicas, shown by Messrs. SUTTON & SONS, was of more than usual interest.

Floral Committee.

Present: H. B. May, Esq., and Messrs. Geo. Paul, W. P. Thomson, Chas. E. Pearson, Chas. Dixon, W. Rain, H. J. Jones, Chas. E. Shea, Walter T. Ware, A. Kingesmill, J. T. Bennett-Poe, W. Howe, Jno. Jemings, Jas. Douglas, G. Reuthe, R. C. Notcutt, John R. C. Boscawen, E. T. Cook, James Hudson, R. Hooper Pearson, E. H. Jenkins, and W. Cuthbertson.

Carnations were shown splendidly by Mr. H. BURNETT, Guernsey, who had all the best of the standard varieties and many new kinds displayed in an attractive manner. The bright colour of the flowers impressed visitors, their high tints being indicative of the favoured climate of the island. Amongst the newer varieties we noticed May Day, which was given an Award of Merit at a recent meeting; Defiance, a notable addition to the scarlet varieties; Apple Blossom, showing a faint blush at the base of the white petals; Mrs. W. B. Clode, deep salmon; Countess of March, a seedling from the popular Enchantress, the salmon-coloured petals being fragrant; Bridesmaid, salmon-pink; Alvina, a flower of medium size, coloured a pleasing shade of cerise; and a seedling raised from Mrs. H. Burnett x Enchantress, the large bloom being blush-pink. (Silver-gilt Banksian Medal.)

Mr. W. H. PAGE, Nurseryman, Hampton, Middlesex, displayed one of his beautiful exhibits of Carnations and Lilies which always find high favour at these meetings. The fine quality of the flowers and the attractive method of displaying them cannot be too highly praised. The Lilies were shown in big clusters and included *L. longiflorum* and *L. speciosum rubrum*. The new *Pelargonium Illis Majestis*, certificated at the last meeting, and another of rose-pink colour named

Fiscal Reformer were grouped at either end of the exhibit. (Silver-gilt Banksian Medal.)

Messrs. CUTBUSH & SON, Highgate, who have exhibited Carnations at these meetings for a very considerable period, again contributed a fine display. They showed a new tree variety named Rosine, the blooms being sweet-smelling and of rose-pink colour. Mme. Barreto is also fragrant; the colour is the shade known as puce. A seedling labelled A4 has exceptionally strong stems; the colour is after Mrs. Burnett but darker. White Enchantress, The President, Winsor and other standard kinds were represented by exceptionally choice blooms. In another part of the building Messrs. CUTBUSH showed a bright group of berried shrubs, including Hollies, Perpetuas, Skimmias, Cotoneaster angustifolia and Hippophae rhamnoides, set off with Bamboos and Palms. (Silver Flora Medal.)

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, arranged, in the central transept, a kiosk decorated with Carnations. It was a very pretty feature, the columns being terminated by hanging baskets of flowers, the whole forming a gay bower of these attractive blooms. Some notable varieties were O. P. Bassett (scarlet), May Day (salmon-pink), Mrs. Crook (pale crimson, flaked with maroon), Roseate Dawn, Floriana (pale pink), and Lady Allington (deep salmon). (Silver Banksian Medal.)

An attractive group of flowering plants arranged with Ferns and Palms was shown by E. H. BROWN, Esq., Roehampton (gr. Mr. R. Bradford). In the centre was a large bank of Euphorbia (Poinsettia) with finely-developed bracts; on either side were six large pyramid-trained plants of Begonia Gloire de Lorraine and between these were arranged small pot plants of Paper White Narcissus and Lily of the Valley, with a background of Dracenas and Palms. There were also large pans of Cyripedium insigne, the plants being well bloomed. Numerous foliage plants were interspersed amongst the flowers for relief. (Silver Flora Medal.)

A considerable exhibit of Cyclamens was displayed by Rev. E. H. BUCKSTONE, Etwell, Derby. They were grouped in batches of crimson, red, pink, and white-flowered varieties, all the plants being freely flowered and with healthy foliage. (Silver Flora Medal.)

Another but smaller group of these flowers was exhibited by W. ASTOR, Esq., Taplow (gr. Mr. W. Camm). They were all of salmon colour, and made a very attractive group, the culture being excellent. (Silver Banksian Medal.)

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, again showed their beautiful hybrid Begonias, the method of staging being different on this occasion, but showing them to the very best advantage. Mingled in the group were handsome specimens of *Luculia gratissima*, a useful, winter-blooming, tender shrub; and late-flowering Chrysanthemums. (Silver-gilt Banksian Medal.)

Messrs. H. B. MAX & SONS, The Nurseries, Upper Edmonton, showed an assortment of greenhouse Ferns, well-flowered plants of *Erica melanthera*, a fine strain of *Primula obconica*, *Plumbago rosea*, and *Begonia Gloire de Lorraine* and Turford Hall. The whole made a very fine display, all the plants showing the perfection of culture. (Silver Flora Medal.)

Mr. FRANK BRAZIER, nurseryman, Caterham, Surrey, showed a floor group of Chrysanthemums, principally of decorative and single varieties, interspersed with sprays of ornamental-leaved shrubs. The new variety Mrs. W. Parker (see Awards) was represented by many attractive specimens.

Messrs. W. WELLS & Co., LTD., Merstham, Surrey, showed Chrysanthemums, principally of single and Japanese varieties. Miss Muriel Smith is a pretty flower of pale-pink colour shaded with terra-cotta. Captain Julyan (yellow), Merstham Jewel (a yellowish bronze single), R. F. Felton (rich yellow), Mrs. David Syme (white), Wells's Pink, and Bessie Evans (an incurved Japanese bloom of blush shade) were the more notable varieties.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a pretty exhibit of single and decorative Chrysanthemums and varieties of Zonal Pelargoniums. Amongst the Chrysanthemums, those labelled Miss Gweneth Wood, with Chestnut-red florets and a pretty yellow centre; Souvenir de A. Scalarandis, a fine yellow decorative variety; Mrs. Amy Collett, salmon-pink, set off by a large yellow disc; Cannell's Crimson, Cannell's White, and Mrs. Chas. Willis (single) were the

more noticeable. The Zonal Pelargoniums were shown in massive trusses of big blooms; Berlin (scarlet), Venus (white), Ascot (salmon), and Cymric Crimson (magenta) are notable varieties of their respective colours. (Silver Banksian Medal.)

Vases of single Chrysanthemums were shown by F. W. WILLIAMS, Esq., Bromyard. A good Incurved Chrysanthemum, of richest yellow colour and with hair-like eruptions on the florets, was shown by Messrs. J. & F. CHATFIELD, Southwick, Sussex.

Messrs. JOHN PEED & SON, nurserymen, West Norwood, again showed Alpine and succulent plants in pans and small pots, as at the last meeting.

Mr. L. R. RUSSELL, Richmond, Surrey, showed a group of berried shrubs, Ivies, Hollies, *Eurya latifolia*, and other ornamental-leaved plants.

Mr. JAMES DOUGLAS, Great Bookham, Surrey, showed large blooms of *Carnation Hercules* from autumn-layered plants. The colour is crimson maroon. As a winter-blooming variety, the plant is an acquisition.

AWARDS OF MERIT.

Chrysanthemum Mrs. W. Parker.—A single variety of faint blush colour, the large conical disc being an additional attraction. Shown by Mr. F. BRAZIER.

Chrysanthemum Kathleen May.—Naturally grown and disbudded sprays were shown. Those that were disbudded showed large blooms with reflexed petals and a prominent yellow "Ane-mone" centre. In the other sprays, the disc was scarcely observed, and the florets were erect and stiff. The large blooms were $\frac{1}{2}$ inches across, with several rows of petals. The colour is crimson. Shown by Mr. H. J. JONES.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), W. Bolton, W. Cobb, R. G. Thwaites, W. Boxall, F. J. Hanbury, Stuart Low, J. F. Alcock, A. A. McBean, C. H. Curtis, J. Charlesworth, J. Cypher, A. Dye, W. H. Hatcher, H. Ballantine, H. G. Alexander, Gurney Wilson, J. Wilson Potter and de B. Crawshaw.

Lt.-Col. G. L. HOLFORD, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed several fine hybrid Cyripediums, including *C. Arethusa*, which had previously secured an award; *C. Draco* (*Euryades* × *insigne magnificum*), the fine white upper sepal spotted with purple; *C. Dawn*, a well-formed flower with white dorsal sepal having a purplish central band, and pale-greenish petals and lip; and *C. Euryades leopardinum*, a very beautiful flower.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for an excellent group, principally Cyripediums, among which were a fine lot of *C. insigne Sanderae* and other varieties of *insigne*; *C. Minos*, *C. triumphans*, *C. Mme. Jules Hye*, *C. Maudie*, &c. In the centre was a fine crimson form of *Odontioda Bohnhoffiae*, and at the back some good *Laelio-Cattleyas* and hybrid *Odontoglossums*.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an effective group, in which were several very remarkable plants, the finest of which was *Cyripedium Alcibiades illustre* (*Leeanum giganteum* × *Mons. de Curte*). As the flower bore a resemblance to that of the very fine *C. Alcibiades magnificum* for which Lt.-Col. G. L. Holford received a First-class Certificate on January 9, 1906, no award was given. In effect it resembles the remarkable *C. Leeanum J. Gurney Fowler*; in size and substance it is perfect, and the large white dorsal sepal, which is broader than long, is prettily marked with dotted purple lines from a small green base. Other fine Cyripediums were *C. Lion* (see Awards), *C. Clousianum*, of unknown parentage, but bearing evidence of a fine *C. Leeanum* on one side. The flower is of good size, well balanced, the white dorsal sepal having distinct dotted lines of purple. The petals and lip are honey-yellow tinged with mahogany red. Fifteen varieties of *C. insigne* were included; several showy hybrid *Odontoglossums*, and some interesting species.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for

a varied group of good things, principally hybrids. In the centre were a group of *Calanthes*, and on one side a large batch of that richly-coloured winter flower *Laelio-Cattleya Charlesworthii*, with its bright heads of orange-red flowers, with crimson lips. A magnificent variety of *Cattleya Octave Doin* had broad, pearly-white sepals and petals and gold-veined mauve-purple lip. Several fine blotched *O. crispum* raised from seeds; a superbly-coloured new form of *O. ardentissimum*, obtained from *O. Pescatorei Charlesworthii* × *O. crispum Graireanum*; an evenly-spotted *O. Fascinator*, and various other hybrid *Odontoglossums*; some fine *Cyripediums*, including the handsome *C. Eboracum*; also some showy *Sophranitis* crosses.

Messrs. MANSELL & HATCHER, LTD., Rawdon, Leeds, secured a Silver Banksian Medal for a neat group, in which *Cyripediums* were well represented. Among these were *C. Sidney-anum*, a very attractive flower, with the white dorsal sepal effectively spotted; *C. insigne Bohnhoffianum*, with the colouring in the dorsal sepal not displayed in blotches, the upper part being very clear white; *C. triumphans*, *C. Mme. Jules Hye*, *C. Marjorie*, of fine shape; *C. Leeanum magnificum*, and other forms of *C. Leeanum*; *C. gigas superbum*, &c. Also in the group were *Brasso-Laelia Jessopii*, with pale-green sepals and petals and white fringed lip; and the pretty *Maxillaria elegantula* and *M. grandiflora*.

Messrs. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Banksian Medal for an extensive group of good *Cyripediums*. Among the varieties of *C. insigne*, one named *C. i. Ethel Cypher* was a very attractive light form; *C. Mr. F. Sander* was a remarkable flower of good shape and dark colouring, and with some appearance of *C. nitens*. Other good things included *Cyripedium G. F. Moore*, a very handsome flower; varieties of *C. Euryades*, *C. Minos Veitchii*, *C. Charlesianum Cypher's variety*, a bold flower, good dark forms of *C. Fairrieanum* and the deep-red *Masdevallia Boeking Hybrid*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed a selection of beautiful hybrid *Cyripediums*, splendidly grown, and including *C. Memoria Mostynii* (*Acteas Langleyense* × *aureum Surprise*). The delicately-tinted flowers were of good shape, and showed well the light yellow and white of *C. aureum Surprise*. The white dorsal sepal had some very small dark spots near the base, which was tinged with emerald green. *C. Etonense*, a large flower, somewhat resembling *C. Eson giganteum*; *C. The Emperor* (*Beckmannii* × *Sallieri*), shaped like *C. Beckmannii*, and nicely spotted; *C. Thalia The Baron*, with more white in the dorsal sepal than other forms; the fine *C. Elatior splendens* (*Leeanum giganteum* × *Baron Schröder*); and *C. P. G. Henriquez*, a cream-coloured flower, marked with light claret colour.

Messrs. J. & A. McBEAN, Cooksbridge, showed *Cattleya Trianae alba Kathleen*, a charming, white-petalled flower, with magenta-crimson blotch on the lip, and resembling *C. labiata Gilmeriae*; also the dark-coloured *Cyripedium Euryades New Hall Hey variety*, and cut flowers of *Laelia anceps Schröderae*.

The Duke of MARLBOROUGH, Blenheim Palace (gr. Mr. Hunter), showed *Cyripedium Lord Ivor Leonidas* × *Mrs. Wm. Mostyn*, a very darkly-coloured flower of the *C. Euryades* class.

E. ROGERSON, Esq., Oakdene, West Didsbury, Manchester (gr. Mr. W. C. Price), sent *Cyripedium insigne albidum*. This has a good, round dorsal sepal, with much white in the upper half.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr. Mr. T. W. Bond), sent *Laelio-Cattleya Susiana (maxima* × *Dayana)*, and *L.-C. Simonette (elegans Turneri* × *Ingramii)*.

Sir JEREMIAH COLMAN, Bart, V.M.H., Gatton Park, sent two very pretty plants of *Laelio-Cattleya Epicasta Colmaniae*, each with a spike of three large rose and purplish-crimson flowers.

Mr. H. A. TRACY, Twickenham, sent *Cyripedium Floryanum* (*Charlesianum* × *Leeanum giganteum*).

Messrs. STUART LOW & Co., Bush Hill Park, staged a group which included some good *Cyripediums*, *Cirrhopetalum Medusae*, with three spikes; a very beautiful *Cattleya Maggie Raphael alba*, with white sepals and petals, and carmine-rose lip with gold veining, and the handsome *Cyripedium Beryl*.

Mons. MERTENS, Mont St. Amand, Ghent showed several hybrid *Odontoglossums*.

Mr. E. V. Low, Haywards Heath, staged a small group of good *Cypripediums*, *Cymbidium erythrostylum*, *Dendrobium Dearei*, a fine plant of *Oncidium ornithorhynchum album*, &c.

AWARDS.

AWARD OF MERIT.

Cypripedium Lion (*Boadicea* × *Sallieri Hyeanum*), from Messrs. SANDER & SONS, St. Albans. This is a grand flower, in which the fine, dorsal sepal has the middle area of a soft rose tint, the upper part being pure white, and a broad, rose-purple band extending up the middle. The petals are broad of pale greenish-primrose tinged with purple, the large lip being tinged in like manner. The subdued tone of the colouring is very effective.

BOTANICAL CERTIFICATE.

Monomeria barbata Lindl., from the ROYAL BOTANIC GARDENS, Glasnevin, Dublin. A very remarkable species, which should delight all lovers of curious flowers. It is the species on which Lindley founded the genus, though afterwards named *M. Crabro*, Parish and Reich. f. It may be said to have the growth of *Bulbophyllum*, the roundish, one-leaved pseudo-bulbs being distantly placed on stoutish rhizomes. The inflorescence, at first sight, appears like that of one of the slender *Gongoras*. The stout scape is about 1 foot long, green, spotted with purple, and bearing on the upper part singular flowers, each about one inch and a quarter long, greenish, marked with red-brown. The upper sepal is ovate acuminate, and rests on the column; the lower sepals are longer and broader, and curiously folded over each other at the tips, which are greenish-white; the surface is hairy. The petals are small and fringed. The lip is poised on the upturned end of the column, to which it is so delicately hinged that it moves up and down as the position of the flower is changed, the extended, horned side lobes acting as a counterpoise to the thickened front lobe, which is viscid. It is well figured in the *Orchids of the Sikkim Himalaya*, t. 208.

Fruit and Vegetable Committee.

Present: W. Ponpart, Esq. (in the Chair), and Messrs. W. Eates, A. Dean, H. Parr, H. Markham, A. R. Allan, J. Vert, J. Jacques, J. Davis, P. D. Tuckett, G. Wythes, O. Thomas, G. Hobday, C. Foster, A. Beckett, and G. Reynolds.

An Apple submitted under the name of *Kentish Red Quarrenden* was considered identical with *Winter Quarrenden*. It was held over for comparison at the next meeting.

Mr. H. LANGSTON, of Marston, sent a round red Apple named *Red Wonder*.

Mr. W. ALLAN, Gunton Park Gardens, Norwich, showed examples of Apples *Bramley's Seedling* and another, which he claimed was that variety. Fruits similar to these latter he had exhibited for competition at a previous meeting and they were disqualified, as the variety was then considered to be *Beauty of Kent*. The general opinion was now that the variety is *Kentish Fillbasket*.

Messrs. JARMAN & Co., Chard, sent maiden Apple trees to show the damage done by vermin in eating the roots, the whole of which were destroyed. It was assumed that the injury might have been done by water rats or voles.

A singularly interesting collection of Brassicas was staged by Messrs. SUTTON & SONS, Reading. In the centre a table 30 feet long contained at the back, elevated pyramids of Sutton's Protecting Broccoli, Dwarf Blood Red Cabbages, and Perfection and Dwarf Green Curled Savoys. There were also Winningstadt and Pomeranian Cabbages, and, on the level, Savoys, Best of All, Sugar Loaf, New Year, and Reliance. There were also green and purple dwarf Arctic Kales, heads of the wild Cabbage from the sea cliffs, resembling small Thousand Head, stems of Exhibition and Dwarf Gem Brussel Sprouts. On dishes were Hearting Conve Tronchuda, Christmas Drumhead, Hybrid Brussel Sprouts, with cabbage-like heads, and trays of handsome "bulbs" of the Early White Kohl Rabi. On either side of this table were large collections of Kales, such as the Russian, Cottagers, Lark's Tongue (a very curious form), the tall Palm Tree, Dwarf Curled Scotch, Ragged Jack, and the tall Chou de la Porthe with huge leafage. At the other end were the giant purple Flanders

Kale, huge Drumhead Savoys. Thousandhead and other Kales. (Silver-gilt Knightian Medal.)

The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), set up numerous tall pyramids of Kales or Broccoli. These pyramids were from 4 to 5 feet in height, and proportionately broad. The varieties included Tall and Dwarf Green Curled, Scotch Kales, the Russian, Labrador, Cottager's, Sutton's A1, red and white variegated, with mounds of Sutton's Hybrid Hearting Kale at either end. The greens were of the usual high quality from Aldenham. (Silver Knightian Medal.)

Messrs. SHEARN & SON, Tottenham Court Road, had 26 broad baskets of Nuts of many kinds. The Giant Coconut was included; also numerous specimens of imported Jamaica Pineapples, home-grown Grapes and other fruits. (Silver Knightian Medal.)

Mrs. MILLER, Moyleen, Marlow, Bucks., showed a collection of bottled fruits and chutny sauces. (Silver Banksian Medal.)

Miss MARTIN, New York, United States, had an extensive collection of bottled fruits, Tomato soups, chutnies, and pickled Peaches. The Peas and Peaches were tasted by the Committee. They had been bottled in brandy, so that the flavour was almost wholly of this spirit. (Silver Knightian Medal.)

COMPETITIVE CLASSES.

VEGETABLES.—Mr. BECKETT was the only exhibitor in the classes for two varieties of Celery, both coloured and white kinds. He staged first-class samples of Superb Pink and Standard Bearer, and (white) Solid White and Giant White.

There was no competition in the other classes for Celery.

Mr. BECKETT was also placed 1st in the class for three varieties of Beet, having Cheltenham Greentop, Delicacy, and the Sutton Black; 2nd, The Countess COWPER, Panshanger (gr. Mr. R. Staward), with Blood Red, Sutton's Crimson, and Satisfaction.

No trade collections of herbs were staged.

The best three dishes of Carrots, distinct, were shown by Mr. BECKETT, who staged Scarlet Intermediate, New Intermediate, and Favourite. There was no other entry in this class.

In the class for two varieties of Brussel Sprouts on stems, E. J. PRESTON, Esq., Kelsey Park, Beckenham (gr. Mr. M. Webster), was awarded the 1st prize for capital samples of Dwarf Gem and Exhibition; 2nd, Mr. BECKETT, with shorter, well-sprouted stems of the same varieties.

For two dishes of Brussel Sprouts there were five entries, Mr. BECKETT being placed 1st with first-rate Exhibition and Dwarf Gem varieties. Mr. WEBSTER was awarded the 2nd prize, his Sprouts being larger and of the same varieties as Mr. BECKETT's. We preferred for 2nd place the small green and perfectly-shaped Sprouts staged from Cliveden, by Mr. CAMM.

Mr. BECKETT was the only exhibitor of two varieties of blanched Endives, having Broad Leaved and Exquisite Curled, and this exhibitor was also 1st for three varieties of Savoy Cabbages, two heads of each variety. His varieties were Reliance, Green Curled, and Best of All. Mr. STAWARD was 2nd with larger but almost white heads.

EDINBURGH SEED TRADE ASSISTANTS.

ANNUAL DINNER.

DECEMBER 2.—The annual social function of the Edinburgh Seed Trade Assistants was held in the Carlton Hotel, Edinburgh, on the evening of the above date. More than 100 members and friends were present. Mr. Wm. Newton, the well-known flower and fruit salesman, occupied the chair. After dinner was served, the Chairman proposed the loyal toasts, and then, in a short, humorous speech, proposed the toast of the Edinburgh Seed Trade Assistants. He said he had been a seed trade assistant for a considerable period, and knew well both the pleasures and discomforts of an assistant's career. He strongly advocated young men to work hard, as all, or nearly all, the hard workers were successful men. But hard mechanical work must be associated with intellectual study. The toast was accepted with much enthusiasm. Mr. Forbes replied on behalf of the assistants. The toast of the Nursery and Seed Trades was pro-

posed by Mr. J. Anderson in an appropriate speech, and replied to in a characteristically humorous speech by Mr. James Grieve, the well-known nurseryman. In addition to other toasts, the programme included music and recitations. A collection was made on behalf of the Royal Gardeners' Orphan Fund, and a sum exceeding £3 was thus obtained.

DUBLIN SEED AND NURSERY EMPLOYÉS.

DECEMBER 4.—The seventh annual dinner of the above association was held on this date in the Gresham Hotel, Dublin. About 150 members and friends were present. The president, Mr. George Watson, discharged the duties of chairman. The room was decorated with choice flowers, and, from the spectacular and social aspects, the gathering was undoubtedly one of the most notable and successful yet held under the auspices of the association.

After the usual loyal toast, Mr. MacDonough, the hon. secretary, read a number of letters of regret from persons who were unable to be present.

The toast of the Dublin Seed and Nursery Employés' Association was proposed by Mr. George Ryce, B.A., who said the association had a career of remarkable success, and its record of useful work might be envied by other organisations enjoying the benefit of much more influential patronage.

Mr. George Watson (president) replied, and commented on the great advantages enjoyed by the Dublin seed trade assistants of the present day. During the period of his apprenticeship, scarcely five per cent. of the apprentices knew anything of the sciences bearing on their business, and had no facilities for acquiring knowledge outside their daily shop routine. The association had remedied that within the past six or seven years, and, besides the intellectual benefits that had accrued from the association, there had also sprung from it a feeling of kindly fellowship among the members of the different establishments, that was in itself highly to be valued, and which he hoped would long continue.

Mr. J. S. Cuthbertson proposed the toast of "The Seed and Nursery Trade," and bore testimony to the cordial relationship existing between the employers and their employés. Mr. J. J. Egan, J.P., replied.

Mr. J. A. Rochford gave the toast of "The Guests," and thanked those who had invited the association to visit their gardens and nurseries. He also thanked those who had delivered lectures.

Mr. E. Knowlton returned thanks on behalf of the guests, and urged the desirability of fostering the bond of friendship that existed between the different houses, especially in these days of keen competition.

SMITHFIELD CLUB.

DECEMBER 6-10.—The usual exhibition of fat cattle, sheep, pigs, and poultry, together with the thousand and one articles of use to the farmer and gardener was opened on Monday last at the Agricultural Hall, Islington. The prize beasts, as usual, represented what may be termed the finished product, to which the many side shows of roots, grains, patent cattle foods, medicines, root cutters, cake mills, hay pressers, food pulpers, &c., all contribute. There were many labour-saving machines, including Potato planters and diggers, Corn elevators, manure distributors, and spraying machines.

Among the cattle the greatest interest centred around an Aberdeen Angus steer, shown by Sir RICHARD COOPER, Bart., of Shenstone Court, Lichfield. Not only did this beast win the 1st prize in its section, but it also secured the piece of plate valued at 100 guineas, offered for the best beast in the show. In addition to a silver cup valued at £50. H.M. the KING, as usual, won many prizes; his beasts surpassed all others in the three classes for Devon breed, and he showed the best Hereford steer aged more than two but not exceeding three years, whilst his Highland steer, a magnificent beast, was adjudged the finest in its class.

A useful implement was shown by Messrs. BURLAND & Sons, Bishopgate, Wigan, for

whitewashing walls, &c. It is somewhat similar to a portable spraying machine, the lime-wash being applied as a fine spray forced through a nozzle. [A portable machine for spraying with whitewash was figured in *Gardeners' Chronicle*, January 2, 1904, p. 15.] A very cheap and serviceable fencing made of Chestnut staves was shown by the FERNDEN FENCING Co., Surrey. The pales are held in position by twisted strands of wire, which is sold by the yard very cheaply. A handy telescopic ladder was shown by the PATENT SAFETY LADDER Co., Peterboro'; the height of the ladder is easily adjusted. The NORTH BRITISH RUBBER Co., Edinburgh, displayed high-class garden hose, rubber gloves for spraying operations, and many other articles in this useful material. Insecticides of all kinds were shown by Messrs. STRAWSON & Co., 79, Queen Victoria Street. Cheap fencing and gates were shown from the Marquis of EXETER's Burghley estate. Engines for haulage, pumping, threshing, ploughing, &c., were extensively exhibited. Those driven by gas power, shown by Messrs. CROSSLEY BROS., Manchester, were excellent. Messrs. RANSOME, SIMS & JEFFERIES, Ipswich, also had a selection of engines showing all the latest improvements.

In the gallery, which the King visited this year for the first time since his accession, many of the leading seed firms showed produce from their various strains of farm seeds. Messrs. JAS. CARTER & Co., High Holborn, had one of the largest stands. In the front they piled up huge roots of Mangels, Swedes, and Turnips, with a selection of Potatoes, Onions, Beet, and Carrots at the foot, with sacks of pedigree cereals. Their Black Cluster Oat is a remarkably fine variety. Some of their Mammoth Long Red Mangel were 2 feet in length. Messrs. SUTTON & SON, Reading, had also an important exhibit of roots and cereals. Mangels, which are of such importance to the stockbreeder, being shown in perfection. The centre of the stand was piled with a large group of Prize-winner Mangel, a prolific cropping variety. Golden Tankard, Golden Globe, Intermediate and Mammoth Long Red are other ponderous rooted kinds. Not the least interesting on this stand were the varieties of Grasses for pasturage. Messrs. SUTTON also showed tubers of some choice varieties of Potato; Tomato Winter Beauty, Onions, Kohl Rabi, Mushrooms, and Carrots formed other items on this interesting stand. Messrs. TOOGOOD, Southampton, also showed produce from their farm seeds and a Vegetable Marrow having a weight of 116 lbs. This received much notice in the daily Press, but our "record" book gives 242½ lbs., with a girth of 10 feet 4 inches, as the record pumpkin (see *Gardeners' Chronicle*, October 12, 1841); Giant Yellow Intermediate Mangel, Red Marvel Wheat and Broad Clover were some specialities in this exhibit. Messrs. CANNELL & SONS, London, Norwich, showed a selection of roots, including Dreadnought Green Top Swede, a hardy Turnip useful for feeding purposes in winter, as the tops are unharmed by frost. Messrs. J. K. KING & SONS, Coggeshall, Essex, displayed Mangels, Swedes and Turnips of the usual gargantuan proportions. Golden Tankard Mangel has the appearance of a very solid root. Defiance Short Top Kohl Rabi also favourably impressed us. This firm also showed Onions, Potatoes, Tomatoes, Peas, Beet, and Grass seeds. A similar display was made by the other Coggeshall firm of this name—Messrs. E. W. KING & Co. Messrs. HARRISON & SONS, Leicester, had a prominent display of Turnips, Mangels, Swedes, Onions, Potatoes, Peas, Beet, and Grasses. Messrs. WEBB & SONS, Stourbridge, were also exhibitors of produce from farm seeds. A considerable number of "seed" Potato growers showed their wares, whilst fruit was shown by Messrs. W. & J. BROWN, Peterborough; Messrs. DICKSONS, Chester; Messrs. W. HORNE & SONS, Cliffe, Rochester, Kent; and Messrs. W. SEABROOK & Co., Chelmsford.

PERPETUAL-FLOWERING CARNATION.

DECEMBER 8.—This Society held a show at the Royal Horticultural Hall, Westminster, on the above date. The exhibits were about equal in numbers to those contributed at former shows, but the quality exhibited much improvement. Several new, or, at the least, improved colours

were remarked, and one new variety received an Award of Merit.

In a class (open to members of the Society) for a group of cut Carnations, not fewer than 12 varieties, with which decorative foliage plants or cut foliage was used for effect, the 1st prize was awarded to Mr. C. F. WATERS, Deanlands, Balcombe, for a good display of choice varieties. We noted beside old favourites, Ruby, Mrs. Chas. Knopf (a pretty blush flower), Mrs. N. A. Patten, Rose Doré, Mikado, &c. 2nd, Mr. S. MORTIMER, Rowledge, Farnham, Surrey, with a collection consisting of, on the whole, smaller blooms. The finer ones were Beacon, Nelson Fisher, White Perfection, Jessica, Rose Doré, Enchantress, and Neptune (a pale yellow flower).

There was a class for three vases of 12 blooms each of American novelties distributed since January 1, 1907. The 1st prize, a challenge cup presented by the American Carnation Society, was awarded to Messrs. BELL & SHELDON, Castel Nursery, Guernsey, for, among others, May Day, Winona, and Pink Delight—the first-named variety being a very beautiful pink flower of a soft shade.

COLOUR CLASSES.

In a class for 25 blooms of any white variety, the 1st prize was awarded to Mr. W. H. LANCASHIRE, Victoria Nurseries, Guernsey, for extra fine blooms of White Perfection in choice condition; 2nd, Mr. D. M. COLLINS, Heathfield Nursery, Swanley, for White Perfection; and 3rd, Messrs. BELL & SHELDON, for the same variety, which was shown by all the exhibitors.

In the corresponding class for 25 blooms of a blush or light pink variety, the 1st prize was won by Messrs. BELL & SHELDON, with Winona; 2nd, Mr. W. H. LANCASHIRE, with Enchantress; 3rd, Mr. D. M. COLLINS, with the same variety.

For 25 blooms of a rose or salmon variety, Mr. W. H. LANCASHIRE was placed 1st with fine examples of Rose Doré; 2nd, Mr. A. F. DUTTON, Iver, Bucks., with May Day.

For 25 blooms of a deep pink or cerise variety, Messrs. BELL & SHELDON secured the 1st prize with Afterglow (very vivid in tint); 2nd, Mr. W. H. LANCASHIRE, with Mrs. T. W. LAWSON; 3rd, Mr. C. ENGELMANN, Saffron Walden, with Afterglow.

For 25 blooms of a crimson Carnation, Mr. W. H. LANCASHIRE was 1st, with President, and Mr. C. ENGELMANN 2nd, with Carola (a very large flower of much substance and smooth-edged petals); 3rd, Mr. A. SMITH, Enfield Highway.

In a similar class for a scarlet variety, the 1st prize fell to Messrs. BELL & SHELDON for Britannia. The blooms were adjudged the best shown in the colour classes, and thus received a Silver-gilt Medal offered as a special prize in this section. 2nd, Mr. LANCASHIRE, with R. Craig; 3rd, Mr. C. ENGELMANN, with Britannia.

For 25 blooms of any other colour or any fancy variety: 1st, Mr. W. H. LANCASHIRE, with Emperor (a scarlet flake fancy, with pleasing markings, the petals being smooth edged and of moderate size); 2nd, Mr. C. ENGELMANN, with Vinca (a compact flower, moderate in size, and rich purple in colour).

The 1st prize for 12 blooms of any variety not in commerce was won by Mr. C. ENGELMANN, who showed a bloom of reddish-crimson, with a dentate edge to the petals and rather more than moderate size; 2nd, Mr. A. SMITH, Enfield Highway, with Empire Day (a soft shade of pink, with petals having a dentate edge). A special prize for the best vase of Carnations exhibited in classes 3-10 inclusive, and the Society's Silver-gilt Medal were awarded with the 1st prize.

A special prize, given by Messrs. Felton & Sons, Hanover Square, was offered for the best vase of 36 blooms (either one or any number of varieties), arranged for effect. Any kind of foliage was allowed, and any or all the blooms could be wired, if artificial support was necessary. The prize was won by Messrs. BELL & SHELDON.

The best basket of Carnations arranged for effect with any kind of foliage was shown by Mrs. ALEX. ROBINSON, Nonhyrst, Park Hill, Carshalton. The exhibit was composed of small pink Carnations, Asparagus, and Golden Privet; 2nd, Mr. H. J. DUDNEY, South Road Nurseries, Erith.

Messrs. BELL & SHELDON showed the best bouquet of Carnations.

Three ladies' sprays of Carnations were best shown by Sir RANDOLF BAKER, Bart., Ranston, Blandford; 2nd, Messrs. R. FELTON & SONS, Hanover Square.

In the class for a dinner table decorated with perpetual-flowering Carnations, the best exhibit was shown by Messrs. R. F. FELTON & SONS, but they were disqualified, as the exhibit was not in accordance with the schedule. The 1st prize was awarded to Mrs. ALEXANDER ROBINSON, Park Hill, Carshalton; 2nd, Sir RANDOLF BAKER, Bart.

For a group of perpetual-flowering Carnations, arranged in a semi-circle and occupying 25 square feet. The 1st prize, with which went Lord Howard de Walden's Silver Challenge Vase, was awarded to C. F. RAPHAEL, Esq., Shenley (gr. Mr. A. Grubb), and he was also awarded the President's Challenge Cup and a Silver-gilt Medal. The blooms were large and of good quality. We noted Daheim, Rose Doré, Britannia, Enchantress, and John Peed (a rich, purple flower).

Sir R. BAKER, Bart. (gr. Mr. Usher), showed the best collection of Carnations as cut blooms. Among the flowers we noted Winsor, Britannia. Mrs. T. W. LAWSON, Ranston Gem (of orange-scarlet), Sarah Hill, White Perfection, and C. P. Bassett; 2nd, Sir DANIEL GOOCH, Bart., Highland, Chelmsford (gr. Mr. P. Wilkinson); 3rd, FRANK MAY, Esq., Radlett, Herts.

A special prize presented by Mr. W. H. PAGE, Hampton for the best six Carnation plants (six varieties, in bloom), was won by Sir RANDOLF BAKER, Bart.; 2nd, Lord HOWARD DE WALDEN, Audley End, with good blooms, but too few of them.

Sir RANDOLF BAKER, Bart., won the 1st prize offered for three Carnation plants in as many varieties.

AWARD OF MERIT.

Carnation Mary Velden, a seedling shown by Messrs. BLACKMORE & LANGDON, Twerton Hill, Bath.

ANNUAL MEETING.

The annual meeting and dinner was held on the same evening as the show, in the Hotel Windsor, about 40 being present. The chair was occupied by Mr. J. S. BRUNTON. Several toasts were proposed, and afterwards the Annual Report and Balance-sheet were submitted. The Report showed a steady increase in the membership, which at the end of October was 250, 64 new members having joined in 10 months. The balance-sheet showed a surplus of £28 11s. 5d. The officers for the new year were elected, Lord Howard de Walden being appointed president, Mr. Hayward Mathias hon. secretary, and Mr. E. F. Hawes show superintendent.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 2.—Committee present: Messrs. Ashworth, Arthur, Ashton, Cowan, Cypher, Holmes, Keeling, Parker, Shill, Sander, Thorp, Ward, Warburton, and Weathers, hon. sec.

A large number of groups were exhibited, and the following awards were made for these.

MESSRS. CYPHER & SONS, Cheltenham, Silver Medal for *Cypripediums*; G. S. BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), Silver Medal for a miscellaneous display; CLIVE COOKSON, Esq., Wylam-on-Tyne (gr. Mr. Chapman), Silver Medal for a display including Hybrid Calanthes, *Odontoglossums*, &c.; J. T. CLIFTON, Esq., Lytham (gr. Mr. Float), a Silver Medal for *Cattleyas* and *Lelias*, and a similar award for a display which included a fine specimen of *Angraecum sesquipedale*, to which a Cultural Certificate was awarded; C. PARKER, Esq., Ashton-on-Ribble, a Silver Medal for a group of *Cypripediums*; N. GALLOWAY, Esq., Great Horton, Bradford, Silver Medal for *Cypripediums*; H. J. BROMLOW, Esq., Rainhill (gr. Mr. Morgan), a Silver Medal for *Cypripediums*; J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), Silver Medal for *Cattleyas* and *Lelias*; Mrs. S. WOOD, Glossop (gr. Mr. Gould), a Silver-gilt Medal for a general display; J. H. CRAVEN, Esq. (gr. Mr. Corney), a Silver Medal for the beautiful albino hybrid *Cypripedium* × *Doltonii*, the parentage of which

MARKETS.

COVENT GARDEN, December 8.

[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.—Eos.]

Cut Flowers, &c.: Average Wholesale Prices.

Table listing various cut flowers and their prices. Includes items like Acacia longifolia, Azalea Ghent, Bouvardia, Carnations, Eucharis grandiflora, Gardenias, Gladiolus, Gypsophylla, Heather, Hyacinths, Lapageria, Lilac, Liliun auratum, Liliun longiflorum, Liliun lancifolium, Liliun of the Valley, etc.

Cut Foliage, &c.: Average Wholesale Prices.

Table listing various cut foliage and their prices. Includes items like Adiantum cuneatum, Asparagus plumosus, Berberis, Croton leaves, Cycas leaves, Galax, Grasses, Hardy foliage, Ivy, Myrtle, Oak foliage, Papyrus, Smilax, Vine leaves, etc.

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

Table listing various potted plants and their prices. Includes items like Ampelopsis Veitchii, Aralia Sieboldii, Begonia Gloire de Lorraine, Bouvardia, Chrysanthemums, Clematis, Cocos Weddelliana, Crotons, etc.

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

Table listing various potted plants and their prices. Includes items like Liliun lancifolium, Lily of the Valley, Marguerites, Pelargoniums, Zonals, Poinsettias, Selaginella, Solanums, Spiraea japonica, etc.

Fruit: Average Wholesale Prices.

Table listing various fruits and their prices. Includes items like Apples (Nova Scotia), Grapes (Canon Hall), Lemons, Oranges, Pomegranates, Bananas, Pears, Custard Apples, etc.

Vegetables: Average Wholesale Prices.

Table listing various vegetables and their prices. Includes items like Artichokes, Asparagus, Beans, Beetroot, Cabbages, Cardoons, Carrots, Cauliflowers, Celery, Cucumbers, Endive, Horseradish, Lettuces, Mushrooms, etc.

REMARKS.—Apples from Nova Scotia and California continue to sell well and realise good prices. The demand for Oranges remains about the same. Doyenné du Comice Pears from California are realising high prices. There is a slight improvement in the Grape trade. English forced Rhubarb may be had, but there is scarcely any demand before Christmas. English Tomatoes are practically finished, and the last shipment of Tenerife produce arrived, with few exceptions, in a bad condition. E. H. R., Covent Garden, Wednesday, December 8, 1909.

Potatoes.

Table listing various potato varieties and their prices. Includes items like Bedfords, British Queen, Epicure, Up-to-Date, Blacklands, Dunbars, Maincrop, etc.

REMARKS.—Prices remain about the same. The stocks of tubers in London are still heavy.—Edward J. Newborn, Covent Garden and St. Pancras, December 8, 1909.

is not recorded; and Messrs. SANDER & SONS, St. Albans, a Silver Medal for *Cypripedium* × *Alcibiades* var. *Illustrious*.

Bronze Medals were awarded to W. J. RUTHERFORD, Esq., M.P., Blackburn (gr. Mr. Lupton); Mr. H. ARTHUR BLACKBURN for *Cypripediums*, and Messrs. MANSSELL & HATCHER, Rawdon, near Leeds.

Other exhibitors who received the thanks of the Committee were Messrs. S. GRATRICK, Whalley Grange; FRANCIS WELLESLEY, Westfield, Woking; J. ROBSON, Altrincham; Wm. BOLTON, Warrington; W. R. LEE, Heywood; A. J. KEELING, STUART LOW & Co., and J. J. HOLDEN, Southport.

FIRST-CLASS CERTIFICATES.

Cypripedium Boltonii.—A beautiful white hybrid, whose parentage is not recorded. It is probably *C. insigne* Sanderæ and *C. niveum*. In style and shape it resembles the former parent, with the rich whiteness and solidity of the latter. Shown by J. H. CRAVEN, Esq., Keighley.

Cattleya × *Peetersii* var. *J. J. Holden*.—This is a cross from *C. × Hardyana* var. *alba* × *C. labiata autumnalis* var. *alba*. It is a finely-shaped flower with creamy-white sepals and petals. It shows the influence of *C. Hardyana* alba in the labellum. Shown by J. J. HOLDEN, Esq., Southport.

BRITISH GARDENERS' ASSOCIATION.

At the last meeting of the Council, Mr. R. J. Frogbrook in the chair, it was reported that 360 circular letters had been issued to candidates for the Borough Councils in reference to a minimum wage for public gardeners. Replies had been received from a considerable number (25 per cent.), nearly all being in favour of the Society's proposition. Many who replied were of opinion that a minimum wage of 30s. is too low. Thirty-two new members were elected, bringing the total membership to 1,594. J. Weathers, Secretary.

DEBATING SOCIETIES.

BANBURY AND DISTRICT GARDENERS.—The usual fortnightly meeting was held at the White Horse, Banbury, on December 3. The Mayor of Banbury presided. Mr. Chidlow, gardener to Mrs. Morrell, Headington Hill Hall, Oxford, gave a paper on "The Culture of Winter-flowering Plants."

CHEAM (SURREY) LECTURE AND RECREATION.—On Thursday, November 25, Mr. P. Aquinas, of Tiptree, Essex, gave a lecture on "Intensive Gardening on the French System." The lecturer having traced the history of intensive gardening and having described how a French intensive garden is managed, related the work done in a French garden month by month.

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. W. H. JOHNS, for 23 years Gardener to the late Mrs. J. BICKFORD, as Gardener to T. TREVITHICK, Esq., Tolray, Hayle, Cornwall.

Mr. H. B. CURREY, for the past 7½ years at Gledbow Hall Gardens, Leeds, as Gardener to R. B. HOPKINS, Esq., Moor Allerton Hall, Mordtown, Leeds.

Mr. JAMES SINFIELD, for the past 9 years Foreman at Shaw Hill Gardens, Melksham, Wiltshire, and previously at Bowood, as Gardener to G. A. LOPES, Esq., Northleigh, Bradford-on-Avon.

Mr. G. W. GOOSELL, as Gardener to J. H. FRASER, Esq., The Bungalow, Crowhurst Station, Sussex.

Mr. A. EDWARDS, late Gardener to C. T. PRICE, Esq., New Park, Brockenhurst, Hampshire, and previously at F. A. J. POULSON, Esq., Wellfield, Latham, Ormskirk.

Mr. A. TURNER, for nearly 5 years Foreman at Goodwood, as Gardener to E. G. PREYMAN, Esq., M.P., Orwell Park, Ipswich.

Mr. W. SPICER, for the past 5 years Gardener at Tissington Hall, Derbyshire, and previously at Nettleworth Manor, Nottinghamshire, as Gardener to Wm. HOLLINS, Esq., Berry Hill, Mansfield, Nottinghamshire.

Mr. H. BANFIELD, Ford Manor Gardens, Lingfield, Surrey, as Gardener to Colonel HOLDSWORTH, Garden Park, Chester.

CATALOGUES RECEIVED.

MAWSON BROS., Windermere—Trees, Shrubs, and Roses. JAMES STRECKWICK & SON, Silverhill Park, St. Leonards-on-Sea—New Cactus Dahlias and Japanese Chrysanthemums for 1910.

COVENT GARDEN FLOWER MARKET.

Growers are holding back their stocks for the Christmas trade, but there are still large supplies of Chrysanthemums. There are large supplies of Paper White and Soleil d'Or Narcissus, also Roman Hyacinths. Lily of the Valley is plentiful, but there is a great falling off in supplies of Liliun longiflorum. Callas (Richardia africana) have been making fair prices. Violets are now at their best but their prices are low. Camellias were a little dearer this morning (Wednesday). Good blooms of Roses are making slightly advanced prices, but it is difficult to state their actual value, as one or two days of bright sunshine makes a great difference in the supply: the demand also varies. Carnations have developed so slowly that many growers were unable to exhibit at the exhibition on Wednesday last, yet supplies in the market are equal to all demands.

POT PLANTS.

Some fairly good Poinsettias are seen but the cold weather has affected the trade for them. Azaleas, both white and pink varieties, are fairly well flowered. Cinerarias are good, but they are soon affected by the cold. Chrysanthemums are still plentiful and generally of very good quality. Erica hyemalis, E. gracilis, and E. gracilis nivalis are well flowered. Although marketed in pots the florists cut the sprays extensively for decorative purposes. Cyclamen are fairly good, also Begonia Gloire de Lorraine and its several varieties. Plants of Liliun longiflorum in pots have been more plentiful than the cut blooms. In foliage plants Aralia Moseri is very good, and it appears to be taking the place of A. Sieboldii. Asparagus plumosus nanus, A. Sprengeri, and A. tenuissimus are all good. Supplies of Ferns are abundant. I recently saw in a nursery 20,000 plants of Pteris tremula ready for immediate sale and large quantities coming on for succession. Other market sorts were equally abundant. Christmas trees, Holly, Mistletoe, and other Evergreens are already seen in large quantities. A. H., Covent Garden, December 8, 1909.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD OF THE weather throughout the British Islands, for the week ending December 4, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—During nearly the whole of this period the conditions were rough and very unsettled, rain falling daily over a large portion of the kingdom, while towards the end of the week many localities experienced hail, sleet, and snow. Thunder and lightning occurred in several parts of the country generally, either early or late in the week.

The temperature was below the average in Scotland, the north-east of England, and the north of Ireland, the deficit being as much as 3° in Scotland N.; elsewhere it was above it, the greatest departure being 2°7' and 2°5' respectively in England E. and S.E. The highest of the maxima were generally recorded on November 28 or 29, and ranged from 56° or 55° in many parts of the kingdom to 51° in Scotland N. and W. The lowest of the minima, which were registered on December 4, varied from 20° in Scotland N., 22° in Scotland E., and 24° in Scotland W. and England N.W. to 34° in England S.E., and to 30° in the English Channel. The lowest grass readings reported were 17° at West Linton, 18° at Crathes and Glasgow, and 20° at Aspatria and Buxton. At several other stations the readings were below 25°.

The mean temperature of the sea.—At all stations except Aberdeen and Seafeld the water was colder than during the corresponding week of last year, the greatest difference being nearly 5° at Kirkwall. The means for the week ranged from 49°8' at Seafeld, and about 49° on the south-west coast of England and at Port Erin to below 42° at most places on the north-east coasts of Great Britain.

The rainfall was largely in excess of the normal. In several districts the fall was more than twice as much as the average, and in the English Channel more than three times as much. Falls of an inch or more in one day were experienced over a wide area, generally either on Sunday, Monday, or Thursday. In some Scottish localities there was more than an inch both on Sunday and Monday, the largest fall in any one day being 2·68 inches at Fort William on Sunday. The highest total for the week was 4·25 inches at Fort William and Llangamarch Wells; at Buxton the total was 4·21 inches, and at Bettws-y-Coed 4·19 inches.

The bright sunshine just equalled the normal in Scotland E. and W., and also in England S.E., and slightly exceeded it in Scotland N. and Ireland S., but elsewhere it was deficient. The percentage of the possible duration was 24 in Ireland S. and 20 in England S.E., but only 10 in the Midland Counties and the English Channel, and 9 in England N.W.

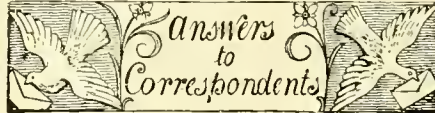
THE WEATHER IN WEST HERTS.

Week ending December 8.

A very wet week.—The mild weather mentioned in the last report only lasted six days, after which a return to lower temperatures took place. On the first two days of the past week the highest reading in the thermometer screen was 52°, whereas four days later it was only 35°. On the coldest night the exposed thermometer registered 11° of frost. The ground temperatures are now 2° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Rain or snow has fallen on each day as yet this month, and to the aggregate depth of 1½ inch, or nearly half the average fall for the whole month. During the week 53 gallons of rainwater has come through the bare soil percolation gauge, and 5½ gallons through that on which short grass is growing. The sun shone on an average for 1½ hours a day, or for 20 minutes a day longer than is usual in the early part of December. The wind was very high during the first three days of the week, but since then light airs have, as a rule, prevailed. In the windiest hour, during the early morning of the 3rd inst., the mean velocity amounted to 26 miles—direction W.S.W. This is the highest wind recorded here since December 14, 1907. The average amount of moisture in the air at 8 p.m. exceeded a seasonable quantity for that hour by 5 per cent. At 5 a.m. on the 3rd inst. the corrected reading of the barometer was 28·48 inches—the lowest reading registered here since December 21, 1870, or for 10 years. E. M., Berkhamsted, December 8, 1909.

NEW INVENTION.

MR. C. E. WEST, horticultural sundriesman, Higham Hill sends samples of a new zinc wall fastener for trees. It consists of a piece of metal about the shape and size of an ordinary nailing shred with slots at either end, so that when bent around the shoot the nail can be driven through. The bottom part of the holes are large enough to permit of the head of the nail passing through at such times, as it is necessary to unloop the fastener. It is claimed that by their use shoots can be detached from a wall for pruning or cleansing, and almost instantly be put back again without nailing.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

APPLE GOLDEN NOBLE: L. L. This variety is always classed as a culinary Apple, and we have never seen it shown as a dessert variety at exhibitions. In the list of culinary and dessert Apples, published in the R.H.S. Rules for Judging, it is clearly defined as a cooking Apple. Dr. Hogg also, in his *Fruit Manual*, states that it is a culinary variety and makes no mention of it ever being used for dessert purposes.

BEGONIA GLOIRE DE LORRAINE: P. H. No disease is present. The injured condition of the leaves has been caused by some error in culture, probably excess of moisture in the plant-house.

BUDDELEIA VARIABILIS: L. T. P. Defer the transplanting of this plant until the spring-time. The Pine tree can be shifted at once, selecting a time when the weather is fairly mild, and the ground damp, but not too wet. Cuttings of Buddleia should be inserted in late summer, placing them under hand-lights in a cool, frost-proof pit. They will root slowly during the winter, and, when they are potted off in spring-time, they should be plunged in a bottom heat of 60° to 65°.

CARNATION RUST: P. D. It is best to cut off all the affected leaves and burn them. Although this will spoil the appearance of the plants for a time, it is the most effectual remedy. Spraying with potassium sulphide will serve to check the spread of the disease.

CHRYSANTHEMUM: G. C. Decay in the centre of the flower arises from a variety of causes, including an excess of manurial stimulant, too much moisture at the roots and in the atmosphere, and from injury to the bud. You will, no doubt, know which of these causes is responsible for the failure of your blooms.

CHRYSANTHEMUM SPORT: A. E. C. The bronze variety has arisen as a sport, and you should perpetuate it by inserting cuttings. Next season submit flowers at one of the National Chrysanthemum Society's meetings for the consideration of the Floral Committee. The Cyclamen seedlings are attacked by the damping-off fungus (Pythium De Baryanum). Damping off usually arises through overcrowding in the seed-pans and a too moist and stagnant atmosphere. Pick out those that have the disease and burn them; sprinkle some dry sand over the surface of the pot, at the same time placing it in a dry situation.

CYCLAMEN LIBANOTICUM: B. L. The Lehannm Cyclamen, although not hardy under all circumstances, would succeed in such a warm situation as you describe. The soil will need to be specially prepared, and if it be of a clayey nature, with a very moist subsoil, you should mix with it liberal quantities of sandstone, brick rubble, old plaster or mortar rubbish. The plants succeed best in the dry positions within the rooting area of trees or shrubs. Not only do they receive protection from cold in such places, but the soil suits them better than the richer staple in more highly cultivated ground. The corms should be inserted about 3 inches deep.

FORCING VEGETABLES: A. T. The forcing of Potatoes, Seakale, Asparagus, Rhubarb or Mushrooms on a hot-bed of manure requires the most careful judgment. Hot-beds should consist mainly of tree leaves, the rest being stable manure. Potatoes will hardly give satisfactory results under such conditions. Those forced under very mild circumstances should be fit for lifting in from 10 to 15 weeks, according to the variety. Seakale and Rhubarb forced under proper conditions, will take from three to eight weeks, according to the season of the year; Asparagus from three to five weeks, and Mushrooms from 8 to 12 weeks. Seakale, Rhubarb and Mushrooms are all best brought forward in a dark shed specially set apart for the purpose. Experience and observation must decide when to replenish the fermenting material between the frames.

FRENCH AND GERMAN DIRECTORY OF GAROENS: J. S. & Co. Thalacker's Adressbuch für den deutschen Gartenbau und Kalender (Bernard Thalacker, Leipzig-Gohlis. Price, not including postage, 2.50 marks). We know of no Directory of gardeners and nurserymen published in France.

GUN LICENCE: Gun. No licence is required by the occupier of any land using fire-arms for the purpose of scaring birds or killing vermin.

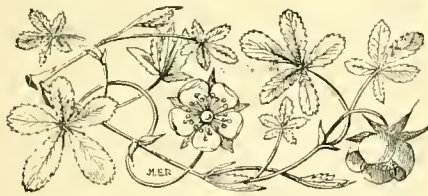
NAMES OF FRUITS: A. Fisher. The fruits were badly packed. 1, Very much bruised, it cannot be identified; 2, Cheshunt Pippin; 3 and 6, King of the Pippins; 4, bruised, but looks like Lane's Prince Albert; 5, Blenheim Pippin; 7, Court of Wick.—E. G. Horner. Knight's Monarch.—E. E. R. 1, Bellissime d'Hiver; 2, Prince Consort; 3, Bergamotte Esperen; 4, Beurre Diel; 5, Catillac; 6, Glou Morceau; 7, decayed; 8, Duchesse de Bordeaux; 9, Josephine de Malines.—G. White. 1, Sussex Nanny; 2, D'Arcy Spice; 3, Small's Admirable; 4, Castle Major; 5, Dumelow's Seedling; 6, Dutch Codlin; 7, not recognised, probably a local variety; Pear Beurre Clairegeau.

NAMES OF PLANTS: C. R. Nerine undulata.—P. H. 1, Marañiz Makoyana; 2, Acalypha marginata; 3, A. Macleana; 4, A. tricolor; 5, Eranthemum variegatum.—P. W. J. 1, Eupatorium Weinmannianum; 2, Eupatorium petiolare (illustrated in the *Gardeners' Chronicle*, March 12, 1904, p. 163); 3, Adiantum cuneatum elegans; 4, Carex riparia variegata.—O. R. 1, Masdevallia triaristella; 2, Rodriguezia secunda; 3, Oncidium flexuosum; 4, Epidendrum dichromum.—A. B. H. Lycaete costata.—W. B. All varieties of Sonerila and almost identical with the Sonerila Hendersonii raised many years ago between S. margaritacea, and a species which appeared with an Orchid said to have been imported from Borneo.—W. D. Abelia rupestris.

PRESERVING FRUIT NETS: G. M. Fishermen preserve their nets by either boiling them in tan water or dipping them in linseed oil. Procure some tan from a tannery, place it in a caldron with water, and when the liquid is boiling dip the nets several times into it. The linseed oil should also be boiled, and after the nets are steeped in it they should be spread out to dry. You might adopt either of these methods.

VIOLETS: T. M. The leaves are badly affected with disease (Ascochyta violae). As your plants have failed for two seasons your best plan is to start with a new stock, destroying your old plants by burning them. Remove all the old soil from the frames and bury it in a distant part of the garden; thoroughly cleanse the woodwork and all parts of the frame with warm water, with a little carbolic acid and plenty of soft soap added. If you can select fresh frames for their culture you will be less likely to be troubled again with the disease. You will find particulars respecting the best soil for Violets and details of their culture in the issue for April 11, 1908, p. 234.

Communications Received.—W. E. G.—H. H. W. P.—W. P. H.—Sir Edmund G. L.—W. A. C.—J. G. W.—E. P.—W. F. R.—J. M.—A. & B.—W. W. Naunton.—J. R. J.—W. W. P.—J. E. T.—G. G. M. D.—Malta—M. H., Edinburgh—H. C. & S.—R. A. D.—J. S.—M. H., Letchworth—J. G. W., Berlin—A. O.—Dr. Kranzlin—W. D.—J. O. B.—J. C.—J. T.—R. P. V.—W. L., Texas.—Chloris—W. W.—W. G.—E. H. J.—G. F.—A. L., Manila—W. J. G.—A. R. S.—M. A. J.—W. E. G.—S. Ely—Constant Reader—W. E.—A. G. S.—A. J. C.—T. H.



THE
Gardeners' Chronicle

No. 1,199.—SATURDAY, December 18, 1909.

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THE EFFECT OF GRASS ON TREES.

THE effect of grass on trees is probably intimately connected with that fundamental question in agriculture to which no comprehensive answer has yet been obtained, namely, the fertility of the soil. The casual observer may dismiss the subject by stating that it is simply due to the grass robbing the tree of its nourishment or its moisture, but such a statement can only be based on ignorance of the facts, and of all the work which has been done in the matter. The subject has been under investigation at the Woburn Experimental Fruit Farm for the last 15 years: one report (the third) dealing with it was published in 1903, and it is hoped that another will be issued before very long.

Although no final solution of the problem has yet been obtained, considerable progress has been made in the matter, and various possible explanations have been definitely negated. Foremost amongst these is the theory that the action is due to the grass absorbing all the food and water from the soil. The original experiments are, perhaps, the most striking, though not the most precise, on this point. A large number of Apple trees were planted in rows, 11 feet apart, in 1904: the ground in one row was kept tilled, and that in the other row laid down to grass; the grass, when cut, is left to rot on the ground,

and the same amount of manure is given to both rows of trees. Those in the tilled soil are now such large trees that half of them have had to be removed, their spread being some 15 to 16 feet; these in grass did not grow at all for several years, and only began to make growth when their roots extended beyond the grassed area; they are still miserable specimens of trees, about one-sixth the size of the others, and the crops borne by them have only been about one-tenth of that of their neighbours. Yet the grassed soil is actually richer than the tilled soil. In the 15 years it has had removed from it only one crop of grass (that actually growing at any given moment), and the small amount of material required for the stunted growth of the trees; whereas, from the tilled soil there has been removed material for an annual crop of fruit, and also for the vigorous growth of the trees. Analysis also shows that the grassed soil is the richer of the two, and it also shows that, in this particular case, there is practically no difference between the water contents of the grassed and open plots.

Of the many other experiments on these points, the most conclusive are, perhaps, those made with Apple trees grown in pots. In some of these the grass roots were separated from the tree roots by very fine wire gauze, through which the former could not penetrate; the pots were weighed and watered every two days, so as to keep the water contents the same, and such water and food as was added, was introduced from below, so that the tree should have the first pull at it. Yet the trees still suffered badly from the grass, although the soil was actually moister and richer than in the case of similar trees without grass. Corresponding experiments have been made with trees planted in the open. Though increase of moisture up to a certain point, and increase of food in certain cases, may benefit the trees, the benefit is much too small to do more than very slightly diminish the deleterious effect of the grass.

The behaviour of a tree in grass is clearly a case of starvation in a land of plenty, and this cannot be explained by supposing (untenable as such a supposition is for other reasons) that the grass roots suck up whatever nourishing solution there is in the soil, leaving none for the tree roots. The pot experiments, just quoted, effectively negative this. Nor can we explain the matter by supposing that the tree was only temporarily affected by the grass, but, being in a weak state after transplanting, this check resulted in its becoming permanently stunted; for a precisely similar, and even more marked effect has been proved to be produced by grassing over trees which have been established, in one case for four years, and in another case for 12 years; the effect, indeed, was so great that, in the first instance, many of the trees have been killed, and, in the second instance, a similar result appears imminent.

Other explanations which suggested themselves have been investigated, and found equally unacceptable: these were differences in soil temperature, differences in aeration or proportion of carbon dioxide, and difference in the physical condition of the soil. The only other explanation which appears to be possible is that the growth of the grass results in the formation of some substance which is poisonous to the tree. This may be an active poison—a toxin—or the poisonous

action may result from an alteration in the proportion of various substances present in the soil. An active poison may be produced in various ways, such as by the decomposition of the debris of the grass, actual excretion from the grass roots, or as a product of the bacteria present in the soil. As to the origin of the toxin, no definite evidence has yet been obtained, but it has been found that toxins may be formed in soils by heat, and other means, producing effects which are analogous in many respects with those produced by grass on trees. Thus, on heating soil, substances are produced which are toxic towards the germination of seeds, and these have been found to be toxic towards plant growth also. That established plants grow better in heated than in unheated soil, is due to the fact that heating causes a considerable increase in the soluble nitrogen present in the soil, and also in the composition of the bacterial flora of the soil. Moreover, the toxin formed as the result of heating the soil soon becomes oxidised and destroyed, allowing the favourable conditions to assert themselves. If, however, the toxin is present in sufficient quantity, it is not all destroyed before the plant grows, and its deleterious effect becomes apparent. It is noticeable that this effect varies greatly in different cases, and is very much less in the case of grasses than in that of the other plants which have been examined. Earth from grassed ground behaves in the same way as earth which has been slightly heated and which contains only a limited amount of toxic matter, for trees planted in it (the grass being removed) do better than in soil taken from tilled ground, such toxic matter as there was present in it having evidently become destroyed before the tree started into growth: whether its presence originally in soil can be established by its effect on germinating seeds, still remains to be seen.

If the formation of a toxic substance is the explanation of the grass effect, we might naturally expect great variations in this effect in different soils: and this is certainly the case. At Ridgmont the effect is, perhaps, greater than in any other instance which has come under the writer's observation, but cases of very nearly the same intensity have been found in various parts of the kingdom, whilst only one instance has been noticed where the grass, apparently, had no effect. This variation in intensity with the nature of the soil is, probably, the chief reason why the action is not more widely recognised; but two other causes contribute to an under-estimation of the grass effect, the one that it is very rare for a plantation to be partly grassed in such a way as to give satisfactory evidence as to the bad effect of this grassing; the other, that the grassing is generally effected gradually, extending throughout several seasons, and in that case, it has been found, the effects are far less marked than they otherwise are, the trees, apparently, becoming gradually adapted to the altered conditions.

No definite connection has yet been found between the nature of the soil and the intensity of the action, but it does not appear to be governed by the richness of the soil. The case, alluded to above, in which the action has been nil, cannot be explained by any greater depth of soil into which the tree roots penetrate, thus getting away from the grass roots, for many of the trees have been grafted, and all have been found to have their roots near the surface. *Spencer Pickering.*

NOTES ON IRISES.

POLLEN GRAINS AS A MEANS OF CLASSIFICATION.

HITHERTO, as far as I have been able to discover, very little attention has been paid to pollen grains as a means of classification or as a help to the determination of the relationship between the various species of a genus. The reason probably, is that systematic botanists are usually content to know dried herbarium specimens without having recourse to living plants; and herbarium specimens seldom offer facilities for the examination of the pollen.

During the past year I have examined microscopically the pollen grains of about two-thirds of the known species of *Iris*, which number in all about 270. Among them I have observed at least four distinct types, which agree to a large extent, but not in all respects, with the usual grouping of the species. So far, I have not obtained much help from this examination towards

the use for, the spines on the surface of the grains, I can make no suggestion, and it would indeed be interesting to find any explanation of the phenomenon or to hear from workers on other genera whether they have observed similar anomalies. W. R. Dykes, *Charterhouse, Godalming*.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM INSIGNE AT DELAMERE HOUSE GARDENS.

SOME remarkably fine blooms of *Cypripedium insigne* were recently sent us by Mr. John Thompson, Delamere House Gardens, Norwich. Accompanying the flowers were photographs showing the plants in flower, and these were so well flowered that we asked Mr. Thompson to describe their treatment, which is as follows:—They are grown in a mixture of three parts fibrous loam

grown principally for supplying cut flowers. Of *Cypripedium*, *C. callosum* is the species chiefly grown. Besides this species, *C. Curtisii*, *C. Lathamianum* and *C. insigne* are grown. *Cattleya Schröderæ*, *C. Trianaei* and *C. labiata* are also grown in great numbers. It is seldom that one observes such large quantities of Orchids growing with so great a degree of vigour and health as is the case at this establishment. There is a magnificent lot of *Phalenopsis Schilleriana* and *P. amabilis*. *Dendrobium*, it is strange to state, are but little cultivated. Mr. Welzel's customers, in many instances, objecting to the too great variegation and spottiness of the blossoms, and to their loss of vigour, owing to much cutting, so that every two years the plants must be renewed. The cultivation of *Vanda cœrulea* and *Oncidium varicosum Rogersii* has been increased, and that of *Lycaste Skinneri* lessened, its blooms, which at one time sold better, being now less popular



FIG. 179.—THUNBERGIA FRAGRANS VAR. LEVIS: FLOWERS PURE WHITE.

[Photograph by C. P. Raffill.]

the arrangement of the species within each group, but a few curious facts have come to light.

In only one case—in that of the well-defined group of the Juno Irises—are the grains spherical. In all other species, as far as I have been able to examine them, the outline is a more or less pointed oval. In the case of these spherical grains, the surface is covered with a number of hexagonal bosses, which, in their turn, are covered with a network of irregular markings and separated from each other by comparatively deep, smooth channels. The number of bosses on each grain seems to decrease with the size and vigour of the plant. Thus *persica* and *caucassica* have each about 20 bosses to the grain, while *buhariaea* and *Warleyensis* have only from seven to ten or twelve.

There is, however, one remarkable fact about the Juno group, and that is that there are two species whose pollen can be at once recognised as unlike that of all the others. In these two cases the grains are still spherical in outline, but closely set all over with small spines. I think that on some grains I have been able to trace very faint and shallow hexagonal markings, but on this point I do not feel very certain, for I usually fail entirely to see any sign of them. The species in question are the two Mediterranean representatives of the group that flower long before any of their Asiatic relatives, namely, *alata* and *palaestina*. As to what may be the cause of, or

and one part peat, with a few small crocks intermixed to keep the compost porous. They are examined at the roots each year and repotted as required; the pots range from 3½ inches up to 10 inches in diameter. The total number of flowers on the various plants is 590. After flowering, the plants are wintered in a temperature of 40° to 45°. They are transferred to cold frames about the second week of May until the latter end of September. During the summer the lights are only used in the daytime for the purpose of placing shading over the plants, and they are removed altogether when the sun is on the wane, remaining off until early noon the next day. They are exposed to rains and dews. During the growing season the plants are given light doses of manurial stimulants. The plants were exposed to 6° of frost during the month of February, 1908.

HOUSE BERGLINDEN.

THOSE who visit the old-world town of Naumburg, near Weimar, and have the time to pay visits to the nurseries, should climb to Spechsart, to the House Berglinden, and direct their steps to the handsome Herrenhaus, and let Mr. Obergärtner Welzel, many years manager of the nursery and garden, show them the plant treasures and cultures. The chief plants cultivated are the autumn, winter, and spring-flowering Orchids, the stock numbering about 7,000 plants. They are

than *Cattleyas*. Besides Orchids, *Begonias* of the *Gloire de Lorraine* type, English *Pelargoniums* and *Cyclamen* are largely cultivated. F.

THUNBERGIA FRAGRANS VAR. LEVIS.

THE twining *Thunbergia* is a very free-flowering plant, and in a stove or warm greenhouse it will blossom practically through the whole year. The growths, being slender and twining, are suitable for training round the smaller pillars in a warm greenhouse, or they may be trained to small wire balloons or even to a tripod formed of three stakes. In the *Begonia* house at Kew, where the spray of blooms shown in fig. 179 was photographed, several plants are arranged on the front of the stage and trained up wires to the roof. The pure white flowers are 2 inches across: they are freely produced from the leaf-axils. Unlike the species, the variety *levis* is not fragrant. Plants are readily propagated from seeds, which are freely produced, and also from cuttings inserted in spring. For repotting the plants a compost of fibrous loam, leaf-mould, and coarse sand is suitable. *Thunbergia fragrans* is a native of the East Indies, where it grows in hedges and bushes on the banks of streams. It is especially plentiful on bushes along the water courses in districts of the Coromandel coast. A. O.

MADRESFIELD COURT.

(Concluded from page 390.)

THE bowling green is sheltered on three sides by splendid Yew hedges. On one side recesses are formed, in which are placed marble busts of the Cæsars, forming an interesting out-of-door sculpture gallery.

Thence I entered the pleasure ground or arboretum. It may, I think, rightly be claimed that Earl Beauchamp possesses some of the finest Conifers in the Kingdom. They were planted by the late earl some 40 or 50 years ago. As the hardy flowers are the charm of these grounds in spring, summer and autumn, so are the handsome and stately trees their glory in winter. On emerging from the bowling green I stood in front of an avenue of *Cedrus atlantica glauca* a quarter of a mile in length, the trees being from 40 feet to 50 feet in height and well clothed down to the grass. Need I describe the effect of these two huge banks of silvery foliage, bursting at once on the view, or the expression of delight it evoked? For all who love trees

it has enabled the present owner to convert the larger spaces between the trees into a rare garden of hardy ornamental-flowering and foliage trees and shrubs, and of bulbous plants. It is safe to say that there is no hardy tree, shrub, bulb, or herbaceous plant of merit introduced of late years which has not found a home in these gardens. It is his lordship's desire that his out-of-door garden shall never be found without flowers throughout the year. In late winter, spring, and early summer, it is aglow with bulbs, commencing with the Aconite, Snowdrop, *Chionodoxa*, *Crocus*, early and late *Narcissi*, Dog's Tooth Violets, Anemones, bulbous *Saxifragas*, and later with *Tulips*. In the autumn hardy *Cyclamen* and autumn *Crocuses*, not in tiny patches, but in broad masses of thousands, wherever there is a point of vantage in the grass in which they could be placed, provide masses of colour. This colour effect is continued throughout the summer with *Irises* and *Lilies*, with flowering and foliage shrubs and trees, and, later in the autumn, with brightly-coloured, bold-habited and hardy herbaceous plants.

The practice of grouping in masses of one

another extremely bright garden of annuals. It is named Lady Mary's garden, and is formed in the shape of the Greek M, with grass paths. Leaving this, and proceeding through the Lavender garden and by the Eglantine walk, I came to the maze and to the skating pond and island water garden, where all the popular forms of *Iris germanica*, *I. pallida*, and *I. Kæmpferi* are grown.

THE KITCHEN GARDEN.

This includes a walled-in portion of three to four acres, and another part outside the walls of about the same area. The soil is nearly a pure clay. Land of this character has its advantages as well as its disadvantages, for, when subjected to deep and thorough cultivation, it can support crops of fruit or vegetables, without exhaustion in trying summers, so that there are seldom any failures. Evidence of this was reflected in the splendid crops of fruit, vegetables, and salads seen in these gardens.

The collections of Apples, Pears, Peaches, Plums, Apricots, and Cherries are so extensive, and the varieties so numerous, that it is impossible, from considerations of space, for me to do more than briefly refer to them. The quality of the fruit was of the highest throughout, as those who have seen the exhibits of fruit from Madresfield at the shows in London and elsewhere would expect. The lower part of the south wall is mostly devoted to Peaches and Nectarines, which were bearing good crops at the time of my visit. Apricots occupied part of the top south wall.

But Apples form the most important crop. They are grown on trees trained in many ways. Dessert varieties are largely grown as cordons, not against walls, but out in the open border, better flavour and colour being obtained in this way than in any other. Cordon trees of Cox's Orange Pippin were splendid. The Paradise stock is only used for cordon trees in these gardens, but bushes and standards are worked on the crab or free stock—which, however, is treated in an original and, I believe, excellent way. The tap, or perpendicular root instead of being cut off in the usual way is carefully bent until it is got into a horizontal line, and then planted firmly in this position. The result is that large quantities of fibrous, surface-roots are formed of better quality than those from the Paradise stock, and there is but little danger of the roots getting into the subsoil. As it is now planting time, it may be useful to enumerate a selection of Apples and Pears grown so well by Mr. Crump. To take first dessert Apples on bush or cordon trees:—James Grieve, American Mother, Christmas Pearmain, Rival, Claygate Pearmain, Cox's Orange Pippin, and The Houbon are all excellent. To these must be added the fine new variety "William Crump." It is a cross between Worcester Pearmain and Cox's Orange Pippin, partaking of the handsome colour of the former parent, with the yellow flesh and delicious flavour of Cox's Orange Pippin. It was raised by Messrs. Rowe, nurserymen, of Worcester, and has received an Award of Merit from the Royal Horticultural Society. Of culinary Apples, Mr. Crump recommends the following varieties:—Ecklinville Seedling, Stirling Castle, Lane's Prince Albert, Cox's Pomona, King of Tompkins County, Gascoyne's Scarlet Seedling, Bismarck, Dumelow's Seedling, and King Edward VII.—a recently certificated Apple of great merit, also raised by Messrs. Rowe.

For standard orchard trees, the following dessert varieties are recommended by Mr. Crump:—Worcester Pearmain, Duchess of Oldenburgh, Tyler's Kernel, King of the Pippins, Gascoyne's Scarlet Seedling, and Glenheim Pippin; and for culinary purposes, Lord Grosvenor, Lord Derby, Warner's King, Bramley's Seedling, Newton Wonder, and King Edward VII.



[Photograph by H. J. King.]

FIG. 180.—GARDEN OF ANNUALS AT MADRESFIELD COURT.

description is surely unnecessary! At the far end of this avenue, and looking to the left, another avenue opens out to view; the two together forming two sides of a triangle, one, the Cedar avenue, extending south, and the other, which is planted with *Abies nobilis glauca*, running westward. The third side is composed of Lombardy Poplars. Thus the avenues form on those two sides the boundary of the pleasure grounds. The *Abies* avenue is of the same length, age, and height as the Cedar avenue, and, as all the trees are grafted, every specimen is of the true bright, silvery-coloured variety. Among the specimen Conifers in the gardens, I may instance the following species: *Abies grandis*, 110 feet high; *A. Douglasii*, 80 feet; *A. orientalis*, 50 feet (perhaps the finest specimen in the United Kingdom); *A. lasiocarpa*, 50 feet; *A. Pinsapo*, 50 feet, and *A. Nordmanniana*, from 50 to 60 feet.

The pleasure ground covers an area of 70 to 80 acres. The trees have been planted wide apart (excepting in the avenues); thus they have ample scope for the full development of their form and beauty. It is fortunate for another reason, for

colour is a great feature throughout these gardens, no confused mixing of colours being tolerated.

I next inspected a construction of "Pulham" rock, where Bamboos and rock plants thrive. A short distance away is Lady Susan's garden, enclosed between hedges of clipped Yews, and not far off is the flowering shrub border, where all the best of the new varieties find homes. The evergreen varieties have a section to themselves. I noticed some large groups of the new Japanese Maples, whilst in front of a Holly plantation were masses of *Prunus Pissardii* and Golden Elder. The most surprising thing to me was that in this vast area of planting scarcely a case of repetition is to be seen! A little farther on I came to the herbaceous garden proper. Two long borders are planted between two Holly hedges, the path being grass, with red tiles in the centre, laid on cinders, to form a dry footing. These borders are planted with a choice collection in bold groups, each variety being used but once. In the centre is a sundial, opposite to which is an opening which brought me to

Pears.—No one can visit Madresfield without being impressed by the pergolas furnished with cordon Pear trees which span many of the walks of the kitchen garden. These are delightful when covered with blossoms or laden with fruit. They are formed by selecting one strong, young shoot at the top of each tree on either side of the walk, and training it in cordon fashion over the paths. Very choice fruits are obtained from these plants. Pears are largely grown also on walls of various aspects, and in warm summers magnificent fruits are obtained, the heavy soil suiting the Pear. The following is a selection of the Pears grown on pyramid trees:—Souvenir du Congrès, Marie Louise, Beurré Hardy, Doyenné du Comice, Thompson's, and Beurré Superfine. An orchard of cider Apples has been recently planted. Mr. Crump thinks highly of the Loganberry. It is as easy to grow as a Bramble bush, and the fruits make delicious jelly for flavouring ices.

Amongst Strawberries, Royal Sovereign still

summer for furnishing blooms early in spring. The remainder of the houses in this block are used for forcing Strawberries in spring, and afterwards for the growing of Melons, Tomatos, Cucumbers, and winter decorative plants.

Strawberries are forced in large numbers, and for later supplies they are planted out in cold pits, where excellent fruits are obtained with very little trouble or expense. The pits are freshly planted each season as early as strong runners can be obtained. Of Melons the grand old variety Blenheim Orange, raised by Mr. Crump more than 30 years ago, when he was gardener at Blenheim, is still a favourite.

Several plant houses are devoted to Figs, the trees being grown on the extension system; they seldom, if ever, fail to produce two crops in a year. Ripe Peaches are available from the first week in May to late in October.

The vineries contain most of the popular varieties of Grapes. It was a treat to me to

CAMPANULA CARPATICA.

THE Carpathian Harebell is a valuable subject for the border or rock-garden, and one of the easiest of the family to cultivate. It produces its pretty blue flowers in profusion during the summer months. A row of plants in flower forms a pleasing band of colour to the front of a flower-bed or border. At fig. 181 is shown a flower-border margined with this *Campanula* in the garden of Mr. Platt, at Highgate. The photograph was sent us by the gardener, Mr. C. Turner, who states that the plants are moved every three years, as the flowers grow larger and much finer if the plants are afforded fresh soil occasionally. The flowers shown in our illustration were all of the blue-flowered variety, but there are several other kinds, one of the best being the variety *alba*, which is very suitable for mingling with the type.

TREES AND SHRUBS.

AMERICAN CRATÆGI IN THE SPECIES PLANTARUM OF LINNÆUS.*

SINCE the publication last year in *Rhodora* (x. May, 1908) of Mr. Eggleston's notes on the species of *Cratægus* described by Linnæus I have had the opportunity to examine again the specimens of *Cratægus* in the Plukenet Herbarium at the British Museum and the specimens of this genus preserved in Linnæus's own herbarium.

Three of the four species of *Cratægus* described by Linnæus in the first edition of the *Species Plantarum* are what may be called book species, that is, there is no evidence that Linnæus had ever seen a specimen of these plants when his descriptions were published in 1753, these having evidently been based on the descriptions and figures of earlier authors. Of the fourth species, *Cratægus viridis*, there is a specimen in the Linnæan Herbarium collected by Clayton in Virginia which Linnæus may have seen before his description was written. Several years ago I made out that this specimen represented the plant described later by Elliott as *Cratægus arborescens*, although at that time this species had not been rediscovered in Virginia. It is interesting to report, therefore, that *Cratægus viridis*, Linnæus (*C. arborescens*, Elliott) was found by Mr. Rehder last summer on the bank of the Blackwater River near Zuni, in South-eastern Virginia.

Cratægus Crus-galli was described by Linnæus from Plukenet's figure and description. The specimen which appears to have served in part, at least, as the subject for Plukenet's figure (*Alm. Bot.*, 149, t. 46, f. 1) is preserved in his herbarium. It is a young shoot without flowers and fruit, and, although I suspect that it is not the plant which is now usually considered to be *Cratægus Crus-galli*, it is impossible to say what it is except that it is from one of the *Crus-galli* group of species. The specimen labelled *Cratægus Crus-galli* in Linnæus's Herbarium is also only a barren shoot. It was collected by Kalm and no locality is given. It is certainly one of the *Crus-galli* group, and probably represents a different species from the specimen in the Plukenet Herbarium. In spite of the doubt which these specimens raise on the identity of *Cratægus Crus-galli* of Linnæus, it does not seem desirable or necessary to abandon his name, as no confusion is likely to occur by retaining it.

It is not possible to guess even at the plant described by Linnæus as *Cratægus tomentosus*. His species was based on the specimen collected by Clayton in Virginia, and, unfortunately, this is one of the few of Clayton's specimens which is not preserved in the British Museum. On the sheet labelled *Cratægus tomentosa* in Linnæus's Herbarium there are two specimens collected by Kalm without locality. One is evidently what

* C. S. Sargent in *Rhodora*, the journal of the New England Botanical Club, vol. xi, (1909).



FIG. 181.—*CAMPANULA CARPATICA* FLOWERING IN A LONDON GARDEN.

holds the first place for forcing and cropping out-of-doors. The old *La Grosse Sucrée* is still employed as a forcing variety.

Out-of-doors, the following Strawberries are grown:—Trafalgar, Gunton Park, Burghley President (true strain), still unsurpassed taking it all in all, and Oxonian for a late crop.

THE GLASS HOUSES.

The glass department includes two ranges in the kitchen garden, the one against the south wall consisting chiefly of vineries and Peach houses. The other range extends parallel with it, and is devoted to Figs, Melons, and Peaches.

On the north side of this wall, and facing the offices, are the potting sheds, fruit rooms, and other garden buildings; also the recently-enlarged and conveniently-equipped bothy, close to which is another block of glasshouses and forcing pits, the whole covering upwards of one acre. Winter-flowering Carnations and Begonias are extensively grown. Saint Bridget Anemones are planted in cold frames at the end of

see one house is devoted to Lady Downe's, and better bunches of this fine variety I have seldom seen.

In conclusion I will say a few words about the original Madresfield Court vine. It was raised upwards of 40 years ago by Mr. William Cox, the gardener at that time. It is the result of crossing Black Morocco with Muscat of Alexandria. It obtained the certificate of the R.H.S. in 1863. The variety is unsurpassed for all-round excellence. About 30 years ago, when Mr. Crump first took charge of these gardens, the vine was planted with several others, but now it nearly fills the vinery itself. I have seen the old vine on many occasions, but never before have I seen it carrying such splendid bunches as this year, many of them weighing from 3½ lbs. to 4 lbs. each.

These delightful gardens have been laid out and planted to express in every feature the love of the owner for hardy plants and general out-of-door gardening. Owen Thomas.

NOTICES OF BOOKS.

* THE GARDENER'S COMPANION.

THIS little work on flower gardening out-of-doors is written by a lady "who has lived and worked in a garden all her life, under a father who made one of the most charming gardens in Kent." Those who wish to make a garden but do not know how to begin may, with this book in their hands, be at no loss to know how to lay it out.

Hints and suggestions abound as to what should be done in making walks, flower borders, sunny nooks, and warm corners in which to sit and enjoy the warm days of autumn, and delightful spots of cool shade for shelter from summer heat. We are told how the garden, if it be small, may be laid out and planted so as to mask its boundary and, as it were, cheat the vision; how to make use of adjacent grass land, and throw into view distant fine trees and handsome buildings; where a hedge may be more desirable than a fence of any kind; or if a fence must be erected, then how to conceal it. Hints are given on what to plant in the way of trees, half trees, and shrubs, and explanations of the more important features in garden planning, planting for shelter, and for securing a certain degree of privacy in the garden. An abundance of material is mentioned for filling beds and borders, the plants being chiefly perennial species, the rest biennials. Roses receive special notice.

There are some sensible remarks on the making of pergolas and rockeries. A useful list of the better class of herbaceous perennial-flowering plants, with both the popular and botanical names, will be much appreciated by many amateurs, accompanied as it is by cultural directions. A list of the finer annuals will be found valuable. Sweet-scented foliage has not escaped the authoress's notice, although but few species with this property are mentioned. Evergreen and deciduous trees and shrubs are referred to, but mention is made of only a few of the finer varieties of modern introduction. In a short chapter on the rooting of cuttings of hardy plants, the reader is told that clay and sand make the best medium—surely a mistake. This is a chapter that should be extended in a future edition, when numerous errors in the spelling of plant names should also receive attention.

LISSELAN.

LISSELAN, the property of Mr. Reginald Bence-Jones, is a lovely spot, a few miles from the sea, nestling between wooded hills near Clonakilty. The clear river Arrigadeen runs through the garden, and from the lawn many a fine salmon has been caught. From the house stretches a long and wide terrace-lawn, margined on one side by a large border bright with well-grown Phloxes, double *Lychnis chalconica*, and other herbaceous plants. The terrace is bounded by a stone balustrade over which one looks down on the garden 30 feet below. Beyond the lower lawn the river forms a lake, but since the rush of water is often too great for Water Lilies they are grown in a secluded lakelet in another part of the grounds. Upon the lake is an island where Bamboos, Rhododendrons, and fine foliaged plants luxuriate, whilst, at its edge, *Astilbe Davidii* flourishes to perfection with self-sown seedlings springing up around it in hundreds. Majestic Gunners spread their giant leaves, *Saxifraga peltata* grows in masses at the margin, and *Zizania aquatica* shoots up from the water. From the terrace to the lower level a rock-garden slopes, the interstices between the rough stone steps being filled with flowering Sedums, *Ambretias*, Sea Pinks, dwarf Campanulas, *Helianthemums*, and *Oxalis*, which make a very pretty picture. In this garden are

* *The Gardener's Companion*, by Selina Randolph. (London: Mills & Boon, Ltd.) Price 2s. net. Crown 8vo., pp. 156.

is now generally called *Cratægus tomentosa* and the other is one of the thick-leaved, tomentose species. It is of interest, perhaps, that there is a thorn on the first of these specimens, as *Cratægus tomentosa* is usually thornless, although "ramis spinosis" appears in Linnæus's description of his *Cratægus tomentosa*. As no confusion is likely to arise from retaining the name of *Cratægus tomentosa* for the plant now generally considered to be that species, there appears to be no good reason for abandoning the name.

Cratægus coccinea was established by Linnæus on Plukenet's figure (*Alm. Bot.*, t. 46, f. 4). The figure well represents one of the three specimens so numbered preserved in Plukenet's Herbarium. The numbers published by Plukenet have been written below the specimens of his herbarium by some one now unknown and, perhaps, after the collection had become the property of the British Museum. Under the specimen which is the type of Linnæus's *Cratægus coccinea* there is a note by Robert Brown confirming the determination. Mr. Eggleston's statement that the type of *Cratægus coccinea* was an unnumbered specimen found by Mr. Britten is not clear. All the specimens in Plukenet's Herbarium are numbered, and Mr. Britten assures me that he has no recollection of having made such a statement. It is probable, however, that the fruit that he sent to Mr. Eggleston is from the specimen represented on plate 45, f. 4, as one of the seven fruits figured by Plukenet is missing. The leaves of this specimen are only slightly villose on the upper surface; the fruit is glabrous and the pedicels are slightly hairy; and it cannot, as Mr. Eggleston has suggested, represent *Cratægus modesta*. The specimen is thornless, and the detached thorn in the Plukenet figure may have been taken from one of the two other specimens in the Plukenet Herbarium, which the same unknown person has referred to the plant figured on t. 46, f. 4. The thorns on one of these specimens are slightly thicker and on the other they are more recurved than that figured by Plukenet. These three specimens in the Plukenet Herbarium referred to t. 46, f. 3, certainly all represent different species, either in the Molles or Lobulate Groups, and I am unable to identify any of them. The matter is further confused by the fact that Linnæus also referred to his *Cratægus coccinea* the plant figured in the *Hort. Angl.*, t. 13, f. 1, which is *Cratægus cordata*. The specimen labelled *Cratægus coccinea* in the Linnæan Herbarium was from a plant cultivated in the Upsala Garden, and, being unable to determine any of Plukenet's specimens, it was this specimen that I formerly considered the type of *Cratægus coccinea* and referred to it a common species of the New England coast and the St. Lawrence Valley (see *Bot. Gazette*, xxxi. 11). Aiton's specimen of *Cratægus coccinea* in the British Museum is a barren shoot of some Molles species.

Under Rule 51 of the Vienna code it is provided in Section 4 that every one should refuse to adopt a name "when the group which it designates embraces elements altogether incoherent or when it becomes a permanent source of confusion and error." This is the case of *Cratægus coccinea*. Certainly the type of *Cratægus coccinea* cannot be determined, and a large number of different species have at different times been called *Cratægus coccinea*. It appears therefore desirable to abandon the name entirely and to find a new name for the plant figured as *Cratægus coccinea* in the *Silva of North America* and in the *Manual of North American Trees*. A glabrous form of this which I have called *Cratægus coccinea rotundifolia* was first described in 1785 by Moench (*Bäume Weiss.* 29, t. 1) as *Cratægus rotundifolia*, which would therefore be the name of the species if the hairy and glabrous forms are considered to belong to one species; and the hairy plant which I have described as *Cratægus coccinea* may then become *Cratægus rotundifolia var. pubera*.

Androsaces in variety, *Linaria alpina* spreading over the rocks, *Lithospermum rosamariniflorum*, *L. graminifolium*, and *L. prostratum* in blue sheets, *Sedum kamschatcicum variegatum*, *Zauschneria californica*, *Senecio pulcher*, *Linum narbonense*, dwarf Phloxes, *Stokesia cyanea*, *Sphærolea Munroi*, *Dryas octopetala*, *Cerastigma plumbaginoides*, and *Glaucium Fisheri*, all in the best of health. The dwarfier plants are relieved by taller-growing subjects, such as Palms, *Yuccas*, *Cordylines*, *Kniphofia Northiæ*, and *Dasylyron quadrangulatum*. At the back of the riverside lawn is a pergola 70 yards in length, covered with flowering Roses and terminated by a thatched summer-house smothered with *Solanum jasminoides* in full bloom. Beyond, and at the side of the lake, is the Rose garden. This is filled with bushes and standards and climbing varieties trained to tall poles, while the sloping bank at the back is veiled with Roses. On the other side of the lake the rising ground is planted with flowering Brooms and other shrubs, that have a bright effect in spring. At the time of my visit in July in the newly-constructed bog-garden was the pretty *Thalictrum Delavayi* bearing its large, lilac-coloured flowers, and *T. dipterocarpus* was in bud. *Helonias asphodeloides*, with pale yellow blossoms, was attractive. *Podophyllum Emodi*, bearing its great crimson pods, was a very handsome object, and *P. peltatum* was growing hard by. *Pinguicula grandiflora*, from the damp mountains near Bantry, was evidently at home, and *Ranunculus lingua*, *Butomus umbellatus*, varieties of *Trollius*, *Mimulus Crimson Queen*, *Galax aphylla*, *Iris longipetala*, *Diphylleia cymosa*, *Rodgersia podophylla*, and *Astilbe grandis* obviously appreciated their environment. The Primulas evidenced the most robust health, and there were fine colonies of *P. rosea*, *P. sikkimensis*, *P. involucrata*, *P. pulverulenta*, *P. japonica*, *P. cashmeriana*, *P. capitata*, and *P. farinosa*, while hundreds of self-sown seedlings were growing vigorously around on the higher and drier ground.

Probably Lisselan is the only place in the British Isles where the grand *Dahlia imperialis* has flowered in the open. On the Riviera it blooms magnificently; but as it does not perfect its blossoms until November, they are, even in Cornwall, generally spoilt before they expand. However, last autumn was a marvellously warm and open season, and the plants of *Dahlia imperialis* at Lisselan produced a number of exquisite blooms. This summer also the plants were looking well. There is a fine collection of rare and tender shrubs in these gardens. Against the walls are growing *Solanum Wendlandii*, which, since it is generally killed in the open in Cornwall, will probably not survive the winter here. *Hidalgoa Wercklei*, *Cantua dependens*, *Oleander*, *Pomegranate*, *Plumbago capensis*, *Pentstemon cordifolius*, *Mandevilla sauveolens*, *Calceolaria Burbidgei*, *Acacia leprosa*, *A. Drummondii*, *Viburnum hydrangeoides*, and the blue-flowered *Pueraria Thunbergiana* from Khasia.

Of Buddleias there are *B. Colvilei*, *B. variabilis Veitchiana* and *magnifica* and the new variety *superba*. A fine shrub of *B. asiatica*, 8 feet through, and unharmed by the 15° of frost to which it had been subjected, scents the November air with the perfume of its white blossoms. Other good shrubs are *Eucryphia pinnatifolia*, *Embothrium coccineum* (such a glorious sight in Cornwall in the month of May), *Tricuspidaria lanceolata*, better known as *Crinodendron Hookeri*, *Plagianthus Lyallii*, which had flowered profusely, *Nandina domestica*, a good plant of *Davidia involucreata*, *Drimys Winteri*, *Edwardsia* (*Sophora*) *microphylla*, the rare New Zealand *Hoheria populnea*, *Crocea latifolia* from New South Wales, *Correa cardinalis*, *Callistemon salignus*, *Rhapitannus cyanocarpus* bearing blue berries, *Osteomeles anthyllifolia*, *Feijoa Sellowiana*, *Amorpha canescens*, the Japanese *Ilexia polycarpa*, *Lomatia ferruginea* a very handsome foliage shrub, the New Zealand pink Broom

(*Notospartium Carmichaeliae*), *Carpenteria californica*, the rare *Neviusia alabamensis*, *Caragana frutescens*, a fine specimen of *Dimorphanthus mandschuricus variegatus*, *Cornus aurea elegantissima*, very good in colour, and the new *Hydrangea arboreascens grandiflora*, an extremely handsome plant introduced by M. Lemoine, bearing trusses of flowers 18 inches across. Beyond the garden proper is a long walk at the foot of a steep bank, which, in the old days, was covered with weeds and Bramble. These have been cleared away, and it is now planted with *Spiraea*, *Olearia*, *Lilac*, *Hypericum*, *Escallonia*, *Berberis*, *Diervilla*, *Philadelphus*, *Cotoneaster*, *Cistus* and *Veronica* in variety. They are planted in large groups and produce an exceedingly pretty effect. In one spot the bank is covered with a large colony of *Libertia formosa*, which spreads for a distance of fully 40 feet. Beyond is an orchard sloping down to the path, and below the Apple trees a trellis has been erected with arches, over which *Rose Dorothy Perkins* is trained. In July this was a beautiful sight, for the Reses were in full bloom, and for 100 yards they formed a sheet of delicate pink.

Leaving the orchard one enters the kitchen garden, through which a broad walk extends, margined on both sides by wide, herbaceous borders full of handsome perennials. Here *Artemisia lactiflora* grows with astonishing vigour, being well over 6 feet in height, and shares its quarters with the Dropmore variety of *Anchusa italica*, *Delphiniums*, *Phloxes* excellently grown, *Lychnis chalconica* (single and double), *Michaelmas Daisies*, and other plants. *Tropaeolum speciosum* grows like a weed at Lisselan. It rambles up tree-trunks, wreathes pergolas and arches, and clammers amongst flowering shrubs, spreading its veil of brilliant scarlet on all sides. *Wyndham Fitzherbert*.

NOTES FROM A "FRENCH" GARDEN.

We are now preparing hot-beds, which will be cropped immediately after Christmas. A portion of the beds first made will be utilised for the growing of Turnips to succeed the Lettuces late in February; other beds will be employed for pricking out Tomatoes at that date.

The manure of the beds will be 12 inches thick when trodden down; it will consist of dry manure collected in September and fresh manure in equal proportions.

For forcing Lettuces, Radishes, and Carrots from January 10, the manure need not be more than 10 or 11 inches deep. There is no advantage in making the beds too thick, as young Lettuces do better in winter in a mild temperature, say, about 40° or 45°. During frosty weather the requisite temperatures may easily be maintained by lining the frames with good straw manure as necessity demands.

We are placing the cold frames in position on ground dug for the purpose early in October. Three barrow-loads of decayed manure are placed in each frame, and they are next covered with the lights. By this method the soil is in a good condition in January when the Passion or Little Black Gott Lettuce is planted.

The frames and lights used for this purpose are available for the first batch of Melons and also for planting early Tomatoes in April.

Cabbages and Cos Lettuces under the cloches have not grown much during the present month owing to the damp and cold weather, but they are very clean and free from mildew. We have been obliged, owing to damping, to prick out earlier than was intended, the Lettuces sown late in November on a mild hot-bed.

The Cauliflowers are doing well in their winter quarters, though they are not very forward. In more favourable seasons we have transplanted them twice during December to check their growth and to give them increased room. *P. Aquatias*.

A BOTANICAL JOURNEY IN SOUTH-WEST AFRICA.

(Concluded from page 402.)

ANGOLA.

THE desert strip which lies between the sea and the hinterland of Namaqualand and Damaraland crosses the Cunene River and stretches northwards into the Portuguese territory of Angola. To the north of Mossamedes it merges into a thinly-populated dry belt, fairly rich in vegetation but with a meagre supply of surface water, which extends northwards almost to the mouth of the Congo. North of Benguela this belt is a grass-covered plain, dotted with Baobabs (*Adansonia digitata*) and a few other trees.

Beyond this dry belt, in the latitude of St. Paul de Loanda (8° S.), is a mountainous forest region rising to about 4,000 feet. Our knowledge of the flora of this region is mainly due to Dr. F. Welwitsch, who spent two years at Golungo Alto, and obtained a remarkably rich collection of new plants. The forest is high and frequently very dense, with a woody under-

growth, Ceara, Castillea, *Funtumia*, and others—which, if allowed to proceed, will certainly yield results of the highest economic value. Many fibre and food plants are also established, and the station has already become an important centre for their distribution and for the dissemination of information concerning the best methods for their cultivation. It is feared, however, that the Portuguese Government is inclined to view this important work with a considerable measure of indifference, and to regard the results as insufficient to warrant the expenditure involved. To abandon it or to allow it to languish for want of funds would be an extremely short-sighted policy. Except for the Coffee industry, the increasingly difficult exploitation of wild rubber and the manufacture of rum from home-grown sugar, but little attempt has yet been made to utilise native products or the cultural possibilities of this rich region, and, with the certainty that the rum industry will decline, it becomes increasingly necessary to find new economic plants whose suitability for cultivation has been thoroughly tested.

Farther south, in the latitude of Mossamedes, a stony, low-lying plateau borders the sea. It



FIG. 182.—SOUTH-WEST AFRICA.

A group of *Sesamum* sp. among granite blocks at an altitude of about 1,500 feet on the Mossamedes Railway.

growth of which a wild coffee, *Coffea arabica* var., is a common constituent. This plant is the source of nearly all the Coffee obtained in Angola. In general it is left in its natural surroundings, except that other constituents of the undergrowth are more or less completely cleared away from it. Little attempt has yet been made to improve the plant or its yield, or to introduce more profitable varieties. Among the many woody climbers found in the same forests, rubber-yielding species of *Landolphia* (*L. florida*, &c.) are abundant, and that little-known member of the family Gnetaceae, *Gnetum africanum*, is found here and there. One of the most interesting features of the forest region, where it merges into the savannahs of the central plateau, in the vicinity of Golungo Alto, is the experimental station established in 1907 under the direction of Mr. J. Gossweiler and, in spite of many difficulties and much discouragement, administered by him to the present time with conspicuous success. The primary object of the station has been the experimental treatment of various rubber plants—Para, Mani-

usually presents all the familiar features of a desert, though it is to some extent less arid than is its southern continuation in Damaraland. A short rainy season sometimes occurs in the summer and is followed by a growth of grasses so luxuriant as to provide, for a few weeks, an abundant supply of food for various herbivorous animals. One admirable regulation in force in the vicinity of Mossamedes enacts that no grass may be cut for fodder until the seeds have fallen. On these plains *Welwitschia* is found in considerable abundance; indeed, the classical locality in which Dr. Welwitsch's memorable discovery was made is only a few miles distant from Mossamedes and lies between that town and the Cape Negro. Here the plants are large—larger than any to be seen in Damaraland—and not only do they set seed abundantly, but young seedling plants are very frequently met with. This energetic reproduction is probably not of annual occurrence, but it certainly happens with far greater frequency than in more southerly localities. Here, at least, as long as the present climatic conditions persist, there is

no probability that this remarkable species will die out through failure of the natural means of reproduction.

The lower 10 miles of the broad bed of the

covered plains offered them grazing for their oxen and one of the finest climates in Tropical Africa, while in the surrounding country they found elephants, lions, the rhinoceros, the

From the Huilla plateau the land slopes, at first abruptly, afterwards more gradually, to the Cunene River on the east and to the sea on the west. Down to the Cunene on the one side, and to within 50 miles of the coast on the other, the country is for the most part covered with a light, open forest, in which the undergrowth during the summer rainy season consists mainly of grasses affording rich pasturage. On the upper slopes Proteaceous trees prevail. At lower elevations two types of forest are curiously intermixed; the one is dominated by the leguminous tree *Copaifera Mopane*, and includes numerous rather small Baobabs, while the other consists mainly of a few large, more or less shrubby species of *Acacia*, with two Palms, one acaulescent, both apparently species of *Hyphæne*. An Orchid, a species of *Ansellia*, is rather common as an epiphyte on the rough trunks of the *Copaifera*, and, while the presence of woody climbers is not a marked feature of these forests, a few lianas of the families *Asclepiadaceæ* and *Menispermaceæ* are rather frequently met with. In the wide, open spaces, which are of frequent occurrence, numerous grasses—many of them remarkably handsome—white and blue-flowered *Acanthaceous* bushes, tall, purple-flowered species of *Sesamum* (fig. 182) and many other striking plants are found. Below 4,500 feet this forest region is for the most part unhealthy and sparsely populated. Native cultivation is concerned mainly with a few varieties of Millet, and, to a less extent, with Mealies (*Zea Mays*). An Anglo-French company has, within the last three years, commenced the experimental cultivation of Cotton on a large scale on the low-lying lands (3,500 to 4,000 feet) west of the Cunene. About 700 acres are at present under this crop, and the variety known as the "American King" has yielded very encouraging results. The cultivation of Cotton, if successful, probably offers the greatest promise for the economic development of this region. The experimental introduction of Agaves and other dry-climate fibre-plants would also seem to be indicated. A native species of *Sansevieria* flourishes in the more open parts of the forest, but nothing is known as to the quality or yield of its fibre, and the natives appear to make no use of it. No indications of the presence of valuable minerals in workable quantities are yet disclosed. H. H. W. Pearson.



FIG. 183.—SOUTH-WEST AFRICA.

A view on the Huilla plateau near Humpata (6,000 feet), showing *Aloë Baumii* and Proteaceous bush.

River Bero presents a remarkable contrast to the barren country through which it flows. This river rises in the western flanks of the Huilla plateau, but it is only in years of exceptional rainfall that the drainage of this part of the plateau reaches the sea as a surface stream. Normally it is absorbed by the thirsty ground of the desert belt, and consequently, although the lower course of the river may be waterless, there is a sufficient water store not far beneath the surface. This makes cultivation possible and, in fact, near the sea the river bed is a scene of considerable agricultural industry. The principal crop is Sugar Cane, the final product being mainly rum, though some sugar is exported. Figs, Bananas, Dates, Pineapples, Oranges, Pears, and other tropical and sub-tropical fruits are grown, and also many common European vegetables. The neighbouring town of Mossamedes is supplied and there is a small export trade with the coast settlements to the north. If a better market were available, no doubt, the production of fruit and vegetables would be capable of further development.

The new railway running at first across the Bero, and for some distance up the bed of the Giroual River, crosses the desert and at present ends less than 20 miles from the foot of the steep ascent of the Chella range, on the top of which is situated the great Huilla plateau whose remarkable flora was first investigated by Dr. Welwitsch. On this plateau—an undulating plain, 6,000 to 6,500 feet above the sea—is a remarkable development of Proteaceæ and of other forms well known at the Cape in association with other members of this ancient family. In April the neighbourhood of the Boer settlement of Humpata (6,000 feet) was gay with flowers—*Aloë Baumii* (fig. 183), various Proteaceous bushes, everlastings, leguminous bushes and annuals, *Melastomaceæ*, *Scrophulariaceæ* and many others scattered among the rich growth of grasses. This plateau is the headquarters of a small Boer colony numbering about 1,000 souls. They or their fathers arrived here in 1881 after a six years "trek" from the Transvaal across the Kalahari and Ngamiland. These grass-

giraffe and smaller game in abundance. Their energies have been mainly directed to hunting, transport riding and cattle-breeding, while agriculture, except in a few instances, has received little attention. Now, however, various causes, among which must be reckoned the attraction offered by the new régime in South Africa, have induced many of them to return to the Transvaal, and it is probable that the number of Boers remaining on the plateau will, in a short time, be very considerably reduced.



FIG. 184.—SOUTH-WEST AFRICA.

The Caculovar River near Houmbe, a few miles above its junction with the Cunene. The trees are mostly *Acacias*.

The Week's Work.

THE ORCHID HOUSES.

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

Cattleya.—Among *Cattleyas* that bloom late in spring may be mentioned *C. Warneri*. Plants of this species are now showing signs of activity, both new growths and roots are pushing freely; they should, therefore, be well elevated on stands or flower-pots so as to bring them as near to the light as possible. From the time until the flowering season is past the compost should be kept in a fairly moist condition. There are other plants in the *Cattleya* house which are in various stages of growth, such as *Lælia crispa*, *L. purpurata*, also many *Cattleya* and *Lælia-Cattleya* hybrids which must be watered with much discretion. Of the long-hulbed section, *Lælia harpophylla* is growing fast in the *Cattleya* house, and will require plentiful supplies of water. When growth is completed and the flowers are past, the plants should be removed to a warm corner of the cool house.

Polycynis muscifera.—This very interesting species thrives well in a structure having an intermediate temperature. The species requires plenty of water during the growing season, but after flowering is over it should be kept cool and allowed a decided rest.

Sophronitis.—There are nearly 50 beautiful and remarkable hybrids, which have been obtained by crossing and inter-crossing *Sophronitis grandiflora* with species of *Cattleya*, *Lælia* and *Epidendrum*. They flower at different seasons, and a collection of these plants provides one or more in bloom nearly the whole year round. Those in flower at the present time are *Sophrocattleya Marcus*, *S.-C. Chamberlainiana*, *S.-C. Deris*, *S.-C. Saxa*, *Sophro-Lælia Leda*, *S.-L. Gratrixie*, *S.-L. Mariettiana*, and *Sophrocattleya Marcus*. Others which have recently bloomed, and are commencing to grow, may, if they require it, be repotted. All these hybrids thrive well in a mixture of *Osmunda* and *Polypodium* fibres with plenty of material for drainage; a light, warm corner of the intermediate house is the most suitable place for them. Great care is necessary in affording water at the roots, as the young growths are apt to decay if the plants are watered indiscriminately, whilst the old leaves and pseudo-bulbs will quickly turn black from the same cause. The interferences of such varieties as *S.-C. eximia* and *S.-L. Gratrixie* develop peculiarly; when the flowers are nearly ready to open, they have not escaped from the partially-developed growths, and appear to be deformed, but later they grow fast and open out perfectly. While the flowers are developing inside the sheath, no water, either from syringe or sprayer, should be allowed to settle on them, or they will rapidly decay. The safest plan is to suspend the plants so that no water from the syringe can reach them, but moisture at the roots must be given when necessary. *Epiphronitis Veitchii* is one of the finest of these hybrids. We have at Burford half-a-dozen plants, and during the past six or eight months one or more have been in bloom. They grow very freely, and in a suitable temperature will produce young plants from the old growths and flower-stems. These, as soon as they begin to push forth roots, may be removed with a portion of the old stem attached and potted. Ten or a dozen of these pieces put in a 6-inch teak-wood basket will form a good compact specimen. Place a few large crocks over the bottom of the receptacle, and fix the plants firmly in chopped Sphagnum-moss freely mixed with small crocks. Suspend the plants at one end of the *Cattleya* house, where they can be shaded from strong sunshine at all times, and afford them plenty of water throughout the whole year.

Trichosma suavis.—This is a neat, compact-growing plant, and a moderately-sized specimen, when covered with its creamy-white, scented flowers, is a very pretty object. Its flowering season is now past, and any repotting that is necessary should be done at once. The plant is a strong grower, and when potted in the new Orchid compost increases in size very rapidly. It requires a cool, shady position in the intermediate house, and plenty of water at the roots at all seasons of the year.

Trichopilia.—*Trichopilia fragrans* is one of the best sweet-scented, white-flowering Orchids

which blooms at this time of the year. The variety *nobilis*, sometimes known as *Pilmma nobilis*, has larger flowers than the type, and they are of purer whiteness. The plant requires a trifle more warmth than *Odontoglossums*, therefore a cool position in the intermediate house is the best place for it. *T. crispa*, *T. laxa*, *T. rostrata*, *T. terilis*, *T. coccinea* and *T. galeotiana* all require a similar temperature. The majority of these plants have now made their growths, and must not be watered often or their leaves and pseudo-bulbs will quickly decay. Those which are showing bloom should be placed in the *Cattleya* or Mexican house, where their flowers will open better than in a cooler temperature. None of these *Trichopilia*s need strong light, and direct sunshine often turns their leaves from deep green to yellow. The best time to repot *Trichopilia*s is soon after they commence to grow. They root freely in a compost of *Osmunda* and *Polypodium* fibres and *Sphagnum*-moss. Use well-drained pots and keep the plant a trifle elevated, so that it can be easily watered without moisture lodging in or around the base of the young growths.

General work.—Cleanse the houses both inside and out, washing the glass so that the plants may receive all the light. At the same time, the plants should be thoroughly cleansed of dirt and insects, and the pots and stages well washed. The borders under the latter may be forked up and replanted with various dwarf-growing foliage plants, so as to give the house a smart appearance.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Salads.—These vegetables are usually in great demand during the Christmas season; where proper provisions were made during the past summer and autumn, there should be little difficulty in furnishing a good supply of most kinds. With regard to Lettuce, the Cabbage varieties are the best to cultivate at this season. These will have been transplanted into frames during the past autumn, and will now be sufficiently matured for the table. Any plants which do not show signs of hearting may be tied up in much the same manner as are the *Cos* varieties. All the Year Round and Hardy Hammersmith are two desirable varieties for the purpose. In gardens where there is likely to be a scarcity of Lettuce during the winter months, seeds of varieties suitable for forcing should be sown at once, and the plants raised in moderate warmth. Before the second leaf appears, the seedlings should be pricked off into boxes and grown on in a temperature of about 55°. These forcing varieties are very suitable for use in salads; the leaves grow quickly and are therefore very tender. They may be cut off when quite small in much the same manner as Mustard and Cress.

Endive.—Maintain a plentiful supply of both the plain and curled-leaved kinds in a well-blanching condition. This salad will also have been planted in cold frames or orchard houses.

Chicory.—Where a sufficient supply of roots have been grown there will be little difficulty in having *Chicory* in good condition for salad till May. It is also much appreciated, if properly blanched, as a cooked vegetable. Once a week, a few fresh roots should be placed in the darkest part of the Mushroom house, or some other suitable warm place from which light is entirely excluded. Should severe frosts appear imminent, a sufficient number of roots for use should be lifted from the open and stored in a frost-proof place.

Mustard and Cress should be sown weekly in boxes and raised in gentle warmth.

Tarragon.—A flavouring of this herb is often appreciated in salads. A supply can be easily obtained by lifting a few roots, planting them in boxes, and placing them in gentle heat.

Onions.—Sow, each fortnight, a small quantity of seed of the silver-skinned variety and raise the plants in a temperature of about 50°, keeping the seedlings near to the glass.

Tomatos.—Fresh, ripe Tomatos should always be included in a well-assorted salad. When nicely sliced they are not only appetising, but add greatly to the appearance of the dish.

Beetroot.—This, too, should be included, small roots being kept in readiness for the purpose.

Seakale should be introduced into heat in large quantities, as it is sure to be in great demand. Each week from now it will start into growth more and more readily.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

The forcing house.—Considerable forethought and management is necessary in the management of this structure. In the matter of forcing plants and shrubs, every garden must be a law unto itself. The gardener, knowing the particular requirements of the establishment under his care, should introduce fresh subjects into the forcing house at the proper times and in sufficient numbers to meet the demand. If his judgment is faulty, his show house will become either insufficiently furnished or overcrowded. The careful manager commences to force the various plants some few days, or even a couple of weeks, according to the nature of the plant, in advance of the latest date, well knowing that, should the weather prove very unfavourable, the extra time will be needed, whilst in the absence of unfavourable weather, he can easily retard the progress of the plants on the approach of the flowering stage, by decreasing the temperature of the house, or by removing the plants to a cooler structure. The plants to be forced should not be introduced at once into great heat, but gradually accustomed to warmer surroundings. Well-rooted bulbous plants will put up with more in this direction than most species, but even in the case of bulbous plants the forcing should be comparatively gradual until a maximum heat of about 65° is reached; with some few exceptions, which have previously been remarked upon, it is not wise to attempt to force shrubs into flower in a greater artificial heat than 60°. Water at the root must be applied with extreme care. It often happens that the water used in syringing the growths of shrubs keeps the surface soil sufficiently moist to give the impression that no water is needed, whilst the remainder of the soil may be too dry. No attempt should be made to subject *Liliums* to a high temperature until the flower-buds have attained to a good size.

Solanum.—Before the fruits shrivel and fall, a few of the largest berries should be gathered, and the seeds removed ready for sowing in the spring. As these plants are now kept somewhat dry at the root, frequent fumigations will be necessary to destroy insect pests.

Gardenia.—If *Gardenia* flowers are required during the winter months, it is essential to devote a house entirely to their culture. A high temperature (75° to 80°) with abundant atmospheric moisture is necessary, and the plants must receive every possible ray of light. The culture of *Gardenias* becomes much easier when flowers are not required until the spring. The plants for this purpose should, for the present, be kept in an atmospheric temperature of 57° to 60°, and they should receive but little water at the root. The plants should be inspected frequently, and if mealy bug is detected, they must be at once cleansed.

Epiphyllum truncatum.—Plants coming into flower should be placed in a house having a moist atmosphere and a temperature at night varying from 55° to 60°. The scarlet-flowered *E. Gaertneri*, which flowers in the spring, should be resting at the present time.

FRUITS UNDER GLASS.

By E. HARRISS, Fruit Foreman, Royal Gardens, Frogmore.

Early Peaches.—The earliest house should be kept slightly warmer from this date; the night temperature ranging between 50° and 55°, in accordance with the atmospheric conditions outside. If this degree of warmth can be maintained without the aid of the hot-water pipes at the front of the house nearest to the trees, so much the better, as then there will be less danger of red spider appearing. Admit a little fresh air through the top ventilators on fine mornings, but close the apertures before the sun has lost its power, after slightly spraying the trees with luke-warm rain-water. Damp down the paths and bare surfaces of the borders as often as is

necessary to maintain a moderately humid atmosphere, as dry air is favourable to both red spider and aphid. It is a good plan to fumigate the house with some vaporising compound just before the trees open their flowers. When the young growths are about an inch long budding may be commenced. It is better to remove at least one-third of the buds at this stage rather than to wait till the shoots are 2 or 3 inches long, as the removal of a number of shoots at one time is a great check to the plants. This work should be done on at least three occasions. Commence at the upper part of the trees, rubbing off the buds on the lower side of the shoots first. Before the flowers expand carefully examine the borders to ascertain if they require moisture; if they are dry give them a copious soaking with clear water, which should not be colder than the atmosphere of the house. More than ordinary care is necessary at this time of the year to ensure the fruits setting, therefore strict attention must be paid to the smallest cultural details whilst the trees are in flower. Excessive use of fire-heat or sudden fluctuations of temperature are two of the chief causes of failure in this matter. Damping and syringing must be discontinued till the flowering stage is over. Encourage a free circulation of air during favourable weather, but never allow cold draughts to reach the flowers. Pollinate the blooms at noon by carefully passing a rabbit's tail over them, and especially see that all the flowers at the top-side of the branches are dusted with pollen.

Second early Peaches.—The beginning of the New Year will be sufficiently early to start the trees in another house for a succession to the earliest crop. If the buds on the trees are already swelling, it will be advisable to close the front ventilators when cold winds prevail, as cold draughts are responsible for much injury to Peach buds when they are bursting.

Late Grapes.—All Grapes should now be cut, provided a suitable room is available for keeping them, as the vines need to be watered, pruned and cleansed. The roots and borders should also receive any necessary attention.

Young vines.—Vines intended to be planted in the spring should be cut down to three or four eyes. Paint the cut surfaces with styptic and place the vines in a cold house. Young vines which were planted last year may now be pruned. Cut back the main rod to about 2 or 3 feet, according to the strength of the plant. Proper treatment when they are young is essential to secure strong, healthy vines, and there is nothing so detrimental to their future welfare as over-cropping them when in that stage.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EDMUND G. LOOER, Bart., Leonardlee, Sussex.

Trenching and digging.—Any flower-beds that are not planted with bulbs or spring bedding, or bare parts of the borders and shrubberies, should be dug or trenched. If the soil needs enriching, afford it a good dressing of manure, leaf-soil, or ashes from the garden fire. Let the surface of the ground lie as roughly as possible, so as to expose it to the beneficial influences of frost and air.

Grass verges.—Any worn patches in the grass edging, by the side of paths or carriage drives, may now be renovated. Remove the turf, and place sufficient fresh soil to raise the verge to its proper level. If the grass is badly worn, it is better to employ fresh sods, but in some cases all that will be necessary is to reverse it, placing the worn part inside, and levelling it by adding some fine soil. When doing this, see that all drains and gullies are in a proper working condition.

Garden paths.—It is a suitable time to mend or make garden paths. If new ones are being prepared, excavate the soil to a sufficient depth, and place at the bottom a quantity of hard core, or large stones; then some smaller pieces of the same material, finishing with a good layer of fine gravel. Where there is a considerable amount of traffic, the material forming the path should be at least 1 foot deep. Older paths should be forked over lightly and surfaced afresh with new gravel, and afterwards thoroughly rolled. It is necessary to do this every few years in order to maintain them in good condition.

Potting materials.—Get ready the various loams, leaf-mould, manure, soot, lime, and other materials which will be required for potting purposes. Mix up the soils for the several purposes for which they are intended, and then place some material such as boards or corrugated iron over them to keep them dry.

Berried shrubs.—The birds will now be busy amongst these, and measures should be taken to protect the fruit. Birds are very fond of Mistletoe berries, which must be protected by nets or some other means. Black cotton or thread entwined amongst the branches is a simple and useful measure for keeping away birds, which will even devour the berries of small shrubs in pots intended for decorative purposes indoors.

Climbing Roses.—Where there are large quantities of Roses of the Rambler type, their thinning and pruning may be undertaken as opportunity presents. The branches will need to be unfastened, so that the useless shoots may be cut out easily. All the old shoots should be cut down to the ground level, and the young ones trained in position. Do not bunch the branches together, but arrange them so that they will cover all sides of the support, and allow the smaller side branches to hang free, as this will give a more natural effect. It is not necessary to do this every year, but it should be undertaken every second or third season. After the pruning and training is finished place a good mulching of manure about the roots.

Briar stocks.—Where these can be obtained in the neighbourhood, they should be dug up, and planted in rows for budding later. Those with long, straight stems are very useful for standards.

The Alpine garden.—Small shrubs may be planted on the rock-garden whenever the weather permits.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

Strawberries.—The beds should be lightly forked over, during favourable weather, and generally made tidy. Established plants should be given a liberal mulching of well-rotted manure. The manurial substances contained in the mulching will be washed into the soil by the rains and when the roots become active again in the spring they will find a reserve of food which will enable them to grow vigorously and produce good crops of fruit. The Strawberry is a gross feeder, and is much benefited by these heavy manurial dressings in winter. When making the beds tidy, see that each variety is properly labelled. In the case of beds which were planted last autumn, this heavy mulching of manure will not be required, provided the ground was suitably prepared and enriched at the time. The present is a suitable time for preparing land intended for Strawberry planting next year. Trench the soil and work in plenty of manure as the digging proceeds, also apply a good dressing of lime. Leave the surface of the soil in a rough condition, so that it may be exposed to the beneficial actions of frost and air. The ground need not necessarily remain fallow until the Strawberries are planted; a suitable crop to precede Strawberries is early Potatoes, which will be harvested early in the summer. After the Potatoes are dug, the ground should be made level and tidy, and nothing more will be required to prepare it for the Strawberries. Trenching land in the winter has many advantages; not only is the soil exposed to the weather all through the winter, but it settles down, so that by spring-time it is in a proper condition for planting, and the manure is well rotted. In addition, labour for the work can be better spared in winter than at any other season.

Planting and root pruning.—The wet weather has delayed this work, but it is nevertheless desirable to wait rather than plant when the ground is in an unfavourable condition. Pruning and training can be attended to in the case of wall trees, or in places where planks can be employed for the operator to walk upon. Trees arriving from the nursery while the ground is in the present condition should be "heeled in" for the time being, but plenty of soil should be placed about the roots, because the trees may remain un-

planted for some considerable time, and it will not be wise to risk injury from frost. Even the tops of the trees should be protected during very severe frost, and some light material such as Bracken Fern should be at hand ready for the purpose. If the trees are delivered during very cold weather it will be better not to unpack them, but to place them just as they are in a shed or cellar. When the weather becomes milder they can be heeled in as advised. Stakes for securing fruit-trees should be prepared, and any necessary staking carried out, also any other work that will forward matters when the ground is in a suitable condition for planting, lifting, or root-pruning. When tying the stems of the tree, use a piece of sacking or other soft material round the part where the string is tied; fasten them securely, so that there will be no danger from the bark being rubbed during windy weather. Coarse, tarred twine is the best material to use.

PUBLIC PARKS AND GARDENS.

By W. W. PETTIGREW, Superintendent of City Parks, Cardiff.

Special grounds for professional sports.—In these days, when so many more sources of income exist than was formerly the case, in connection with public parks, there is a danger of judging a park's success according to the greatness or smallness of its financial returns. Park officials are naturally always very pleased when they are in a position to report to their committee and through it to the general public, at the end of each season, that the takings from the playing of games, the hiring out of chairs or the letting of boats, are on the increase. For the same reason, when recommending any new departure in park management, they are always glad to be able to point out that it will result in a financial return, even before indicating its public advantage. This danger of losing sight of the real function parks play in urban life was forcibly brought to my notice last summer when visiting a large park one evening after a band performance had taken place. The superintendent, meeting one of his assistants, casually asked how everything had gone off. The reply was prompt and to the point. "Very poor, sir. The crowd was the largest we have had all season, and yet the chairs were hardly patronised." Prior to the introduction of chairs (for the use of which a charge is made at this park) the answer would have been very different, for then, apart from the quality of the music, the standard of success would have been the number of visitors present and not the number of pennies collected.

Financial considerations sometimes necessary.—While it is to be hoped that parks will never descend to such a low plane as to be regarded as commercial concerns, there are circumstances under which money-making is not merely justifiable but actually essential, namely, where certain forms of amusement are desired by the public. Such sports as foot and cycle racing, pedestrianism, and professional football matches, &c., can only be provided at great cost, and persons desiring to see these must be prepared to pay for the privilege. In many towns private companies provide grounds for these games, and in such cases there is no need for the parks department to deal with the question. There are, however, many places where no facilities exist for private enterprise taking up such sports, and it is then to the advantage of the public authority to make the necessary provision.

Methods of management.—After being laid out and fitted up, sports grounds may be dealt with in one of two ways. They may either be leased to a company for a number of years or retained by the Parks Department, and let out from time to time to clubs and societies requiring their use. The latter, from the public standpoint, is the better course, as they are then always at the disposal of the parks authorities, and when not in use for one thing are available for another. Even when this is the method adopted, there are two different ways of charging for the use of the ground. In some cases a fixed charge is made per day, whereas in others payment is made by handing over a given percentage of the gross takings. When payment is made on this latter basis it is necessary to have registering turnstiles fixed at the entrances to the grounds as well as at the entrances to each different class of seats on the grand stand.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

Editors 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 EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 21—
Roy. Hort. Soc. Coms. meet.

SAURDAY, DECEMBER 25—
Christmas Day. Quarter Day.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38.6°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 15 (6 P.M.): Max. 41°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, December 16 (10 A.M.): Bar. 30.1; Temp. 39°; Weather—Slight rain and sleet.

PROVINCES.—Wednesday, December 15: Max. 42° Cornwall and S. Ireland; Min. 35° Cambridge.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Dutch Bulbs, Herbaceous and Border Plants, at 12; Roses and Fruit Trees, at 1.30; Palms and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

The
French
Government
and
Horticulture.

A few weeks ago we recorded the formation of a Sub-Department for Horticulture by the Belgian Government. We have now to announce the creation, by the French Minister of Agriculture, of a permanent, Technical Commission of Horticulture.

The step taken by the French Government is so wise and so important that we propose to set forth in some detail the considerations which have led the Minister of Agriculture, M. Ruan, to decide upon the formation of this standing Committee of Horticulture and the programme of the work which the Committee will undertake.

In an admirably lucid report which prefaces the official decree establishing the Committee, M. Ruan draws attention to the enormous progress of French horticulture during the past 20 years. This progress, which consists in increase of production, in improvement of varieties and in means of transport, may be gauged by the fact that, whereas the total value of French horticultural produce was 295,904,000 francs in 1892, it has now reached 400 million francs. That is to say, the annual value of French horticultural produce has increased in 17 years by 36 per cent. and is now 16 million pounds sterling. Notwithstanding this marked development in the industry, the Minister states roundly that

French horticulture cannot rest content with its position. Competition in the open markets of Europe, and even in France itself, is becoming keener year by year. To maintain their position, M. Ruan is convinced that French horticulturists must redouble their efforts and "must receive every assistance from all departments of the State." These efforts and this assistance must take the form of improvement in the methods of production, the introduction of co-operation among the producers and vendors, improvement in methods and in speed of transport and in revision of the charges for the carriage of horticultural goods. The supreme function of the commission will be to co-ordinate the efforts now being made in these and in other directions "in order to increase the prosperity of France." Among the first practical tasks of the Committee will be the investigation of carriage rates and the establishment, under conditions which have the approval of horticulturists themselves, of an agricultural parcels-post for produce sent in parcels up to 40 kilog. (90 lbs.) in weight. The Minister recognises that, before establishing this new parcels-post, he requires to have the advice of the growers and merchants whom the new post is intended to benefit.

Another duty, which the Committee will be required to undertake, is that of organising a national bureau for the granting of certificates of export. M. Ruan points out that, owing to the stringency and uncertainty of the new laws concerning the importation of nursery stock and other horticultural produce into the United States and also other countries, French horticulturists run, at present, the risk of heavy losses. He proposes to form a body of inspectors who shall, when required, examine goods intended for export and give certificates which will be accepted by the Customs authority of the country to which the goods in question are consigned. The Minister points to the enterprise shown by Belgium in founding a State Research Station for the investigation of insect and fungal pests which attack cultivated plants and foreshadows the establishment of a similar institute in France.

Nor is the Committee to neglect the gardener in its attempt to ameliorate horticulture; amongst other things, it will be called upon to consider the conditions under which gardeners incurring accidents in the course of their work shall have legal claims for compensation.

The constitution of the Committee augurs well for the success of its work. Besides some 16 members who are appointed by virtue of their several offices—the Director-General of Customs, the Director of Agriculture, the President of the National Society of Horticulture, the Director of the School of Horticulture at Versailles, the chief of the Agricultural Enquiry Bureau, and representatives of the chief railway companies—there are also 30 members nominated by the Minister. In making his first nominations, M. Ruan has taken care that all the chief horticultural interests are represented. The list includes seedsmen, florists, nurserymen, market-gardeners, fruit-growers, salesmen and head gardeners chosen from the various regions of the country. Among the names of members of the Committee we note those of Messrs. René Adnet, of Antibes; Antoine Rivière, of Lyons; Victor Lemoine, of Nancy;

Albert Truffaut, of Versailles, Amédée Lecointe, of Louvecienne; Philippe de Vilmorin, of Paris; and Jules Vacherot, head gardener to the town of Paris.

We not only wish all success to the Standing Committee, but hope earnestly that the formation of this important body will not escape the notice of our own administrators. They "order these things better in France," but there is no reason why we should not imitate where we cannot originate. We do not want to see a doctrinaire committee of well-meaning amateurs and procrastinating officials, but we should welcome gratefully a standing committee constituted on the lines of the French "Commission Technique de l'Horticulture," and like it leavened with the leaven of the leading representatives of horticulture.

ROYAL HORTICULTURAL SOCIETY.—The Rev. W. WILKS reminds us that there will not be an exhibition on December 21, as the date is found to be too near to Christmas. The Floral, Orchid, and Fruit Committees will sit upstairs, and plants, &c., for Certificate will be received, but nothing else. It will be remembered that a show for December 21 was announced in the R.H.S. publications and in our own Almanac.

ROYAL INSTITUTION.—Amongst the series of Friday evening lectures to be delivered before Easter, 1910, is one on "The Heredity of Sex," by Prof. W. BATESON, M.A., F.R.S., on February 4.

ROYAL GARDENERS' ORPHAN FUND.—We are glad to hear that this charity has received a sum of £10, the proceeds of a whist drive arranged by Mr. F. TOPHAM, Northwick Hall Farm, and held at Worcester on the 9th inst. Mr. TOPHAM may be congratulated on the results of his efforts.

KEW.—In the *Bulletin*, No. 9, 1909, just published, it is announced that Miss J. J. CLARK, B.Sc., has been appointed to the vacancy on the Herbarium staff as the result of a competitive examination. Another appointment announced is that of Major HENRY ALFRED CUMMINS, C.M.G., as Professor of Botany, University College, Cork. The *Bulletin* records the death of Mr. C. W. SMYTHE, Agricultural Superintendent, Sierra Leone, on October 15. Mr. SMYTHE left Kew in 1904 to take up the duties of Curator of the botanic station in Sierra Leone.

YORK CHRYSANTHEMUM SHOW, 1910.—The next show of the York Chrysanthemum Society will be held on Tuesday, Wednesday, and Thursday, November 15, 16 and 17, 1910.

PUBLIC PARK FOR BANGOR, CO. DOWN.—The corporation of this town recently offered a premium for the best design for laying out a public park. We are now informed that a large number of designs were submitted, and that of Messrs. J. CHEAL & SONS, Crawley and London, has been awarded the first prize.

RAILWAY COMBINATIONS.—The following resolution was passed at a recent meeting of Hull fruit traders: "That this public meeting of fruit traders of Hull and district declares that it is absolutely necessary for the welfare and growth of their trade that there should be healthy competition and freedom for all railways in this large port, and we are therefore absolutely opposed to the proposed agreement of the North Eastern and the Hull and Barnsley Railway Companies, which means practically amalgamation and monopoly, and we pledge ourselves to oppose this agreement by all legitimate means."

"THE BOTANICAL MAGAZINE."—The issue of this journal for December contains figures and descriptions of the following plants:—

PARTHENOCCISSUS TRICUSPIDATA (*AMPELOPSIS VEITCHII*), tab. 8287.—Gardeners will scarcely recognise, under this somewhat lengthy name, the familiar plant known to most of them as *Ampelopsis Veitchii*. Indeed, they have never used the name *Vitis inconstans*, which was until recently considered the correct nomenclature. The conception of the genus *Vitis* in the *Genera Plantarum* is made to include all the *Ampelidaceæ* except the species of *Pterisanthes* and of *Leca*. Planchon, however, subdivides the *Vitis* of the *Genera Plantarum* into nine distinct genera. It is in following Planchon that Mr. SPRAGUE now adopts the name *Parthenocissus tricuspidata*.

ASPARAGUS TETRAGONUS, tab. 8288.—This species is a native of South Africa. It was first collected by MUND and MAIRE in Cape Colony. In general characteristics, the species most resembles *A. racemosus*. The specimens from which the figure was prepared were obtained from a plant which has been growing for many years past in the succulent house at Kew. It is cultivated in a shallow border, and its stems attain to a height of over 10 feet. The plant flowers very freely, the blooms being fragrant: they are succeeded by red, globose, one-seeded berries. This species has a root system remarkable for the large, whitish, watery, ovate tubers, which are formed along the principal roots, and are calculated to enable the plant to endure long seasons of drought.

PRUNUS MALITIMA, tab. 8289.—This species is described as a low, spreading bush 4 feet to 5 feet high, and considerably more in width. It flowers in May, and not only produces its blossoms in great profusion, but keeps them in perfection longer than is the case with most Plums. It appears to possess a robust constitution, and is one of the most accommodating of American Plums in regard to soil. It is surmised that it will prove useful for planting in fairly exposed places near the sea. The fruits are red, and, as a rule, freely produced.

OPUNTIA IMBRICATA, tab. 8290.—This is a very old plant in gardens, having been introduced to cultivation early in the 19th century. The plate is prepared from a plant which flowered early in August, 1908, in Sir EDMUND G. LODER's collection at Leonardslee, a plant which Sir EDMUND LODER himself collected in Colorado in 1878. The rose-pink flowers are very beautiful, but, apparently, the plant seldom flowers in this country.

EURYOPS VIRGINEUS, tab. 8291.—This species belongs to the Natural Order *Compositæ*. It is tender in most gardens in this country, but it can be successfully grown in sheltered situations in the south-western counties. It thrives luxuriantly in the gardens of Mr. T. A. DORIAN SMITH at Tresco Abbey, Isles of Scilly, who furnished the materials from which the plate was prepared.

THE SHREWSBURY SHOW.—Several important alterations have been decided upon in respect to the next show of the Shropshire Horticultural Society. The groups of ornamental foliage plants which for some years past have been more or less similar to the other groups of flowering and foliage plants, will be discontinued. In the place of these there will be a class for displays of indoor and hardy plants and cut flowers, each exhibit to be arranged on a space of 250 square feet. The prizes offered in this class are of a very liberal character, the desire being to encourage exhibitors to show groups of plants and flowers of a type entirely new to these shows. The 1st prize will consist of £20 and a large gold medal, the 2nd prize £15 and a small gold medal, the 3rd prize £12 10s., and the 4th prize £10. The selection of plants and flowers is left to the exhibitors, and they will be allowed to arrange them in any method they choose, using mecha-

nical aids of any description. The Society has decided not to accept any trade prizes for Sweet Peas, it being considered that sufficient classes are already provided for these flowers. The hardy flowers in class 52 will in future be arranged on the ground level, where they will be much more effective than if staged on tables as heretofore. Each exhibit will occupy a floor space of 20 feet by 6 feet. It will be remembered that some correspondence took place in these columns last season in respect to class 72, for a decorated fruit table. It was felt that the practice which formerly obtained of displaying the points awarded to each exhibit was of considerable interest to the general public, and the discontinuance of this practice was regretted. We are glad to be able to state that the Society has decided that in future the points will be shown on cards placed to each exhibit. The points for decoration have been altered as follow: six for beauty of flower, &c., and an equal number for general arrangement; a total of 12, instead of 24. No prizes from trade growers will be accepted for single dishes of vegetables; such prizes must be offered for collections of six or more dishes. The non-competitive exhibits are to be treated more liberally than last year. The judges will be empowered to award the Society's medals in gold, silver-gilt, silver, or bronze to such exhibits as may be worthy of such distinction. In order to prevent inferior exhibits obtaining medals, the judges will be empowered to pass, without award, exhibits of insufficient merit.

FLOWERS IN SEASON.—Messrs. GEORGE WILLIAMS & SONS, Manor House Nurseries, send blooms of their new single *Chrysanthemum Caledonia*. The blooms are from 7 to 8 inches across, the colour of the florets being a bright rose-pink.

INTERNATIONAL EXHIBITION AT BUENOS AYRES, 1910.—According to information from the Commissioner-general for Europe (Argentine Embassy, Berlin, W.), December 31, 1909, will be the last day for receiving applications from exhibitors for the International Agricultural Exhibition of live stock, agricultural products, implements, &c., as well as the recently added section for provisions, to be held next year in Buenos Ayres from June 3 to July 31, under the auspices of the Argentine Government in connection with the celebration of the first centenary of the independence of the Argentine Republic. Applications may be sent direct to the secretary of the Exhibition, 316, Florida, Buenos Ayres, Argentine Republic. Further information may be obtained from the Argentine Consulate or from the Commissioner-general for Europe, the Hon. Consul GUSTAV NILDERLEIN, Berlin, Argentine Embassy.

CHEMICAL ANALYSIS OF THE "WONDER-BERRY."—Our readers will remember that we published in a recent issue the results of an analysis by Dr. GRESHOFF of the fruits of the Wonderberry; and that this authority found more poisonous alkaloids in this fruit than in the fruits of the Nightshade and Huckleberry (see *Gardeners' Chronicle*, October 30, p. 291). We have received a letter from Mr. J. LYON WHITTLE, Town Clerk of Warrington, enclosing a report from the official analyst for the County Borough of Warrington, Mr. FREDERICK G. RUDDOCK, F.I.C., on the results of the chemical analysis of fruits of the Wonderberry grown in this country from seed obtained from New York. Mr. RUDDOCK states that he has "analysed both the leaves and fruit of this sample of Wonderberry, making a special search for the alkaloids atropine and solanine," and that he is "of opinion that neither solanine, atropine, or other poisonous alkaloid is present in either the leaves or fruit of this sample." Attention has more than once (see *Gardeners' Chronicle*, March 27, 1909, p. 204) been drawn to the fact that the alkaloids responsible for the poisonous effects of the Nightshade (*Solanum nigrum*) are erratic in their occurrence. It

would be worth the while of some botanist to enquire more closely into the phenomenon of the occurrence and distribution of these toxic substances in species of *Solanum*, with the object of determining whether these alkaloids are produced under definite climatic conditions or whether their presence is confined to certain kinds only of the plant in question.

OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1910. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

CYPRIPEDIUM TIBETICUM AND C. MARGARITACEUM.

(See Supplementary Illustration.)

OF the many terrestrial *Cypripediums* found in Western China, *C. tibeticum* and *C. margaritaceum* are amongst the most important.

Much has been written regarding *C. tibeticum*, but the illustration now published is probably the first showing the species *in situ*. Though it is now in cultivation (see fig. 185), I may say that the plant is only seen at its best in the wild state. It is comparatively common on most of the ranges of West and North-west Yunnan, extending as far south as latitude 25° N., but it also grows in abundance on the eastern slopes of the Mekong-Salween divide, about 28° N., where, in the spring and early summer, scarcely an Alpine pasture can be traversed which is not starred with its dark, nodding blooms.

In common with many of the earlier Alpine plants, it appears almost immediately on the melting of the snows, and favours the more open and exposed pastures, generally on dry, well-drained soil, at an altitude of 9,000 to 11,000 feet. The plants are from 9 to 12 inches high, the flowers being so large in comparison as to give the impression of top-heaviness. The normal colouring of the perianth is a pinkish-yellow ground shade, heavily veined and streaked with deep purplish-rose; the much-inflated labelum, measuring 1 to 1½ inch in length by about the same breadth, is very much darker, and it is not uncommon to find specimens with all parts of the flower of a uniform deep, almost black, maroon.

C. MARGARITACEUM.—This species also is a hardy Alpine, but it is much rarer than *C. tibeticum*, being extremely local in its distribution. It has only been found in one or two districts in the basin of the Mekong river.

The plants are generally about 3 inches and never exceed 6 inches in height. The solitary flower arises from the centre of the foliage, which consists of a pair of large, broadly-ovate, sheathing leaves. These measure 3 to 5 by 2½ to 4 inches, and are deeply ridged along their full length, of a dark green colour marked with large purplish-maroon blotches. The upper surface is glabrous, the under sparingly coated with livid purplish hairs.

The flowers are large, the segments of the perianth extremely fleshy and brittle, of a yellowish shade, streaked and spotted with purplish-maroon, so much so in many specimens that little or none of the ground colour shows. The labelum is very large, 2 inches by 1 inch, exceptionally thick, and of such a brittle nature that it was only by exercising great care that perfect specimens could be preserved for herbarium material. The ground colour is a pale shade of yellow, broken with numerous reddish-purple spots, all parts of the surface being covered with purplish shining hairs.

The illustration now published shows one of a group found growing, on almost pure limestone in open Pine forest, on the eastern flank of the Lichiang Range at an altitude of 10,500 feet. G. Forrest.

BATTERSEA PARK.*

BATTERSEA PARK is 199½ acres in extent. The land was purchased by Government in 1846 at a cost of £150,000, or £750 per acre. The park was laid out by the late Mr. Gibson and was opened to the public in 1858. The cost of laying out the park, including the embankment along the River Thames, was about £80,000, and the average cost of annual maintenance is £12,000. Being a comparatively new park, it is laid out in the picturesque garden style, and it is a pleasant contrast to such formal parks as Hyde Park and Kensington Gardens. Less than 60

thrive in more favoured localities. The park is approached by four principal entrances. Being oblong in shape, an entrance has been formed at each corner. These are guarded by ornamental gates attached to pillars of masonry; smaller gateways have been formed between these to make convenient junctures with the main thoroughfares.

THE CARRIAGE DRIVE

is two miles in length and of sufficient width to give dignity to the park. The course of the drive follows the whole boundary of the park, but it does not allow of the extreme outskirts

have been formed at carefully-chosen points; therefore, upon looking through these openings, some beautiful landscape views can be seen. At some points one can look across the whole of the playing fields over vast tracts of restful greenward to the distance beyond, where the skyline is irregularly broken by the towering peaks of many graceful trees.

For the safety and convenience of pedestrians, footpaths have been made upon each side of the carriage drive, and raised 6 inches above it; the edges are built up with kerb stones 4 feet by 1 foot by 1 foot, let 6 inches into the ground. The paths slope towards these edges, so that the



FIG. 185—*CYPRIPEDIUM TIBETICUM*.
(See p. 419 and Supplementary Illustration.)

years ago the site of Battersea Park was a desolate swamp, a resort of gamblers and prize-fighters!

The situation of the park is not an ideal one from the cultivator's point of view. It is bounded on the north side by the River Thames, and upon all other sides by a forest of chimneys; the smoke from these, combined with the mist from the river, renders the atmosphere unfavourable for the growth of many plants which

of the park being seen, as these are screened by avenues of trees and carefully-arranged shrubberies. Herbaceous borders have been formed in front of the shrubberies, and from March to November these borders afford the visitor an ever-changing series of floral pictures.

At various points the belts of trees and shrubs have been broken up to form glades and vistas. The glades were formed by excavating the soil and throwing it up to form mounds and hollows; these make charming spots for naturalising spring bulbs, such as Snowdrops, Aconites, Crocuses, Bluebells and Daffodils. The vistas

surface water can drain off easily into the gullies. The drive is drained by a row of 9-inch pipes extending down one side; the gully traps upon the opposite side are connected by pipes which cross the drive at these points. The gully traps are placed at intervals of 25 yards, and are so arranged that they can easily pass off the surface water, whilst all sediment falls to the bottom, where it can be collected as often as circumstances may require.

THE ELM AVENUE AND FOOTPATHS.

Branching off from the drive are numbers of

* A paper given before the London branch of the British Gardeners' Association, by Mr. V. Cockram.

gravel walks and footpaths leading to the principal portions of the grounds. Some of the playing fields have been cut up in a regrettable manner by an unnecessary number of paths which have been formed to make short cuts for people going to their businesses. Not only has this taken up much valuable space, but the number of consequent fences has marred the scene.

The Elm avenue, in the centre of the park, is also a doubtful acquisition. In the first place it cuts the park in halves, thereby lessening its apparent size, and also provides half a mile of straight line which seems out of harmony with the rest of the park. Open spaces are of the utmost value in parks, nothing being more restful to the eyes of the town dweller accustomed to narrow streets, than a wide expanse of unbroken sward.

The Elm trees are planted on both sides of a broad walk, which is intercepted in the centre by the band stand. Here the walk diverges and forms a circle, which is used as a promenade during the band performances. The trees afford a grateful shade during summer, whilst in spring and autumn the varying tints in the leaves give some pretty effects. It is unfortunate that just as the trees have reached their prime they have to be condemned. The trees are attacked by the parasitic fungus, *Polyporus Ulmaria*. This parasite has found a lodgment in the bark of the trees, and the mycelium has worked its way through the fibres of the branches and so weakened them that they are apt to fall without any warning, being therefore a source of danger to the public. The trees have already been lopped to minimise the danger of accidents, and in time they will be entirely displaced by the young Plane trees (*Platanus acerifolia*) which have been planted alternately with the Elms with this object in view.

It would seem a matter for regret that the choice has fallen upon the Plane, as there are already several avenues of this tree in the park, as well as many isolated specimens. There is beauty in variety, and variety stimulates interest.

An avenue of *Ailanthus glandulosa* would have been very distinct; this graceful tree flourishes in almost any soil and position. The long, graceful pinnate leaves retain their spring-like freshness long after many other trees have become scarred and brown by the effects of dust and drought. *Catalpa bignonioides* also deserves mention as an avenue tree. This tree has handsome, dark green, cordate leaves, and produces its flowers in great profusion; it also retains its freshness until autumn. All the varieties of *Fraxinus* do well, especially *simplicifolia*; this makes a handsome park tree.

The Beech trees present a picture of health; the damp locality suits them so well that there is not a dead twig to be found in their spreading branches. (To be continued.)

FRUIT REGISTER.

CROPS OF PLUMS AND PEARS ON A SOUTH WALL.

The following tables give the crops of Plums and Pears obtained over a period of 10 years from trees planted against a south wall in a Lincoln garden. The wall is 390 feet long and 8 feet high. It is built of cement and wired from end to end. The trees were obtained from Messrs. J. R. Pearson & Sons. Each had four tiers of horizontal branches (two on either side of the stem), and they were six years old when they were planted in the autumn of 1898. They were not allowed to fruit until 1900. During the flowering period, the trees were protected by a removable wooden coping, 12½ inches wide, and Frigi Domo curtains, which, when tied together, covered the whole length of the wall.

The Pear trees were worked on the Pear stock, but as the wall was only 8 feet high, I think the Quince stock would have been better. These varieties marked with an asterisk were root-pruned in 1906. The two trees of Pitmaston Duchess Pear are precisely alike in all respects and are growing side by side. Whilst one tree gave 225 fruits the other produced only 13 in the 10 years. *Reine Claude Bavay* Plum was

somewhat shaded by a Rose tree, but I should never again plant that variety. Early Transparent Gage was over-cropped in 1908, and therefore was not allowed to fruit in 1909. Doyenné du Comice may be the finest quality Pear, but I prefer 961 fruits of Conference to 92 of Doyenné du Comice. Twenty vertical cordons of Cox's Orange Pippin Apple did not give 20 fruits in the 10 years. They bloomed, and the fruits set, but they dropped, not from lack of water, but from too much heat.

The tables may be of service in guarding against two common mistakes: (1) the planting of fruit trees of too high a quality for the particular locality, and (2) the planting of all kinds of trees in the wrong situations. C. C. Ellison, *Bracebridge, Lincoln.*

CYANANTHUS INCANUS.

THERE appears to be only two species of *Cyananthus* in cultivation, viz., *C. incanus* and *C. lobatus*. The latter has purplish-blue flowers, and is a native of the Himalayas; it is a fairly well-known rock-garden plant. *Cyananthus incanus* (see fig. 186) comes from Alpine Sikkim, and is extremely rare in cultivation. The erect flowers are of a beautiful soft blue colour, and at a distance somewhat resembles those of *Gentiana verna*, but the petals are longer; when fully opened the flower measures 1½ inch across, the corolla tube being 1 inch long. A tuft of soft, white hairs closes the corolla tube at first, but the hairs turn back as the flower ages, and a white five-rayed stigma is revealed. The plant has a neat, trailing habit, and is clothed with small oval leaves. The stem and calyx are covered with white hairs, and the leaves on their under surface, but the upper surface is glabrous.

Cyananthus lobatus is often planted in too dry a situation to succeed. At Glasnevin it grows in a fairly moist but well-drained peat bed, where it flourishes and flowers abundantly, but the plants have to be guarded from slugs. It grows to perfection in Mr. Walpole's garden at Mount Usher, where it is planted in a group close by a stream. *Cyananthus incanus* flowers usually about August or September at Glasnevin, but this year it flowered in October.

Both the species of *Cyananthus* can be increased from cuttings or seeds. The flowers are distinctly protandrous, and for this reason seeds are very sparingly produced. The stigma is at first capitate and hairy, and sweeps away the pollen from the anthers as it grows upwards; later the stigma becomes receptive, opening into five rays. C. F. Ball, *Glasnevin.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

LILY OF THE VALLEY DESTROYED BY CATERPILLARS.—When lifting a large pot of Lily of the Valley for forcing, a few weeks since, I was much surprised to find a large proportion of the crowns destroyed by caterpillars. They had eaten into them some distance below the surface of the ground, and worked upwards, consuming the central portion. Some were found inside, and many were distributed about among the roots; they were rather more than an inch long, whitish in colour, with brown heads, and have been identified as belonging to the garden swift moth (*Hepialus lupulinus*). We have not noticed the moths flying about, neither have we found the caterpillars in any numbers elsewhere. I have not heard of Lily of the Valley suffering in this way before, but, as the damage is done underground, the above instance may account for failures in other places where the cause is still mysterious. W. H. Divers, *Belvoir Castle Gardens, Grantham.*

APPLE GOLDEN NOBLE (see p. 408).—Many of the recognised dessert Apples are not nearly so good as Golden Noble. It might be used for both purposes, culinary and dessert, just as Gascoyne's Scarlet Seedling. I have reason to believe that another variety is often substituted for Golden Noble. In Barron's list of synonyms in *British Apples*, Golden Noble is given as a synonym of Waltham Abbey Seedling, although no one knew better than the late Mr. Barron that these two varieties are quite distinct. T. W. Turner, *The Gardens, Royal Hospital, Chelsea.*

MR. W. BOTTING HEMSLEY (see p. 381).—Writing with unavoidable haste, I blundered rather badly in some of my dates. Although I knew better, I put the date of the paper on Julianæ as 1897 instead of 1907, and I mistook 1896, that of Mr. Hemsley's election as a Fellow of the Linnean, for 1899, when he was elected a Fellow of the Royal Society. I find also that he entered the Herbarium at Kew in 1861, not in 1863, as I imply. W. T. Thistleton-Dyer.

JUGLANS AILANTIFOLIA (see p. 384).—Ripe fruits of this species are possibly of rare occurrence in this country, but the fruiting is not confined to Belgrove. In a sheltered, warm, and naturally well-drained position facing west, in the gardens at Aston Rowant, Oxfordshire, there is a tree of considerable height, which I believe to be *J. ailantifolia*. This has matured fruits on three or four occasions during the last 10 years. As an isolated tree, it has an attractive appearance. Although the fruits are edible, the kernel adheres so firmly to the shell that there is some little difficulty in removing it. W. H. Clarke.

PLUMS.

		1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	Total
1	Reine Claude de Bavay	12	8	5	—	1	2	—	—	16	2	= 46
2	Monarch	4	10	53	—	14	2	75	69	95	30	= 355
3	Monarch	82	59	92	—	4	13	84	144	86	80	= 635
4	Jefferson	4	3	3	6	—	19	8	114	94	25	= 297
5	Jefferson	25	54	12	—	10	78	63	126	57	—	= 425
6	Coe's Golden Drop	37	46	60	—	—	39	8	61	51	70	= 363
7	Coe's Golden Drop	45	87	22	3	73	92	—	123	143	96	= 688
8	Reine Claude Violette	2	1	7	—	7	157	—	78	182	42	= 476
9	Kirke's	37	80	118	—	92	20	335	8	380	73	= 1134
10	Early Transparent Gage	111	33	115	—	16	58	82	32	105	—	= 552
		359	372	490	9	207	424	670	632	1277	475	= 4975

PEARS.

		1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	Total
11	Emile d'Heyst*	—	—	—	—	—	86	109	41	65	88	= 389
12	Emile d'Heyst*	—	—	—	—	—	79	37	53	—	117	= 286
13	Doyenné du Comice	—	—	—	—	—	26	8	12	5	11	= 62
14	Doyenné du Comice	—	—	—	—	—	5	10	5	6	4	= 30
15	Conference*	15	16	2	5	84	76	51	62	136	90	= 527
16	Conference	2	22	2	4	47	67	7	48	126	109	= 434
17	Pitmaston Duchess*	—	—	—	—	—	2	6	—	1	1	= 13
18	Pitmaston Duchess*	1	1	—	—	7	48	28	24	65	53	= 225
19	Beurré Superfin*	—	—	—	—	—	1	8	4	8	1	= 22
20	Marie Benoist*	—	—	—	—	—	—	—	9	5	3	= 17
21	Glou Morceau	—	—	—	—	24	61	26	6	2	10	= 129
22	Beurré Buisson	—	1	—	—	—	31	4	43	41	63	= 183
		18	40	1	9	163	480	285	237	461	553	= 2309

FROST FIGHTING.—Last week I witnessed a demonstration given by a representative of the Colorado Orchard Heater Co., in a fruit garden, in the midst of the Strawberry industry, at Botley. The demonstration was to show how fruit crops may be saved from a sudden frost when the trees or plants are in blossom, or even in the bud stage, for, in the case of Strawberries, more damage is often done to the plants in the bud stage than when the blossoms are fully expanded. The idea is to warm the atmosphere within the area where the fruit trees or Strawberry plants are in bloom. In the case of Strawberries, the early fruit is of the greatest importance to the grower, and it is this which is frequently damaged by frost. Although frost does much injury to the Apple crop, it is not the only cause of failure. A low temperature, with easterly winds, not necessarily frost, accompanied by an absence of sun for several days at a time at the critical stage of fertilisation, or during the first swelling of the fruit afterwards, is often most injurious. At the demonstration, the attendant first showed how, at any period of the night, the owner may be apprised in his bedroom of a sudden frost by the aid of an electric bell connected by a cable with a thermometer out-of-doors, by setting the alarm at a point a few degrees above freezing-point. Fifty heaters to an acre are necessary for Strawberries; but for such fruits as Apples, Plums, and bush fruit, forty would suffice. The heaters were arranged over the acre of ground to be experimented upon. They were round, pan-like in appearance, about 18 inches in diameter, and made of sheet iron, standing on wire legs, the pan being a few inches above the soil to allow a draught through the punctured base. In charging the heaters, a small piece of cotton waste was placed at the bottom, on this a few pieces of split wood about 6 inches long, and then 14 lbs. of common nut coal, arranged around a central, temporary funnel, 3 inches in diameter. When the funnel was drawn out, a ventilating shaft was left so to speak, which accelerated the draught and induced a quicker burning of the fire. This amount of coal will maintain a sufficient heat for four hours. Unfortunately for the demonstration, a south-west gale was blowing, yet, in spite of this, the temperature within the given area was increased 4° in 2½ hours. The 50 heaters were lighted in the space of three minutes by the aid of a small torch made of cotton waste soaked in paraffin, some of which was previously poured on the wood and coal. The fires burnt fiercely, owing to the strong wind, and they filled the atmosphere with dense volumes of smoke. I was anxious to know if harm would accrue to the Apple or Plum blossom, for example, from the smoke passing through the trees in such density and for so long a time, and the attendant assured me no harm would be done. Probably in the near future there will be similar experiments during the actual setting period. *E. Molyneux.*

LIME-LOVING PLANTS.—I am obliged to Mr. Arnott and Sir Herbert Maxwell for their notes in reply to mine (see page 346). Mr. Arnott desires fuller particulars as to *Coronilla iberica*. In the case where the plant was growing in loamy soil taken from chalk land, the rock-garden was built up above the surroundings, hence, it was exposed to wind, and the plants may have suffered in consequence. In the more successful instance, the rockwork arrangement was on a gentle slope, with granite rocks employed on the out-crop system, the plants being bedded in heavy brick earth below the ground level. In my opinion, the success in the latter instance was due to the heavier soil, and its uniformly cool condition. I do not agree with Mr. Arnott when he states that as a rule those plants which like lime in their native homes "prefer it with us." The opposite, I think, is abundantly evidenced in the Pasque Windflower, *Anemone pulsatilla*, which is still found on the chalk downs of this country, though usually dwarfed and not always flowering well. The plant, however, according to my experience, attains its highest excellence when planted in rich, deep, clayey loams that are always moist. This is no isolated example, as witness the many plants from the Dolomites and other limestone ranges, which appear quite indifferent. With

reference to lime, I think failure may often be attributable to either excess or deficiency of this element or to the lime being in a form not readily assimilated by the plant. That a large number of choice Alpines do inhabit limestone rocks almost exclusively is well known. I am inclined, however, to regard their presence there as circumstantial, and not preferential, and, being there, the plants do their best to perpetuate their kind in the most natural manner, i.e., by seeds. It might appear that, after a plant's association for centuries with one particular rock formation, the soil constituents of that rock would be well-nigh indispensable to its well-being, were it not that there is abundant testimony to the contrary. After all, a high mountain range is the home of a host of Alpines, because plants of taller growth cannot exist there. The limestone range thousands of feet high I regard as no more essential to the successful cultivation of most Alpine plants than is Table Mountain to the "Flower of the Gods" or the Giant tree of the tropical forest to epiphytic Orchids. Plants can be safely transported from their habitats to other climes and lower altitudes, where their increased vigour of growth or freedom of flowering demonstrates that the conditions of their natural homes were not indispensable. I fully agree with Sir Herbert Maxwell that certain plants appear to require lime to bring out all

third year. Unfortunately, the sudden and severe frost of December of last year, following such an unusually mild November and early December, caught the *Eucalypti* in full growth, unchecked by slight frosts, and the bark of several species was split open and the trees cut to the ground level. *E. cordata* shot out from the base this spring, but the sunless, damp summer prevented healthy growth, and I think all the specimens are now dead. They were planted in 1901, and in 1905 I exhibited flowers before the Scientific Committee of the Royal Horticultural Society (vide *Journal of R.H.S.*, vol. xxxi. December, 1906, p. xci.), and, for purposes of comparison, flowers of *E. pulverulenta*, also grown in the open. It is now hard to procure seed of *E. cordata*, and I should be pleased to hear from anyone who could supply it, as although one must expect to get the specimens killed every 10 years or so, its beauty is so great it is worthy of a place even though it is subject to periodical disappearance. It is one of the few fairly hardy species that retain broad and brilliantly blue leaves when grown to flowering size. I saw a fine specimen of it at Heligan this autumn. *E. Augustus Bowles, Myddelton House, Waltham Cross.*

—For several years young trees of *E. cordata*, which I planted in 1930, flowered regularly, but 25° of frost at last killed them.



FIG. 185.—*CYANANTHUS INCANUS*: FLOWERS BLUE.

(See page 421.)

that is best in their nature. The encrusted *Saxifragas* are instances, though even in their case we must not ignore the vast importance of the moisture-absorbing rock with which the plants delight to be surrounded, or the benefits accruing from the sun-warmed bank or slope that affords such a perfectly drained soil. Extreme instances of a puzzling nature such as are seen in the stemless *Gentian* and *Lithospermum*, the latter reputedly both a "lime-hater" and a "success in limestone," opens the door, I think, for experiments in other directions than lime. My experience has been identical with that of Sir Herbert Maxwell with this plant. I have repeatedly attributed its lack of success to a soil known to be deficient in lime, and to extreme rock dryness. *E. H. Jenkins.*

EUCALYPTUS CORDATA (see p. 403).—This fine and comparatively hardy species of *Eucalyptus*, as Mr. Melville points out in his note in your last issue, is one of the most decorative for English gardens. But only in its young state for summer bedding, for in most gardens there must be a fairly sheltered corner, where, protected from the north and east, the species would safely pass through ordinary winters. I had several fine specimens of it here that flowered regularly every November, and one of which ripened seeds, from which I have a young plant now in its

Besides having also flowered in the Cornish Riviera, a tree for years regularly flowered in my father's front garden, within the city boundaries, at Exeter. On various occasions I have advocated in your columns the use of this species for summer bedding, for which purpose *E. coccifera* and *E. coriacea*, to mention species the seed of which may usually be purchased and are similar in appearance when young, are almost equally valuable. The most beautiful of the silvery-foliaged *Eucalypti* is *E. Stuartiana*, of which the late Mr. Rashleigh grew a fine example at Menabilly. For some years it has been difficult to obtain seeds of *E. cordata*, but it appears that a good quantity of seeds of *E. pulverulenta*, a closely-allied species, was imported last year. Whilst in the juvenile stage of growth this species only differs from *E. cordata* in the size of its leaf; it is equally effective in the flower-garden. A month ago, in the *Times*, Mr. F. G. Heath, of Silverton Grange, Devon, stated that *E. amygdalina* was, in his experience, one of the hardest of the *Eucalypti*, of which he had planted a large collection. I have tried many different sorts at Pencarrow, and cannot support his statement; North Cornwall is much colder than South Devon. The only species which has successfully withstood our winters here (with a minimum of 23° of frost) are

E. Gunnii, E. urnigera, and E. coccifera. The flowers of the Eucalypti are often very fragrant, and they remain open for a considerable time. May not a species of Eucalyptus be sometimes described as the Australian Myrtle? (See p. 389) A. C. Bartlett.

I was pleased to see Mr. Melville's note on this plant, for I have long admired the species, both for bedding and as a hardy tree. When living in Sussex, a few years ago, I experimented with most of the Eucalypti commonly seen in gardens, and it seemed as if E. cordata was the most beautiful species. Plants raised from seeds in 1897 were used for bedding and other purposes until the spring of 1901, when I planted them out in permanent positions. One plant in particular flowered profusely three seasons in succession up to 1905, when I left the place, the plants being then 18 feet in height. I cannot say if it still survives, but when I last saw it, in addition to being strikingly graceful, it provided one of the most effective bits of colouring to be seen in the garden. In point of hardness I believe E. cordata ranks second to E. Gunnii. F. J. Bray, *Greenhurst Park Gardens, Capel*.

PELECYPHORA ASELLIFORMIS.—This curious plant has recently produced an extraordinary number of off-sets. I have one with 36 and another with more than I care to count. Some are produced at the top of the plant. Some plants have neither a flower nor off-set, but both combined and showing colour. I have known plants produce off-sets after receiving damage to the crown, as they frequently do in their native habitat, but never unless such injury has taken place. Can any reader enlighten me as to the cause of the plants acting in this manner? J. C., *Blewbury, Didcot*.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 7.—*Present:* J. T. Bennett-Poë, Esq., M.A. (in the Chair); and Messrs. A. Worsley, J. Fraser, L. Crawshaw, J. Douglas, W. Cuthbertson, R. Hooper Pearson, W. E. Ledger, and F. J. Chittenden (hon. sec.).

Lobelia thapsoides.—Mr. WORSLEY showed flowers of this species, a tall-growing plant, reaching 7 feet in height, seeds of which he had collected at the summit of the Organ Mountains, in Mexico.

Saxifraga tridactylites.—Mr. J. FRASER showed specimens of this plant growing vigorously in a pot, reaching a size considerably greater than that attained in its usual habitat, such as the tops of walls and similar places in the British Isles. The seed had been collected at Weybridge, and the plants were now commencing to flower. He remarked that the plant had a wide distribution through the north temperate zone, and that, although in this country it was confined to such situations as the tops of walls, on the Continent it grew among pasture plants and appeared able to compete with them.

Psychotria jasminiflora (see *Gard. Chron.*, August 16, 1879, figs. 35 and 34).—Foliage cut from a seedling of this plant, raised by Mr. GEORGE LEE, of Clevedon, was sent, illustrating the difference between the juvenile and adult forms of leaves, the latter being much broader in proportion to their length than the former, and also considerably larger. The seed had been produced eight years ago by a plant at Clevedon, and it appears rare to find it fruiting in this country, though the plant is often cultivated under the name of *Gloneria jasminiflora*.

Trees attacked by voles.—Examples of maiden Apple trees with their bark bitten off below the ground level all round the stem, and the roots eaten, were received from Chard, Somersetshire. The committee was of opinion that the damage was the work of field voles. It was pointed out that the best way of checking the spread of these pests was by encouraging owls and kestrels. They may sometimes be trapped by digging pits wider at the bottom than the top, and they may be driven away by injecting carbon-bisulphide into the soil at the rate of about $\frac{1}{2}$ ounce to the square yard, or by the use of paraffin poured in

small quantities around the trees, taking care not to touch the trees with the liquid.

Malformed Cyclamen.—From Mr. RICKARDS, of Usk Priory, Monmouth, came a malformed Cyclamen, having the sepals developed into foliage leaves.

THE ROYAL BOTANIC AND ROYAL HORTICULTURAL.

I AM directed to send to the *Gardeners' Chronicle* copies of the correspondence which has passed between representative committees of the Royal Botanic and Royal Horticultural Societies with reference to the meeting held on November 24 to consider and discuss proposals affecting the welfare of the two societies.

By order,

J. BRYANT SOWERBY, Secretary,
Royal Botanic Society.

No. 1.—From the Royal Horticultural Society,
November 26, 1909.

MEMORANDUM

consisting of a skeleton outline of a suggested working arrangement between the

ROYAL HORTICULTURAL and the ROYAL BOTANIC SOCIETIES.

POSITION OF AFFAIRS.

A circular issued by the Royal Botanic Society's Council on November 6, 1909, describes the position thus: "The R.B.S. will come to an end . . . within four weeks' time unless . . . a sum of £2,000 . . . is immediately paid."

In a previous official statement sent out by the R.B.S., the expenditure for the year 1908 is shown to have been £6,290, and the receipts £4,503, that is to say, there was a loss of £1,787, or of £1,053 even if the £734, the interest paid on debentures, be deducted; and looking back on the previous balance-sheets, the R.B.S. appears to have been working for some time at an annual loss. The Council of the R.B.S. is therefore amply justified in their "apprehended close of the gardens," and the consequent loss of all the Fellows' rights and privileges and enjoyment therein.

OBJECTS AIMED AT.

1.—To safeguard and secure in perpetuity all existing rights and privileges of the Fellows of the Royal Botanic Society in the Regent's Park Gardens.

2.—To secure the continued use of the gardens for the service of horticultural and botanical science.

3.—The constitution and establishment of one great united Horticultural and Botanical Society for the Metropolis and Kingdom.

SCHEME.

(a)—A new society of similar or joint name to be formed under the auspices of the R.H.S., each of the contributing societies nominating members of council in proportion to the number of existing Fellows.

(b)—The R.B.S., with the assent of the Department of Woods and Forests, to sublet or assign their lease to the new society for the full term of such lease (less one month), the Department of Woods and Forests agreeing to accept payment of rent from the new society and giving it their receipt in discharge.

(c)—A covenant to be inserted in the assignment that the joint society is to give up the gardens and buildings at the close of the lease in as good a state of repair as when assigned.

(d)—The Fellows and Associates of the R.H.S. to rank as Fellows and Associates of the new society, on the same terms and conditions, and with the same privileges as attach to them as Fellows and Associates of the R.H.S.

(e)—The Fellows and debenture holders of the R.B.S. to rank as Fellows of the new society on the following conditions:—

1.—Subscribing Fellows to pay to the new society the same rate of subscription they at present pay to the R.B.S., and to retain all their existing privileges at Regent's Park, and have added thereto all the privileges of the R.H.S. as well.

2.—Life Fellows and debenture holders to retain all their existing privileges at Regent's

Park, and have added thereto the rank and privileges of Life Fellows of the R.H.S. as well.

(f)—At the termination of the lease all Life Fellows and debenture holders of R.B.S. to cease to rank as Fellows of the R.H.S. unless the lease be renewed.

FINANCIAL ASSISTANCE.

1.—The question of the possibility of the R.H.S. affording immediate financial assistance to the R.B.S. does not rightly come under a scheme suggested for the purpose of maintaining the rights and privileges of the Fellows of the R.B.S. in perpetuity, and securing the upkeep and present uses of the Regent's Park Gardens.

2.—The president of the Royal Horticultural Society nevertheless would bring before the Council and Fellows of his Society the apparent necessity that some financial assistance should be given, but he wishes it to be distinctly understood that he has no power whatever to pledge the Society to agree to this proposal.

NOTE.—The suggestions embodied above are in no sense offered as an ultimatum, but as forming a convenient basis for further friendly negotiation, and in the hope that the Fellows of the R.B.S. would prefer such a scheme rather than that their society should perish and they themselves lose all their rights and privileges therein.

No. 2.—From the Royal Botanic Society,
December 8, 1909.

Suggested working agreement between the Royal Botanic Society and the Royal Horticultural Society.

The special committee of the Royal Botanic Society appointed to confer with the special committee of the Royal Horticultural Society, wish, at the outset, to acknowledge their very frank and courteous reception on the occasion when they met by invitation at the Royal Horticultural Society's Hall in Vincent Square. And the special committee, as desired, accept as a basis for further friendly discussion between the two societies the memorandum received by them on the 27th ult.

As regards the memorandum itself, they cannot help saying that its shape leaves something to be desired. As regards, for instance, the circular of November 6, to which prominence is given in the memorandum, it was explained at the interview that circumstances had altered considerably since that circular was written.

The actual position of affairs would seem to be as follows:—

The Botanic Society is emerging from a critical financial position, but is gathering its forces together. And with the support and self-sacrifice of its Fellows, and the considerate action of the debenture holders, is now in a better position relatively than for some years past. Prompt financial assistance would, of course, further improve matters. The Royal Botanic Society has possession of admittedly the finest garden in London, which, if lost, could never be replaced, and the prospects of the society for next season are good.

The Royal Horticultural Society is in a strong financial position, and has a hall in Vincent Square, where flower shows are held fortnightly, supported by a brisk trade element.

On the other hand, the Royal Horticultural Society has no garden of its own in London, and depends for its more important gatherings on the friendly aid of the owners of the Temple Gardens, or of Holland House, or on the hire of grounds such as those of Chelsea Hospital, &c.

Turning to the memorandum itself, it is not clear whether there are intended to be three societies "in perpetuity," namely, the Royal Botanic Society, the Royal Horticultural Society, and "The Great United Society," or only one Society. And, if only one, what is to become of the rights, properties, and incidents of the two other societies.

As to the mutual extension of the privileges of each society over the territories of the other, it is necessary to remember how this would operate in practice. One society has, say, for the purpose of argument, 1,100 Fellows, and the other has, say, 11,000 Fellows, and the smaller society has a garden, whilst the larger society has none.

Again, the effect of vesting the ownership or management of the gardens in the larger society, whether by sub-lease, transfer, or otherwise,

unless the matter was very carefully arranged beforehand, would be that the smaller society would be submerged and swamped in the larger body, and it would cease to have practically the same enjoyment of what are now its own gardens.

Under the heading of "financial assistance," it is to be gathered that the Royal Horticultural Society do not think this rightly comes within the scheme at all. The president generously expresses his willingness to lay the matter before the Council and Fellows of the Royal Horticultural Society, "but has no power whatever to pledge the society to agree to this proposal."

If, therefore, the negotiation is to proceed, with hope of useful results, the special committee invite the Royal Horticultural Society to make their proposals more clear and definite, especially as to finance.

Without interfering with the constitution or independence of either society, it would, of course, be possible to arrange for the Royal Horticultural Society to enjoy similar facilities at Regent's Park to those which they have had in previous years at the Temple Gardens or Holland House or Chelsea Hospital. And the special committee of the Royal Botanic Society would cordially consider any proposition in that respect for the ensuing season of 1910.

LINNEAN SOCIETY.

DECEMBER 2.—On behalf of Dr. H. Drinkwater, F.R.S.E., there were exhibited 25 drawings in body-colour on dark backgrounds, of wild flowers, chiefly of Wrexham.

Mr. Clement Reid, F.R.S., exhibited photographs on the screen of fruits and seeds of some of the plants introduced by the Romans into Britain. The remains have been collected principally from disused Roman wells, employed subsequently as rubbish pits, and often sealed up under Roman pavements of later date. The principal sources have been Roman Silchester, Caerwent, London, and Pevensey, and to a large extent the collections have been made by Mr. A. H. Lyell, who has been most careful to reject any deposit of doubtful or later date.

The fruits and seeds exhibited belong to Pea, Bean, Fig, Grape, Mulberry, Medlar (a very small variety), Apple, Cherries (probably both black and red), Sloe, Bullace (wild and cultivated), Damson, a larger Plum like the "black Plum" of Cornwall, Portugal Laurel, black and white Mustard, Turnip, Fennel, Dill, Coriander, Alexanders, *Chaerophyllum aureum* (a casual, perhaps introduced with packing-case rubbish from France, and not grown in Britain), Belladonna, Henbane, field Poppies (*Papaver Rhœas*, *P. Argemone*), the Opium Poppy (seeds of this were probably used, as in Rome, scattered on loaves of bread), greater Celadine, Corn-Cockle, White Campion, Bladder Campion, Penny Cress, Sow-Thistle, Ox-eye Daisy, *Chenopodium urticum* and *C. murale*, and leaves of Box. Box leaves have been found in three different rubbish-pits in Roman Silchester; the branches may have been used for wreaths, as the nearest native substitute for the Italian Myrtle.

The plants thus far found do not suggest any direct shipping trade with the Mediterranean. The Peach, Apricot, Almond, and other fruits that will only ripen south of Britain are missing. The fruits and spices found are only such as can be grown commercially in Britain at the present day, and this makes it probable that the abundant Fig and Grape seeds belong to fruit grown in this country and not imported in a dried state. Mulberries do not travel well and are scarcely ever dried; they must have been grown at Silchester.

Mr. Lyell (visitor), Lieut.-Col. Prain, Mr. G. C. Druce, Mr. L. A. Boodle, the Rev. J. Gerard, Mr. E. M. Holmes, Mr. E. G. Baker, and the president took part in the discussion which followed, and Mr. Reid briefly replied.

Mr. G. Claridge Druce, F.L.S., exhibited specimens of (a) *Zannichellia gibberosa*, Reichb., new to Britain, from Eya Green, Northants, and (b) *Orchis maculata* var. *O'Kellyi*, Druce, from Ballyvaughan, Co. Clare, recently described in *The Irish Naturalist*.

Mr. Clement Reid exhibited in connection with this, three photographs of *Zannichellia* fruits obtained by him from the Cromer Forest Bed (preglacial), and also contributed some remarks; Mr. Holmes brought specimens of another variety of *Orchis maculata* and commented on the same.

SCOTTISH HORTICULTURAL.

DECEMBER 7.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, occupied the chair, the audience numbering more than 150. A debate took place as to whether "Frost is Beneficial to the Soil," the affirmative being held by Mr. G. P. Berry, lecturer in horticulture at the Edinburgh and East of Scotland College of Agriculture, Edinburgh, and the negative by Mr. David Storrie, Glencarse Nurseries, Perthshire. Mr. Berry contended that frost was the most powerful mechanical disintegrator or soil former in Nature, and without this force there would be no fertile soil in many parts of the country. Frost was also useful in bringing about proper aeration of the soil, thus enabling plants to take full advantage of the latent feeding material in the soil. When land is properly drained the benefits of frost are seen in heavier crops. Again, the soil bacteria were rendered inactive (but not destroyed) at temperatures below 32° Fahr., and, therefore, in the resting season of plant life the accumulation of food materials formed by these organisms at a time when they would be washed away and wasted was prevented by frost. Frost was also beneficial when it came early enough in autumn or late enough in spring to destroy insect pests before they had been provided with proper protection for the winter, or just as they are emerging from this condition in spring. Frost was of great use in destroying spores of disease-producing fungi.

Mr. Storrie's contention was that air and moisture, without which frost is of no avail, were the essentials in rock weathering. These dissolved out certain parts of the rock which the rain washed away probably long before any frost put in an appearance. When a rock was frozen, all the fungi, algae and bacteria, which were active above 32°, were arrested in their work and kept waiting for the thaw, therefore frost was not an accelerator but a retarder of rock weathering; the claim that there is a liberation of plant food in rock shattering by frost is not true. Mr. Storrie also said that the idea that frost pulverised the soil and produced a fine tilth was also wrong, and that in dry, open winters a much better tilth was got than by the aid of frost. With regard to the cultivation of the soil, Mr. Storrie stated that the more a light or medium soil was cultivated in autumn the better, but a dense, clay soil, in a clean, healthy condition, ought not to be dug in autumn. The arrest of the work of the soil bacteria by frost was not beneficial, and Mr. Storrie cited the well-known fact that crops are always stronger on ground which has been protected by a hay or corn rick in winter, underneath which the frost does not penetrate.

So much time was taken up by the debaters themselves that none was left for discussion by the members, and, so far as the meeting was concerned, there was no expression of opinion upon the matters dealt with by the disputants.

A report on the Chrysanthemum show held in November was presented to the meeting, and it was decided to hold a four-days' show in 1910, from November 16 to 19.

The office bearers for 1910 were nominated, and the election of these will take place on January 18, 1910, the date of the annual business meeting.

NATIONAL ROSE.

ANNUAL MEETING.

DECEMBER 9.—The annual general meeting was held on this date at the Westminster Palace Hotel. The Rev. F. Page-Roberts, President of the Society, occupied the chair. After the minutes of the previous meeting were read and confirmed, the ballot for the election of officers for the ensuing year was opened, Messrs. Strange and A. Turner being appointed scrutineers.

The annual report was read by the secretary, and the financial statement by the treasurer, Mr. G. W. Cook, who gave details of the larger items grouped under the various heads of both receipts and expenditure.

REPORT OF EXECUTIVE COMMITTEE.

The following are extracts from the report:—"The Metropolitan Exhibition again took place in the gardens of the Royal Botanic Society, Regent's Park.

Owing to the backwardness of the season the display of Roses was not quite as extensive as usual, and the general quality of the blooms was below the average standard. In other respects this must be regarded as having been a most successful show, the attendance of visitors being the largest, the tents the cleanest and best, and the refreshment arrangements more complete and satisfactory than at any previous exhibition.

The Provincial Show was held at Luton, in conjunction with the Luton and District Sweet Pea and Rose Society. This was, with one exception, the largest exhibition the Society has yet held in the provinces.

The sixth Autumn Show of the Society took place in the Royal Horticultural Hall, Vincent Square, Westminster. It was of about average extent, and was noteworthy for the keenness of the competition in the leading class for nurserymen.

During the year new and carefully revised editions of the *Handbook on Pruning Roses* and the *Official Catalogue of Roses* were issued to the members, in addition to the *Rose Annual for 1909*.

Six new Rose and other horticultural societies have become affiliated during the past year, bringing up the total number of societies in affiliation to the National Rose Society to 55.

The committee record with regret the death of Mr. T. B. Hall, of Rock Ferry, in Cheshire. Mr. Hall was for a long time a member of the committee, and for many years a leading exhibitor at the Society's exhibitions, and in 1887 and 1888 carried off the Society's Jubilee Challenge Trophy.

The amount received in gate-money from the general public at the exhibition in the Royal Botanic Gardens exceeded that at any previous exhibition held by the Society. The receipts from all sources during the past year, including a balance from the previous year of £427 8s. 2d., amounted to £3,151 6s. 4d., and the expenditure to £2,714 15s. 10d., leaving a balance at the bankers' and in the treasurer's hands of £436 10s. 6d. after £300 had been placed to the reserve fund. The reserve fund now stands at £750.

During the past 12 months exactly 900 new members joined the Society, or 115 more than in the previous year. Allowing for the losses by death and resignation, the total number of members is now 3,797. Taking the year as a whole, between two and three members a day have, on an average, been added to the list of membership.

INCREASE IN MEMBERSHIP SINCE 1904.

	1904.	1905.	1906.	1907.	1908.	1909.
Number of members	1,308	1,637	2,034	2,484	3,150	3,797
Net increase since previous year ...	304	329	397	450	666	647

The Metropolitan Exhibition will again be held in the Royal Botanic Gardens, Regent's Park, the date fixed for the exhibition being Friday, July 8. (The holding of a provincial show is still under consideration.)

The Autumn Show in the Royal Horticultural Hall, Vincent Square, Westminster, will be held on Thursday, September 15."

The President, in moving that "the Report and financial statement be adopted," spoke of the excellent progress the Society had made during the past year. The work had grown so large that, instead of one general committee, a series of sub-committees had been elected to deal with general purposes, finance, exhibitions, and publications.

Mr. E. J. Holland seconded the adoption of the report, and the motion was carried unanimously.

Mr. C. E. Shea proposed that a grant of £100 be awarded to the hon. secretary, Mr. Edward Mawley, as an honorarium for the great services he has rendered to the Society. This was adopted.

Mr. Mawley, in returning thanks, gave a brief survey of the secretary's work.

ALTERATION OF BY-LAWS.

Dr. A. H. Williams moved the alteration of several rules and by-laws, which were dealt with individually. The principal objects of these alterations were to confine to the "treasurer and secretary" alone, power to give receipts;

changing the name from "General Committee" to "Council of the Society"; and making the "sub-committees" previously referred to "standing committees," which shall report direct to the Council; and a general rearrangement of rules into individual groups.

It was proposed also that by By-law 8 be added the following words:—"In all boxes for single blooms the tubes must be 5 inches apart each way from centre to centre of the tubes."

"The thanks of the Society to its officers and committee for their services during the past year" was proposed by Mr. Robbins and seconded by Dr. Lamplough. This was received with acclamation. Mr. E. Mawley, who replied for all the officers in rotation, stated that the President had attended eight out of nine general committee meetings, and 21 out of 28 sub-committees, and that nearly every member had attended the 11 meetings of the Publication Committee.

The next business was the presentation of the Dean Hole Memorial Medal to the Rev. J. H. Pemberton. The Chairman, on presenting the medal, said: "I know you will value this more than any of the other prizes or medals you have so deservedly won." The Rev. J. H. Pemberton expressed his thanks, and paid a tribute to his sister, Miss Pemberton, who acts as his head gardener, assisting both in growing and showing his Roses.

A vote of thanks to the Chairman concluded the business.

THE CONVERSAZIONE.

A conversazione took place in the afternoon instead of the usual dinner. It was held at the Westminster Palace Hotel from half-past four to six o'clock. The decorations of Roses with pretty foliage by Messrs. R. F. Felton & Son, florists, Hanover Square, were greatly admired. Refreshments were provided, and vocal and instrumental music was rendered at intervals. About one hundred members and friends were present at this social meeting.

NATIONAL SWEET PEAS.

DECEMBER 10.—The annual general meeting of the National Sweet Pea Society was held on the above date at the Hotel Windsor, Westminster. The chairman of the General Committee, Mr. Horace J. Wright, presided in the absence of the president, Sir Randolph Baker. There was a very good attendance of members, and much enthusiasm was shown in the proceedings.

EXTRACTS FROM THE REPORT.

We extract the following paragraphs from the Report of the committee for 1909:—

"At the end of the year 1908, the Society had 779 members on its books and 51 societies in affiliation. During the year just ended no fewer than 280 new members have joined the Society, a few of these having entered for the coming year. There have been several losses from death and removal, and again a number of members have failed to respond to the several requests for payment of subscription. After deleting the latter, the membership stands at 938, while the number of affiliated societies is 101.

"The committee is glad to find itself able to record a very satisfactory financial position. The generous manner in which the members are treated quite naturally entails a large expenditure in printing, postage, stationery and prizes, but it would appear that this policy is now producing its proper effect, for no society has become so strong in so short a period. The balance at the bank is the largest yet carried forward, and it would have been still larger had all those who received the *Annual* in January last promptly paid the subscription then due.

"In conjunction with the Salsaire Rose and Horticultural Society, the Provincial Sweet Pea Show was held in Salsaire Park, Salsaire, on July 13, but the somewhat early date coupled with the lateness of the season resulted in a comparatively poor display. The growers in the Lake District and others from Surrey and Hampshire showed well, and the Provincial Cup was again won by Mr. T. Stevenson.

"Held on Thursday, July 23, at the Royal Horticultural Hall, Westminster, the Society's London Show was a great success. The fine hall was again taxed to the utmost, and a building half as large again would not have been too big for the beautiful and fragrant display. There were nearly 200 exhibitors, and in the small growers' section the competition was very keen.

"The Society's trials were not so entirely successful this year as they have been in previous seasons, owing to the vagaries of the weather, and the consequent difficulty experienced in inspecting the trials under the best conditions. The thanks of every member are due to the Council of the University College, Reading, for permission to hold the trials in their gardens; to Mr. Charles Foster for his able conduct of the trials under difficult conditions; and to Mr. Drew, who had the trials under his care for a considerable portion of the year. There were 350 varieties or stocks of Sweet Peas on

trial at Reading, and an abridged report of these has been sent to every member of the Society.

"The work of the Floral Committee has been unusually heavy and difficult this season. The members paid two visits to Reading and held one meeting in London. They made awards sparingly, drew up a list of too-much-alike varieties, and made a selection of the best varieties (in commerce) of each colour for the guidance of members. They also selected a number of varieties for further trial and drew up a statement concerning the fixity and purity of the stocks tested.

"The following awards were made at Reading:—First-class Certificate to Clara Curus (Trial No. 186), from Mr. W. J. Unwin, Histon, Cambs.; Award of Merit to Charles Foster (Trial No. 7), from Mr. Robert Bolton, Warton, Carnforth; Award of Merit to Edrom Beauty (Trial No. 250), from Mr. A. Malcolm, Duns; Award of Merit to Mrs. W. J. Unwin (Trial No. 289), from Mr. W. J. Unwin; Award of Merit to Dazzler (Trial No. 334), from Mr. C. W. Bredmore, 120, High Street, Winchester; Award of Merit to Sunproof Crimson (Trial No. 338), from Messrs. Dobbie & Co., Rothsay; Commendation as a Market Variety to Mercia (Trial No. 136), from Messrs. G. Stark & Sons, Great Ryburgh; Commendation as a Garden Variety to Colleen (Trial No. 305), from Mr. Wm. Deal, Brooklands, Kelvedon.

"When the Society proposed to issue a medal of its own, the committee was fortunate in securing the services of Miss Williamson for the preparation of the new well-known design, and during the past year Miss Williamson has again placed the Society under a debt of gratitude by designing the new certificate. This certificate will be issued to affiliated societies, and will serve as an award either in conjunction with the Society's medal or distinct therefrom. As a slight acknowledgment of her valuable assistance the committee has presented Miss Williamson with a suitably engraved silver-gilt copy of the medal she designed.

"In the United States of America the year has been marked by the formation of a National Sweet Pea Society, formed on similar lines to our own, and with similar objects in view. The American Society will hold Sweet Pea trials in the gardens of the Cornell University, and our own raisers are invited to send their varieties across the water for trial. The hon. sec. of the American Society is Mr. Harry Bunyard, and the conduct of the trials is in the hands of Mr. Alvin C. Beal.

"The committee has been fortunate enough to secure the Royal Horticultural Hall for the purpose of a two days' show in 1910, and the dates already fixed for the London exhibition are Tuesday and Wednesday, July 12 and 13. No provincial show will be held next year, but the Society's Provincial Cup will be offered for competition at the exhibition of an affiliated society. The trials will be continued, and arrangements are being made for a more extensive and conclusive test of varieties than has been possible hitherto. Mr. Charles Foster will again superintend the trials, which will be conducted at the Times' Experimental Station, Sutton Green, near Guildford."

The Chairman, in moving the adoption of the Report, stated in a few words that the Society was in a very satisfactory condition. He thought the Report now presented was the most favourable in the Society's history. Mr. A. Dean seconded the resolution, and suggested that, should the Society find itself with more funds than were needed, it might consider further the interests of those members living in the Midland and Northern counties, by establishing trials in those districts such as have already been conducted at Reading. The Report was adopted unanimously without further discussion.

Votes of thanks were next passed to the retiring officers, and the meeting then proceeded to the election of officers and committee for 1910. Mr. N. N. Sherwood was elected president; Mr. Edward Sherwood, treasurer; Commander Humphery, R.N., chairman of General Committee; Mr. Richard Glynas, auditor; and Mr. C. H. Curtis, secretary.

On the meeting proceeding to the election of the General Committee it was pointed out by Mr. Brunton and others that the names of many appeared on the list of the General Committee who never attended the meetings of that committee. Eventually a resolution proposed by Mr. Brunton was adopted. This resolution has the effect of disqualifying for future election any member of the General Committee who fails to attend two meetings of the Society's committees during the year. A vote of thanks to the chairman terminated the proceedings.

The General Committee held a meeting immediately afterwards for the purpose of electing the Executive Committee, the general meeting having no voice in the election of this latter committee. There were nearly 30 names submitted, and 15 members were elected by ballot. These were as follow: Messrs. Horace J. Wright, Chas. Foster, T. Stevenson, H. Smith, E. F. Hawes, W. J. Unwin, W. Cuthbertson, R. Hooper Pearson, G. F. Drayson, S. B. Dicks, C. W. Bredmore, W. Deal, E. King, G. W. Leek, and W. Lumley.

DINNER AND CONFERENCE.

Some of the members afterwards attended a dinner at the same hotel, at which Commander

Humphery, R.N., presided. Immediately following the dinner a meeting was held under the presidency of Mr. H. J. Wright, and papers were read by Mr. Wm. Cuthbertson, J.P., and Mr. W. J. Unwin. Below we give extracts from these papers.

SWEET PEA NAMES.

A paper on this subject was read by Mr. W. J. Unwin. We make the following extracts:—

"I do not propose to deal particularly with the naming of Sweet Peas, but rather to outline a scheme by which I believe growers may be safeguarded in making their selections of distinct varieties. Our Society is already doing good work, but more must be done if we are to know, with certainty, which new varieties are worth growing.

"The Society cannot prevent unfixed stocks being sent out, but it can debar unfixed new varieties from being staged in competitive classes at its shows. I suggest that all new varieties in future shall be sent to the trials, and only those that prove to be fixed shall be eligible for entry in any of the Society's competitive classes. If the Society is firm in this matter, members will soon know which varieties to grow and who to look to for more reliable information than we have at present.

"I next suggest that a more detailed account be given by the Society of all fixed stocks, as to their type and colour, and whether they are distinct, or how they compare with varieties already in commerce. Unless any of the unfixed stocks are of special merit, they should not be mentioned. It is useless to waste time over varieties that are badly mixed and of no particular merit. If the Society allows only fixed varieties to be staged in the competitive classes, and publishes a fully-detailed report of the trials from the Floral Committee, growers will be safeguarded to a great extent, and I believe this would eventually prove a benefit to the trade.

"I assume that the Society will deal with those unfixed varieties already in commerce. At the present time the list of too-much-alike varieties is of little value, but with the detailed report on fixed stocks it would enable us to know which varieties are identical, and what differences there may be between others.

"There is a marked difference in the colour of Sweet Peas growing in a row, as compared with the same variety when bunched. To arrive at a more accurate description of its colours, I make a further suggestion, namely, that a bunch of 12 sprays from every fixed stock (new and old) be brought from the trials to the London show and staged under numbers, in their different colour sections, and judged by points for colour effect and size. A few ladies would be useful as judges in this class. After the judging each bunch shall be named or numbered as sent to the trials. This would be a real benefit to hundreds of members who cannot visit the trials.

"Mr. Unwin then added a few words as to the unfair way raisers of novelties are being treated by some seedsmen."

A discussion followed, in which Messrs. Foster, Cuthbertson, Bredmore, and others took part.

THE IMPERFECT SEEDING OF WAVED SWEET PEAS.

The following extracts are taken from a paper, read by Mr. Wm. Cuthbertson, J.P., on the imperfect seeding of Sweet Peas:

"In the present paper I shall endeavour to show as clearly as I can by means of photographs and some flowers which have been kindly sent me by the Rev. Macduff Simpson, of Eldrom, the essential differences between the old and the new 'Spencer' type of Sweet Peas, and, in conclusion, state why, in my opinion, the waved or Spencer type seeds so imperfectly.

"Last season was altogether an abnormal one, and I am not therefore disposed to argue from experience gained in it, but if we look at an average season I think you will agree with me if I put it that, on an average, the old type seeds ten times better than the Spencer type. Having said that I have not said all, because a number of the finest Spencers are far below the average, and are nearer being 20 times worse seeders. Think of Etta Dyke and Dorothy Eckford—Clara Curtis and Mrs. Collier or James Grieve—The King and King Edward VII.—Mrs. Chas. Foster and Lady Grisel Hamilton—Earl Spencer and Henry Eckford—Mrs. Harcastle Sykes and Prima Donna!

"In the old type of Sweet Pea the pollen escaped and could not help coming immediately in contact with the stigmatic point, as they were all squeezed up together, owing to the constricted or clamped keels in the old and Unwin types. In many of the Spencer or waved forms the stigma from the very earliest stage has grown out beyond the anthers. It is apparent therefore that the chances of fertilisation are much reduced when this condition of things exists. The old type and the Unwin type cannot help being prolific. They are abundantly self-fertilised before they expand.

"In the Spencer type the stigma protrudes beyond the anthers. In some flowers it seems to do this right away from the beginning, slightly protruding in the earliest bud stage. My theory regarding this is as follows:—We all know that the anthers dehisce, that is, shed their pollen in the very early bud stage of the flower. Unless, therefore, the point of the stigma, in pushing its way to the outside position just referred to, gets coated or partly coated with pollen, the flower runs an exceedingly poor chance of producing seed. If the stigma has not been pollinated before it protrudes, what chance has it of being pollinated afterwards? Very little indeed. It is not in the nature of pollen to rise above its own level. It is subject to the same law of gravitation as other things, and, consequently, will drop down into the keel and lie there without having an opportunity to fulfil the function for which it was made.

"Some people argue that Sweet Peas are pollinated by wind-borne or insect-borne pollen, and that accounts for the variations we get in so many stocks of Spencer Sweet Peas. I have never been able to accept this theory, because I think I have had as large an experience as most, and have not observed it happen in practice. The plan we adopt at Mark's Tey is to grow the different varieties in lines of 100 feet long. There may be four lines of 'The Marquis,' followed closely by four lines of 'Countess Spencer,' then four lines of 'Helen Lewis,' and so on. If the wind or insect theory of cross-fertilisation held good we should not get pure seed, but as a matter of fact we do get pure seed. Then again, it is suggested that in America there must be insects, unknown in this country, at work there to give us the fine variations we so frequently get! I should like to have Mr. Burpee's or Mr. Morse's opinion on this point. Fifty years ago so extremely careful an observer as Charles Darwin wrote: 'Whatever the cause may be, we may conclude, that in England the varieties of Sweet Peas never or very rarely intercross. But it does not follow from this that they would not be crossed by the aid of other and larger insects in their native country.'

"Then there is the liability of the pods to rot off. Last season this was particularly noticeable. Close to the footstalk the pods became brown, as if attacked by a fungus. When this happened the pods fell away in a few days. After the petals dropped on some varieties—notably on Earl Spencer and Edrom Beauty—the young pod appeared all right, but on the slightest touch it dropped. I remember one evening Mr. William Deal and I were examining some rows at Mark's Tey, and he remarked, 'You have a good promise here.' I took out a pencil and walked along the row, merely touching the young pods with it, and quite 50 per cent. of them dropped. I think the abnormally cold weather had much to do with this.

"To sum up, I must put as the first and foremost cause of imperfect seeding in Spencer varieties—the open keel in conjunction with the protruding stigma, otherwise imperfect fertilisation. Then the extreme sensitiveness of the type to adverse weather conditions. Its very shape, the large waved standard, make it much more sensitive than the old type. How often have we noticed in bad weather the standard almost rotting and falling down and clasping the keel and pod! Sunshine supervening after such conditions made the standard adhere to the keel and pod as if they had been glued round them, and they could only be removed by being pulled sharply.

"To all but the seed-grower this non-seeding is an advantage. It means a longer continued period of bloom, and this must enhance the value of the Sweet Pea as a decorative plant. The consolation I would offer the seed-grower is this.

The choicest things in the world—the things most worth having—are the things most difficult to get. Nature seems to decide for us that the more perfect we make her productions from our point of view, the more difficulty we shall encounter in reproducing them. This law holds good right through the floral world."

A discussion followed, in which the following members took part: Messrs. Foster, Deal, Sydenham, Fraser, Stevenson, Harvey, Ireland, Hawes and Dicks.

ROYAL SCOTTISH ARBORICULTURAL.

DECEMBER 11.—The annual meeting of the Aberdeen branch of this Society was held in the Music Hall Buildings, Aberdeen, on this date. Mr. Gammell, of Drumtochty, president of the branch, occupied the chair. There was a large attendance, including many visitors, who were admitted after the general business had been transacted to hear a paper on "When afforestation Comes," by Sir John Fleming, of Dalmainzie, Aberdeenshire, a leading timber merchant.

Sir John Fleming said that afforestation, by which he meant afforestation aided by the State, was bound to come. It was the result of, first, the high price to which timber had risen; second, the extraordinary demand for timber for paper-making; and third, the desire to create some new industry to keep the people on the land. The timber trees best suited for cultivation in Scotland were the Larch and Fir, and the wood from these would be principally used, as at present, in the making of staves and sleepers, pit-wood and box-wood, with the addition, as time proceeded, of roofing and joisting in dimensions from 4 inches by 2 inches up to 7 inches by 2½ inches. The Scottish white-wood, Spruce, was, so far as his experience went, only inferior to the Silver Fir. Larch had not its equal amongst soft woods for its lasting qualities, for boat-building, for millwright and cartwright purposes, for making railway sleepers and pit-wood, and for all manner of house-building timber. Referring to railway rates, Sir John Fleming stated that timber could be brought from Russia, 1,500 miles away, to Aberdeen at 7s. to 7s. 6d. per ton; from Ballater to Aberdeen, a distance of 44 miles, the rate was practically the same.

The annual report showed that much good work was done by the Society during the past year. The office-bearers for the ensuing year were elected as follow:—President, Mr. Sydney J. Gammell, of Drumtochty and Comitesswells; vice-presidents, Dr. Trail, professor of botany Aberdeen University; Mr. John Michie, M.V.O., factor to the King at Balmoral; Mr. A. Forbes Irvine, Drum; and Mr. C. S. France, F.B.S., Aberdeen. A number of proprietors, factors, and foresters were added to the committee and Mr. Massie was unanimously re-elected secretary and treasurer.

NATIONAL VEGETABLE.

DECEMBER 13.—The sub-committee appointed to arrange the schedule of classes and prizes for the exhibition of vegetables, to be held at the Royal Horticultural Hall, Westminster, on September 28, 1910, met on the above date. It is hoped the completed schedule will be ready for issue early in the new year. The schedule will include the President's prize of 10 guineas for a collection of 12 dishes. Other prizes are promised from the proprietors of *Country Life* and *The Garden*, and other gentlemen, for a collection of eight dishes of uncommon vegetables; S. Monro, Esq., for six dishes of Tomatos (distinct); chairman of committee, for a collection of six kinds of vegetables, open only to cottage garden societies in the county of Surrey; Mr. R. Sydenham, for collections of 12 kinds and six kinds of vegetables; Messrs. Dobbie & Co., for six classes for single dishes and one class for two dishes of Potatos; Messrs. Wood & Sons, Wood Green, for a miscellaneous collection of vegetables to occupy a table space of 45 feet, and also for six dishes of vegetables; Messrs. Dickson & Robinson, for 12 single-dish classes, and one for two dishes of Tomatos; Messrs. Barr & Sons, for a collection of seven dishes out of eight specified kinds; Messrs. J. Cheal & Sons, for a collection of six dishes of vegetables; Messrs. H. Cannell & Sons, for a

collection of six dishes (distinct) grown on virgin or unmanured soil; Messrs. Clibrans, for a single dish of Celery; Messrs. S. Massey & Sons, for three single dishes of Potatos; and Messrs. Clay & Sons, for classes not yet specified.

There will probably be offered prizes for bottled vegetables. So far the cash prizes amount to about £150.

Several of the leading trade firms have given subscriptions, but, we are informed, the list is not yet complete.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

DECEMBER 13.—At the monthly committee meeting held at the Royal Horticultural Hall on this date, four new members were elected and one nominated. The sum standing to the credit of the late Mr. J. C. Tallack in the society's books, viz., £39 ls. 6d., was paid to his widow. Three members over 60 years of age were granted their interest, as per Rule 18. Two distressed members were relieved from the Benevolent Fund. The sick pay distributed since the last meeting has amounted to £44 7s.

THE WEATHER.

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

GENERAL OBSERVATIONS.

The weather.—The general condition was changeable, frequent and in some cases heavy falls of rain being interspersed with considerable intervals of fine bright weather. Snow showers occurred in several northern and eastern localities early in the week. Thunderstorms were experienced in various parts of Great Britain between Sunday and Tuesday. At Brighton a thunderstorm at 3.45 a.m. on Tuesday was accompanied by snow.

The temperature was below the average, the greatest deficit being 4.7° in Scotland W., and the least 1.7° in the Midland Counties. The highest of the maxima were registered during the latter half of the week, and ranged from 56° in Ireland, England N.W. and Scotland E. to 50° in England S.E. The lowest of the minima were recorded at most places on Tuesday or Wednesday. In Scotland E. the thermometer fell to zero at Balmoral on Tuesday, and to 6° at West Linton on Thursday, and in Scotland W. to 12°, while elsewhere the values ranged from 15° in England N.W. to 24° in England E. and S.W. and to 34° in the English Channel. The lowest glass readings reported were zero at Balmoral, 4° at West Linton, 5° at Newton Rigg, 9° at Buxton, and 10° at Burnley. In several other localities the readings were below 20°.

The mean temperature of the sea.—At almost all stations the water was colder than during the corresponding week of last year, the difference being about 5° in several localities. The means for the week ranged from 49° at Seaford, and 48° at Plymouth and Port Erin to about 40° on the north-east coast of England.

The rainfall was much above the average in most parts of Great Britain, and slightly in excess in Ireland S., but in Ireland N. there was a deficit. Some heavy continuous falls occurred in the west of Scotland on Thursday, and in the east on Saturday, the largest measurements being 2.46 inches at Port William, 2.94 inches at Landale, 2.09 inches at Stonehaven, and 1.48 inch at Aberdeen. On Friday, more than an inch fell in the north of England, the heaviest amount being 1.92 inch at Lancaster, and on Saturday 1.66 inch fell at Aslington.

The bright sunshine exceeded the normal in all parts of Great Britain except Scotland W., England S.W., and the English Channel district. The highest percentages of the possible duration being 31 in England S.E., and 30 in Scotland E. In Ireland the week was much more cloudy, the percentage of the possible amount in Ireland N. being only 10.

THE WEATHER IN WEST HERTS.

Week ending December 15.

Five sunless days in succession.—Except on two days the weather remained cold during the daytime, but there was only one cold night—when the exposed thermometer registered 12° of frost. The ground is at the present time 1° colder, both at 1 and 2 feet deep, than is seasonable. Rain fell on four days, but to the total depth of only about a quarter of an inch. The percolation through the soil gauges has gradually slackened during the week, but there are still small quantities of moisture coming each day through both of them. The sun shone on an average for 52 minutes a day, which is 23 minutes a day short of the average for the month. On the last five days of the week no sunshine at all was recorded. Light winds have, as a rule, prevailed, and for the last three days they have come from some point of the compass between north and east. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 7 per cent. E. M., Berkhamsted, December 15, 1909.

PUBLICATIONS RECEIVED.—*The Estate Magazine*, December, 1909. Price 6d.—*Bulletin of Miscellaneous Information (Royal Gardens, Kew)*, No. 9., 1910. Price 2d.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS.—At the last meeting of this association a paper on "Rockwork" was read by Mr. A. Mackenzie, gardener to Mrs. Groves, Wargrave Lodge. The lecturer gave full directions for building and planting a rockery, and the best plants for the purpose.

The previous meeting was devoted to competitions in vase decoration for table centres, and some good work resulted. In the journeyman's class the winners were (1st) Mr. Arthur Keep, Scarlet's Gardens, and (2nd) Mr. P. Allen, Scarlet's Gardens. In the head gardener's and foremen's class the prize-winners were (1st), Mr. E. Collier, Oldfield Gardens, Maidenhead; (2nd), Mr. J. Shipley, Old Vicarage Gardens, Shiplake; (3rd), Mr. A. Mackenzie, Wargrave Lodge Gardens. The flowers were next day forwarded to the Royal Berkshire Hospital.

READING GARDENERS.—The fortnightly meeting held in the Abbey Hall on Monday the 6th inst. was not well attended. The President occupied the chair. The hon. secretary presented the balance-sheet of the recent exhibition, which showed a profit of £18 15s. 6d. A friend, not a member of the association, has since contributed £1 4s. 6d. to make the amount £20, which will be devoted to the two gardening charities. With the object of encouraging impromptu speaking, questions had been prepared, each bearing a number. The chairman drew tickets bearing corresponding figures, and the holder of the number called was asked to speak on the subject named on his question paper. Mr. A. F. Bailey presided during the latter half of the evening.

BRITISH GARDENERS' ASSOCIATION (LONDON BRANCH).—The monthly meeting was held at Carr's Restaurant, Strand, on December 9. Mr. E. F. Hawes presided. The concert held on November 27, showed a profit of £2 18s., which will be used to carry on the work of the branch. The concert having proved so successful, it was proposed that a Bohemian concert be held in March next, at the Essex Hall. The proposal was favourably received, and the matter will be considered by the committee. It was announced that as a result of Mr. Hawes' lecture on "State Recognition of Horticulture," a sub-committee has been formed by the executive council to consider the subject. The secretary, Mr. Cockram, gave an address upon Battersea Park.

BRISTOL AND DISTRICT GARDENERS.—A meeting of this society was held on December 9 at St. John's Parish Rooms, Mr. E. T. Parker presiding. A special feature at the meeting was a collection of Zonal Pelargoniums, staged by Messrs. Garaway. The lecturer for the evening was Mr. Gostling, gardener to A. G. Groves, Esq., Horfield Lodge, the subject being "Manure as the Gardener's Friend." The lecturer recommended nitrate of soda for Onions and Cabbages, and superphosphate for Potatoes; he caused astonishment among his audience by stating that leaves of Pine trees were beneficial to Potatoes.

CHESTER PAXTON.—The annual general meeting was held in the Grosvenor Museum on Saturday, December 11, when the hon. secretary (Mr. G. P. Miln) presented a report of the transactions for the past year. The report was very satisfactory, and showed that the recent exhibition of fruits and Chrysanthemums, as well as the course of winter lectures, had been successful. Mr. T. Gibbons Frost, C.C., was unanimously re-elected president, Mr. A. W. Armstrong chairman of the committee, and Mr. G. P. Miln hon. sec. and treasurer. The new committee was appointed.

SALISBURY AND DISTRICT GARDENERS.—A meeting of this society took place on the 8th inst. Mr. T. Challis occupied the chair. Mr. Tucker, Longford Castle gardens, read a paper on "Perpetual-flowering Carnations," Mr. Tucker described fully the methods of cultivating these plants, and gave a list of the best varieties.

CARDIFF GARDENERS.—The members of the association paid their annual visit to the Central Free Library on the 7th inst., with the permission of the Libraries Committee of the City Council, to inspect the collection of books dealing with horticulture and kindred subjects. The works were arranged in sections, each dealing with a particular subject. Mr. Farr, the chief librarian, welcomed the association and pointed out additions which have been made to the library since the last visit.

EGHAM AND DISTRICT GARDENERS.—At the last meeting a large number of members were present to hear Mr. Giles, of Messrs. Sutton & Sons, Reading, deliver a lecture on "Improvement in Vegetables," illustrated by lantern slides. Mr. Giles gave the history of the common vegetables since the sixteenth century.

CATALOGUES RECEIVED.

- SUTTON & SONS, Reading—Seeds.
JAMES VITCH & SONS, LTD., Royal Exotic Nursery, Chelsea—Seeds; Chrysanthemums.
H. N. ELLISON, 5 & 7, Bull Street, West Bromwich—Bulbs, Ferns, Begonias, Cacti, &c.
DICKSONS, Chester—Seeds.
S. MORTIMER, Rowledge, Farnham, Surrey—New Dahlias.
H. J. JONES, LTD., Ryecroft, Hither Green, Lewisham—Chrysanthemums and Hardy Perennials.
S. F. RICHMOND, Ossett, Yorkshire—Chrysanthemums.
T. SMITH, Daisy Hill Nursery, Newry—Roses.
H. CANNELL & SONS, Swanley, Kent—Fruit Tree Wash.
GUARDIAN ASSURANCE CO., LTD., 11, Lombard Street, London—Lloyd's Insurance.

FOREIGN.

DAPE & BERGMANN, Quedlinburg, Germany—Novelties in Flower and Vegetables.

MARKETS.

COVENT GARDEN, December 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.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices.

Table with columns for flower types (Acacia longifolia, Azalea, etc.), quantities, and prices in s.d. and s.d.s.d.

Cut Foliage, &c.: Average Wholesale Prices.

Table with columns for foliage types (Adiantum, Asparagus, etc.), quantities, and prices in s.d. and s.d.s.d.

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

Table with columns for plant types (Ampelopsis, Aralia, etc.), quantities, and prices in s.d. and s.d.s.d.

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

Table with columns for plant types (Lilium lancifolium, etc.), quantities, and prices in s.d. and s.d.s.d.

Fruit: Average Wholesale Prices.

Table with columns for fruit types (Apples, Grapes, etc.), quantities, and prices in s.d. and s.d.s.d.

Vegetables: Average Wholesale Prices.

Table with columns for vegetable types (Artichokes, Asparagus, etc.), quantities, and prices in s.d. and s.d.s.d.

REMARKS.—Large consignments of Onions have been received and they are selling freely. Onions are plentiful and cheap. Mandarins from Florida are arriving in very fine condition, Lemons are a short supply. Large quantities of Pines are realising satisfactory prices. Tomatoes from the Canaries are very poor in quality. The Grape trade is quiet. The market is well supplied with Christmas stock. Vegetables are, generally, a little dearer. Trade is fair. E. H. R., Covent Garden, Wednesday, December 15, 1909.

Potatoes.

Table with columns for potato types (Bedfords, British Queen, etc.), quantities, and prices in s.d. and s.d.s.d.

REMARKS.—Trade and prices are about the same as last week. Edward I., Newborn, Covent Garden and St. Pancras, December 15, 1909.

COVENT GARDEN FLOWER MARKET.

It is difficult to estimate what the Christmas trade may be, but it seems likely that there will be a plentiful supply of all subjects. Lilies will be sure to advance in value. Callas (Richardias) are already dearer, but this may be in consequence of growers holding them back until next week. Christmas Day falling on Saturday the market will be closed from Friday until the following Tuesday or Wednesday. As growers will be forced to clear their stocks on Friday, it is probable that prices will be low at the close of the market. A large quantity of cut blooms is ordered in advance at Christmas. The salesmen endeavour to serve their regular customers at ordinary rates, but casual buyers are made to pay advanced prices as soon as the supply appears short. Some of the growers are ready to take advantage of the regular buyer when there is a short supply, but when I was a salesman I found that old customers were ready to pay a fair price when there was an abundance, expecting to receive favoured treatment when things were scarcer.

POT PLANTS.

Chrysanthemums will be available over a longer period than usual this season. Comparing their prices with Ericas they must be the most profitable to cultivate. Chrysanthemums in 48 size pots are worth from 8s. to 12s. per dozen, whilst Ericas, which require two years before they are marketed, do not far exceed these prices. Euphorbias (Poinsettias), are very good this season. Those propagated late from strong cuttings make the best plants and retain their foliage best. Ericas (Heaths) have been selling rather better. Tulips are very good, also Roman Hyacinths, Azaleas, Cyclamen, and Cinerarias. Spireas are not so plentiful. The successful market grower must be ready to supply the florist with what he wants at short notice. A large London florist once informed me that he did not deal with a certain firm because he got things cheaply, but because he could always rely on getting them promptly. The market trade is very different now to what it was when florists used to be up in the early hours of the morning to meet the growers before they reached the market. *A. H., Covent Garden, December 15, 1909.*

LAW NOTES.

GARDENER'S CLAIM FOR COMPENSATION.

At the Epsom County Court on Friday, 10th inst., Henry Robinson, gardener, claimed compensation from his employer, Mrs. Annie Cunliffe, Leatherhead, in respect of being incapacitated from work owing to injury received from a horse. Plaintiff was feeding a horse when the animal kicked him in the stomach, and he was thrown against a hayrick. On May 15 the head gardener handed him a written week's notice, which expired on May 22. On the previous day, May 21, he was given a certificate from a doctor, who certified that plaintiff was, in the doctor's opinion, now recovered from the effects of the kick. That certificate was dated May 13. On May 21 plaintiff was given £1 17s. 5d., with a document written apparently by Mrs. Cunliffe. At the bottom of the document were the words, "In lieu of all demands." That document was signed by plaintiff. Plaintiff bore out counsel's statement.

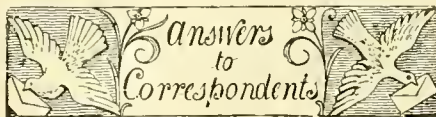
His Honour found that the present condition of the applicant was the result of the accident that occurred while he was in the employ of the respondent, that at present he was wholly incapacitated from work, and that he was entitled to an award of 12s. 3d. a week, payments to commence from April 23.

ACTION RESPECTING A CYPRIPEDIUM.

In the City of London Court on Monday, December 13, before Judge Lumley Smith, a case was tried in which Mr. J. Forster Alcock, of Great St. Helen's and Northchurch, Berkhamsted, sued Mr. Francis Wellesley, of Westfield, Woking, to recover £100 for breach of warranty. Mr. Newbolt appeared for the plaintiff, and Mr. Crawford for the defendant. Mr. Alcock purchased at a sale of Orchids belonging to Mr. Wellesley, for 80 guineas, a plant named Cypripedium insigne Francis Wellesley, which was stated to be a great improvement on C. insigne Harefield Hall, but which on flowering, the plaintiff stated, proved to be C. insigne Harefield Hall. In summing up, Judge Lumley Smith, K.C., stated that all the parties concerned seemed to have acted in perfect good faith. He found for the plaintiff for £70 and costs. In another similar action judgment was also given for the plaintiff.

ENQUIRY.

CONCERTS IN PUBLIC PARKS.—Can any reader inform me upon what basis concert parties are charged for the privilege of giving performances in public parks? What do such parties usually pay the parks department? *Midland Superintendent.*



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ABIES: *W. Edworthy.* The gouty growths on the twigs of the Abies are produced by the fungus *Æcidium elatinum*. The affected branches should be removed and destroyed. Chermes abietes produces a similar malformation, though not to such a marked extent as the *Æcidium*.

BLACK CURRANT MITE: *H. E. H.* Your suggestion to procure a fresh stock of trees is an excellent one. The variety Boskoop Giant should be selected, as this kind is not so liable to attack by the mite. In the meantime, pick off and burn all the infested buds, and next March or April dust the bushes with a mixture of lime and sulphur, using one part of unslaked lime and two parts of flowers of sulphur, repeating the application in the middle of April and again in the first week of May.

COMMERCIAL GARDENING: *Manchester.* You state that as cemetery registrar and gardener you are able to dispose of all the bedding plants you can raise annually—about £60 worth. Assuming that you have reasonable anticipation of a market for all you could produce, you could do much with a capital of £200. You could rent 2 acres of land, as you suggest, but if you want a cottage and greenhouses, it would be wise to take the land on a lease for 7, 14, or 21 years, providing for a renewal of the lease at the end of either of these periods. With the aid of a few good greenhouses, about 12 feet wide and of any convenient length, and a few cold frames, you could raise large stocks of Zonal Pelargoniums, Lobelias, Calceolarias, Fuchsias, Petunias, and similar plants each year. You could utilise some of the houses during the summer months for growing Tomatoes and Cucumbers, while early and late-flowering Chrysanthemums might be grown in the open air during the summer months. It would be well to study local conditions and tastes before going in largely for any particular crop. For indoor plants you will find *Store and Greenhouse Plants*, by T. Baines, and the *Gardener's Assistant*, edited by W. Watson, useful; while for outdoor plants, including fruits and vegetables, you should procure *Practical Guide to Garden Plants and School, Cottage, and Allotment Gardening*, both by John Weathers. These books can be obtained from our publishing department.

CORRECTION.—On p. 403, col. 2, "Sow" Thistles was made by a printer's error to read "Cow" Thistles.

MEALY BUG ON VINES: *R. A.* In pruning your vines (which you say are old), remove altogether as many of the old spurs as can be dispensed with, cutting back the current year's growth on the spurs retained to a prominent bud or "eye." Young growths that have pushed from the main stems this year should be pruned to within one "eye" of their origin. This will enable you next year to cut clean away an equal number of old, unsightly spurs. After the pruning has been done, remove all the loose bark from the stems, being specially careful to leave none about the old spurs, as this is where the mealy bug is likely to conceal itself. Thoroughly wash the vines with a solution of soft soapy water and petroleum, using 4 ounces of soap dissolved in one gallon of hot water, and one part-wine glassful of the paraffin. Keep the mixture well stirred when applying it to the vines. The woodwork and glass of the viney should also be washed with soapy water and the brick and plaster work with hot lime-wash. See that every nook and cranny in the

wall is filled with the lime-wash, and afterwards repair any bad joints in the mortar. This done, smear the vines thoroughly with a mixture of coal-tar and clay, using one part of the former to nine parts of the latter. The clay should be dried and powdered so that it may be passed through a sieve with $\frac{1}{4}$ -inch mesh. It may be pulverised in a large flower-pot, having a lump of stiffish clay put into the hole in the bottom, using a 3-inch flower-pot as a measure. Pour in the tar and work the two materials well together, afterwards adding sufficient water to give the mixture the consistency of ordinary paint, apply it to the vines with a stiffish paint brush, working it into every crevice about the spurs, keeping it stirred meanwhile. Do not syringe the vines overhead with tepid water, as is usually done, to induce them to break into growth.

NAMES OF PLANTS: *H. V.* *Odontoglossum Wilckeanum*.—*A. F. D.* 1, *Cestrum* (*Habrothamnus*) *corymbosum*; 2, *Aster diffusus*; 3, *A. ericoides*; 4, *Lycostera formosa*.—*H. R. J.* *Selenipedium* (*Cypripedium*) *Sedenii* and *Origanum Dictamnus*.—*C. S. C.* 1, *Begonia subpeltata nigra rubra*; 2, *Salvia angustifolia*.

ORANGE TREES: *W. W.* You may employ the fumigator you mention, but be careful to see that the house is not excessively damp, and do not make the fumigation unnecessarily severe.

PLANTS FOR DECORATIVE PURPOSES IN WINTER: *Hortus.* Besides those you mention, the following are suitable for the purpose:—*Ericas*, including *E. hyemalis*, *E. gracilis*, and its variety *nivalis*, *Zonal Pelargoniums*, *Cinerarias* (which should be started early to flower in December), *Lily of the Valley* from retarded crowns, *Astilbes* (*Spireas*), *Liliums*, including *L. longiflorum* and *L. speciosum*, *Tulips*, *Roman Hyacinths*, *Narcissus Tazetta*, and *Indian Azaleas* (*Rhododendron indicum*).

POLYGONUM RALDSCHUANICUM: *E. P.* We are not surprised the plants failed to flower the first season after planting. As they have made such satisfactory growth, no doubt they will bloom freely in the coming season, provided the aspect is a favourable one.

PRUNING: *A. R.* The manner in which "trees should be pruned that were planted last year" will depend partly on how they were pruned last season, and also on what amount and kind of growth they have since made. Assuming that they were average young trees, and that they were pruned very lightly last year, they should require little or no pruning this season. This is because the check trees receive by transplantation is usually sufficient to keep them from growing much in the following season. Your second question relates to "older trees." If you mean old, neglected trees, you will find ample directions for treatment in the articles recently published in these pages under the title of "The Hardy Fruit Garden." So much depends on the class of tree and the treatment it has received that it is not possible to give you definite advice unless such information is sent us. As a general rule, intelligent pruning consists of cutting out all shoots which cross each other, any side-growths which are not required, and shortening the leading growths to 12 or 18 inches, according to the space to be occupied. Some kinds flower on the previous season's growth and others on the new wood, therefore an intimate knowledge of their habitats is necessary before an operator can prune with a reasonable hope of getting the best returns. If the present growth is particularly strong, the roots may need pruning rather than the tops.

RICHARDIA (CALLA) LEAVES INJURED: *W. E. C.* No disease is present in the plants. The injury is due to an excess of moisture in the air.

SOLANUM LEAVES DECAYING: *W. S.* See reply to *W. E. C.* on *Richardia*.

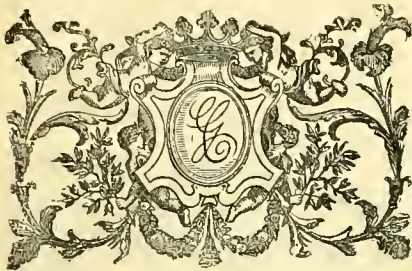
Communications Received.—*A. J. C.*—*H. S.*—*C. G.*—*S. E.*—*W. H. W. P.*—*G. E.*—*H. H. W. P.*—*Searle*—*W. H.*—*M. A. J.*—*G. W.*—*A. O.*—*W.*—*W. H. W.*—*S. R.*—*W. B. H.*—*Royal Meteorological Society*—*A. G.*—*Dr. F.*—*W. P.*, *California*.—*C. J. H.*—*J. W. H.*—*A. B. C.*, *Surrey*—*J. Snell*—*R. A.*—*Roserai* de *Bagatelle*—*G. Benington*—*W. Camm*—*An Old Reader*—*Dr. K.*, *Berlin*—*A. Grove*—*C. F. E.*—*H. S. T.*—*F. D.*, *Balmuc* les *Bains*.—*A. C. B.*—*Col. V.*—*H. D.*—*J. R. J.*—*C. B. L.*—*J. G. W.*—*W. A. C.*—*C. T. D.*—*E. M.*—*J. W.*—*O. T.*—*S. A.*—*E. M.*—*W. H. Y.*—*W. D.*—*T. H.*—*W. W. P.*—*J. B. H.*—*S. J. W.*



Photographs by G. Forrest.

CHINESE CYPRIPEDIUMS IN THEIR NATIVE HABITATS.

(ABOVE) *C. TIBETICUM*; (BELOW) *C. MARGARITACEUM*.



THE

Gardeners' Chronicle

No. 1,200.—SATURDAY, December 25, 1909.

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ALDENHAM HOUSE.

(See Supplementary Illustration.)

ALDENHAM HOUSE, the country residence of the Hon. Vicary Gibbs, is situated in West Hertfordshire, nine miles from St. Albans and five miles from Watford. Elstree, the nearest village, lies a mile away, to the south. Looking at the reposeful situation and the grand site of the mansion, it is difficult to realise that Hyde Park Corner is only 13 miles off. There is but little history to relate of Aldenham House. The mansion is a massively-built brick building in the style of Queen Anne. It was probably constructed at about the year 1550. In 1614, with Thomas Sutton's daughter and heir, it passed to her husband, Henry Coghill, in whose family it remained until 1734, when it passed to Robert Hucks, who had married a relative of another Henry Coghill, and remained in the Hucks's family until 1814. After this time the estate descended through a Miss Noyes, a relative, thence to the Gibbs family through the marriage of Antony Gibbs (grandfather of the first Lord Aldenham) with Dorothea Hucks.

Aldenham is especially noted for its extensive collection of trees and shrubs and high-

class vegetables. The Hon. Vicary Gibbs possesses a wonderful knowledge of trees and shrubs, not only a knowledge of their nomenclature, but of their requirements from a cultural point of view.

During the last 27 years many extensive alterations have been carried out in the gardens. The late Lord Aldenham, whose death occurred in 1908, was passionately attached to his home. He devoted much of his great wealth to improving the garden. The designs, prepared by his son, the present resident, were ably carried out by Mr. E. Beckett, who has been gardener at Aldenham for many years. So vast has been the increase in the garden that the pleasure grounds now occupy 200 acres, and even that apparently large area is becoming crowded, so many trees and shrubs have been added of late. A noteworthy addition is the extensive collection of Chinese plants, introduced through the agency of Mr. E. H. Wilson. The approach to the mansion is through a double avenue of Chestnuts, which extends for a mile along the carriage drive, over a handsome bridge of stone, which spans a portion of a ten-acre lake, on whose banks are huge clumps of golden Elder, golden and red-barked Willows, Astilbes, Snowberries, and Berberis, some of which are effective at every season of the year. A magnificent avenue of Elms on grass serves as an approach to the house from the north-west. A quarter of a mile west from this avenue is another of Turkey Oaks, probably 20 years old, and growing most luxuriantly. Although this avenue appears to join on to that made by the Elms, the public road from Elstree to Watford runs between, but the grounds are so arranged that even pedestrians are not seen from the Elm avenue.

The shrubberies form the most charming feature of the garden, many acres being planted with the choicest trees and shrubs. The clumps vary in size and form, but all are surrounded by grass; many of the clumps cover an acre or more. In the formation of these clumps care has been exercised to secure such graceful curves and easy slopes as are most in keeping with the immediate surroundings. The individuality of each subject has been preserved, and there is no confused planting or overcrowding.

The general scheme of planting is a mixture of evergreen and deciduous subjects. Pillar plants are effectively employed in such subjects as golden Ivies, coloured vines, Sweet Briars, Clematis, Polygonum baldschuanicum, which tend to relieve the surroundings by patches of colour—flower or foliage. A careful system of pruning is practised, and the results are shapely specimens, even if small, and those of a flowering character give their full share of blossom. As to variety, it is almost endless, including such choice plants as Symphoricarpos mollis, Sassafras officinalis, Larix lyallii, Salix lanata, Juniperus pachyphloea, Hydrangea arborescens grandiflora, Colutea persica, Esculus chinensis, and the very rare Æ. Bushii; Ilex pedunculosa, Magnolia hypoleuca, Cotoneaster adpressa, Ononis arragonensis, and Fagus antarctica uliginosa. Others, not quite so rare, are Shepherdia canadensis (a fine specimen), an extraordinarily fine plant of Hamamelis mollis, Saix gracilistyla, Aristotelia Macqui, Castanopsis chrysophylla, Davidia involucrata,

Ribes lobbia, Berberis Knightii, Prunus Mume, and a charming plant of Hex Aquifolium "Golden King."

Of the more common yet distinctly desirable shrubs and trees are the following:—Læspedeza cystobotrya, a new Japanese form, rosy purple; the creamy-white inflorescence of Sambucus canadensis, with red stems; Quercus nigra, with thick, leathery leaves, which are green on the upper surface and gold beneath; Disanthus cercidifolia, a tree like the Judas tree in growth, with crimson and gold colouring; Cytisus sessilifolius, with small, deep-green leaves, and a mass of bright golden blossoms, as many as 100 on each spike; Cydonia sinensis, a huge Quince, very bright in the autumn; Rhamnus alaternus variegatus and Fraxinus dimorpha var. dumosa, the small-leaved Ash, with silvery stems, most peculiar, in the opposite growths of leaves and branches; Berberis virescens, which starts into growth with a rich purple hue and dies off rich crimson; B. coccinnum, a most desirable plant, producing its rich, coral-red fruit freely; B. diaphana, worthy of a place in any collection, no matter how small, for its red stems and yellow flowers; Rhus typhina; R. Osbeckii; Peraphyllum ramosissimum, with its rosy-white, early-summer Apple-blossom-like flowers; and Fuchsia coralina.

The Lavender-like purple spikelets of Perowskia atriplicifolia, with its silver leaves, are exceedingly attractive; Mallos japonicus, with its Paulownia-like leaves, and the variegated Bramble in front, all add to the interest of the collection. A very handsome specimen is Pittosporum eugenioides, fully 11 feet high and as much as 9 feet in diameter. One of the richest of crimson-flowering trees is Amygdalus magnifica. But I could go on almost indefinitely naming rare trees and shrubs at Aldenham! For are there not upwards of 100 species and varieties of Oaks alone, including many forms of Q. Cerris? Of Berberis, in addition to those already named, there are 30 varieties, including Fendleri, Fremontii, pruniosa, nepalensis, congestiflora, and empetrifolia.

A wonderful collection of Ash, includes many of the Japanese species. Of Pyrus there are many desirable sorts, which add their quota of interest to the garden during their season of blossom or fruit. Lonicera number some 25 species. Pendulous trees are much appreciated; Tilia petiolaris is a fine specimen. Morus alba, Beeches, and Ash are a few of the more noteworthy.

Mention should be made of the many uncommon subjects treated as low wall climbers on the pillars of the handsome balustrade in terra cotta, extending parallel for some six hundred yards to a broad gravel path on the east and southern side of the mansion, and dividing the grounds from the park. Colletia cruciata, Hydrangea quercifolia, Berchemia racemosa variegata, Othera japonica, Menispermum canadense, Escallonia macrantha Ingramii, Cotoneaster angustifolia, Olearia macrodonta, Griselinia littoralis, and Rhus Toxicodendron, with its brilliantly-coloured crimson leaves. Edwin Molyneux.

(To be continued.)

NOTICES OF BOOKS.

* THE FLOWERS OF MADEIRA.

THE island of Madeira, situated off the north-west coast of Africa, is about a ten days' sail from England. It is about the same size as the Isle of Wight, but, instead of being largely meadowland, Madeira is a mass of basaltic rock, rising abruptly from the Atlantic to a height of over 6,000 feet. There are valleys and ravines, through which streams and rivulets in plenty run, watering the soil as they go, and, as the climatic conditions are subtropical, the mean temperature for the year at Funchal being about 70°, the island is very fertile. When the Portuguese found it about 500 years ago, the island was covered with trees, and, to get a clearing, the first settlers set fire to the forest, which is said to have burnt for seven years. Trees, chiefly Chestnuts and Pines, are still abundant on the highlands, but a large part of the island is now cultivated, Sugar being the principal industry, Vines, Bananas, Lemons, Citrons, Cherimoya, Guava, and other fruits being also largely grown. Madeira wine is, of course, well known. The great charm of the island is the wonderful variety of introduced plants, which occur not only in the gardens, but wild in all kinds of positions. A walk along the steep roads and lanes which start from Funchal and wind up the mountain is, to anyone acquainted with plants, truly delightful. It is so at most times of the year, but the best months for flowers are March, April, and May. Even in December there is a great display of bloom; Poinsettias, Bougainvilleas, Erythrinias, Bignonias, Allamandas, Passifloras, Roses, to mention some of the most familiar, take the place there of Thorn and Ivy and Bramble here.

The gardens are not of the kind we make. There it is not possible to have stretches of lawn and well-kept borders. The plants make the garden, growing in semi-wild fashion, to be pushed out of the way if they intrude too much, and never failing to yield a wealth of bloom. Probably most of the plants have been introduced at some time or other by residents of British nationality in the island, which has for centuries been the resort of invalids on account of the mildness and uniformity of its climate, and the

* *The Flowers and Gardens of Madeira*, by Ellen and Florence du Cane. (London: Adam and Charles Black.) Price 7s. 6d. net.

Englishman delights in flowers. The Portuguese, to whom the island belongs, are not keen gardeners. The best of the houses in Madeira are—and have been for many years—in the occupancy of Britishers.

A list of the beautiful, exotic plants now estab-

lished in Madeira, cultivated and wild, would be of astonishing dimensions. Here are a few:—Jacaranda, Duranta, Stephanotis, Poinciana, Solandra, Weigandia, Brunfelsia, Rosa gigantea, Lonicera Hildebrandtiana, Azalea indica, Romneya, Hibiscus, Palms, Strelitzia, Musa, Streptosolen, Amaryllis, Belladonna, Datura, Wista-

ria, Almond, and Cape Aloës. In addition to the introduced plants, there are many among the natives that have claims to the gardener's attention, such as *Clethra arborea*, *Ranunculus cortusæfolius*, *Statice*, *Echium*, *Cineraria*, *Orchis foliosa*, the Dragon Tree, and numerous Ferns.



[Photograph by H. F. Macmillan.]

FIG. 188.—THE SNAKE GOURD (*TRICHOSANTHES ANGUINA*).

lished in Madeira, cultivated and wild, would be of astonishing dimensions. Here are a few:—Jacaranda, Duranta, Stephanotis, Poinciana, Solandra, Weigandia, Brunfelsia, Rosa gigantea, Lonicera Hildebrandtiana, Azalea indica, Romneya, Hibiscus, Palms, Strelitzia, Musa, Streptosolen, Amaryllis, Belladonna, Datura, Wista-

Messrs. Black were well advised to add to their series of Beautiful Books this volume by the Misses du Cane. The illustrations are charming works of art, remarkable for their beauty of composition, clever drawing, and effective coloration. Every picture is a pleasing study of plants, either as seen in a garden, by the roadside, or in a sea view. The letterpress, by Miss Florence du Cane, is as clever as are the pictures. A short chapter accompanies each picture, giving particulars sufficient to enable one to realise the whole, of which the picture shows only a part. The criticisms are honest and to the point, displaying an orthodox feeling for plants and a correct knowledge of the art of gardening.

Whilst the gardens and cultivated plants are interesting features of the island, the scenery and natural vegetation are well worth the attention of visitors. No other island of its size has such variety of scenery, and the flora is remarkable for the number of endemic species it contains, or, rather, contained; for, according to Sir Joseph Hooker, many of the plants peculiar to the island have perished through the operations of the cultivator, or have been elbowed out by vigorous aliens. *Clethra arborea* (the Lily of the Valley tree), peculiar to Madeira, forms a large tree, as also does the Portugal Laurel. The palm for flowering trees is given by Miss du Cane to *Jacaranda mimosæfolia*, from Brazil. There is a beautiful picture of this species in the book, showing a tree about 40 feet high, shaped like an Oak. It loses its leaves in winter, and in May it bursts into a cloud of blue blossoms. It is common in Funchal, where it is known as the Blue Tree. Most people, however, give pride of place to the Bougainvillea, which, in Madeira, is everywhere, and when in flower really seems to paint the whole island magenta-red. W. W.



FIG. 187.—VIEW IN THE ROYAL BOTANICAL GARDENS, PERADENIYA.

CEYLON.

ROYAL BOTANICAL GARDENS.

THE illustration, fig. 187, shows the entrance to the Orchid collection in the Royal Botanic Gardens, Peradeniya, and is typical of the vegetation in these gardens. Needless to say, the Orchids here are not grown under a glass roof and in artificial heat, as in cooler climes. Instead, however, a structure with screened sides, on which climbing plants are trained, and a roof consisting of a framework covered with coir netting, provides the requisite conditions for the plants. It is noteworthy that when suitable trees are at hand these invariably form the best "ground" for epiphytic Orchids.

bare stem and branches by short, slender stalks; dangling in the air, they readily give the impression of a chandler's shop (see fig. 189). This impression is intensified as night falls and the numerous fireflies move among the fruits. It is not, perhaps, surprising that the inexperienced traveller should not infrequently be informed that the fireflies perform the duty of lighting up these "candles" when required by the denizens of the jungle. The fruits are fleshy and juicy, and have a peculiar Apple-like odour. They are eaten by certain tribes and also by cattle. The tree belongs to the Natural Order Bignoniaceæ.

"HEN-AND-CHICKEN" PINEAPPLE.

This peculiar variety of *Ananassa* (see fig. 190)

grown in native gardens as a vegetable. In the illustration, fig. 188, a tall Tamil man is seen standing by the side of one of these fruits, which is nearly as long as himself. The plant grows with rapidity, and produces an abundance of peculiar fruits which reach usually a length of 4 to 5 feet. They are esteemed by the natives as a vegetable for curries, a portion of one fruit only being used for each meal. *Hugh F. Macmillan.*

NEW OR NOTEWORTHY PLANTS.

CALLISTA v. DENDROBIUM.

I AM sorry that my short note about *Callista amabilis* (see p. 354) seems to be misunderstood in more than one respect. Mr. O'Brien, in support of his contention (p. 393), quotes the ruling of the recent Vienna Botanical Congress, with which I am well acquainted. I never dreamed of returning to Dr. O. Kunze's nomenclature, but as I recorded the plant after it had more than a century's oblivion I took the opportunity to mention its interesting history in botanical literature from the time of Swartz to Kunze. I

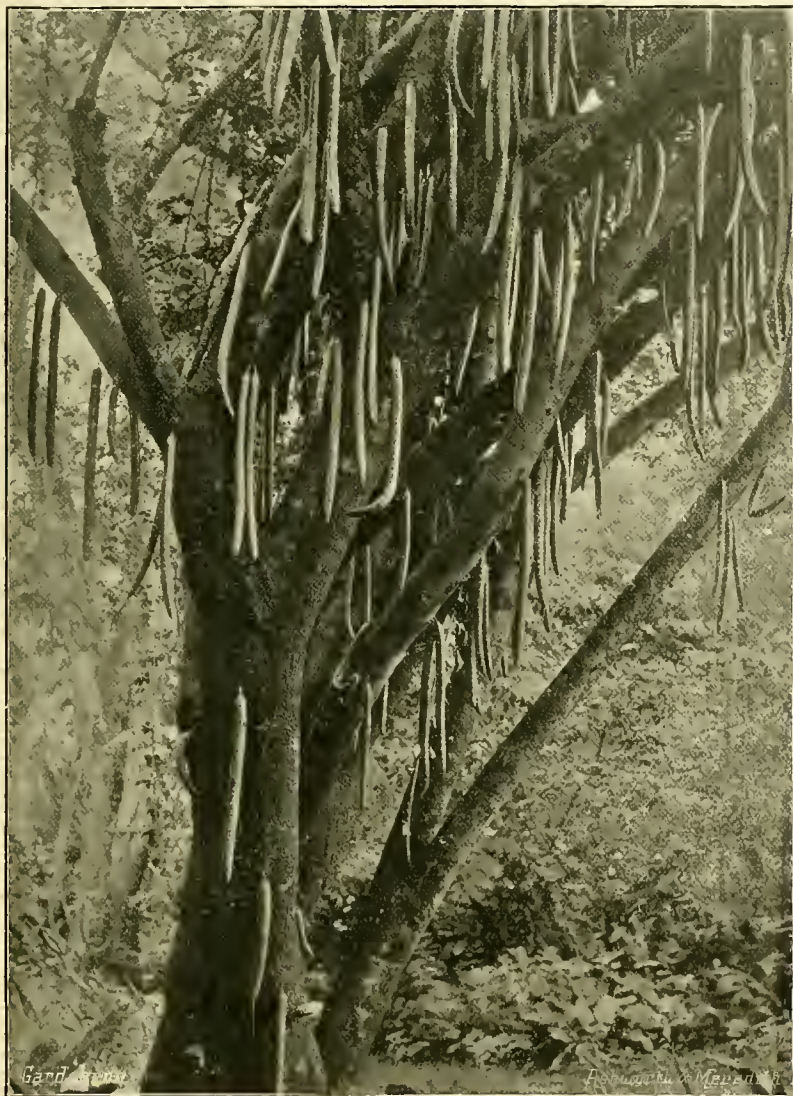


FIG. 189.—THE CANDLE TREE (*PARMENTIERA CEREIFERA*).

THE CANDLE TREE.

One of the most remarkable trees of the Tropics is undoubtedly the Candle Tree (*Parmentiera cereifera*), native of Panama. It grows 30 to 40 feet high, and produces from its stem and older branches a profusion of almost sessile campanulate flowers; these are followed by yellowish, cylindrical, smooth points, 12 to 18 inches long, which appear exactly like wax candles, as the botanical name implies. So close is this resemblance, that travellers, seeing the tree in fruit for the first time, are liable to be temporarily puzzled as to whether the candles of shops are made in factories or grown on trees! The candle-like fruits are suspended from the

has of late become common in native gardens at low elevations in Ceylon. Though grown for its fruit, the latter can only be described as of second-rate quality, being rather pithy and insipid. The two striking peculiarities of the variety are that the fruit does not bear the usual characteristic crown of small leaves, but a growth resembling a cock's comb instead, and its habit of producing a number (usually from seven to ten) miniature growths at its base.

THE SNAKE GOURD.

The "Snake Gourd" (*Trichosanthes anguina*) is so called on account of its long, snake-like fruits. It is a native of India, and is commonly



FIG. 190.—"HEN AND CHICKEN" PINEAPPLE.

have not even quoted Dr. Kunze's name in my Monograph. At the same time I believe it is necessary to convince his followers that their master was wrong in this as in many other matters. For this reason I have treated that part of the question a little more fully than it really deserved. Now this part is inseparable from the second: is Loureiro's plant in the British Museum a *Dendrobium* or is it a *Callista*? All I can say for the moment, after ten years' study of the vast genus *Dendrobium*, is that the plant is not a *Dendrobium* as defined by Dr. Lindley, the author of the genus, nor in the sense of the term as used in Bentham and Hooker's *Genera Plantarum*. Although the plant may be similar in its growth and habit to a *Dendrobium*, there are peculiarities both in the lip and side petals of the flower which separate the plant absolutely from the genus. It is impossible to go into all the details of this very intricate matter now, and I propose that further discussion be withheld until the Monograph now in the press is published. The genus is so polymorphous that without a clear definition as to what section or subgenus a plant belongs, the declaration of its being a *Dendrobium* says practically nothing. *P. Kränzlín, Berlin.*

THE ALPINE GARDEN.

SOME GOOD AUTUMN-FLOWERING CROCUSES.

THE Crocuses enumerated below are given in the order in which they have flowered. Crocus speciosus is an all-important kind among first earlies. The type is well known, but the exquisitely beautiful *C. s. Aitchisonii*, which is later in flowering, and whose petals reveal the lovely colouring of *Iris stylosa* on their inner surfaces, is less frequently seen. *C. nudiflorus* is also an early-flowering species, and its bold and handsome flowers render it a conspicuous object. Its period of flowering is not greatly removed from that of *C. speciosus*, but permanently-planted corms are usually a little later to flower. *C. zonatus* has long, pointed flower-buds, its mauve-lilac colour and finely-pencilled petals having at their bases a coloured zone of rich yellow. *C. medius* is a showy, free-flowering species. Its first flowers were spoiled during the wet and frosts of late October, but the sunny weather on two or three occasions in the first week of November favoured the secondary flowers, which afforded a rich display. One must see this glorious species in the sunlight to realise to the full the richness of its purplish-violet cups, or to get a proper glimpse of the mahogany-red colour of its plume-topped stigmata. It deserves to be extensively grown for its freeness of flowering. On a sunny ledge in the rock-garden a group of *Crocus medius* would constitute a rare feature in early November, when so few plants are in flower; grown in pots or pans in a cold house, it would also prove a great attraction. With me it is one of the very best and most reliable of the autumn-flowering kinds. *C. ochroleucus* is a dainty-looking, white-flowered kind, whose pointed petals are coloured a golden yellow at their bases. It is smaller and less vigorous generally than any of the above-named, but it is a pretty little plant, and merits more extensive cultivation. It does not compare in point of size or beauty with the lovely white-flowered *C. marathonisii* (*C. Boryi*), which is the best of the white-flowered, autumn-blooming Crocuses. Unfortunately, *C. marathonisii* has not proved satisfactory with me. *E. H. Jenkins.*

APPLES AT THE WOBURN FRUIT FARM.

FOR some years past annual exhibitions of Apples have been held at the Duke of Bedford's Experimental Fruit Farm. A fortnight ago I had the pleasure, in response to an invitation by Mr. Spencer Pickering, F.R.S., of representing the *Gardeners' Chronicle* at one of these shows. It was held in a large pavilion on the farm, the central hall of which was filled with specimen fruits representing upwards of a hundred varieties.

Before saying anything further about the Apples, I should remark that there is no attempt made to grow what may be termed show fruit, either by the aid of warmth and shelter from walls, by thinning the fruit, or by extra feeding. The Apples seen represented the produce of orchard fruit trees, grown under various conditions. The object in view is to demonstrate to the fruit farmers and gardeners of the county, by scientific and practical tests, the most economical and successful methods of Apple culture.

The experiments have been carried on for 15 years, and the results have been published in the reports issued periodically from this farm by Mr. Spencer Pickering. In these reports we are told that unpruned trees (trees which have never been treated with the knife during the 15 years of their life) are larger, healthier, and bear better crops of fruit than those which have been annually pruned for the same length of time. We are also told that trees in untruncated and unmanured land produce better fruit, and more of it, than do those on land which has been trenched and specially prepared for planting at a great cost. I make no comments on these statements. I can only bear witness to what I saw. I saw the trees and I saw the fruit, and both bear out the truth of the above report. I took the liberty to sug-

gest to Mr. Pickering that the Fruit Committee of the R.H.S. should be invited to inspect the farm next autumn. This would give him a rare opportunity of trying to convert some of those who most persistently reject the conclusions which he has reached.

The exhibition of Apples was arranged on a large centre table and on side stages by Mr. Nield, the manager, large pyramids of the most attractive fruit as to size and colour being raised in the centre, ends, and corners of the table. The body of the table was filled with raised dishes of other choice varieties. The sides were arranged in the same pleasing way, the whole showing presenting a surprisingly good exhibition of Apples of excellent quality, generally of high colour, and certainly of fair to over-average size for orchard fruit.

I noticed the following as being amongst the best samples:—Cox's Orange Pippin, Gascoyne's Scarlet Seedling, Bramley's Seedling (very high colour), Cox's Pomona, Golden Spire, Gospatrick, Newton Wonder, Egremont Russet, Beauty of Kent, Lane's Prince Albert, Northern Greening, Blenheim Pippin, Maggie Grieve, Wealthy (very fine), Lord Derby, Warner's King, Mannington Pearmain, Allen's Everlasting, Tom Putt, Hamblin's Seedling, Allensbank (a splendid cooking Apple of large size, the tree being of extraordinary erect habit of growth), Scarlet Nonpareil, Wadhurst Pippin, Baxter's Pearmain and American Mother. *A Conventional Fruit-grower.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchard Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Miltonia.—Plants of *Miltonia vexillaria* are growing fast, and, occasionally, some of the leaves clasp each other so firmly as to become wrinkled. When this is observed, the leaves should be liberated by passing a thin, smooth piece of wood between them. Only very moderate supplies of water are needed until the flower-spikes appear in the spring. The black spot which is apt to appear on the tips of the leaves is often caused by the heat of the house being deficient, especially if, at the time, the atmosphere is damp. It is also caused by too frequently damping between the pots, particularly if the plants are standing upon some moisture-holding material, such as fine coal or shingle. *M. vexillaria* is a shallow-rooting plant. Most of the roots ramble about the surface of the compost, and woodlice are very fond of them. These latter should be trapped and destroyed. *M. Roezlii* thrives better in the same house with *M. vexillaria* than in a warmer temperature, but it requires a denser shade. Should any plants of *M. Roezlii* need repotting, it may be done when new roots are seen to be pushing out at the base of the young growths. This species thrives well in the new Orchid compost. It is a compact-rooting plant, and should not be over-potted. The roots tend to collect together around the inside of the pot, in which state the plants will take plenty of water. *M. Phalenopsis*, being at rest, should be given a light position in the Mexican house; the plant will require but very little water until growth recommences. *M. Phalenopsis* is seldom seen in good health, but this is owing more often than not to the foliage being attacked by a small species of red spider. To remedy this, the leaves should be sponged with some weak insecticide or soft-soapy water at least once a month.

Polystachya.—Among small-flowering Orchids, many of the *Polystachyas* are pretty and interesting, one peculiarity being that, invariably, the flowers are inverted. At the present time the following are in bloom:—*P. grandiflora*, *P. Laurentii*, *P. luteola*, *P. Buchaniana*, *P. odorata*, and *P. pubescens*. These and other species, as *P. Ottoniana*, *P. laxiflora*, *P. zambesiac*, *P. Haroldiana*, and *P. flexuosa*, thrive and bloom freely in the new Orchid compost; a light, moist position in the warmest house is the best place for them.

Mexican Odontoglossums.—Plants of *Odontoglossum Reichenheimii*, *O. leve*, and *O. citros-*

mum will, by this time, have completed their growths. They require a long and decided rest. Therefore, as each pseudo-bulb becomes fully made up, gradually diminish the quantity of water at the root, and in a few weeks' time watering may be discontinued. Owing to the absence of water at the root, the bulbs will shrivel; but shrivelling does not affect the well-being of the plants, unless it is excessive, for when the growing season commences, if the plants receive a good supply of water, and are placed in a moist atmosphere, the bulbs readily plump to their normal condition. The best position for these plants while at rest is near the roof of the Mexican house. The rare *O. Londesboroughianum*, being now at rest, should be in a similar position; if kept at all moist at the root, the pseudo-bulbs will certainly decay. *O. Inseleyi splendens* grows well on a dry shelf in the cool house, and should now be sending up its flowers. It is a plant well worthy of being freely grown, as it lasts long in flower, and the blooms are very showy and attractive. After the blooms fade, keep the plant on the dry side until new growth commences.

Calanthes.—Many of the deciduous *Calanthes* of the *vestita* and *Veitchii* sections will now be passing out of bloom. As these plants require a thorough rest, they should be placed on a dry shelf, close to the roof of the warmest house, where the light will help to mature the bulbs. Water must be entirely withheld till after the repotting of the plants in the spring. Before removing them to their resting quarters, cleanse every pseudo-bulb from the white and brown scale which commonly infests them. Such late-flowering hybrids as *C. Wm. Murray* and *C. Bryan* are now at their best, and those of the *C. Regnieri* section, as *C. Regnieri*, *C. Sanderiana*, and *C. Stevensii*, will soon be opening their flowers, which will last well into the spring months. These varieties help greatly to prolong the *Calanthe* season. The flowers show to the best advantage when the plants are stood on the ground arranged with Ferns, &c.

FRUITS UNDER GLASS.

By E. HARRIS, Fruit Foreman, Royal Gardens, Frogmore.

Strawberries.—Some of the plants which were placed into warmth at the end of November, or early in the present month, will be developing flower-spikes. These should be removed into a warmer house and placed near to the glass. The atmospheric temperature of the house should not be lower than 60°. Spray the plants with lukewarm water twice daily, and give occasional applications of liquid manure. Other batches may be placed in warmth for succession, according to requirements. Shelves in vineries or other fruit-houses which have just been started are very suitable places for these later batches, but see that the Strawberries are not infested with insect pests, as there will be a danger of these spreading to the permanent fruit trees.

Melons.—Where there is a large demand for forced fruits, and provision is made for early forcing, preparations must now be made. Select a house or pit having a southern aspect, and have it ready for planting the Melons as early in the New Year as convenient. Place at the front of the house and quite close to the glass a hot-bed of leaves and stable manure in equal proportions. For a rooting medium use a fairly strong fibrous loam, mixed with a quantity of old mortar rubble, or wood-ashes. Press all the materials very firmly together, or the growths will be soft and liable to be affected by canker. Raise the seedlings in 2½-inch pots, using a light compost, and plunging the pots in a hot-bed. When the seedlings are well through the soil, place the pots containing them on the beds of soil, where the plants will be put out.

Cucumbers.—A fresh batch of plants should be raised to take the place of those which are now in bearing. They will need more care than Melons. Sow the seeds singly in 2½-inch pots filled with a mixture of loam and leaf-soil in equal parts, which should be warmed before the seeds are sown. If the compost is just moist at the time of sowing, no further water will be needed until the seeds have germinated. Plunge the pots in a hot-bed, and cover them with a sheet of glass. In the meantime prepare beds as advised for Melons, and when the plants are large enough plant them in small mounds of soil placed about 5 feet apart in the hot-bed.

Tomatos.—The plants which were raised in October are ready for potting in 6-inch pots. The soil for Tomatos at this period of the year should be of a lighter texture than will be used later in the season. Afford a temperature of about 60°, and place the plants close to the glass. Tomatos now fruiting should be given a top-dressing of fresh soil, whenever the roots appear through the ground. An occasional sprinkling of some artificial manure will also be useful.

THE FLOWER GARDEN.

By W. A. COOK, Gardener to Sir EOMUNO G. LODER, Bart., Leonardlee, Sussex.

Shrubs with winter berries.—A good selection of plants that produce bright berries during the winter months will assist in making the garden effective when the general surroundings are dull. All the Roses of the rugosa type are valuable, and they have the additional advantage of furnishing a good display of their pretty single blooms in the summer-time. The Coloneasters all produce beautiful fruits, and these shrubs are amongst the easiest to cultivate. A well-fruited plant of *C. horizontalis* is always a beautiful object; other species that should be included are *C. Simonsii*, *C. microphylla*, *C. thymifolia*, *C. frigidula*, *C. Franchetii*, and *C. adpressa*. Then the *Skimmias* may be mentioned, and of these *S. Foremanii* is the best for the purpose, the berries being larger and more freely produced than on any other species. *S. japonica* also fruits freely, and is a very pretty object at this time of the year. The *Skimmias* grow well in a smoke-laden atmosphere, and for that reason they are good plants for towns. The *Aucuba* is also prized for its scarlet berries in winter. Sometimes the *Aucuba* does not set its fruits. Both the *Skimmia* and the *Aucuba* bear flowers of one sex only on the individual plants, and this is also true of *Hippophae rhamnoides*, the Sea Buckthorn, which produces its berries in the greatest profusion. A few male plants should always be grown with the females. With respect to the *Aucuba*, the variety known as *Fertility* produces the brightest berries and in the greatest quantity. The species of *Berberis* must be included in our list, the best for our purpose being *B. Thunbergii*, *B. vulgaris*, and *B. atro-purpurea*. The *Cratægus* family includes many useful berry-bearing plants. Nothing is finer at this season than a tree of *C. Pyracantha* covered with its scarlet berries. Others of the family that are effective in winter are *T. tanacetifolia*, *C. orientalis*, *C. Carrièrei*, and *C. præcox*. The Strawberry tree, *Arbutus Unedo*, bears its scarlet berries in winter, and the flowers at the same time. *Elæagnus multiflora* is a prolific berry-bearing, ornamental shrub; the fruits are sometimes used as a preserve. The native Spindle tree, *Euonymus europæus*, should be extensively planted in the shrubbery. The fruits are very pretty when they have burst and exposed the seeds covered with orange-coloured arils. Hollies have an especial interest at this season, but they are beautiful all through the year. *Ilex cornuta* is little known in gardens, but it is one of the best of the Hollies to retain its berries, besides being a handsome subject at all times. *Pernettya mucronata* and its varieties are always welcome in winter. Nothing is finer than a dense mass of these plants covered with their fruits. *Pernettyas* are suitable as edgings to clumps of shrubs or in places near trees. Even the *Magnolias* furnish a fine berry-bearing plant in *Magnolia tripetala*, which produces large, purplish-red fruits. The blue-fruited vine, *Vitis heterophylla*, will succeed in light soils in warm situations; the bunches of pale blue berries will afford a pleasing change to the scarlet kinds.

THE KITCHEN GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Elstree, Hertfordshire.

Onions.—It is necessary to make a commencement early in the New Year in order to produce the finest bulbs, whether for the table or for exhibition purposes. The seeds should be sown on some date during the first fortnight in January, but the soil should be prepared beforehand, so that everything is in readiness at the date of sowing. Some gardeners prefer sowing Onions at the end of December, but I have had the best results from sowing in January. The soil for the seed-bed should consist of fibrous

loam three parts, well-rotted leaf-mould one part, and manure from a spent Mushroom-bed one part. All these materials should be passed through a fine-meshed sieve. Whilst they are being mixed together add a quantity of road or river sand for the purpose of keeping the compost open. It should be used in a moderately dry condition; the seed-bed should be made very firm. The seed may be sown in either boxes or pots, but whichever receptacles are used, adequate provision for drainage must be provided. It will be sufficient to just cover the seeds with the soil, and, after they have been pressed firmly and watered, place them in gentle warmth, an early vinery or Peach house being a suitable structure for the boxes. There is no variety better than a good strain of *Ailsa Craig*.

Preparing Onion beds.—At the time that the seeds are being sown, the ground should be prepared for the planting of the seedlings out-of-doors in the month of April. The Onion is a very deep-rooting plant, and revels in a deep soil. It is also a gross feeder; therefore, the ground should be well enriched as well as deeply dug. The best plan is to trench the land 3 feet deep, placing a thick layer of manure at the bottom, and another layer below the top spit. If the soil is naturally deficient in lime, apply a good dressing of this, as well as plenty of wood-ashes. A little later on dust the ground pretty freely with soot.

Leeks.—These require much the same treatment as Onions, except that the seed should be sown a fortnight later. Nothing is gained by sowing the seed too early, for it often causes the plants to have a tendency to "bolt" and form bulbs.

Potatos.—Attend to the earthing-up of the earliest plants in heated frames or other warm structures. Do not unduly force the plants, but endeavour to promote a sturdy, short-jointed growth by admitting all the light possible and fresh air, whenever the weather will permit, being careful to ventilate on the opposite direction from which the wind is blowing. Make successional plantings in heated pits, and prepare further "sets" to follow these by selecting suitable tubers and laying them thinly on suitable trays; place the trays in a greenhouse, and keep them in the light.

The seed order.—The nursery firms having issued their new catalogues, it is advisable for gardeners to place their orders early. In addition to ordering old and tried varieties, there is much interest in cultivating a few of the most promising novelties for comparison.

PLANTS UNDER GLASS.

By A. C. BARTLETT, Gardener to Mrs. FORD, Pencarrow, Cornwall.

Clivia miniata.—Although this is not the usual season of flowering, some plants of this species generally develop their inflorescences in winter. Such plants should be moved into a structure having an intermediate temperature, and be given occasional applications of manure water. The increased warmth and feeding will cause the flowers to be finer, and of a brighter colour. The general stock of *Clivias* should remain in the cool house and be kept moderately dry at the roots.

Coleus thyrsoides.—In order to obtain the best results with this useful winter-flowering plant, it should be kept in a moderately-warm house, where the atmospheric temperature at night is not lower than 45°. Apply water at the roots with great care, for any excess of moisture will cause the margins of the leaves to turn brown. The use of manure water must now be discontinued.

Clerodendron fallax.—As the plants finish flowering, they should be pruned severely and placed in a warm glasshouse. The strongest plants may have the shoots shortened to five or six buds. Keep the roots somewhat dry, until the new shoots appear, and, in order to assist the growths breaking freely, syringe the plants in the morning and afternoon of fine days. As soon as the new shoots are 3 inches long, they should be taken off with a portion of the old wood, or "heel." Insert them singly in small pots, and place these in a brisk bottom heat.

Carnations.—As soon as good cuttings of the tree and winter-flowering varieties can be obtained, they should be inserted with a view to

raising plants for flowering next autumn and winter. By propagating the plants early, they will have a longer season of growth, and this will permit of extra stopping, which will be especially useful in varieties not naturally of a bushy habit. The best cuttings are obtained from basal shoots pulled from the plants, with a portion of the old wood attached, the cuttings being about 3 inches long. Those much longer than this must be trimmed in the usual manner. Insert the shoots either singly in small pots, or around the sides of 3-inch pots. Use a mixture of sifted loam three parts, and leaf-soil one part, adding plenty of sand. Make the cuttings very firm in the soil, and then plunge the pots in a frame where there is a bottom heat of 70°, and an atmospheric temperature of 60° to 65°. If the cuttings are given one good watering before they are inserted in the frame, it generally suffices until roots are formed. After about a month the pots will be well filled with roots, and then the propagating case may be opened for ventilation, and five or six days later the plants may be taken out of the case and placed on the shelf of the same house.

Hippeastrum.—A small batch of bulbs should be potted up and placed in a warm house, where bottom heat can be provided. Plants for early flowering should be selected from those which were repotted last season, as these will merely require a top-dressing.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to H. J. KING, Esq., Eastwell Park, Kent.

The Loganberry and Blackberry.—Cut out all the old wood that has fruited, and train the new growths thinly to the fence, poles or trellis-work, as the case may be. Allow plenty of space between the shoots, as the fruits will not be nearly so fine if the branches are crowded. When the training is completed, fork up the ground, and then apply a mulching of rotted manure. Fresh canes may be planted at the first opportunity when the weather and soil are favourable. In the meantime have the ground properly prepared for the plants.

Small fruits.—It is desirable to have a reserve of young bushes both of Currants and Gooseberries. These home-grown plants admit of any necessary planting being done early in the autumn, and they receive very little check in transplanting. Cuttings for propagating Currants and Gooseberries should be made of well-ripened wood. Select some of the best shoots removed when pruning, tying them in small bundles, and placing them in damp soil or sand until required. The shoots may be prepared under cover during bad weather, when outdoor work is impossible, and should later on be planted at the first favourable opportunity. When preparing the cuttings of Gooseberries and Red and White Currants, only about four or five buds should be left at the top of the shoot, removing all others, or suckers will cause trouble later on. The cuttings should be from 15 to 18 inches long, after removing the thin, weak end of the original shoot. No buds should be removed from Black Currant shoots, and the cuttings may be rather shorter than those of the Gooseberry. The reason for leaving all the buds is that the Black Currant always fruits better on young wood, and, leaving these buds, allows plenty of strong shoots to spring from the base of the bush. Gooseberries and Red Currants, on the contrary, are better on a clean, short stem. A cool, sheltered border is the best place for the cuttings, but after the first year they should be transplanted to an open piece of ground. The ground having been previously dug, should now be raked over, and all the larger stones removed. The cuttings should be inserted firmly in the ground, putting them about 4 to 6 inches below the surface.

General work.—A good plan is to have a fire burning always in the garden to consume the prunings, weeds and rubbish. Endeavour to keep every place tidy; there is no economy of labour in allowing heaps of rubbish to accumulate in corners or in yards; if these are burnt up, the ashes make valuable manure. See that imperishable labels are fastened to fruit trees. In view of severe weather, where experience has proved the necessity of protecting Fig trees during winter, this should be done without further delay.

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 EDITORS, 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 Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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

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

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

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 25—

Christmas Day. Quarter Day.

MONDAY, DECEMBER 27—Bank Holiday.

AVERAGE MEAN TEMPERATURE for the ensuing week, deduced from observations during the last Fifty Years at Greenwich—38.5°.

ACTUAL TEMPERATURES:—

LONDON.—Tuesday, December 21 (6 P.M.): Max. 37°; Min. 25°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Wednesday, December 22 (10 A.M.): Bar. 29; Temp. 53°; Weather—Dull.

PROVINCES.—Tuesday, December 21: Max. 40° Cornwall and S. Ireland; Min. 28° Durham.

SALES FOR THE ENSUING WEEK.

THURSDAY—

Dutch Bulbs, Herbaceous and Border Plants, at 12; Roses and Fruit Trees, at 130; Palms, Azaleas, Rhododendrons, &c., at 5; at 67 and 68, Cheapside, London, E.C., by Protheroe & Morris.

It can scarcely be claimed that the year now nearing its close has been marked by any horticultural event of outstanding importance, although it has been attended with great activity and steady progress. If there is one fact more obvious than others, it is the increased prosperity of the Royal Horticultural Society. By continuing the sound horticultural policy, happily inaugurated after the salutary lessons at South Kensington, successive councils have obtained the confidence of the public, and the Society now occupies such a position that its usefulness and influence are felt throughout the country. The fortnightly meetings in the Society's building, of which every Fellow is justly proud, are invariably interesting. Indeed, these displays have grown so much in extent that they appear to crowd the present hall, with its greatly-increased area, just as often as the resources of the old Drill Hall used to be overtaxed. The annual exhibitions in the Inner Temple Gardens and Holland Park were again eminently successful, that at Holland Park having exceeded in general interest any of its predecessors. The annual show of British-grown fruits was allowed to lapse, and in its place there has been a series of competitions at the fortnightly meetings. The idea was to encourage exhibits of fruits and vegetables at these meetings—for hitherto they have been but poorly represented—and thus distribute throughout the year some of the interest that attached to the autumn show. In some degree the objects have been realised, but it will probably be felt that the competitions have not been sup-

ported quite so liberally as was desirable. The reason, doubtless, is that most of the growers of hardy fruit reside at considerable distances from London, and, whilst they are disinclined to exhibit in competitive classes unless they are themselves able to stage their fruits, it is scarcely worth their time to come to London expressly for the purpose of showing in a single class. It may be noted here that next year the usual show will be revived, for the Council has already announced that an exhibition of British-grown fruit will take place in October. The jubilee of the Floral and Fruit Committees was celebrated by a dinner, at which Sir Trevor Lawrence presided.

SPECIAL FLORAL SOCIETIES.

The increased interest in horticulture on the part of the general public is reflected also in the flourishing condition of most of the special floral societies. Of these we may cite the National Rose Society for an example. Extracts from the annual reports, published in our last issue, show that the membership has increased during the present year by 647. The total number of members is now 3,797, as compared with 1,308 in 1904. Notwithstanding the expenses incurred by holding several exhibitions during the year, and publishing the *Handbook on Pruning Roses*, *Official Catalogue of Roses*, and the *Rose Annual*, the finances have steadily improved, and the Society has, very wisely, placed a sum of £300 to the reserve fund, which now amounts to £750. The National Sweet Pea Society has increased its membership from 779 to 938, and its activities are supported by much enthusiasm on the part of its members. The National Chrysanthemum, National Carnation and Picotee, National Auricula and Primula, the National Dahlia, and the Winter-flowering Carnation Societies, if unable to show as much progress as those already mentioned, have nevertheless given proofs, by their several excellent exhibitions, of vigour and enterprise. It is to be remarked that one more National Society has been added to the list in 1909. Opinion may be divided as to the need for further multiplying such societies, but, rightly or wrongly, it has been felt by many of those most interested in the cultivation of vegetables that these necessary products have not received sufficient recognition from the Royal Horticultural Society; therefore, a National Vegetable Society has been formed, and an exhibition will be held next October. The Society will also conduct trials, which are expected to have considerable interest for gardeners. If it is able to discharge useful work not at present being carried out, the histories of similar societies go to show that this one may hopefully expect a large measure of public support.

THE PROVINCES.

The provincial societies have generally maintained their hold upon the public. There may be some cases where the interest has decreased, but these are concerned with autumn shows, at which Chrysanthemums form the principal feature. The great summer exhibitions at Shrewsbury, Edinburgh, Wolverhampton, York and other places were as extensive and excellent as ever. Whilst, speaking of Edinburgh, we may recall the fact that during the year the Royal Caledonian Horticultural Society has celebrated its centenary. In a

review of its history in our columns, Mr. David W. Thomson recalled its long and honourable record. It is felt by many Scotsmen that the position it fills to-day is less satisfactory than it should be, and there were indications during the exhibition in September last that efforts would be made to increase its prestige and usefulness. It is to be hoped that a suggestion put forward on that occasion for the amalgamation of the two leading Scottish horticultural societies will be realised. Scotsmen should be shrewd enough to see that the support obtainable by either society is insufficient to enable them to properly serve the interests of Scottish horticulture, and if this fact is recognised, the case for amalgamation is already proved.

NEW PLANTS.

Many new plants have been exhibited, and these will form the subject of an article in our next issue. The largest proportion are hybrids raised by skilful plantmen in this country, but there is also a considerable number of new species from abroad, especially from China, where Mr. E. H. Wilson and others have recently botanised. Some of the most striking brought to notice during this year include the new *Primulas* introduced through the agency of Mr. Forrest, whose excellent photographs of Chinese plants are now appearing in this journal. It is satisfactory to know that Messrs. Jas. Veitch & Sons have a representative in Western China at the present time, and, we believe, Mr. Forrest proposes to sail next month for that district and Thibet as a representative of Messrs. Bees, Ltd. Thus we may hopefully expect to receive many more new species from that comparatively unexplored region.

WEATHER AND THE CROPS.

The season of 1909 has been a trying one for cultivators. Early in the summer there were excellent prospects of good fruit crops, but these latter failed to develop as they should have done, owing to adverse weather conditions. In this climate there is seldom excessive sunshine, but this year the summer, always a short one, was confined to a week or so in the middle of August. During this short period there were tropical skies and sunshine, but afterwards nothing but damp weather and dull days, in which gardeners had all they could do to fight the innumerable weeds that appeared amongst the crops. To some of the vegetable crops the unusual amount of moisture was beneficial, but the Apples and Pears, being ill-matured, have not shown good keeping qualities, and every variety is deficient in flavour, just as were the Strawberries, Raspberries, Plums and other soft fruits. It may very well prove to be the case that the failings of the past season may have a bad effect on the fruit crops next year, owing to the trees and buds being less well ripened than usual.

DARWIN CENTENARY.

The Darwin Centenary celebrations in June last, at Cambridge, represented the great veneration entertained over the whole world for the life and work of the great naturalist whose investigations and researches have yielded results which have benefited gardening and all pursuits that have any relationship with the natural sciences. As was pointed out at the time of the centenary,

Darwin was a frequent contributor to these pages. Thus was there a kind of mutualism established, for he has left it on record that the experiences in practical gardening related by our correspondents were not without value in helping to elucidate the many problems which he was able to solve. It is a noteworthy circumstance that one hundred years after Darwin, Professor Bateson has been appointed the first Director of the John Innes Horticultural Institution, which it is expected will be opened next spring. Whatever else may be undertaken at this Institution, it is certain that there will be systematic researches in heredity, which, although one of Darwin's chief objects of study, is nevertheless fresher and more absorbingly interesting than ever since the discovery of Mendel's law.

The two first lectures in a series instituted in memory of Dr. Masters were delivered during the present year by Professor Hugo de Vries, who selected for his first subject "Dr. Masters' work on *Vegetable Teratology*," and for his second "The Origin of Garden Varieties." In this latter lecture Professor de Vries referred to his own experiments and observations on "Mutations."

LEGISLATION.

Early in the year a Government Committee reported in favour of a large system of State afforestation, for the threefold objects of utilising waste lands, cultivating a home supply of timber, and providing work for the unemployed. The Board of Agriculture and Fisheries have used the powers entrusted to the Department for stamping out diseases of field and garden crops, particularly in the case of the American Gooseberry-mildew. The warty or black scab disease of Potatoes, which was observed some years ago and illustrated at the time in these columns, has appeared in epidemic form in some localities, and has in consequence been scheduled as a notifiable disease.

Horticultural traders have been relieved of a grievance by the new Act authorising the local justices to grant them licences for the sale of poisonous compounds, in cases where the public has not already proper and convenient means of obtaining them. The public health and interest being safeguarded by the regulations of sale, it is a matter for satisfaction that in most cases the local authorities have served the public convenience by issuing one or more licences to dealers in general horticultural requisites.

It will be seen from a note on another page that a special concession to florists granted by the Home Secretary in October, 1908, in regard to the Factory and Workshop Act, 1901, has been rescinded.

HORTICULTURE ABROAD.

With reference to foreign affairs, we have recorded important horticultural events in Belgium and France. In Belgium, effect has been given to the promise made last year of a State Department of Horticulture, and in France there has been appointed the Standing Committee on Horticulture, the functions of which were outlined in our issue for last week.

In April an international exhibition was held in Berlin, which was visited by a deputation of the Royal Horticultural Society and

others. The exhibits contained many features of interest, and the representatives from Britain will long remember the cordial reception accorded them by German horticulturists. In connection with this event it will be remembered that in September last the Royal Horticultural Society caused an announcement to be made that the Council proposed to call a public meeting to consider the question of holding a great international exhibition in London in 1911, on similar lines to the memorable one of 1866. Nothing has been heard of this since, and it may well be that the Council has found a difficulty in getting a suitable site for the exhibition if it intended to go this far before summoning the meeting. In any case, we think our more impatient correspondents may rest assured that the Council is in earnest in the matter, and that means will be found for holding the show.

THE ROYAL BOTANIC SOCIETY.

This subject naturally leads us to the question of the proposed amalgamation of the Royal Botanic Society with the Royal Horticultural Society. Our readers have seen the correspondence between the two societies which was published in our last issue, and we know that already some of them feel a certain amount of fear that the Royal Horticultural Society may get involved in some arrangement that may not be to its interest. So far as we understand the position, the only asset the R.B.S. has to offer is a site for the bigger shows, which cannot be satisfactorily accommodated in the Vincent Square Hall. Since the lease of the Chiswick Gardens was surrendered on the ground that it was worthless for trial purposes, it can hardly be contended that useful trials could be conducted at Regent's Park. Bearing this in mind, we feel confident that the R.H.S. Council will not hastily accept any arrangement which would have the effect of placing the policy of the Society partly in the care of the R.B.S. Fellows will take comfort from the words of Sir Trevor Lawrence that no arrangement will be agreed upon without the consent of the Fellows.

LITERATURE, CHARITY AND OBITUARY.

Garden literature has received many additions during the year. Amongst these works *The Orchid Stud Book*, by Messrs. C. C. Hurst and R. A. Rolfe, is a serious contribution to the question of how to provide a convenient form of nomenclature for multigeneric orchid hybrids. *Mendel's Principles of Heredity*, by Professor Bateson, summarises the present state of our knowledge on this important subject. Other noteworthy publications are:—An admirable work on insect pests of fruit trees by Mr. F. V. Theobald; *Illustrations of Conifers*, by Mr. H. Clinton Baker; *Trees and Their Life Histories*, by Dr. Percy Groom; several fresh volumes of the *Book of Nature Study*, by Dr. Bretland Farmer; the second volume of the *Vegetable Growers' Guide*, by Messrs. J. and H. J. Wright, which completes the most comprehensive book on vegetable culture in the English language; *In a Yorkshire Garden*, by Mr. Reginald Farrer; and *Warley Garden in Spring and Summer*, by Miss Willmott, V.M.H.

The gardening charities have striven, not unsuccessfully, to mitigate the suffering of

the widows and orphans, but the task is very great, and big hearts are needed to grapple with the many calls for assistance. The Gardeners' Royal Benevolent Institution particularly is unable at present to assist the many cases requiring aid.

The British Gardeners' Association continues its way, seeking to make itself a means of raising the gardener to a higher level of efficiency and status, whilst the numerous debating societies in every part of the country are disseminating the practical experiences gained by their best-informed members.

The obituary list includes many well-known names. We have to mourn the loss, among others, of the distinguished botanist, Sir Geo. King; the skilful and indefatigable Orchid cultivator and raiser, Norman C. Cookson; several prominent nurserymen, including George Dickson, of Chester, John Forbes, of Hawick, Peter Kay, of Finchley, and Peter Barr, who had travelled round the world after his retirement from business; and such first-class exponents of practical gardening as David Thomson, William Miller and John C. Tallack.

OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1910. *In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all fixtures for the coming year.*

PRESENTATION TO MR. JAMES GRIEVE.—A large company of horticulturists and others assembled in the Royal British Hotel, Edinburgh, on the 14th inst. to do honour to this veteran nurseryman on the completion of 50 years' work in the city of Edinburgh. Mr. GRIEVE was born 68 years ago at Peebles, and after serving his apprenticeship in the nurseries of Messrs. GENTLE & SONS, of that town, and four years in the gardens at Stobo Castle, entered, in 1859, the nurseries of Messrs. DICKSON & Co., at Pilrig, Edinburgh. When the firm removed to Liberton, Mr. GRIEVE started business in company with his two sons at the old premises at Redbraes. A gold watch and chain and a purse of sovereigns were presented to Mr. GRIEVE by Mr. D. W. THOMSON, on behalf of about 180 subscribers. Mr. GRIEVE was one of the first members of the Scottish Horticultural Association.

BEQUESTS BY A SEEDSMAN.—Mr. FARQUHAR URQUHART, of Inverness, seedsman, who died in August last, left personal estate in the United Kingdom valued at £16,247. The testator bequeathed £300 to the Northern Infirmary, Inverness, and £200 each to the Northern Counties Institute for the Blind, Inverness, and the Highland Orphanage, Inverness; and, subject to life interest, £1,000 to the Northern Infirmary, Inverness, and £500 each to the Institute for the Blind, Inverness, and the Highland Orphanage, Inverness.

FLORISTS' WORKSHOPS AND THE FACTORY ACT.—The Home Secretary, pursuant to section 3 (3) of the Rules Publication Act, 1893, made on December 13 an Order under section 59 of the Factory and Workshop Act, 1901, rescinding as from January 1 next the Order made by him on October 13, 1908, granting a special exception to florists' workshops under section 46 of the said Act and so much of the Order made by him on October 13, 1908, granting a special exception under section 45 of the said Act, as relates to florists' workshops.

PRESENTATION TO A NURSERY EMPLOYÉ.—Mr. THOMAS SWIFT, of Messrs. HURST & SON, 152, Houndsditch, who is retiring at the end of this year, after upwards of 40 years' service, was, on the 17th inst., presented with a silver centre-piece and two silver vases by past and present employés of the firm. On the same evening Mr. SWIFT was entertained to dinner at the London Tavern, Fenchurch Street.

THE NEW BOTANICAL LABORATORIES OF UNIVERSITY COLLEGE.—The new botanical laboratories of University College, London, were opened on Friday, December 17, by Dr. D. H. SCOTT, F.R.S. After the inaugural ceremony the guests inspected the laboratories, which occupy

company the operation: for instance, the affording of fresh soil or such ingredients as wood-ashes, lime rubble, and manure. A striking instance of this kind has just been brought to our notice by a correspondent who has the management of a large garden in Buckinghamshire. He has sent us fruits of Bramley's Seedling Apple. These are in two samples, one being from trees planted 15 years ago, and not since moved, the other from similar trees that were lifted three years ago, at which time they were root-pruned, and lime rubble and burnt earth added to the soil about them. All the manure given has consisted of a top-dressing of leaf-mould applied in summer. The fruits varied so much that we took them to be distinct

FRUIT PRESERVING IN TASMANIA.—According to the *Times*, the capital of Messrs. H. JONES & Co., LTD., fruit preservers of Old Warf, Hobart, Tasmania, has been increased to £500,000. The company has been growing very rapidly, and now employs about 4,000 hands. The production in Tasmania of Strawberries, Raspberries, Currants, Gooseberries, and Blackberries is constantly increasing, and, in order to secure the best fruit, Messrs. JONES have allotted shares to leading fruit-growers. The original shareholders in the company now hold one-half of the shares, and the other half is held by those who sell fruit to or buy preserves from the company.

*** A BOOK WITHOUT WORDS.**—Many of our readers are familiar with the name of Miss ELLEN WILLMOTT, V.M.H., whose enthusiasm for horticulture is only equalled by her great knowledge of gardening matters. But comparatively few have had the privilege of visiting Miss WILLMOTT's garden at Great Warley, so full of treasures and so rich in interest. They will, therefore, welcome the more gladly the reproductions of Miss WILLMOTT's photographs now issued by Mr. QUARITCH. The volume contains 41 illustrations, each of which measures 9 by 11½ inches. In most cases the views represent but small portions of the garden and, therefore, the plants may be seen in considerable detail. Some are printed in black, others in a tint of brown, and all are on parchment paper. Some of the best include "Nankeen Lilies," "Border of Hardy Flowers," "Gunnera by Pool," "Harebells and Mountain Pinks," "Alpine Primroses," and "Wild Crocuses." Interesting as these pictures are, we cannot but regret that the author has issued them without text. A descriptive chapter or two would have helped the reader to piece the various scenes together and get a better understanding of the garden scheme.

ARSENICAL INSECTICIDES.—The volume containing the 31st and 32nd reports, for the years 1907-8, of the Connecticut Agricultural Station, consists of no fewer than 934 pages, and contains the results of valuable investigations on a large number of subjects of interest to horticulturists. The present note, however, deals only with a short, but extremely practical article by Mr. J. P. STREET on the arsenical insecticides, lead arsenate and Paris green. Mr. STREET's conclusions and recommendations are as follows: Paris green (copper aceto-arsenite) is the oldest arsenical insecticide. Its use is, however, open to the objection that, owing to the solubility of the arsenious oxide which it contains, it is apt to damage foliage. This "burning" may be prevented by mixing with the Paris green an alkali, e.g., lime. For use as a spray the following formula is given:—Paris green 1 lb., fresh quicklime 3 lbs., water 100 gallons. If applied dry:—Paris green 1 lb., air-slaked lime 100 lbs. When used with Bordeaux mixture there is no need to add lime, that contained in the mixture being sufficient to neutralise the acid properties of the Paris green. Lead arsenate possesses several advantages over Paris green. It is more adhesive, remaining on the foliage two or three times as long. It is less soluble, and, therefore, though slower in action, is less apt to damage the leaves. By reason also of its lesser solubility, its use by inexperienced men is less dangerous. Another advantage is that lead arsenate keeps longer in suspension than Paris green. Mr. STREET is of opinion that home-made lead arsenate remains in suspension longer than the commercial article. He recommends the following mode of preparation:—Dissolve 24 ounces of lead acetate or 20 ounces of lead acetate in one gallon of cold water (using a



FIG. 191.—GIANT BAMBOOS IN JAMAICA.

(See p. 437.)

the rooms recently vacated by the Department of Physiology. Among the most interesting of the exhibits were the portraits of former members of the botanical staff, including those of JOHN LINDLEY, who was professor from 1828 to 1860, and of Dr. SCOTT, who was assistant-professor from 1881 to 1885.

THE EFFECT OF ROOT-PRUNING.—Whilst root-pruning may never be necessary in certain favourable districts and soils, in others, and particularly in late districts and on cold, clayey soils, such treatment is not only beneficial but essential. At the same time, some of the improvement in crop which follows the operation of root-pruning is attributable to certain processes which ac-

varieties; the first sample consisted of large, well-developed fruits with yellowish skin, and marked with reddish stripes and patches. The average weight of each fruit was 10½ ounces and its circumference 12 inches. The Apples of the second sample were as perfectly green as a French Crab, not more than half the size, whilst their average weight was 5 ounces, and circumference 9¼ inches. Our correspondent states that in the heavy soil of his particular garden the best results can be obtained only by lifting the trees at regular intervals, and treating them in the manner described, combined with a system of pruning by which the branches are thinned out sufficiently to expose them fully to the sunlight.

* *Warley Garden in Spring and Summer*, by Ellen Willmott, F.L.S., V.M.H. (London: Bernard Quaritch.) Price £1 1s.

wooden vessel); to another wooden vessel, containing three quarts of water, add 10 ounces of sodium arsenate. Pour the two solutions into a spray tank containing from 100 to 150 gallons of water. A white precipitate of lead arsenate is formed at once, and the fluid is ready for use. For general purposes 3 lbs. of lead arsenate to 50 gallons of water is sufficient. It may be used with Bordeaux mixture, but in this case it is perhaps less effective than Paris green.

INSECT PESTS IN THE WEST INDIES.

UNDER the auspices of the Liverpool School of Tropical Medicine, Mr. Robert Newstead, F.E.S., has conducted investigations, during last summer, on the insect pests in the West Indies. Most of the work was done in the island of Jamaica, which Mr. Newstead made his headquarters. He found, however, that the various pests were fairly common on all the islands. At the recent Colonial Exhibition in the Royal Horticultural Hall, Westminster, Mr. Newstead gave an account of the results of his expedition.

Many of the pests have not been described previously. There are maggots, thrips, mealy bug, destructive ants, wood-boring beetles, weevils, slugs, butterflies, moths, scale and other insects that attack Cotton, Maize, Sugar Canes, Oranges, Mangos, Rubber and other economic plants. Mr. Newstead's mission was to discover the best remedies.

Among much that was extremely interesting in Mr. Newstead's lecture, his remarks on certain ants, which destroy the Cacao flowers, may be cited. The ants belong to a small, black, stinging species, apparently a Myrmecid, near the genus *Stenamma*. Their nests are generally constructed so that they are partly protected from the direct rays of the tropical sun, often on the outskirts of plantations, without any apparent regard to the distance from their feeding grounds. They do not devour the leaves of the Cacao trees, but are attracted by "honey dew" secreted by aphides. The ants endeavour to screen their movements, and construct galleries or covered ways, using, amongst other things, the petals of the flowers which they injure in such a way as to prevent them falling from the trees. The loss to the trees, occasioned in this way, is considerable.

A serious pest is found in the Girdler-weevil of the Orange and Cacao (*Præpodes vittatus*). The grubs occur just below the surface of the ground near the junction of stem and roots; they eat right through the bark, so that the tree dies. The remedy is a simple one, viz., to replace the soil about the collar of the tree with rock-chippings or small stones. The rubber-producing trees have many pests. Mr. Newstead found on plants of *Hevea brasiliensis* a night-feeding slug which no one had previously detected, although the damage it occasioned was considerable. A girdle of cotton wool around the stem is recommended as a simple yet effectual remedy.

The culinary vegetables of the West Indies appear to have as many foes as our own, and Mr. Newstead found caterpillars of butterflies attacking Cabbages, of moths which injure Beet, and a larva or grub destructive to the Sweet Potato.

The paper concluded with a description of the scale pests of these islands. They have spread lately with great rapidity, probably by strong winds.

The Bamboo forms remarkably fine specimens (see fig. 191) in these Colonies, but is subject to the depredations of the fringed scale (*Asterolecanium bambusæ*). The two kinds of scale most destructive in Jamaica are *Aspidiotus ficus* and *Chionaspis eitri*, foes of the Rubber and Orange trees respectively. The paper included descriptions and formulæ for washes, some of which will destroy the mosses and lichens on the branches, as well as the insect pests. Not a few of the trees are infested with the Spanish Moss, *Tillandsia usneoides* (see fig. 192), an epiphytic member of the Natural Order Bromeliaceæ.

BATTERSEA PARK.*

(Concluded from page 421.)

THE SUBTROPICAL GARDENS.

IN close proximity to the avenue is the subtropical garden for which the park has become famous. The garden is well sheltered upon the north-east and south-west by high ground and belts of trees and shrubs, the only side at all exposed being the south. By this means the tender subjects planted in the garden are protected from cold winds and gales, and are given all the light and warmth possible.

The trees used for wind breaks are the black and white Poplars, Ash, Lime, Alders, and Planes. The south-westerly gales have had a curious effect upon the Poplars: all the branches

From March to October the garden is exceedingly attractive. The flower-beds are occupied by a great variety of flowering and foliage plants. During the summer months the large Palms and other half-hardy foliage plants are placed upon the lawns, either in groups or as isolated specimens.

Many hardy plants are also used in this garden because of their tropical appearance. The following are the most deserving of mention: *Ailanthus glandulosus*, *Gymnocladus canadensis*, *Paulownia imperialis*, *Rhus glabra* and *R. typhina* are useful shrubs. They are cut back each to one bud every year; by this means the plants are induced to produce beautiful, large leaves of Palm-like appearance, those of the *Ailanthus* reaching a length of 6 feet.

Fatsia japonica does well planted out perma-

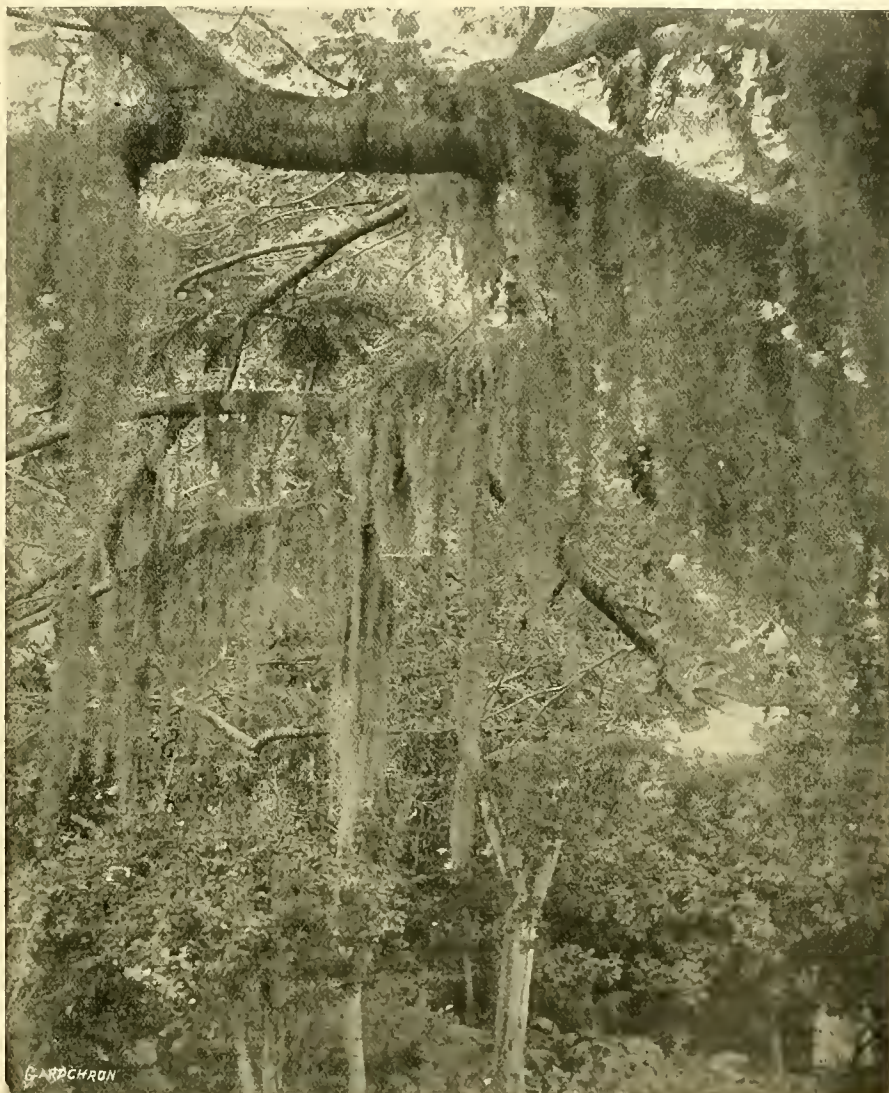


FIG. 192.—WEST INDIAN TREE BEARING FESTOONS OF THE EPIPHYTIC FLOWERING PLANT *TILLANDSIA USNEOIDES*.

have been permanently bent over in a north-easterly direction. The subtropical garden is laid out in quite an informal manner; it is intersected by a broad, winding walk, upon either side of which are a number of flower-beds laid out upon the lawns. The beds do not form a geometrical design, but each one has been shaped to harmonise with its own particular surroundings. A well-kept lawn occupies the centre of the garden, and a number of deciduous and evergreen trees and shrubs are planted in groups around it. These help to furnish the garden in winter, and also have the effect of preventing the flower-beds from being seen all at one time.

* A paper given before the London branch of the British Gardeners' Association, by Mr. V. Cockram.

nently in moist, sheltered positions—the white corymbs of flowers produced in October and November are very striking. *Polygonum cuspidatum*, *P. sachalinense*, and *P. Sieboldii* are planted in masses in odd corners, and give a bold effect. Bamboos are also largely used. Of hardy perennials there are *Acanthus latifolius*, *Gynerium argenteum*, *Gunnera scabra*, *Rheum palmatum*, *Heracleum giganteum*, and such species of *Yucca*, as *Y. recurvifolia* and *Y. gloriosa*.

THE LAKES.

The two lakes in the park cover an area of about 18 acres, and are situated in the lowest portion of the grounds; the larger lake is used extensively for boating during the summer.

—for the charge of 6d. per hour a boat to carry one, two or four passengers may be hired. Even at this low figure the boats earn a considerable profit: on the year's takings the annual net profits average about £700. A motor launch is also employed to take visitors around the islands. The banks are irregular in shape and outline, so that bays and promontories tempt the visitors on miniature voyages of discovery. By the margins of the lakes the grassy slopes add a pleasing effect. The slopes are broken up by small belts of trees and shrubs planted upon mounds of earth made, no doubt, when the ground was being excavated. The mounds are planted with groups of Lilac, Laburnum, Hawthorn, Almond, Forsythia, and many other flowering trees and shrubs. Planted along the margins of the lakes are such ornamental foliage plants as Bamboo, Gyneryum, Mescanthus (Eulalia), Iris, Funkia, and Hieracium.

Fish and waterfowl give animation to the scene, and are a source of endless interest to the children.

On three large islands are planted Arbutus, Aucuba, Laurel, Elder and Dogwood as undergrowths, and trees of Poplar, Willow, Plane, Alder, and Birch. *Salix babylonica* is particularly striking as a waterside tree.

The two lakes are separated by a low dam which is spanned by a rustic, wooden bridge. It consists of large pieces of timber which rest at each end upon a stone wall, that also supports the banks on either side. The bridge is further supported by struts which rest upon a concrete foundation, and are fastened at the top in the angles of the cross pieces. Graceful, weeping trees, such as *Populus alba*, *Salix babylonica*, and *Alnus glutinosa*, with their branches overhanging and touching the water, give beautiful reflections of light and shade, whilst in sharp contrast with these is the characteristic, upright *Populus nigra fastigiata* in the background. The beauty of this spot, however, is somewhat marred by the number of artificial-looking brick burrs that have been used to support the dam and margins of the lakes. Some attempt should be made to hide them.

THE CASCADE.

This is a very striking feature of the park: it is formed of huge boulders arranged precipitously. The water, which is obtained from the pumping station close by, falls over the rocks in a cascade. The rocks are partly draped with such trailing plants as *Cotoneaster microphylla*, *Jasminum nudiflorum*, *Vitis purpurea*, *Berberis steuophylla*, and *Vinca major*.

THE RUSTIC WALK.

A charming feature of the park is the rustic walk situated near the West Lodge, and consisting of a winding path cut through a little wood, and bounded upon each side by a rustic fence composed of Larch poles nailed together crosswise. During the heat of summer it affords a cool retreat. The shade is too dense for the successful cultivation of any great variety of wild flowers, but in spring there is a lavish display of bloom from the bulbs that have become naturalised in the grass. Crocuses, in bold, irregular masses of separate colours, give the first display. They are seen at their best when the sun is shining upon them through the leafless branches of the trees. Narcissus and Daffodils follow the Crocus in quick succession, and later the Bluebells make a charming woodland scene. In the centre of the wood is the botanical garden. This garden was made for the benefit of students attending the local Polytechnic and art schools. Every facility is afforded them to examine the growing plants, and specimens are also supplied for examination in the class-rooms. The flowers in this garden are allowed to grow and bloom so that they appear as natural as possible. There is no attempt at a dazzling display; dotted about in irregular groups can be seen many old-fashioned flowers. The charm of solitude is the one thing dear to the country-bred Londoner, and here is a haven of rest; at all times the noise is softened to a hush, whilst on Sundays a peaceful calm pervades the place. Here the blackbird, the thrush, wood pigeons, robins, tennits, and wrens sing their songs and rear their young. The many birds of the park become exceedingly tame in their semi-domesticated state—even such naturally shy birds as wood pigeons and moorhens will take food from the hands of visitors.

It must be confessed, however, that the birds do a great deal of harm. The sparrows destroy the Crocus blooms, Carnation shoots and Polyanthus flowers. The pigeons, blackbirds, and thrushes devour large quantities of berries in the autumn. Nevertheless, to destroy the birds in a park such as this would be a sad blunder; for their presence helps the Londoner to know something at all events of country life.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE ALMOND AND PRUNUS PISSARDII IN SCOTLAND (see pp. 270, 298).—In Lady Fowler's garden at Inverbroom, in the north-west of Ross-shire, *Prunus Pissardii* (*P. cerasifera atro-purpurea*) fruits most summers, and this year an Almond tree had a very heavy crop of fruit. The tree of *Prunus Pissardii* is sheltered from the east, and thereby escapes, to a certain extent, injury from spring frosts. The Almond is also sheltered somewhat, but the cold and wet of the past season have prevented the fruits from ripening. *H. Low, Braemore Gardens, Ross-shire.*

APPLE HAMBLEDON DEUX-ANS (see pp. 157, 320, 346).—I agree with *A. D.* as to the merits of this Apple. When I first became acquainted with it 40 years and more since in the West of England, my father sold fine fruits to the best fruiterers in Bath. Thirty years ago, when entering a garden in North Hants., I found a big orchard tree in its prime, and during the 11 years I was there it never failed to crop. The fruits were of a good size, clean, and they kept well into April. So impressed was I with the results of this tree, that, when later I had charge of a garden in the West of England, I planted trees of it; but during the 20 years I was there I never saw any fruits approaching those produced in North Hants., although I had no cause to complain of the trees' bearing. I can endorse all *A. D.* says respecting its behaviour at Hackwood Park. I like this Apple for cooking, and especially from a flavour point of view. After a long experience, I consider this Apple far better than many of the large, soft, modern kinds, both for flavour and keeping. But, after all, soil and situation greatly influence Apples. *John Crook, Camberley.*

ORIENTAL POPPIES (see p. 375).—Mr. Molyneux's article tempts me to supplement his remarks. Having paid considerable attention to these Poppies, I am forced to the conclusion that Mr. Molyneux is not quite up to date with his list of varieties. The cultural hints are good. Many gardeners plant Poppies in poor soil and give them very little attention, and the result is not satisfactory. It is best to cut the flowers in the morning just when they commence to unfold and not simply when the calyx is unfolding. It is difficult to believe that anyone seriously suggests that these or any other flowers will last longer in water if the ends are sealed by the aid of a lighted candle or by any other means. There is certainly no need to seal the stems of Poppies, for they do this themselves if not put in water almost as soon as cut. The plan we adopt is to recut the stems immediately before being put in water. Some exhibitors cut them under water to prevent the sealing. Comment is made on the disagreeable odour, and Mr. Molyneux's experience is that the bracted flower has this more pronounced than the ordinary type. I can only say that I catalogue upwards of 60 varieties, not one of which is mentioned by Mr. Molyneux, and practically all are devoid of the Popy odour and nearly all have bracts. The larger the bract, the more is the flower admired. In selecting seedlings (and thousands have been raised here) preference is given first to colour and form, then a stiff, sturdy, and upright stem that requires no support. The flower must be odourless, and in most cases have six petals instead of four, which is the number in most seedlings. Another point is substance. Some varieties produce flowers which are very fugaceous and become "floppy" almost as soon as cut, whilst others retain a beautiful form for four or five days. It is surprising how tastes vary in respect to the

colours found in Oriental Poppies, and much interest may be found in standing near an exhibit of the newer colour ("art shades") and noting the various expressions of opinion. Most men, especially gardeners, look upon them with disfavour, whilst the majority of ladies are rapturous in their praise of them. *H. J. Godfrey.*

—In advising others what varieties to grow, I named those which I knew to be good by close experience. I have not grown any of Mr. Godfrey's "art" shaded varieties, and, although I have seen them at the Temple Show repeatedly now for some years, they do not appeal to me. I have not noticed their inclusion in any other exhibit of these flowers, either from a private grower or in a nurseryman's collection, therefore I am forced to the conclusion that many more beside myself are not quite up to date in their selection. In regard to the sealing of the ends of the stalks when they are cut, if Mr. Godfrey had any experience of even the common wild Poppy for table decoration he would appreciate the difference between sealed and unsealed blooms long before evening of the same day. I not only advise sealing, but practise it with much advantage. When cutting flowers for transmission by rail or post, I know the advantage of securing the buds when the calyx is unfolding, and I fancy the Editors have had the pleasant experience for several days of watching the various colours and forms unfold from the calyx-breaking stage of each variety. Yes, I comment strongly on the disagreeable, opium-like odour given off by some of the bracted varieties, and for that reason I favour the Oriental type. *E. Molyneux.* [Some flower-buds sent us by Mr. Molyneux in June last showed no signs of unfolding at the time of their receipt, but one after another developed beautifully during the succeeding week (see *Gardeners' Chronicle*, 12 Dec. 26, p. 413).—*Ens*]

THE HIGH PRICES OF RUBBER.—The extended cultivation of rubber-yielding plants is a subject that has often been referred to in the columns of the *Gardeners' Chronicle*. This is doubtless due to the fact that rubber plants have, over a very long period, occupied the attention of the authorities at Kew, and a large number of trained men from that establishment have gone forth to distant colonial and foreign possessions of the Empire to take up the cultivation of these plants. They naturally look to their *Chronicle* for any fresh records. To such, as well as to others, some extracts from notes that recently appeared in the *Chemist and Druggist* on the remarkably high prices that have prevailed of late will be interesting. "The price ruling for Para rubber on the London Spot Market during the last three weeks in October, namely, 8s. 9d. to 9s. 2d. per lb., was a record in the history of this product, and 100 per cent. higher than the average value during the years 1905 and 1906. At the close of the year 1907 Para was fetching only 3s. 9d. per lb., and in February, 1908, fine Para sold at 2s. 9d. to 2s. 10d. per lb. Prices continued to increase till the close of the year, when it stood at 5s. 2d. per lb. Opening in January of the present year and continuing to the middle of May, the price ranged from 5s. 2d. to 5s. 4d., which has generally been considered in the trade as a fair normal price for manufacturing. At the end of May it had risen to 5s. 7½d.; at the end of June to 6s. 3d., and at the end of July from 6s. 4d. to 8s. 4d. In August there were very slight fluctuations, but at the close of September the price had risen to 9s. 2d. per lb." It is satisfactory to know that this rapid rise in the price of Para rubber from the Amazon is not due to any shortage of imports, for, compared with the previous four years, they have been quite up to the average; besides this, the supply of "cultivated" Para rubber from the plantations in the Malay States totalled over 200 tons at auction in London in one month. The advance has been partly due to the action of one firm which successfully secured the bulk of the stock. It is reported that the advanced prices are stopping orders, other cheaper articles being substituted where possible; for instance, indiarubber mats were getting very popular and much in use, but the advanced price has driven users to rope and fibre mats again, and the same thing is happening with scores of other things into the composition of which rubber enters. *J. R. J.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 21.—There was no exhibition on this occasion, but the respective Committees met to adjudicate upon novelties. There were only two exhibits before the Fruit Committee; both were seedling Apples; and none before the Floral Committee.

In the Orchard section, however, many novelties were forthcoming, and the Committee, consisting of J. Gurney Fowler, Esq. (Chairman), and Messrs. Jas O'Brien (hon. sec.), Harry J. Veitch, W. Boxall, Stuart Low, F. Sander, H. G. Alexander, A. Dye, W. Cobb, H. A. Tracy, C. H. Curtis, W. H. Hatcher, Gurney Wilson, R. Brooman-White, and J. Charlesworth, made a number of awards as follows:

AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium Mrs. F. Sander (Eve × insigne Sander), from Messrs. SANDER & SONS, St. Albans.—A charming flower of the albino class. The large, wax-like upper sepal is snow-white, with a small emerald-green base. The petals, which are undulated at the edge, are broad and, like the firm, broad lip, greenish-pinkish-yellow, slightly tinged and marked with light purple. The plant is a strong grower and a desirable acquisition.

Dendrobium Phalænopsis album, Sander's variety, from Messrs. SANDER & SONS.—The largest and finest-shaped, pure white form which has yet appeared.

Odontioda Keighleyensis, Fowler's variety (Cochlidia Noezliana × Odontoglossum cirrhosum), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—A fine advance on the type. The plant shown bore a spike of deep scarlet flowers, the front of the labellum being abruptly reflexed. The chrome-yellow tint on the crest, and white base to the column, formed an attractive contrast to the deep colouring of the rest of the flower.

Zygo-Colax Charlesworthii, var. rubida (Z. Perrenoudii × Colax jugosus), from Messrs. CHARLESWORTH & Co., Haywards Heath.—A distinct variety of the pretty hybrid for which Messrs. CHARLESWORTH recently received an Award of Merit, the prevailing colour in which was deep violet. In the variety *rubida* the sepals and petals are cream-white, heavily barred with reddish-purple, the lip being ruby-red with a slight purple shade.

Lalio-Cattleya Firminii (L.-C. Ceres var. × Cattleya Dowiana aurea), from Mons. FIRMIN LAMBEAU, Brussels.—A very distinctly-tinted flower, equal in form and size to *Cattleya Hardyana*, which it also much resembles in the lip. The sepals and petals are Indian-yellow with a pale rose shade; lip crimson, with two yellow blotches at the entrance of the tube, which has good lines from the base.

AWARD OF MERIT.

Cypripedium Alabaster magnificum (Godseffianum × Alcibiades superbum), from Lieut.-Colonel G. L. HOLFORD, C.I.E., C.V.O., Westons-lirt, Tetbury (gr. Mr. H. G. Alexander).—A fine flower, with the large size and good shape of *C. Alcibiades*. The dorsal sepal, which is pure white, has a very small green base, a broad band of purple up the middle and lesser bands of purple on each side forming a trident. The petals and lip are broad, yellowish, with a tinge of purple.

CERTIFICATE OF APPRECIATION.

Oncidium hybridum (tigrinum × lamelligerum), from Messrs. CHARLESWORTH & Co.—An interesting cross of no great floral beauty, but in which the features of the very dissimilar parents can well be traced. The sepals are stalked, the blades brownish; the base of the yellow lip indicates *O. lamelligerum* in its spiny, cushion-like crest, the blade being narrowed compared with *O. tigrinum*.

Amongst other plants than those certificated were *Cypripedium Caruso* (J. Howes × *insigne* Harefield Hall), resembling a good, well-rounded *C. i.* Harefield Hall, but with more purple markings; shown by Lieut.-Col. HOLFORD. *Cypripedium Lusitania*, a pretty green flower with a broad, white margin to the dorsal sepal, which had some obscure brown blotches; also a hybrid *Cypripedium* near to *C. Laurebel*; shown by H. S. Goodson, Esq., Putney (gr. Mr. G. E. Day).

Odontoglossum crispo-Harryanum Bruggense var. *illustre* had 15 flowers on the spike, each flower being 5 inches across diagonally, and the upper sepals 1½ inch wide; this was shown by Messrs. SANDER & SONS. *Cypripedium Hercules*, a very large and well-formed flower; and *C. Germaine* opoix var. *Imperialis* were both shown by FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). *Cattleya Percivaliana* alba Clifton's variety, a good white flower with yellow disc to the lip and larger than the original form, was shown by Messrs. STUART LOW & Co., Bush Hill Park. *Brasso-Cattleya Thorntonii* alba, a fine, clear white flower, with fringed lip, came from Messrs. ARMSTRONG & BROWN, Tunbridge Wells.

STIRLING HORTICULTURAL.

DECEMBER 11.—The annual general meeting was held on the above date. Mr. Geo. Petrie presided over a good attendance of the members. The annual report and balance-sheet were submitted and adopted. The society's finances show a great improvement. The deficit of £25 at the beginning of the year has been reduced to £10, and it is hoped by another year the entire debt will be cleared off. A special effort will probably then be made to celebrate the centenary of the society.

SOCIÉTÉ FRANCAISE D'HORTICULTURE DE LONDRES.

THE annual dinner of this Society, in commemoration of its 21st anniversary, will take place at the Café Royal, 68, Regent Street, on January 29, 1910. Mons. Philippe de Vilmorin will preside on this occasion. Anyone interested in the subject may obtain full information from the president of the Society, Mr. Geo. Schneider, 17, Ifield Road, Fulham Road, London, S.W.

Obituary.

SIR ALFRED JONES.—In the death of Sir Alfred Jones, which took place on December 13, the country has lost one of its most strenuous and enterprising men of business. From humble circumstances Sir Alfred became one of the leading men in Liverpool. Among the most memorable of his achievements was the rehabilitation of the prosperity of the Canary Islands by the development of the Banana trade between them and this country. In doing this he had absolutely to create a market for this fruit, and it says much for his determination that, when difficulties of distribution of the fruit arose, he collected an army of costermongers at the wharves where the Banana boats were unloading, caused them to pile up their barrows with Bananas, and sent them out in the streets of Liverpool to sell the fruit for what they could get for it, telling them that they themselves could have their stock for nothing. After restoring the prosperity of the Canaries, Sir Alfred turned his attention, at the instance of Sir Daniel Morris, to Jamaica. He solved successfully the problem of the long-distance transport of Jamaica Bananas, and received for his services in Jamaica and in the West African Colonies the distinction of a K.C.M.G. Among his many other activities, the assistance he gave in founding the School of Tropical Medicine in Liverpool, and in supporting the enterprise recently undertaken for growing cotton in British territory, will be long remembered.

COUNT HARRACH ZU ROHRAN.—We learn with regret of the death, on December 12, of Johann Count Harrach zu Rohran, president of the Austrian Horticultural Society of Vienna. Count Harrach zu Rohran was, as his position indicates, one of the most celebrated horticulturists in the Austrian Empire, and his services to the science were both numerous and memorable. We offer our sincere condolences to the Horticultural Society of which he was so distinguished an ornament.

SCHEDULE RECEIVED.

Leamington and County Horticultural Society. Flower Show to be held in the Victoria Park, Royal Leamington Spa, on Wednesday and Thursday, July 27, 28. Joint Secretaries: Councillor H. V. Richards and Mr. Leo Rawlinson.

MARKETS.

COVENT GARDEN, December 21.

[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.—Eos.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.	s.d.
Acacia longifolia (mimosas), per bunch ...	0 9-1 0	Mimosas, per doz. bunches ...	12 0-15 0
Azalea, Ghent p. bunch ...	1 0-1 6	Mignonette, per dozen bunches ...	2 0-3 0
— Fielderi, p. dz.	4 0-6 0	Narcissus Paper White, per doz. bunches ...	3 0-4 0
Bouvardia ...	4 0-6 0	— Soleil d'Or ...	4 0-5 0
Caranions, p. doz. blooms, best American (var.)	3 0-4 0	Odontoglossum crispum, per dozen blooms ...	2 0-2 6
— second size ...	1 0-1 6	Pelargoniums, show, per doz. bunches ...	4 0-6 0
— smaller, per doz. bunches ...	9 0-12 0	— Zonal, double scarlet ...	6 0-8 0
— "Malmansons," p. doz. blooms	6 0-8 0	Richardia africana (Calla), p. doz.	6 0-8 0
Camellias, per doz. blooms ...	12 0-14 0	Roses, 12 blooms, Niphetos ...	1 6-2 6
Eucharis grandiflora, per dz. blooms	3 0-4 0	— Bridesmaid ...	2 0-3 0
Gardenias, per doz. Heather (white), per bunch ...	0 4-0 6	— C. Testout ...	3 0 4 0
Hyacinths, Roman, per doz. behs.	10 0-15 0	— Kaiserin A. Victoria ...	2 0-4 0
Lapageria alba, per dozen blooms	2 0-3 0	— C. Mermet ...	3 0-4 0
Lilac (French) p. bunch ...	4 0-5 0	— Liberty ...	4 0-8 0
Lilium auratum, per bunch ...	2 0-3 0	— Mme. Chateau ...	3 0-6 0
— longiflorum ...	4 0-6 0	— Mrs. J. Laing ...	2 0-4 0
— laucifolium rubrum ...	1 6-2 6	— Richmond ...	3 0-4 0
— album ...	2 0-2 6	— The Bride ...	4 0-5 0
Lily of the Valley, p. dz. bunches	8 0-10 0	Spiraea, per dozen bunches ...	2 0-4 0
— extra quality ...	12 0-15 0	Statice, per dozen bunches ...	3 0-4 0
Marguerites, p. dz. bunches white and yellow ...	3 0-4 0	Tuberose, per doz. blooms ...	0 3-0 4
		Violets, per dozen bunches ...	2 0-3 0
		— Parma ...	4 0-5 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.	s.d.
Adiantum cuneatum, per dozen bunches ...	6 0-9 0	Hardy foliage (various), per dozen bunches ...	3 0-9 0
Asparagus plumosus, long trails, per doz. — medm., doz.	8 0-12 0	Ivy-leaves, bronze long trails per bundle ...	0 9-1 6
bunches ...	12 0-18 0	— short green, per doz. bunches ...	1 6-2 6
— Sprengeri ...	0 9-1 6	Moss, per gross ...	4 0-5 0
Berberis, per dozen bunches ...	2 6-3 0	Myrtle, dz. behs. (English), small-leaved ...	4 0-6 0
Croton leaves, per bunch ...	9 0-12 0	— French ...	1 0-1 6
Cycas leaves, each	1 0-2 0	Oak foliage, per dz. bunches ...	12 0-15 0
Ferns, per dozen bunches (English) ...	2 0-3 0	Physalis Franchetii, per doz. bunches ...	6 0-10 0
— (French) ...	0 6-0 9	Smilax, per dozen trails ...	6 0-8 0
Galax leaves, per doz. bunches	2 0-2 6	Vine leaves, per doz. bunches ...	1 0-1 6
Grasses (hardy), dozen bunches	1 0-3 0		

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

	s.d.	s.d.	s.d.
Ampelopsis Veitchii, per dozen	6 0-8 0	Cyclamen, per doz.	8 0-12 0
Aralia Sieboldii, p. dozen ...	4 0-6 0	Cyperus alternifolius, dozen ...	4 0-5 0
— larger specimens ...	9 0-12 0	— latus, per doz.	4 0-5 0
— Moseri ...	4 0-6 0	Dracænas, per doz.	9 0-24 0
— larger ...	12 0-18 0	Erica gracilis nivalis, per doz.	10 0-15 0
Araucaria excelsa, per dozen ...	12 0-30 0	— hymalis ...	9 0-15 0
— large plants, each ...	3 6-5 0	Ericas, small plants	3 0-5 0
Aspidistras, p. dz., green ...	15 0-24 0	Enonymus, per dz., in pots ...	3 0-8 0
— variegated ...	30 0-42 0	— from the ground	3 0-6 0
Asparagus plumosus nanus, per dozen ...	9 0-15 0	Ferns, in thumbs, per 100 ...	8 0-12 0
— Sprengeri ...	9 0-12 0	— in small and large 60's ...	12 0-20 0
— tenuissimus ...	9 0-12 0	— in 48's, per dozen ...	4 0-6 0
Azaleas, per doz.	39 0-42 0	— choicer sorts ...	8 0-12 0
Begonia Gloire de Lorraine, p. dozen ...	13 0-18 0	— in 32's, per dozen ...	10 0-18 0
Bouvardias, per dozen ...	5 0-8 0	Ficus elastica, per dozen ...	8 0-10 0
Chrysanthemums, per doz.	8 0-12 0	— repens, per dz.	6 0-8 0
— special plants ...	18 0 30 0	Grevilleas, per dz.	4 0-6 0
Cinerarias, per doz.	6 0-12 0	Isoplepis, per dozen	4 0-6 0
Clematis, per doz.	8 0-9 0	Kentia Belmoreana, per dozen	15 0-21 0
Cocos Weddelliana, per dozen ...	18 0-30 0	— Fosteriana, per dozen ...	18 0-30 0
Crotons, per dozen	18 0-30 0	Latana borbonica, per dozen ...	15 0-21 0
		Lilium longiflorum, per dz.	18 0-30 0

Plants in Pots, &c.: Average Wholesale Prices (Cont'd.).

	s.d.	s.d.
Lilium lancifolium, per doz.	18 0-30 0	Poinsettias, p. doz.
Lily of the Valley, per dozen	18 0-30 0	Selaginella, p. doz.
Marguerites, white, per dozen	5 0-8 0	Solanum, per doz.
		Spiræa japonica, per dozen
		Veronicas, per doz.

Fruit: Average Wholesale Prices.

	s.d.	s.d.
Apples Newtown (U.S.), per barrel	19 0-27 0	Grapes, Canon Hall, per lb.
— (Nova Scotian), per barrel		— Almeria, per barrel
— Ribston Pippin	15 0 16 0	Lemons, box: — Palermo, 300
— Blenheim Pippin	16 0-18 0	— 360
— King of the Pippins	16 0-20 0	— (Naples), case
— (English), per bushel:		Limes, per case
— Peasgood's Nonesuch	4 6-6 0	— Lychees, per box
— Annie Elizabeth, p. bushel	5 0-6 0	Nuts, Almonds, p. bag
— Allington Pippin	3 6-4 0	— Brazils, new, per cwt.
— Bramley's Seedling	4 0-5 0	— Barcelona, bag
— Dumelow's Seedling (Wellington)	3 6-5 0	— Cob, per lb.
— Lane's Prince Albert	4 0-5 0	— Cocoa nuts, 100
— Queen	3 6-4 6	— Walnuts (French), per bag
— Warner's King	4 0-4 6	— Chestnuts (Roder), per bag
— Blenheim Orange	3 0-4 6	— (Italian), per bag
— Lord Derby	3 6-4 6	Oranges—
— Cox's Orange Pippin, 1/2 sieve	5 0-8 0	— Denia, per case (420)
— Newtown Pippin, per case:		— Valencia, per case (420)
— Oregon	12 0-14 0	— (Almeria), case
— Californian	9 0-11 6	— Jamaica, per case (170)
— British Columbia	12 0 18 0	— (200)
— Avocado Pears	5 0-10 0	— (Mandarine, Florida, p. case)
Bananas, bunch:		— Mandarin, per box
— No. 1	5 6-6 0	— Tangerine, per box
— Extra	7 0-8 0	Pomegranates, per case
— Giant	9 0-11 0	— per box
— Red coloured	4 6-6 0	Pears (Californian):
— Red Doubles	8 0-10 6	— Doyenné du Comice, p. box
— Jamaica	5 0-5 6	— Oregon Winter Nels, per case
— Loose, per dz.	0 6-1 0	— (French), Doyenné du Comice, per c. case
Custard Apples	4 0-6 0	— Catilans (Dutch), per basket
Grape Fruit, case	9 0-12 0	— Persimmons, p. box (12)
Grapes, per lb.:		Pineapples, each
— Gros Colman	0 9-1 3	— (Natal), per dz.
— English Ham-bros	0 5-1 0	
— Alicante	0 3-1 0	
— Muscat of Alexandria	0 10-2 6	

Vegetables: Average Wholesale Prices.

	s.d.	s.d.
Artichokes (Globe), per dozen	1 9-2 0	Mushrooms, per lb.
Asparagus, Paris Green, bundle	4 0-5 0	— broilers
— Sprue, bundle	0 8-10 0	Mustard and Cress, per dozen pun.
Beans (French), boxes	1 0-1 3	Onions (Lisbons), per box
— Madeira, per basket	3 0-5 0	— (Dutch), p. bag
— Madera, per basket	3 0-5 0	— pickling, per bushel
Beetroot, per bushel	1 3-2 0	— Valencia, per case
Cabbages, p. tally	3 6-5 0	Parsley, 1/2 sieve
Cardoons (French), per dozen	8 0-10 0	Potatoes (English), per bag
Carrots (English), dozen bunches	2 9-3 0	Radishes (French), per doz. bunches
— per bag	2 9-3 0	Seakale, per dozen punnets
— unwashed	1 6-2 0	Spinach, 1/2 sieve
Cauliflowers, tally	5 0-7 0	Stachys tuberosa, per lb.
Celeriac, per doz.	1 6-2 6	Tomatos (English), per 12 lbs.
Chicory, per lb.	0 3-0 3	— (English), s.s.
Cucumbers, p. doz.	5 6-6 6	— second quality
— 1/2 doz.	1 3-1 9	— Teneriffe
— 1/4 doz.	1 3-1 9	Turnips, bag
Horseradish, foreign, new, per bundle	1 0-1 2	Watercress, p. flat
Leeks, 12 bundles	1 6 —	
Lettuces (French), per dozen	0 9-1 2	

REMARKS.—There has been a brisk trade during the Christmas week, but prices, with the exception of Apples, have not advanced. Very large quantities of Oranges have arrived and, as usual at this time of the year, they have sold readily. California Navel Seedless Oranges are of excellent quality. Cob Nuts are more plentiful, but best Walnuts are scarce. Supplies of Lemons are plentiful, but their value is low. Winter Nels Pears have fetched high prices. Trade generally is good. *E. H. R., Covent Garden, Tuesday, December 21, 1909.*

Potatoes.

	per cwt.		per cwt.
Bedford	s.d. s.d.	Lincolns	s.d. s.d.
British Queen	3 0-3 6	Sharpe's Express	3 0-3 3
Up-to-Date	3 0-3 6	Up-to-Date	3 0-4 0
Blacklands	2 6-2 9	British Queen	3 3-3 9
Dunbars		Royal Kidney	2 9-3 0
Mancrop	5 9-6 0	Kents	
Up-to-Date	4 6-5 0	Sharpe's Express	3 0-3 6
Lincolns		Epicure	2 9-3 0
Epicure	2 9-3 0	May Queen	3 0-3 6
		Up-to-Date	3 3-4 0

REMARKS.—The stocks of Potatoes in London are not quite so large, fewer being received on account of the frost. Trade is rather better, but the improvement does not promise to last, unless the weather remains very cold. *Edward J. Newborn, Covent Garden and St. Pancras, December 21, 1909.*

COVENT GARDEN FLOWER MARKET.

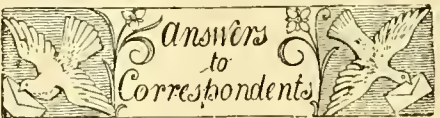
On Monday last, *Richardia africana* (Callas) were selling a 6s. to 8s. per doz. Gardenias, Lilliums, and Camellias were scarce. Tuberoses are now plentiful, but as many are cut with the terminal flowers open, supplies may fall off at any time. *Dafodil obvallaris* has been making 1s. 6d. per bunch, but this price will not be sustained for long. Tulips are plentiful and fairly good; they have been making good prices; they are grown chiefly in boxes containing two dozen each; whites, yellows, and reds are all about of equal quality. Roman Hyacinths are also grown in small boxes, but there are some good ones in pots, which are taller than those in the boxes. Dutch Hyacinths are also well developed for so early in the season; they are grown three in each pot. Lily of the Valley in pots is not quite of the best quality. This is also grown without suffering. Chrysanthemums are plentiful; the pot plants are holding out later than usual this season. Cut bloom up to now has been over-abundant, except for special sorts of medium size. Single varieties appear to meet with an increasing demand. The colours which sell best are the whites, pinks, yellows, and deep crimson. Roses are scarce, and prices have advanced. Liberty has sold for 8s. per dozen. Madame Chateau is dearer; all others are making advanced prices, and I noticed a few fine blooms of Frau Karl Druschki. Niphotos is still extensively grown. Ericas are well flowered from all the usual growers. Poinsettias have suffered from the cold. A very large trade is being done in Holly, Mistletoe, and other evergreens. The Holly wreaths, crosses, and other designs are seen in large quantities; they vary in value from 1s. to 15s., or some may make 20s. each. *A. H., Covent Garden, December 22, 1909.*

LAW NOTE.

WATER SUPPLY FOR A NURSERY.

His Honour Judge Bray, sitting at the Brentford County Court, on the 17th inst., gave judgment in the case relating to the charges for water supplied to Mr. Joseph Darby, a Twickenham nurseryman (see p. 388, in the issue for December 4).

His Honour said that in a previous action the judge held that a person carrying on such a business as a florist must need more water than would be wanted for mere domestic purposes, and found for the defendant. On the second point—the alleged improper use of water—it was not disputed that there was an implied obligation not to intentionally or recklessly waste water, and that if it was proved there was such waste, the plaintiff was entitled by way of damages to deduct from the rate a sum equivalent to the said waste. He was satisfied that there had been an undue and reckless waste of water by the defendant, and he assessed the amount of damages at £16. He gave judgment accordingly.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

APPLE TREES DISEASED: C. G. The shoots are affected with Apple-scab fungus. Remove all the injured branches and spray the trees with dilute Bordeaux mixture in spring, when the leaves are expanding.

APPLE TREES FAILING TO FRUIT: S. R. From your note it would appear that the trees are growing too freely, in which case the proper treatment is root-pruning or lifting. You did not describe the situation in which the trees are planted.

BEES: Queen Bee. Your queen will certainly be past her prime next season. As you wish to increase your stocks, you could easily make three colonies from your present stock, and then, in 1911, you would have three hives headed by young and vigorous queens, from which you could reasonably expect excellent results. During next April stimulate your queen by feeding her with syrup, and when drones are flying in your neighbours' apiaries, remove any comb containing little or no brood, and replace it by a frame placed in the centre of the brood chamber containing a full sheet of foundation (worker base). Over this place the syrup bottle, and in three days remove the queen, and any frame containing very young brood, as from this letter the poorest queens are raised. To encourage the forma-

tion of queen cells, some of the cells containing eggs can be enlarged by breaking down the edges below the eggs. The best are those down the sides and at the lower corners of the frame. After 10 days the cells will be sealed, and then you may cut out the queen cells with some of the surrounding cells, and attach them with great care in a hole cut in the centre of the other combs, fixing them with pins. The brood frames and frames of honey should be shared out, with equal portions of the bees. These will be placed in a contracted hive, with the queen cell on the centre comb. In about a fortnight, if the weather is good, each should have a laying queen. The three hives should at first be placed near the old stand, but will need to be removed 3 feet each fine day until they are at least 6 feet apart.

BOOKS: J. B. H., Letchworth. Either of the following works will be suitable for your purpose:—*Dictionary of Gardening*, by Geo. Nicholson; *Johnson's Gardener's Dictionary*; or *The Encyclopedia of Gardening*, by T. W. Sanders. You can obtain these from our publishing department.

CHRYSANTHEMUM EXHIBIT: An Old Reader. The schedule required coloured varieties, but you awarded the first prize to a white variety. This was not in accordance with the conditions of the schedule.

CHRYSANTHEMUMS UNHEALTHY: Victoria. No disease is present in the shoots; the trouble must be due to some cultural treatment.

EXAMINATIONS: A. B. C., Surrey. You might apply to the Board of Agriculture for the information needed.

NAMES OF FRUITS: Scarle. 1, The Queen; 2, Gooseberry Apple; 3, Roundway Magnum Bonum.—*W. H.* Apple Peasgood's Nonesuch, Pear Beurré Diel.—*M. A. J.* 1, Sandringham; 2, Requette de Caux; 3, Bergamotte Esperen; 4 and 5, Beurré Diel; 6, decayed.

NAMES OF PLANTS: S. Ely. Your tree is not the Butternut (*Juglans cinerea*) but the Black Walnut (*Juglans nigra*).—*J. C. B.* Calanthe Veitchii. The flowers vary in tint from various causes. The colour is often not well developed in dull, sunless seasons. The presence of impure air in the plant-house will often cause the blooms to change almost white.—*H. N.* Well-grown blooms of *Cypripedium* insignue of the old type.—*F. T. T.* 1, *Oncidium cheiroporum*; 2, *Stelis ophioglossoides*; 3, *Ocoteima diaphana*; 4, *Oncidium flexuosum*; 5, *Odontoglossum Lindleyanum*; 6, *Calanthe rosea*.

RECORD GRAPE: J. S. The heaviest bunch of Grapes of which we have record was shown at the International Fruit Show held in Edinburgh on September 15 and 16, 1875. The variety was Raisin de Calabre, and the weight was 26 lbs. 4 ounces. It was grown in Mr. Douglas's garden at Eskbank, Dalkeith, the gardener being Mr. Curror. An illustration of the bunch appeared in the issue of this journal for September 25 of that year. In the accompanying text it was stated to be a handsomely-formed bunch, the berries closely and solidly packed so that the shoulders stood out firmly in all directions; the "bloom" was perfect. Another remarkable bunch of Grapes, weighing 25 lbs. 15 ounces, was exhibited at the same show; the variety being White Nice. This was shown by John Jardine, Esq., Arkleton, Langholme, Glasgow (gr. Mr. Dickson).

RICHARDIA (ARUM) LEAVES SPOTTED: H. S. The black blotches are caused by *Monilia primosa*. Spray the plants with dilute Bordeaux mixture, after first removing the diseased leaves.

TO DESTROY ANTS: H. A. Where the nests can be easily reached, the simplest plan is to pour boiling water over them. If this is difficult, inject a little bisulphide of carbon or vaporite into their burrows. Another effective remedy is the "Ballikinrain Ant Destroyer," prepared by Messrs. Alex. Cross & Son, Glasgow. This is very poisonous, and should be used with care.

Communications Received.—Chloris—F. M.—A. V. H.—A. O.—W. C. Y.—C. H.—T. A. H. Rivers—J. C.—A. C. V.—E. F. H.—A. R. S.—John D.—Dr. K., Berlin—C. B. L.—Constant Reader—A. Grove—North Devon—Henry E.—R. C.—George S.—S. A.—G. N. S.—Dr. F.—W. B. H.—W. E. B.—G. M. G.—W. K.—A. W.—W. J. J.—T. H.—W. W. P.—G. F.—W. G. S.



Photographs by H. N. King.

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